United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with United States Department of Agriculture, Forest Service; United States Department of the Interior, Bureau of Land Management; and Oregon Agricultural Experiment Station

Soil Survey of Curry County, Oregon

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

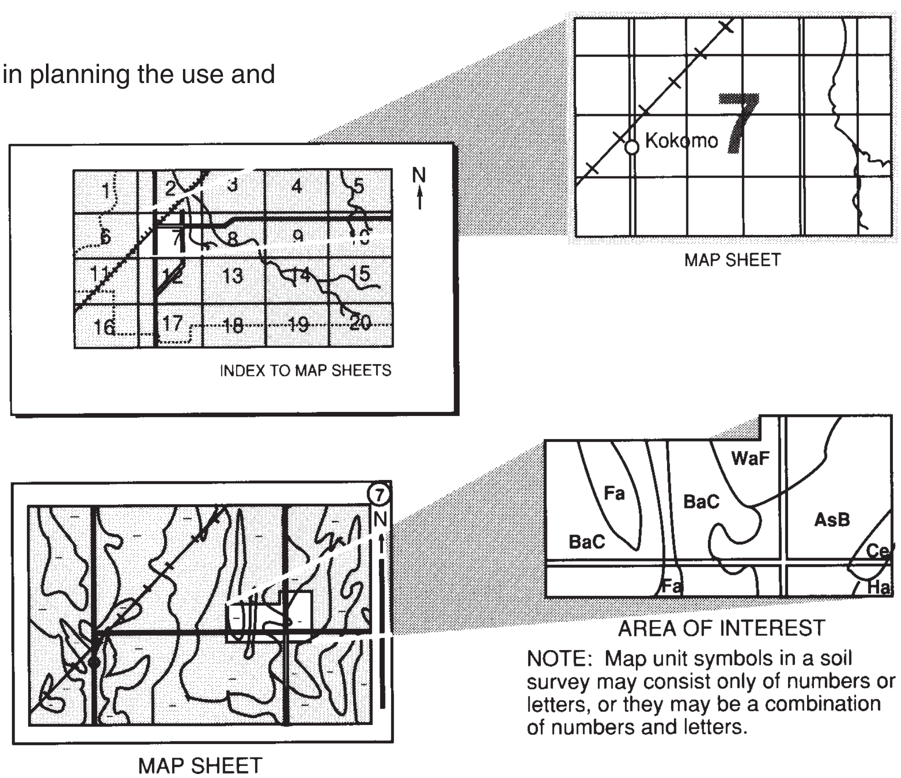
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1994. Soil names and descriptions were approved in 1995. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1994. This survey was made cooperatively by the Natural Resources Conservation Service and the Forest Service, Bureau of Land Management, and Oregon Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Curry County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Since the publication of this survey, more information on soil properties may have been collected, new interpretations may have been developed, or existing interpretive criteria may have been modified. The most current soil information and interpretations for this survey are in the Field Office Technical Guide (FOTG) at the local field office of the Natural Resources Conservation Service. The soil maps in this publication are in digital form. The digitizing of the maps was completed in accordance with the Soil Survey Geographic (SSURGO) database standards. The digital SSURGO-certified maps are considered the official maps for the survey area and are part of the FOTG at the local field office of the Natural Resources Conservation Service.

Cover: View of survey area looking south from Port Orford Heads State Park toward Humbug Mountain and beyond. Cunniff soils are in foreground, Cunniff and Burnthill soils are on high marine terraces left of Humbug Mountain, and Millicoma, Reedsport, and Whaleshead soils are on the mountain. Rocky Peak is in background.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Issued 2005

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

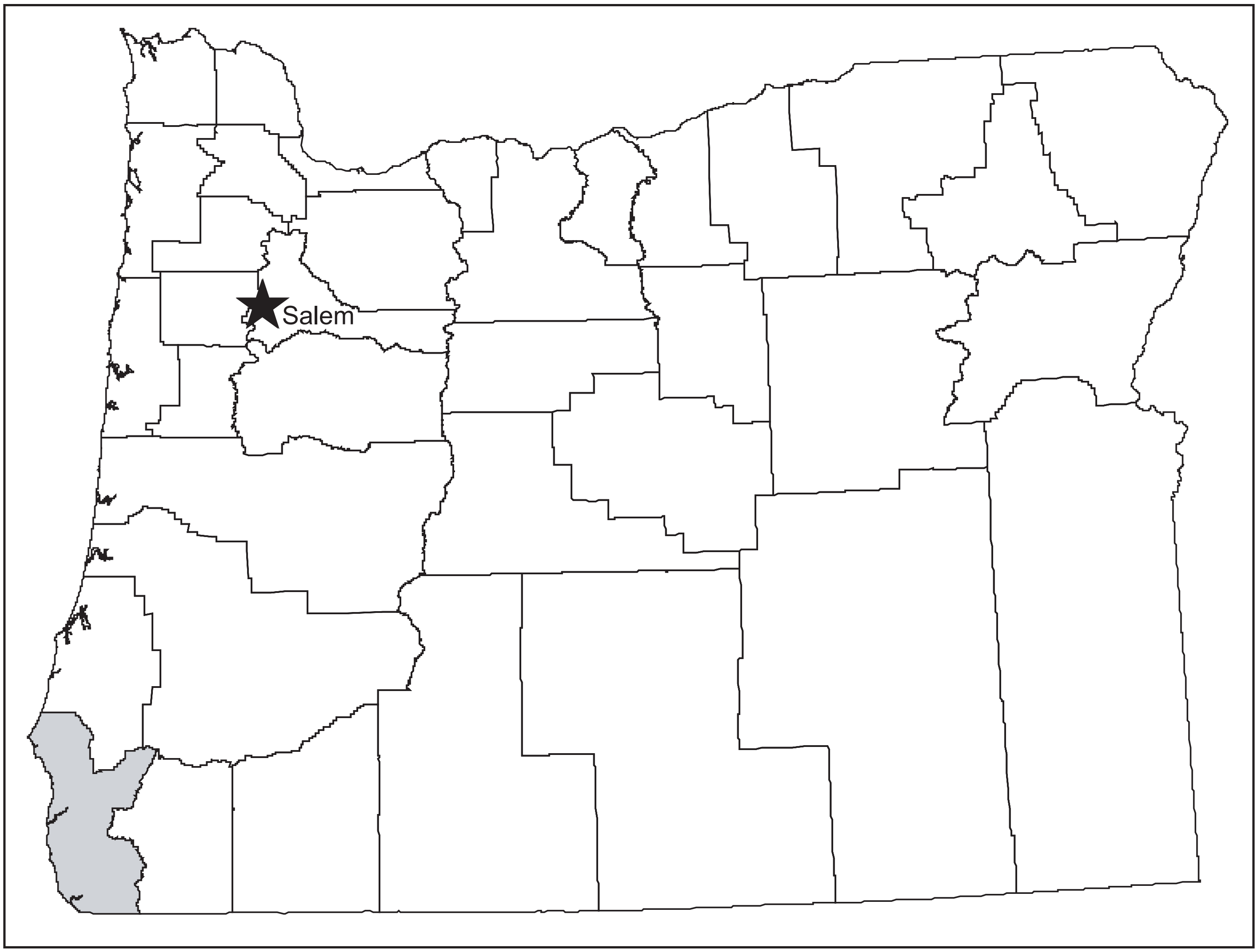
This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Bob Graham
State Conservationist
Natural Resources Conservation Service



Location of Curry County in Oregon.

Soil Survey of
Curry County, Oregon

By Matthew H. Fillmore, Natural Resources Conservation Service

Fieldwork by Matthew H. Fillmore, Gerald J. Weinheimer, Jr., Christopher D. Jasper, James Kienzle, Laura C. Burns, and Richard T. Smythe, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
United States Department of Agriculture, Forest Service; United States Department of the Interior, Bureau of Land Management; and Oregon Agricultural Experiment Station

Curry County is in the extreme southwestern corner of Oregon. Gold Beach is the county seat, and Brookings presently is the largest city. The county is characterized by coastal terraces, very narrow river valleys, and rugged mountains. Elevation ranges from sea level to 5,316 feet on Brandy Peak, near the eastern edge of the county. According to the 1990 census, the population of the county was about 20,000.

The total area of the county is 1,054,528 acres, of which about 356,520 acres is privately owned and about 698,000 acres is publicly owned. About 620,000 acres of the public land is administered by the Forest Service, and the remaining 78,000 acres is managed by the Bureau of Land Management.

Tourism, lumber production, fishing, sheep and cattle ranching, and specialty crop production are the major industries in the county. Coastal U.S. Highway 101 is the principal access to the area. Three wilderness areas are in the county—the Grassy Knob Wilderness, the Wild Rogue Wilderness, and the Kalmiopsis Wilderness, which is the largest.

The mean annual rainfall is about 70 to 90 inches along the populated coastal terraces, 75 to 130 inches in the higher coastal mountains, and 80 to 160 inches in the interior regions. The coastal climate is cool and wet in winter and cool and moist with occasional fog and low clouds in summer. In the inland areas, the winters are cool and wet with snow at the higher elevations and the summers are hot and dry. Most of the survey area is in two major land resource areas—the Northern Pacific Coast Range, Foothills, and Valleys area and the Siskiyou-Trinity area. A small part at the very southern end of the survey area is in the California Coastal Redwood area (USDA 1981).

The survey area has more than 180 different kinds of soil. The soils formed in various kinds of parent material. The soils in the Klamath Mountains formed in colluvium and residuum derived from altered igneous and sedimentary rock, diorite, and scattered areas of ultramafic rock. The soils in the Coast Range formed in colluvium and residuum derived from sedimentary rock and altered igneous rock. The soils on the coastal terraces formed in marine sediment deposited in an oceanic environment, and the soils in the river valleys and on adjacent alluvial fans formed in recent alluvium derived from mixed sources.

This soil survey updates the survey of Curry Area, Oregon, published in 1970 (USDA 1970). The earlier survey covered only the coastal part of the present survey. The present survey updates the earlier publication, provides additional information, and has larger maps that show the soils in greater detail.

General Nature of the County

This section discusses the history and development; physiography, relief, and drainage; natural resources; forestland; and climate of the county.

History and Development

By Walter G. Schroeder, Curry County agricultural extension agent, former State representative, and past president of the Curry County Historical Society.

Curry County was first inhabited by several tribes of Native Americans who spoke different dialects of a common Athapascan language. The Athapascan Indians lived in villages of family groups throughout the county, primarily in areas at or near the mouth of the rivers and major creeks. The largest bands were the Quatomah, which were along the coast from Port Orford north to the Sixes River, and the Che-a-tee, or Chetco, which were in and around the Brookings-Harbor Bench area (Curry County 1990).

Other bands included the Kwatami, or Sixes, who occupied the area south of Bandon to Humbug Mountain, south of Port Orford; the Cosuttheutun near Mussel Creek; the Euquachee near Euchre Creek; the Yashute at the mouth of the Rogue River; the Tuttutunne, or “people close to the river,” in the vicinity of the former Bagnell Ferry site; and the Mikonotunne, or “people among the white clover roots,” near Kimball Creek (Berreman 1937). The Shista Koostee band was in the Agness area. The Chetlessnatin band, or “people by the big rock,” occupied the Pistol River area, and the Khwaishtunnetunne, or Wishtenatin, band was near Whaleshead Creek, north of Brookings (Beckham 1977). The names of the Athapascan bands commonly ended in “tunne,” meaning people. The settlers referred to them as Tututni. The majority of these Native Americans depended on the ocean for their livelihood and as a source of food. They subsisted on the abundance of the land, including camas root, acorn, salmon, smelt, eel, shellfish, deer, elk, and an occasional seal or beach-stranded whale. The Native American population at the time of the first white settlement in the Rogue River country is estimated to be about 8,800 (Beckham 1971).

The earliest known European excursion along the southern Oregon Coast occurred in 1543 by Bartoleme Ferrelo (Cape Ferrelo was named for him), a Portuguese pilot for the explorer Juan Rodriguez Cabrillo. In January of 1603, a Spanish squadron captained by Sebastian Vizcaino, which had sailed north from Acapulco, Mexico, as an exploring expedition, became separated in a storm. Vizcaino is known to have sailed as far north as Cape Sebastian, which was named for him. In that same year, Martin D’Aquilar and Antonio Flores, other members of the squadron, are thought to have reached and named Cape Blanco, the westernmost point in Oregon (McArthur 1982). In 1788 and 1792, Captain Robert Gray of the Royal Navy sailed through coastal waters off of present-day Curry County. Captain Gray discovered the Columbia River.

The first known inland expedition occurred in 1826 by Hudson’s Bay Company trappers from Fort Vancouver. In 1827 Alexander McLeod, a representative for the Hudson’s Bay Company, was the first white man to visit the mouth of the Rogue River (Petersen and Powers 1977). In June 1828, Jedediah Smith and a party of trappers passed through the county on a fur trapping and trading excursion.

William Tichenor, a sea captain who previously transported goods by steamer between San Francisco and the Columbia River, had a desire to initiate a trading settlement along the southern Oregon Coast. To minimize hauling time, he wanted to build a supply road inland to settlements in what is now Jackson and Josephine Counties. Tichenor, who was captain of the small coastal steamer “Sea Gull,” chose Port Orford for his settlement because the headlands provided an excellent sheltering configuration for ships. On June 9, 1851, an advance party of nine men unloaded from the ship to begin construction of the settlement and a commercial depot. Promising to return in 14 days, Tichenor sailed for San Francisco to hire additional men for the construction work. On June 10, 1851, the Quatomah Indians attacked, forcing a stand on what is now called Battle Rock. Fire from muskets and a small cannon kept the Indians at a safe distance. When Tichenor’s ship did not arrive as promised, the nine men fled north during the night to Fort Umpqua, near Reedsport. Tichenor returned about a month later with 67 men. They built two blockhouses, which are reported to be the first structures built in the county by Europeans (Dodge 1969). This became the first settlement in the county.

Army troops arrived soon afterward and constructed Fort Orford, which included the first hospital in southwestern Oregon. Parties were sent out from Port Orford in the fall of 1851 to cut a trail for a new trade route to be connected to the Oregon Trail. This attempt failed, and one of the parties became lost near a mountain which they named in their exasperation “Tichenor’s Humbug.” Today the peak is known simply as Humbug Mountain.

In 1853 Port Orford boasted a store and a sawmill, which milled cedar that was transported by ship to San Francisco. In July of that year, settlers began to migrate into the Chetco Valley and surrounding areas (present-day Brookings-Harbor Bench area).

In the early 1850’s, gold was discovered in the upper Rogue River area and in the beach sand along the coast in Curry County. A rush of prospectors descended into the area and named the site Gold

Beach. For a time, miners were taking as much as $50.00 in gold per day from the black beach sand. When Captain Tichenor later became more prominent in the area, Gold Beach was changed to Ellensburg in honor of Tichenor's daughter, Ellen. In 1890 Ellensburg was changed back to Gold Beach so that it would not be mistaken for a town of the same name in the Washington Territory.

Curry County was established on December 18, 1855, from the southern part of Coos County. It was named for George Curry, the last governor of the Oregon Territory before it became the thirty-third state admitted to the Union on February 14, 1859. Port Orford was the county seat until 1859, when it was replaced by Ellensburg, or Gold Beach.

The more permanent miner-settlers planted gardens to provide food for themselves and to sell to the prospectors. In 1855 a French-Canadian named Enos began promoting an uprising among the Indians. In February of 1856, a group of local Rogue Indians massacred the male members of the John Geisel family, who lived at Elizabethtown, a shanty town just south of present-day Nesika Beach. They took Mrs. Geisel and her two daughters as temporary prisoners. They also murdered Indian agent Ben Wright (Dodge 1969). This marked the beginning of the Rogue Indian Wars, which included skirmishes at Gold Beach and Pistol River before finally ending on May 27, 1856, with a battle at Big Bend, near the confluence of the Rogue and Illinois Rivers. After that battle, 710 Indians were removed from the county and shipped to reservations at Grand Ronde and Siletz (Petersen and Powers 1977). The instigator of the wars, Enos, was captured and hanged by a lynch mob at Port Orford.

After the Rogue Indian Wars, the county experienced rapid growth, particularly at Port Orford. By 1857 Port Orford consisted of 60 buildings, including a sawmill, 3 hotels, 8 stores, 2 saloons, a bowling alley, and 14 army buildings. In the 1860's activity in Port Orford declined, and in 1868 a forest fire leveled a large portion of the town. The lighthouse at Cape Blanco was built in 1870 to aid ships navigating the treacherous rocky coast (Petersen and Powers 1977). Settlement increased at the mouth of the Rogue River. The plat for Ellensburg was filed, and a post office was opened.

In 1877 R.D. Hume built a salmon hatchery and cannery in Ellensburg. This hatchery was the first one built on the coast in Oregon and only the second one ever built in the state. The hatchery operated until 1893 when a fire burned down the cannery. Hume then relocated to the north bank of the Rogue River and organized a settlement that he called Wedderburn, named for the Hume ancestral home in Scotland (Petersen and Powers 1977). A post office was opened in Wedderburn in 1895.

In 1881 Frank Langlois and A.W. Thrift opened a store in the northern part of the county. A post office was also opened, and Frank Langlois became the first postmaster. His name remained with the settlement, which developed into the town of Langlois (Petersen and Powers 1977).

During the 1880's through the early 1900's, mining was a profitable pastime in the area. Borax was mined at Lone Ranch for 2 years, and gold placer was mined along many beaches and most of the rivers and creeks, particularly the Sixes and Pistol Rivers. Nickel was mined along upper Hunter Creek, and a sandstone quarry was located at Blacklock Point. Today, removal of gravel from river bars is the main remnant of a former large mining industry in the county.

By 1890 a wagon road connected Coos Bay, Gold Beach, and Crescent City. This ended use of the Indian trails that for so many years had been the only overland routes. When John E. Brookings built a sawmill in 1908, Brookings became established as a logging and manufacturing town. A post office was built there in January 1913. Presently, Brookings is the largest city in the county. A railroad was constructed that extended into Del Norte County in California. This was the only railroad in the county, and it was destroyed after a depressed lumber market resulted in the closure of the Brookings mill in 1925. In 1927 U.S. Highway 101 was completed, providing an all-weather route through the county, and in 1932 the Rogue River Bridge was completed. Prior to that, vehicles were ferried across the river at Bagnell Landing, about 5 miles upriver from present-day Gold Beach.

During World War II, a U.S. Navy air transport runway was constructed on Cape Blanco. The runway is capable of handling jet aircraft, but it is seldom used today. On September 9, 1942, the county was bombed twice by a single Japanese submarine-based floatplane carrying incendiary explosives but little damage was done. This is believed to be the only aerial attack on the United States during World War II. One of the bombing sites is commemorated at Mount Emily, east of Brookings.

In 1935 Port Orford became the first incorporated city in the county. Gold Beach followed in 1945 and Brookings in 1951. A countywide hospital was opened in Gold Beach in 1951.

Agriculture increased rapidly after the discovery of gold. Twenty-four years after the Rogue Indian Wars, farms in the county supported about 22,000 sheep, 4,000 cows, and 800 hogs (Dodge 1969). The beef cattle and some of the sheep ranged on the thousands of acres of open grassland prairies, most of which have since been overgrown by forests. Hogs fed on the acorns from tanoak trees in the hills, and a specialty market for acorn-fed hogs was developed.

Agricultural land was not abundant in the county, but by 1898 there were 8,000 acres of cultivated land, mostly along fertile river and creek bottoms, and 50,000 acres of hayland. According to records of the county treasurer that year, these small acreages of farmland produced 1,200 bushels of wheat, 20,000 bushels of oats, 5,000 bushels of rye and barley, 3,000 bushels of corn, 12,000 tons of hay, 500 pounds of tobacco, 30,000 bushels of potatoes, 20,000 bushels of apples, 6,000 bushels of prunes and plums, and 125,000 pounds of wool while also maintaining 25,000 sheep, 3,000 hogs, and 10,000 cows (Dodge 1969).

Dairy farming was very important in the county, and every small town or village had a creamery or cheese factory.

In 1885 the first cranberry bog on the southern coast was established by Charles Dexter McFarlin (Petersen and Powers 1977). Today a multimillion-dollar cranberry industry is located in the northern part of Curry County and the southern part of Coos County. Potentially, 1,000 acres in the area from Port Orford to the county line between Coos and Curry Counties could be used for cranberries. The largest cranberry farm in Oregon is located in this area. The climate and other natural resources contribute to the production of exceptionally high-quality, dark red berries that are valued by processors for blending.

In the early 1920's, an Easter lily industry was started near Bandon and was moved south to the fertile soils and ideal lily-growing climate of the Brookings-Harbor Bench area (Petersen and Powers 1977). When Japanese imports were cut off during World War II, the Easter lily business boomed. Over 95 percent of the lily bulbs supplied for the United States and Canada are grown in Curry County and neighboring Del Norte County.

Other specialty crops are grown in various parts of the county—hydrangeas are grown on the rich soils of the Harbor Bench area, blueberries are grown primarily in the northern part of the county, and dahlias are grown along the Rogue River, near the site of the former village of the Tuttutunne Indians.

Early logging was largely for local use, but some lumber was exported. In the 1920's, a market developed for Port Orford cedar. More than two-thirds of the county is publicly owned, and it was not until the 1960's that much of this land was opened for logging. Logging and milling boomed until the late 1980's when the dwindling supply and environmental pressures resulted in the closure of many of the mills that depended on public forests. Some of the best timber-growing land in the county is privately owned. It produces excellent yields if intensive management is used.

The Rogue River and the coast have attracted tourists for many years. In the 1960's the tourism industry started expanding rapidly, and today it is a major component in the economy of the county.

Physiography, Relief, and Drainage

By Gerald J. Weinheimer, Jr., soil scientist, Natural Resources Conservation Service.

Physiographically and geologically nearly all of the county is within the Klamath Mountain geologic province, which lies at the western edge of the North American continent, straddling the Oregon-California border (Dott 1971). This region is characterized by rugged mountainous terrain and narrow canyons with 2,000 to 5,000 feet of relief. The mountains are made up largely of pre-Tertiary strata (about 65 million years old or more) that have been folded, faulted, and in places intruded by granitoid rock and masses of serpentinized ultrabasic rock. A small area of the Coast Range province is in a part of the county where Eocene sediment (about 65 to 38 million years old) is exposed in a narrow syncline that extends as far south as Agness, at the confluence of the Rogue and Illinois Rivers (Baldwin 1981). The Klamath Mountain region is underlain by older and more resistant rocks than is the Coast Range or the Cascade Range, and it has undergone longer and more complicated erosional processes (Dicken 1976).

Curry County has a relatively complex geologic history that is reflected by the wide variety of rock types in the county and the extent of deformation. The geologic bedrock units are composed of sedimentary rock, various types of igneous rock, and metamorphic, or altered, rock. These bedrock units range in age from 150 million years old to less than 10 million years old. Pre-tertiary sedimentary rock that covers most of the county has been folded and thrust faulted. This sandstone, siltstone, and mudstone is highly fractured, and little bedding remains. The stratified, or well-bedded, Tertiary sandstone and siltstone are primarily in the north-central part of the county (about 65 million to 2 million years old). The types of igneous rock are mainly granitelike rock, which has formed many of the more rugged mountains, and peridotite, which has altered to serpentinite. The metamorphic rock consists mainly of schist and phyllite that formed as a result of heat and pressure applied to sedimentary rock (Ramp and others 1977). Surficial geologic units consist of semiconsolidated to unconsolidated terrace and lowland deposits that locally overlie the bedrock units. These geologic units were formed by relatively recent geologic processes. They range to 2 million years old, but most are less than 100,000 years old. Surficial deposits differ from soils in that they are products of deposition rather then weathering (Beaulieu 1976).

All but the very youngest of the geologic units have undergone deformation through tectonic processes such as folding, faulting, and thrusting at various times in the past. Much of the deformation by faulting, which has caused the fracturing and partial mechanical disintegration of the geologic units, has been localized in place and time. The Pistol River shear zone, which is an area of localized faulting, consists of a heterogeneous mixture of intensely sheared rock and serpentinite pods extending in a southeasterly direction from Cape Sebastian to Carpenterville. Linear arrangements of sea stacks such as at Mack Reef, south of Crook Point, represent the resistant tectonic blocks within shear zones. A second area of localized faulting is in the northern part of the county along the coast. It extends from Cape Blanco south through Port Orford to southeast of Humbug Mountain. Part of this shear zone is offshore on the continental shelf. Orford Reef is the resistant tectonic block associated with this zone.

These faults appear to have been active in the distant geologic past and are not a threat in terms of earthquake activity; however, the highly fractured rock presents a significant risk of landslides in the immediate vicinity of the shear zone. Generally, most areas in the county are subject to landslides or to instability of the soils because of the diverse nature of the rock and its origin, the kinds of soils derived from the rock, the deformation of the bedrock units by tectonic processes, the high-relief topography, and the high amount of rainfall in winter.

The county is typified by lowlands, terraces, and mountains. The lowlands consist of the areas within the present flood plains, marshes, and deflation plain between the beaches and dunes at or near the mouth of larger rivers and streams along the coast. The major flood plains are along the Rogue, Illinois, Chetco, and Winchuck Rivers and several of the larger creeks in the county. The areas subject to flooding are narrow stretches and depressional channels adjacent to the streams. Elevation generally is less than 40 feet above sea level. An exception is some areas of sand dunes, such as those south of the mouth of the Pistol River, but these areas are of minor extent.

The terraces consist of two types—marine terraces and river terraces. The marine terraces consist of remnants of past sea floor levels elevated by recent uplift, and the river terraces consist of dissected remnants of former flood plains along major streams. Several distinct levels of marine terraces have been recognized on the coastal plain extending from Port Orford northward into Coos County. They have areas of poorly consolidated sand and gravel from a few feet thick to more than 100 feet thick and have been dissected by major coastal streams. Elevation of the younger coastal terraces generally is less than 200 feet; however, it ranges from 20 to 650 feet because of the considerable continuous submarine seismic activity offshore.

The lower terraces generally have only a partially developed drainage network. Remnants of older terraces are at higher elevations (1,000 to 1,500 feet), such as in the area between the Elk and Sixes Rivers, north of Port Orford, and at the Brookings Airport. These older, higher terraces are strongly dissected and well drained by a highly developed drainage network. Smaller sets of marine terraces are north of Gold Beach and south of Brookings. River terraces generally are less than 50 feet above the present-day flood plains (Beaulieu 1976). The higher stream terraces are somewhat wide, nearly level areas. The widest terraces are in the Agness and upper Sixes River areas. Alluvial fans are on relatively steep, short slopes in narrow river valleys.

A more detailed discussion of the terraces in the county is given in the section “Formation of the Soils.” Terraces are of significant extent in the county, and they are of major importance as sites for commercial, residential, industrial, and agricultural development.

The Coast and Klamath Ranges are the principal mountains in the county. The mountain slopes are steep, long, and dissected. The mountains range in elevation from about 1,700 feet at Humbug Mountain, adjacent to the ocean, to more than 5,300 feet inland at Brandy Peak. The higher elevations exhibit evidence of glaciation, with several small glacial lakes in the cirque basins.

The county is drained by two major rivers, the Rogue and Illinois Rivers, and several smaller rivers, including the Winchuck, Chetco, Pistol, Elk, and Sixes Rivers. These rivers flow in a westerly or northwesterly direction to the Pacific Ocean. The North Fork of the Smith River drains to the south into California. Several well-developed stream systems, such as Floras, Euchre, and Hunter Creeks, drain the smaller basins.

Natural Resources

The many natural resources of the county are varied and unique. They include the outstanding visual quality of the landscape, diverse forest products, abundant anadromous fish and wildlife species, economically important mineral deposits, and agricultural products such as specialty crops.

The landscape is rapidly becoming the most valuable natural resource of the county. Tourism and related businesses are developing into a major enterprise. The wealth of water, wildlife, and scenery and the sunny weather attract thousands of visitors annually.

A variety of forest products from private and public land generates employment for many of the residents in the county. The forest products are a major source of revenue for the local government. Lumber, plywood, and wood chips are produced for domestic use and for export.

Recreational and commercial fishing in the Pacific Ocean and in coastal rivers is of tremendous economic importance, and it is tied directly to the health of the land and the ocean. Salmon is the most sought-after and valuable species.

Limited interest in mining continues. Small placer gold prospects are along the rivers and streams and large deposits of low-grade nickel and associated minerals are in areas of serpentinized peridotite in the interior mountains. These areas are controlled by companies that have large blocks of mining claims. The deposits will be processed when it becomes economically feasible to do so.

Specialty crops such as cranberries and lily bulbs are suited to the maritime climate of the county. Sheep and cattle ranching also is profitable because of the year-round growing season for pasture grasses.

Forestland

The county is one of the better timber-growing areas in southwestern Oregon. About 90 percent of the county is classified as commercial forestland. About 66 percent of the county is commercial forestland that is publicly owned. Of this, about 59 percent is in the Siskiyou National Forest and is administered by the Forest Service, 6 percent is administered by the Bureau of Land Management, and 1 percent is administered by the State and county. About 24 percent of the county is commercial forestland that is privately owned. Of this, about 20 percent is owned by the forest products industry and 4 percent by small woodland operators.

The principal forest cover type is the Douglas fir/Tanoak/Pacific madrone type, which is throughout the majority of the county (Eyre 1980). Other forest cover types include the Sitka spruce type along most of the coastal zone; the Redwood type south of the Chetco River; the Jeffrey pine type associated with the serpentine-influenced soils; and the White fir and Shasta red fir types, which are inland and at the higher elevations (Eyre 1980). Stands of tanoak, Pacific madrone, Oregon white oak, red alder, incense cedar, western redcedar, and bigleaf maple can be harvested for specialty products such as furniture, fuelwood, and wood chips.

The forestland in the county is protected from fire by the Forest Service, the Oregon State Department of Forestry through the Coos Forest Protection Association, and the local fire districts. The increasing population and recreational activity in the area make accidental fire a constant threat, especially during the dry period in summer.

Climate

Curry County has a marine-influenced climate because of its proximity to the Pacific Ocean, which warms the air flowing over the county in winter and cools the air in summer. As a result, temperatures along the coast are mild throughout the year. The coastal marine influence decreases in inland areas, resulting in greater variations in temperature. Precipitation is perhaps the most significant climatic factor in the county. Rainfall is highest in December and lowest in July.

Winds from the west travel over the ocean for several days. When the airmass reaches land, it is saturated with moisture and is at nearly the same temperature as the ocean. This results in about 100 days of fog along the coast each year. In the inland valleys, however, the number of foggy days may be about half that of the coastal areas. Fog occurs in all months, but it occurs dominantly in October through March. In general, the northern part of the county, particularly Cape Blanco, receives more wind and stronger wind, and the southern part, particularly the Brookings-Harbor Bench area, receives more fog.

The mountains begin within a few miles of the coastline. They rise to elevations of more than 5,000 feet. Airmasses flowing over the mountains cool by as much as 3 to 5 degrees F for each 1,000-foot increase in elevation.

In winter, landmasses cool to a much lower temperature than the ocean and they cool the airmasses as they rise up the mountainslopes. As this cooling takes place, air that was nearly saturated at sea level becomes oversaturated. As a result, precipitation increases as elevation increases (Meyer and Amaranthus 1979).

In summer, landmasses heat up more rapidly than does the ocean and thus less precipitation is produced in the airmasses as they move up the mountain slopes. For this reason, the inland valleys, which are 15 to 30 miles from the coast, are drier and warmer than the coastal areas.

Local variations in the climate of the county result in variations in vegetation patterns. An example is in the northern part of the county where the more frequent storms and fog produce a cooler climate. In this part, trees such as western hemlock and western redcedar commonly are in the forest canopy, while further south these trees occur only sporadically. In the northern part of the county, red alder competes with tanoak, which is dominant in the southern part, to become the major hardwood species in the forest stands. Another example is in the very southern part of the county. According to Weather Bureau data, the average temperature at Brookings is about 1.9 degrees F higher than that at Bandon. Gold Beach and Brookings are nearly free of frost (Atzet and Wheeler 1984). Mainly because of the warmer, frost-free conditions, the northernmost extension of the Redwood forest cover type on the Pacific Coast is in this area.

The strong marine influence on the coastal mountains and the western side of the Klamath Mountains is characterized by high precipitation and humidity, abundant fog, and a limited range in temperature. These characteristics tend to lower the rates of evaporation and transpiration, and condensation from the fog increases the available soil moisture. Generally, moist airmasses move from the southwest to the northeast late in fall, in winter, and early in spring. The prevailing drier winds in summer are from the northwest. Normal annual rainfall ranges from 70 to 160 inches. The rainy season extends from mid-October to mid-April. Seventy-five to eighty percent of the total annual precipitation falls during this period. Local wind patterns influence the distribution of the rainfall by funneling airmasses up major drainageways. The amount of rainfall increases as elevation increases. As the distance from the coast increases, snowfall becomes more common at the higher elevations. The snow rarely is more than 1 to 2 feet deep, and it commonly melts by midspring.

The mean temperature in January is about 40 to 45 degrees. Infrequent periods of extremes of as low as zero occur in winter. The mean temperature in July is about 60 to 65 degrees. Infrequent, short periods of extremes of more than 100 degrees occur in summer. In fall and winter, low-pressure systems form in the North Pacific Ocean and produce counterclockwise patterns of air circulation that result in prevailing winds approaching from the southwest. Coastal storms in winter commonly have high-velocity, southwesterly or westerly winds. The winds commonly reach 40 miles per hour. Occasional gusts of more than 120 miles per hour have been recorded at Cape Blanco.

The eastern side of the Klamath Mountains has a different climate as a result of the incoming marine airmasses having been greatly modified during their passage up the western slopes. Considerable amounts of the available moisture in the airmasses are condensed and precipitated on the western slopes. The amount of fog and the humidity are lower on the eastern side and the rate of evapotranspiration is higher as a result of the landmasses heating and cooling more rapidly than the ocean airmasses, which tends to increase the temperature extremes. Snow is common at the higher elevations, but it rarely is more than 2 to 3 feet deep and normally lasts only until midspring.

The mean temperature in January ranges from 35 to 40 degrees, and the mean temperature in July ranges from about 65 to 69 degrees. Short periods of temperature extremes ranging from below zero in winter to more than 100 degrees in summer occur infrequently. The winds are from the southwest, and the maximum velocity during winter storms is rarely more than 50 miles per hour. Most of the total annual precipitation occurs in November through mid-April.

In midspring, high pressure replaces the winter low-pressure centers. This changes the pattern of air circulation to prevailing northwesterly winds and produces a dry season from midspring to late in spring that intensifies through the summer and ends early in fall. Thunderstorms are more frequent in summer, and they commonly approach from the south. Precipitation from the thunderstorms commonly is light; only about 5 percent of the annual precipitation is received in summer.

Table 1 gives data on temperature and precipitation for the survey area as recorded in the period 1962 to 1991 at Bandon, Brookings, Gold Beach, and Illahe, Oregon, and in the period 1965 to 1993 at Port Orford, Oregon. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity. The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Survey Procedures

The general procedures used in making this soil survey are described in the National Soils Handbook of the Natural Resources Conservation Service. References used in the development of this survey include an earlier soil survey of Curry Area, Oregon, published in 1970 (USDA 1970); mapping of geomorphic surfaces on marine and stream terraces; the soil inventory of the Medford District published in 1975 (deMoulin and others 1975); the soil inventory of the Coos Bay District published in 1977 (Townsend and others 1977); the soil resource inventory of Siskiyou National Forest published in 1979 (Meyer and Amaranthus 1979); reconnaissance geologic maps with accompanying texts issued in 1976 and 1977 (Beaulieu 1976, Ramp and others 1977); and the memorandum of understanding between the Natural Resources Conservation Service and the Forest Service, Bureau of Land Management, and Oregon State University Agricultural Experiment Station.

The survey area was mapped using high-altitude aerial photographs enlarged to a scale of 1:20,000. Selected cultural features and hydrography on the soil maps were based on U.S. Geological Survey 7.5-minute topographic quadrangle maps. Hillslopes and relief gradients were determined either by examination of contour intervals on topographic maps or by stereoscopic study of aerial photographs.

The specifications for intensity of soil mapping varied by geographic area within the survey area and were based on the needs of the user. More information on the detail of mapping is given in the memorandum of understanding for this survey.

The soils in the survey area were mapped according to predictable soil patterns that occur on landforms. The general soil-landform relationships are described in detail in the section “Formation of the Soils.” Transects and traverses were used to confirm soil-landform patterns.

Tonal patterns on aerial photographs were used to predict the presence of wet, droughty, or shallow soils, cobbles or stones, and eroded or unvegetated areas. The type and density of vegetation commonly reflect soil depth, available water capacity, and aspect.

Transects were used to map areas where the soils do not occur in predictable patterns. Soils in level areas, such as flood plains and marine terraces, are examples. Transects were made randomly across the areas to determine the composition of the dominant and minor soils. Tonal patterns on aerial photographs were used to predict some preliminary soil delineations, although the extent and composition of each map unit was determined in the field. The soil scientists generally crossed the areas on foot, following a course that had been determined from aerial photographs. The soil characteristics were examined at regular intervals and documented. Several delineations commonly are on a single landform.

Map unit delineations were divided into two categories—similar soils and contrasting soils. Similar soils have the same potential plant communities and similar use and management requirements. Contrasting soils have different potential plant communities and different use and management requirements. The contrasting soils or miscellaneous areas that are of significant extent are described in the section “Detailed Soil Map Units.”

Where predictable soil patterns existed, such as on foothills and in mountainous areas, traverses were made to correlate a soil with a particular landscape position. Traverses were planned through the use of topographic quadrangle maps and photo-interpretation of tonal patterns, slope, and aspect. Point data collected in the field was used to determine the composition of map units, to determine the range of characteristics for each named soil in the map units, and to verify predictions of the occurrences of different kinds of soil. The traverses were made by truck and on foot. The soil was examined when changes in characteristics were apparent. Where the soils varied considerably, many traverses were made at short intervals.

This soil survey was mapped at three levels of intensity. A high level of detail was used to map the soils on marine terraces, in coastal stream valleys, and on low foothills. There is increasing pressure to develop the cropland and pastureland in these areas. Map units used were consociations and complexes of phases of soil series or miscellaneous areas. Maps of the flood plains published by the Federal Emergency Management Agency were used as an aid in determining the boundaries of the flood plains. The minimum size of a map unit delineation was 10 acres. The maximum size of a delineation of contrasting soils was about 1.5 acres on terraces and 12 acres on foothills. About 6 percent of the survey area was mapped at this high level of detail.

An intermediate level of detail was used to map the soils of the remaining foothills and the nonwilderness mountainous areas. These soils formed in various kinds of parent material and are gently sloping to very steep. They are used for timber production, livestock grazing, watershed, recreation, and fish and wildlife habitat. The map units used were complexes of phases of soil series and miscellaneous areas. The minimum size of a map unit delineation commonly was about 80 acres; however, delineations as small as 15 acres were made in areas that were considered to be of high value. About 76 percent of the survey area was mapped at this level of detail.

A low level of detail was used to map the soils of the three mountainous wilderness areas recognized in the survey area. These soils formed in various kinds of parent material and are strongly sloping to very steep. They are used for aesthetic value and as watershed, recreation, and fish and wildlife habitat. The map units used were complexes of phases of soil series and miscellaneous areas. The minimum size of a map unit delineation commonly was about 320 acres; however, delineations as small as 40 acres were made in areas recognized by cooperating agencies as having unique value or that were accessible for transects and enhanced field investigation. Based on accessibility, transects and landform traverses were made at strategic locations. This point data was used to establish general soil-landform associations and to locate representative soil profiles. About 18 percent of the survey area was mapped at this level.

The soil mapping of the marine terraces, coastal stream valleys, and some of the adjacent foothills and mountainous areas is a revision of the mapping done for the soil survey of Curry Area, Oregon, published in 1977 (USDA 1977). Since that time, more has been learned about the soils through laboratory analysis and through examination of data on crop yields and productivity of timber sites. Previous concepts have been revised as a result of this knowledge.

Samples for chemical and physical analysis were taken from pedons of the major soils in the survey area. The analyses were made by the National Soil Survey Laboratory in Lincoln, Nebraska, and by the soils laboratory at Oregon State University. The results were used in classifying the soils, in determining their fertility and erodibility, and in making various interpretations for engineering and agricultural uses and for other land uses.

Soil-plant relationships were evaluated during the development of the detailed map unit descriptions; thus, data on the productivity of trees and yield of crops is included in this survey. Foresters, soil scientists, and soil conservation technicians assisted in measuring the potential for timber production at representative forested sites. Foresters and ecologists correlated existing vegetation to potential plant communities, and soil scientists correlated these plant communities to soil series and map unit concepts. Soil conservationists, agents of the Oregon State University Extension Service, and Earth Team volunteers assisted in collecting yield data for specialty crops and forage.

More detailed information about soils, forestry, and vegetation is given in the sections “Crops and Pasture” and “Forestland Management and Productivity.”

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soils of the Coastal Flood Plains, Terraces, and Dunes

1. Langlois-Logsden-Frankport

Very deep, very poorly drained, well drained, and excessively drained soils that are on flood plains, tidal flats, stream terraces, and stabilized dunes and have cool, wet winters and cool, moist summers with fog

This unit is on flood plains, tidal flats, low stream terraces, and old stabilized coastal dunes. Elevation is 0 to 600 feet. Slopes are 0 to 30 percent. The mean annual precipitation is 70 to 90 inches, the mean annual air temperature 50 to 53 degrees F, and the frost-free period is 210 to 300 days.

This unit makes up about 2 percent of the survey area. It is about 31 percent Langlois and similar soils, 28 percent Logsden and similar soils, and 9 percent Frankport and similar soils. The remaining 32 percent is components of minor extent.

Langlois soils are on flood plains and tidal flats. These soils are very deep and very poorly drained. Typically, the surface layer is silty clay loam and the substratum is silty clay loam, silty clay, or clay.

Logsden soils are on low stream terraces. These soils are very deep and well drained. Typically, the surface layer is silt loam and the subsoil is silt loam or fine sandy loam.

Frankport soils are on stabilized dunes. These soils are very deep and excessively drained. Typically, the surface layer and substratum are sand.

Of minor extent in this unit are Gauldy, Nehalem, Nestucca, Willanch, and Yachats soils on flood plains; Gleneden soils on low stream terraces; Heceta soils in interdunal depressions on deflation plains; Yaquina soils in convex interdunal positions on deflation plains; Beaches adjacent to the Pacific Ocean; Riverwash on flood plains; and water in Floras Lake, Garrison Lake, and the Sixes, Elk, Rogue, and Pistol Rivers.

This unit is used for livestock grazing, hayland, limited homesite development, and wildlife habitat. The Langlois soils are limited by a hazard of water erosion, frequent flooding, a seasonal high water table, and wetness; the Logsden soils are limited by rare flooding; and the Frankport soils are limited by wind erosion, sandy textures, and slope stability.

2. Klooqueh-Winchuck-Bagness

Very deep, well drained soils that are on flood plains, stream terraces, and marine terraces and have warm, wet winters and warm, moist summers with fog

This map unit is on flood plains, stream terraces, and marine terraces. Elevation is 0 to 400 feet. Slopes are 0 to 30 percent. The mean annual precipitation is 70 to 90 inches, the mean annual air temperature is 52 to 57 degrees F, and the frost-free period is 270 to 330 days.

This unit makes up about 1 percent of the survey area. It is about 29 percent Klooqueh and similar soils, 29 percent Winchuck and similar soils, and 14 percent Bagness and similar soils. The remaining 28 percent is components of minor extent.

Klooqueh soils are on marine terraces. These soils are very deep and well drained. Typically, the surface layer is silty clay loam and the subsoil is silty clay loam or silty clay.

Winchuck soils are on high stream terraces. These soils are very deep and well drained. Typically, the surface layer is silt loam and the subsoil is silty clay or clay.

Bagness soils are on flood plains. These soils are very deep and well drained. Typically, the surface layer is silt loam or very fine sandy loam and the subsoil is clay loam or silty clay loam.

Of minor extent in this unit are Ettersburg soils on low stream terraces; Huffling soils on marine terraces; Bayside and Bigriver soils on flood plains; Beaches adjacent to the Pacific Ocean; Riverwash on flood plains; Urban land on marine terraces; and water in the Chetco and Winchuck Rivers.

This unit is used as cropland, livestock grazing, homesite development, and limited timber production. The Klooqueh and Winchuck soils are limited by a hazard of erosion, susceptibility of the surface layer to compaction and displacement, slow permeability, clayey subsoil textures, and plant competition; and the Bagness soils are limited by a hazard of flooding.

3. Cunniff-Bullards-Ferrelo

Very deep, well drained soils that are on dissected marine terraces and high stream terraces and have cool, wet winters and cool, moist summers with fog

This map unit is on dissected marine terraces and remnant high stream terraces. Elevation is 20 to 600 feet. Slopes are 0 to 40 percent. The mean annual precipitation is 70 to 90 inches, the mean annual air temperature is 50 to 53 degrees F, and the frost-free period is 210 to 300 days.

This unit makes up about 3 percent of the survey area. It is about 30 percent Cunniff and similar soils, 28 percent Bullards and similar soils, and 13 percent Ferrelo and similar soils. The remaining 29 percent is soils of minor extent.

Cunniff soils are on dissected marine terraces and remnant high stream terraces. These soils are very deep and well drained. Typically, the surface layer is silty clay loam and the subsoil is silty clay loam or silty clay.

Bullards soils are on relict sand dunes of dissected marine terraces. These soils are very deep and well drained. Typically, the surface layer is sandy loam and the subsoil is gravelly sandy loam.

Ferrelo soils are on relict sand dunes of dissected marine terraces. These soils are very deep and well drained. Typically, the surface layer is loam and the subsoil is fine sandy loam or loamy fine sand.

Of minor extent in this unit are Burnthill, Cashner, Hebo, Horseprairie, Grindbrook, and Wadecreek soils on marine terraces and Quillamook soils on high stream terraces.

This unit is used as cropland, livestock grazing, hayland, homesite development, and limited timber production. The soils in this unit are limited by a hazard of water erosion, steepness of slope, and plant competition. The Cunniff soils are also limited by clayey textures, slow permeability, and susceptibility of the surface layer to compaction, and the Bullards and Ferrelo soils are also limited by wind erosion, slope stability, a hazard of windthrow, and a risk of contamination of groundwater as a result of seepage.

Soils of the Coastal Hills and Mountains

4. Millicoma-Reedsport-Bullgulch

Moderately deep and very deep, well drained soils that are derived from metasedimentary and metavolcanic rock, are on coastal hills and mountains, and have cool, wet winters and cool, moist summers with fog

This map unit is on summits, benches, and side slopes of coastal hills and mountains. Elevation is 0 to 1,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 75 to 95 inches, the mean annual air temperature is 50 to 53 degrees F, and the frost-free period is 200 to 270 days.

This unit makes up about 5.5 percent of the survey area. It is about 35 percent Millicoma and similar soils, 33 percent Reedsport and similar soils, and 14 percent Bullgulch and similar soils. The remaining 18 percent is soils of minor extent.

Millicoma soils are on summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is very gravelly loam or extremely gravelly loam.

Reedsport soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is gravelly loam or clay loam.

Bullgulch soils are on broad summits, benches, and side slopes. These soils are very deep and well drained. Typically, the surface layer is silty clay loam and the subsoil is silty clay or clay.

Of minor extent in this unit are Grassyknob soils in open grassland areas on broad summits, benches, and side slopes; Hunterscove and Templeton soils on broad summits and side slopes; Svensen soils on summits and benches; and Whaleshead soils on side slopes.

This unit is used for livestock grazing, timber production, and homesite development. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, soil depth, and plant competition. The Bullgulch soils are also limited by slow permeability and clayey textures, and the Reedsport soils are also limited by slow permeability.

5. Bosland-Floras-Loeb

Moderately deep and deep, well drained soils that are derived from metasedimentary and metavolcanic rock, are on coastal hills and mountains, and have warm, wet winters and warm, moist summers with fog

This map unit is on broad summits and side slopes. Elevation is 200 to 1,300 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 90 to 130 inches, the mean annual air temperature is 52 to 57 degrees F, and the frost-free period is 240 to 300 days.

This unit makes up about 5 percent of the survey area. It is about 28 percent Bosland and similar soils, 24 percent Floras and similar soils, and 13 percent Loeb and similar soils. The remaining 35 percent is soils of minor extent.

Bosland soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is silt loam and the subsoil is silty clay loam or clay loam.

Floras soils are on side slopes. These soils are deep and well drained. Typically, the surface layer is silty clay loam and the subsoil is gravelly silty clay loam or gravelly silty clay.

Loeb soils are on broad summits. These soils are deep and well drained. Typically, the surface layer is silt loam and the subsoil is silty clay loam, silty clay, or gravelly clay.

Of minor extent in this unit are Dulandy, Guerin, Wedderburn, and Zwagg soils on summits and side slopes and Macklyn and Vondergreen soils on broad summits.

This unit is used for timber production, homesite development, and livestock grazing. The soils in this unit are limited by a hazard of erosion, steepness of slope, slow permeability, susceptibility of the surface layer to compaction and displacement, slope stability, and plant competition. The Floras and Loeb soils are also limited by clayey textures.

6. Calfranch-Capeblanco-Watches

Moderately deep and very deep, well drained soils that are derived from schist and phyllite, are on coastal hills and mountains, and have cool, wet winters and cool, moist summers with fog

This map unit is on summits and side slopes of coastal hills and mountains. Elevation is 100 to 1,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 75 to 95 inches, the mean annual air temperature is 50 to 53 degrees F, and the frost-free period is 200 to 270 days.

This unit makes up about 2 percent of the survey area. It is about 36 percent Calfranch soils, 24 percent Capeblanco soils, and 23 percent Watches soils. The remaining 17 percent is components of minor extent.

Calfranch soils are on summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is very channery loam and the subsoil is very channery loam, very channery sandy loam, or extremely flaggy sandy loam.

Capeblanco soils are on summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very channery loam and the subsoil is very channery clay loam or extremely channery sandy clay loam.

Watches soils are on broad summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is channery loam and the subsoil is channery clay loam or channery loam.

Of minor extent in this unit are Desons soils on broad summits and stable benches and Rock outcrop on side slopes.

This unit is used for timber production and homesite development. The soils are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, a hazard of windthrow, slope stability, plant competition, and moderately slow permeability.

7. Hooskanaden-Loneranch-Reinhart

Very deep, moderately deep, and shallow, somewhat poorly drained, moderately well drained, and well drained soils that formed in highly sheared, deeply weathered material derived from metasedimentary and metavolcanic rock, are on coastal hills and mountains, and have cool, wet winters and cool, moist summers with fog

This map unit is on broad summits and side slopes in open grassland areas on coastal hills and mountains in the Carpenterville Shear Zone. Elevation is 200 to 1,300 feet. Slopes are 0 to 60 percent. The mean annual precipitation is 75 to 95 inches, the mean annual air temperature is 50 to 53 degrees F, and the frost-free period is 200 to 270 days.

This unit makes up about 2 percent of the survey area. It is about 35 percent Hooskanaden soils, 30 percent Loneranch soils, and 15 percent Reinhart soils. The remaining 20 percent is components of minor extent.

Hooskanaden soils are on broad summits and side slopes. These soils are very deep and somewhat poorly drained. Typically, the surface layer is clay loam and the subsoil is silty clay or clay.

Loneranch soils are on broad summits and side slopes. These soils are moderately deep and moderately well drained. Typically, the surface layer is gravelly clay loam and the subsoil is gravelly clay loam or very gravelly clay loam.

Reinhart soils are on narrow summits and side slopes. These soils are shallow and well drained. Typically, the surface layer is gravelly clay loam and the subsoil is very gravelly clay loam or extremely gravelly clay loam.

Of minor extent in this unit are Millicoma soils and Orthents on side slopes in forested areas and Rock outcrop on side slopes.

This unit is used for livestock grazing and homesite development. The soils in this unit are limited by slope stability, a hazard of erosion, steepness of slope, and slow permeability. The Hooskanaden soils are also limited by a high shrink-swell potential in the subsoil, and the Loneranch and Reinhart soils are also limited by soil depth and a seasonal high water table.

Soils of the Inland Mountains and Valleys

8. Meda-Chismore-Eilertsen

Very deep, well drained and moderately well drained soils that are on alluvial fans and stream terraces and have warm, wet winters and hot, moist summers

This map unit is on alluvial fans and high and low stream terraces. Elevation is 200 to 1,000 feet. Slopes are 0 to 15 percent. The mean annual precipitation is 80 to 100 inches, the mean annual air temperature is 50 to 53 degrees F, and the frost-free period is 180 to 220 days.

This map unit makes up about 0.5 percent of the survey area. It is about 24 percent Meda and similar soils, 17 percent Chismore and similar soils, and 16 percent Eilertsen and similar soils. The remaining 43 percent is components of minor extent (fig. 1).

Meda soils are on alluvial fans. These soils are very deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is gravelly loam or gravelly sandy loam.

Chismore soils are on high stream terraces. These soils are very deep and moderately well drained. Typically, the surface layer is silt loam and the subsoil is silty clay loam or silty clay.

Eilertsen soils are on low stream terraces. These soils are very deep and well drained. Typically, the surface layer is silt loam and the subsoil is silty clay loam or clay loam.

Of minor extent in this unit are Kirkendall and Quosatana soils on flood plains; Pyburn, McCurdy, and Wintley soils on high stream terraces; Zyzzug soils on low stream terraces; Riverwash on flood plains; and water in the Sixes River.

This unit is used for livestock grazing, hayland, timber production, and homesite development. The soils in this unit are limited by a hazard of erosion, susceptibility of the surface layer to compaction, and plant competition. The Meda soils are also limited by a risk of contamination of groundwater as a result of seepage; the Chismore soils are also limited by a seasonal high water table, slow permeability, and clayey subsoil textures; and the Eilertsen soils are also limited by slow permeability.

9. Digger-Umpcoos-Dystrochrepts

Shallow to very deep, well drained to excessively drained soils that are derived from sedimentary and metavolcanic rock, are on mountains, and have warm, wet winters and hot, moist summers

This map unit is on summits, benches, and side slopes of mountains. Elevation is 200 to 3,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 90 to 130 inches, the mean annual air temperature is 45 to 53 degrees F, and the frost-free period is 120 to 210 days.

This unit makes up about 12 percent of the survey area. It is about 41 percent Digger and similar soils, 21 percent Umpcoos and similar soils, and 12 percent Dystrochrepts. The remaining 26 percent is soils of minor extent (fig. 1).

Digger soils are on summits, benches, and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very gravelly loam or stony loam and the subsoil is very gravelly loam or very cobbly loam.

Umpcoos soils are on summits and side slopes. These soils are shallow and well drained. Typically, the surface layer is very gravelly sandy loam or stony loam and the subsoil is extremely gravelly loam or very cobbly loam.

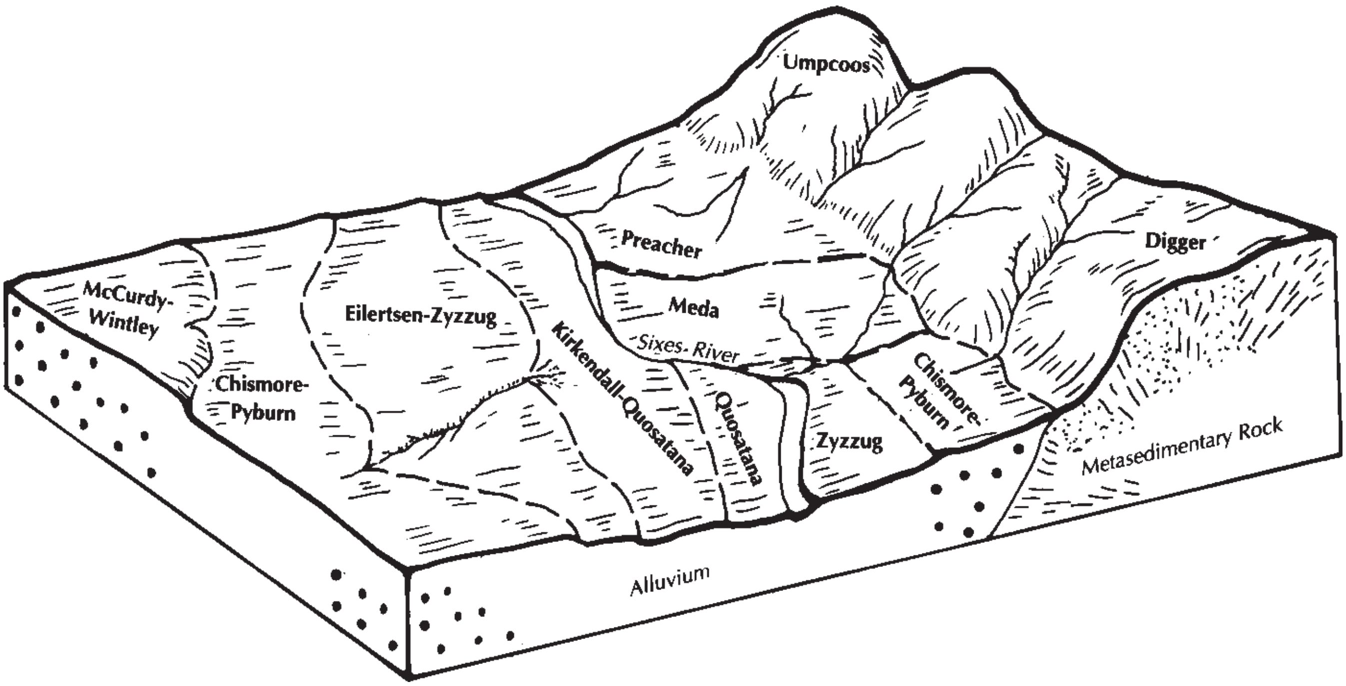


Figure 1.—Typical pattern of soils in general soil map units 8 and 9.

Dystrochrepts are on side slopes. These soils are moderately deep to very deep and are well drained to excessively drained. The surface layer is extremely stony loam to very gravelly sandy loam, and the subsoil is extremely stony clay loam to extremely gravelly sandy loam.

Of minor extent in this unit are Preacher and Remote soils on broad summits and side slopes; Bohannon and Milbury soils on side slopes; Blachly soils on summits and stable benches; Honeygrove soils on summits, stable benches, and side slopes; and Shivigny soils on summits, slump benches, and side slopes.

This unit is used for timber production. The soils are limited by steepness of slope, a hazard of erosion, susceptibility of the surface layer to compaction and displacement, slope stability, soil depth, and plant competition.

10. Fritsland-Bravo-Cassiday

Deep and moderately deep, well drained soils that are derived from metasedimentary and metavolcanic rock and diorite, are on mountains, and have warm, wet winters and hot, moist summers

This map unit is on broad summits and side slopes of mountains. Elevation is 200 to 3,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 90 to 130 inches, the mean annual air temperature is 45 to 53 degrees F, and the frost-free period is 120 to 210 days.

This unit makes up about 23 percent of the survey area. It is about 20 percent Fritsland soils, 19 percent Bravo soils, and 19 percent Cassiday soils (fig. 2). The remaining 42 percent is components of minor extent.

Fritsland soils are on side slopes. These soils are deep and well drained. Typically, the surface layer is silt loam or loam and the subsoil is clay loam or gravelly clay loam.

Bravo soils are on side slopes. These soils are moderately deep and well drained. Typically, the surface layer is loam and the subsoil is clay loam or gravelly clay loam.

Cassiday soils are on summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very gravelly loam or very stony loam and the subsoil is very gravelly clay loam or extremely gravelly clay loam.

Of minor extent in this unit are Averlande, Skookumhouse, and Hazelcamp soils on broad summits and stable benches; Grouslous, Sankey, and Swedeheaven soils on summits and side slopes; Crutchfield and Colepoint soils on broad summits, benches, and side slopes; and Rock outcrop on side slopes.

This unit is used for timber production, homesite

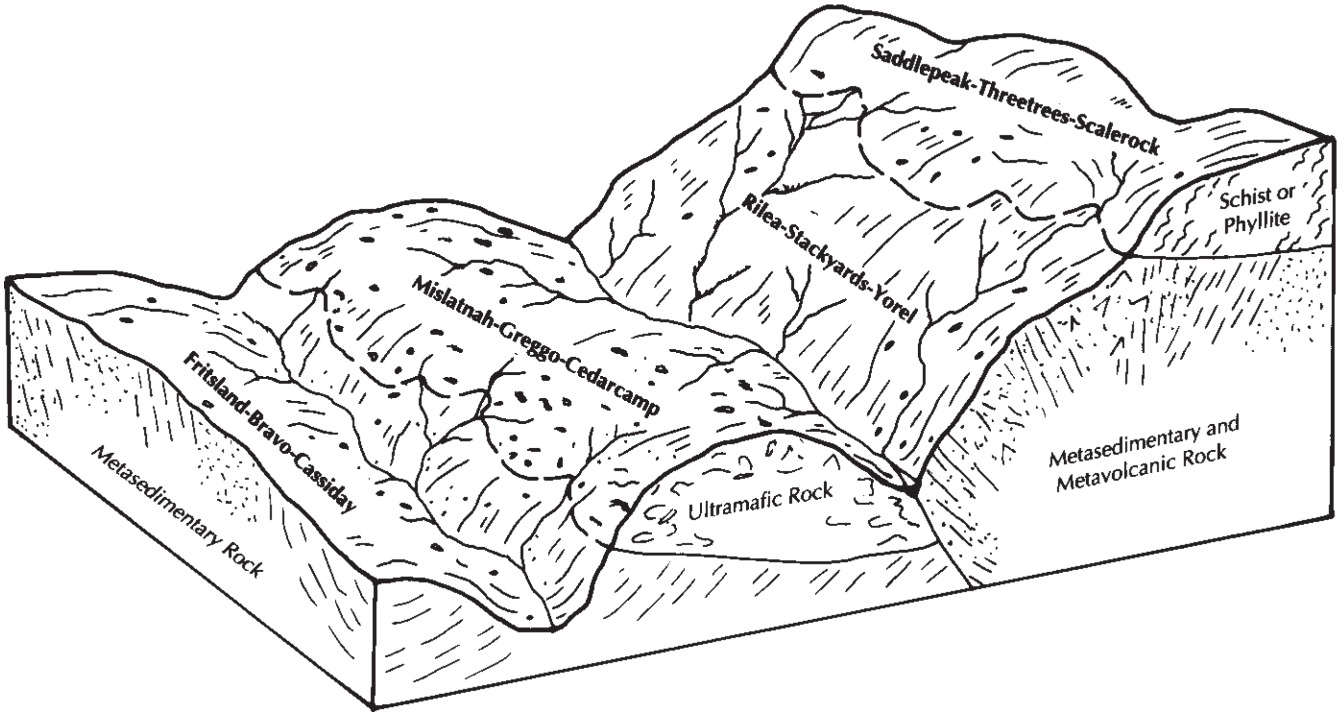


Figure 2.—Juxtaposition of general soil map units 10, 11, 14, and 15 and the underlying bedrock.

development, and livestock grazing. The soils are limited by steepness of slope, a hazard of erosion, susceptibility of the surface layer to compaction and displacement, slope stability, plant competition, slow permeability, and soil depth.

11. Mislatnah-Greggo-Cedarcamp

Shallow, moderately deep, and very deep, well drained soils that are derived from ultramafic rock, are on mountains, and have warm to cool, wet winters and warm to hot, moist summers

This map unit is on broad summits and side slopes. Elevation is 400 to 4,500 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 90 to 160 inches, the mean annual air temperature is 40 to 53 degrees F, and the frost-free period is 60 to 210 days.

This unit makes up about 5 percent of the survey area. It is about 27 percent Mislatnah and similar soils, 20 percent Greggo and similar soils, and 20 percent Cedarcamp and similar soils (fig. 2). The remaining 33 percent is components of minor extent.

Mislatnah soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is cobbly clay loam and the subsoil is very cobbly clay loam or extremely cobbly clay loam.

Greggo soils are on broad summits and side slopes. These soils are shallow and well drained. Typically, the surface layer is very cobbly clay loam and the subsoil is extremely gravelly clay loam or extremely cobbly clay loam.

Cedarcamp soils are on broad summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is very gravelly loam or very bouldery loam and the subsoil is very cobbly clay loam, extremely cobbly clay loam, or very bouldery clay loam.

Of minor extent in this unit are Flycatcher, Redflat, Rustybutte, Sebastian, Serpentano, and Snowcamp soils on summits and side slopes; Aquic Haplohumults on footslopes and slump benches adjacent to meadow areas and drainage basins; Cryaquepts in nearly level meadow areas and drainage basins; and Rock outcrop on ridge crests and side slopes.

This unit is used for limited timber production, limited homesite development, watershed, recreation, and wildlife habitat. The soils in this unit are limited by a hazard of erosion, steepness of slope, slope stability, plant nutrient imbalances, seedling mortality, and moderately slow permeability. The Mislatnah and Greggo soils are also limited by soil depth.

12. Etelka-Whobrey-Remote

Very deep, somewhat poorly drained to well drained soils that formed in highly sheared, deeply weathered material derived from metasedimentary rock, are on mountains, and have warm, wet winters and hot, moist summers

This map unit is on broad summits and side slopes of mountains. Elevation is 500 to 2,500 feet. Slopes are 7 to 60 percent. The mean annual precipitation is 90 to 130 inches, the mean annual air temperature is 45 to 53 degrees F, and the frost-free period is 120 to 210 days.

This unit makes up about 4 percent of the survey area. It is about 37 percent Etelka and similar soils, 28 percent Whobrey and similar soils, and 24 percent Remote and similar soils (fig. 3). The remaining 11 percent is components of minor extent.

Etelka soils are on broad summits and side slopes. These soils are very deep and moderately well drained. Typically, the surface layer is silt loam and the subsoil is silty clay or clay.

Whobrey soils are on broad summits and side slopes. These soils are very deep and somewhat poorly drained. Typically, the surface layer is silt loam and the subsoil is silty clay loam, silty clay, or clay.

Remote soils are on broad summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is very gravelly clay loam or extremely gravelly loam.

Of minor extent in this unit are Houstenader, Carpenterville, and Huntley soils on summits and side slopes in open grassland areas; Digger soils on summits, benches, and side slopes; Umpcoos soils on summits and side slopes; and Dystrochrepts and Rock outcrop on side slopes.

This unit is used for livestock grazing, timber production, and homesite development. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, and plant competition. The Etelka and Whobrey soils are also limited by a seasonal high water table, slow permeability, clayey subsoil textures, and high shrink-swell potential of the subsoil.

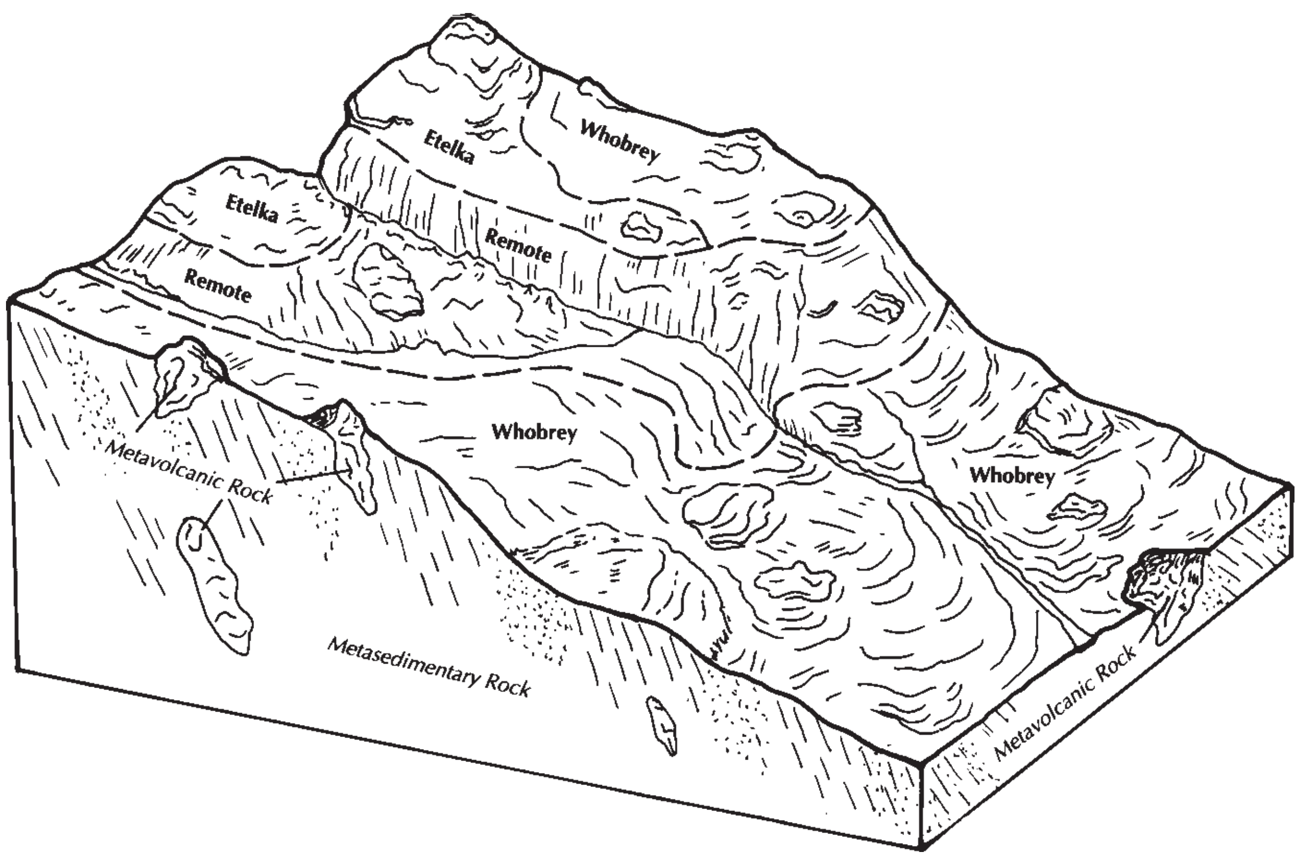


Figure 3.—Typical pattern of soils in general soil map unit 12.

13. Deadline-Barkshanty-Nailkeg

Very deep to moderately deep, well drained soils that are derived from schist and phyllite, are on mountains, and have warm, wet winters and hot, moist summers

This map unit is on broad summits, stable benches, and side slopes of mountains. Elevation is 200 to 3,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 90 to 130 inches, the mean annual air temperature is 45 to 53 degrees F, and the frost-free period is 120 to 210 days.

This unit makes up about 7 percent of the survey area. It is about 34 percent Deadline and similar soils, 22 percent Barkshanty and similar soils, and 19 percent Nailkeg and similar soils. The remaining 25 percent is components of minor extent.

Deadline soils are on broad summits and side slopes. These soils are deep and well drained. Typically, the surface layer is very channery loam and the subsoil is very channery clay loam or extremely channery clay loam.

Barkshanty soils are on broad summits, stable benches, and side slopes. These soils are very deep and well drained. Typically, the surface layer is channery loam and the subsoil is very channery clay loam or very flaggy clay loam.

Nailkeg soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very channery loam and the subsoil is very channery loam or very channery clay loam.

Of minor extent in this unit are Edson and Irma soils on benches and broad summits, Agness and Goldbeach soils in open areas of grassland on summits and side slopes, and Rock outcrop on side slopes.

This unit is used for timber production, livestock grazing, and homesite development. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, hazard of windthrow, and plant competition. The Nailkeg soils are also limited by soil depth.

14. Rilea-Stackyards-Yorel

Moderately deep and deep, well drained soils that are derived from metasedimentary and metavolcanic rock, are on mountains, and have cool, wet winters and warm, moist summers

This map unit is on broad summits and side slopes of mountains. Elevation is 2,500 to 3,800 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 130 to 160 inches, the mean annual air temperature is 40 to 45 degrees F, and the frost-free period is 60 to 120 days.

This unit makes up about 5 percent of the survey area. It is about 28 percent Rilea and similar soils, 26 percent Stackyards and similar soils, and 17 percent Yorel and similar soils (fig. 2). The remaining 29 percent is components of minor extent.

Rilea soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very gravelly loam or gravelly loam and the subsoil is very gravelly loam or very gravelly clay loam.

Stackyards soils are on side slopes. These soils are deep and well drained. Typically, the surface layer is extremely gravelly loam and the subsoil is extremely cobbly clay loam or extremely gravelly loam.

Yorel soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is gravelly clay loam or gravelly loam.

Of minor extent in this unit are Dystrochrepts and Tolfork soils on side slopes; Bobsgarden, Gamelake, and Tincup soils on summits and side slopes; Haplumbrepts on north-facing side slopes; Euchrand soils on summits; Cryaquepts in meadow areas and drainage basins; Rock outcrop on ridge crests and side slopes; and Rubble land on side slopes.

This unit is used for timber production. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, and plant competition. The Rilea and Yorel soils are also limited by soil depth.

15. Saddlepeak-Threetrees-Scalerock

Very deep, moderately deep, and shallow, well drained soils that are derived from schist and phyllite, are on mountains, and have cool, wet winters and warm, moist summers

This map unit is on broad summits and side slopes of mountains. Elevation is 2,300 to 4,500 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 130 to 160 inches, the mean annual air temperature is 40 to 45 degrees F, and the frost-free period is 60 to 120 days.

This unit makes up about 1.5 percent of the survey area. It is about 40 percent Saddlepeak and similar soils, 35 percent Threetrees and similar soils, and 15 percent Scalerock and similar soils (fig. 2). The remaining 10 percent is components of minor extent.

Saddlepeak soils are on broad summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is very channery loam and the subsoil is very channery clay loam or very flaggy clay loam.

Threetrees soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very channery loam and the subsoil is very channery clay loam or very flaggy clay loam.

Scalerock soils are on side slopes. These soils are shallow and well drained. Typically, the surface layer is very channery loam and the subsoil is very flaggy clay loam.

Of minor extent in this unit are Orthents on summits and side slopes and Rock outcrop on ridge crests and side slopes.

This unit is used for timber production. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, hazard of windthrow, and plant competition. The Threetrees and Scalerock soils are also limited by soil depth.

16. Abegg-Ruch-Central Point

Very deep, well drained soils that are on stream terraces and have warm, wet winters and hot, dry summers

This unit is on stream terraces. Elevation is 200 to 600 feet. Slopes are 0 to 20 percent. The mean annual precipitation is 80 to 90 inches, the mean annual air temperature is 54 to 56 degrees F, and the frost-free period is 185 to 210 days.

This unit makes up about 0.5 percent of the survey area. It is about 25 percent Abegg and similar soils, 15 percent Ruch and similar soils, and 10 percent Central Point and similar soils. The remaining 50 percent is components of minor extent.

Abegg soils are on high stream terraces. These soils are very deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is extremely cobbly clay loam or extremely gravelly loam.

Ruch soils are on high stream terraces. These soils are very deep and well drained. Typically, the surface layer is loam or gravelly loam and the subsoil is clay loam or loam.

Central Point soils are on low stream terraces. These soils are very deep and well drained. Typically, the surface layer is sandy loam and the subsoil is sandy loam or gravelly sandy loam.

Of minor extent in this unit are Clawson and Foehlin soils on low stream terraces; Selmac soils on high stream terraces; Pollard soils on toeslopes; Evans soils and Riverwash on flood plains; and water in the Rogue and Illinois Rivers.

This unit is used for livestock grazing, homesite development, and timber production. The soils in this unit are limited by a hazard of erosion, susceptibility of the surface layer to compaction and displacement, and plant competition. The Central Point soils are also limited by a risk of contamination of groundwater as a result of seepage.

17. Beekman-Pollard-Vermisa

Shallow, moderately deep, and very deep, well drained and somewhat excessively drained soils that are derived from conglomerate, metasedimentary rock, and metavolcanic rock, are on mountains, and have warm, wet winters and hot, dry summers

This map unit is on broad summits and side slopes of mountains. Elevation is 200 to 2,300 feet. Slopes are 2 to 90 percent. The mean annual precipitation is 80 to 100 inches, the mean annual air temperature is 49 to 54 degrees F, and the frost-free period is 150 to 200 days.

This unit makes up about 2 percent of the survey area. It is about 30 percent Beekman and similar soils, 25 percent Pollard and similar soils, and 11 percent Vermisa and similar soils. The remaining 34 percent is soils of minor extent.

Beekman soils are on side slopes. These soils are moderately deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is very gravelly loam or very gravelly clay loam.

Pollard soils are on summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is clay loam or silty clay.

Vermisa soils are on summits and side slopes. These soils are shallow and somewhat excessively drained. Typically, the surface layer is very gravelly loam and the subsoil is extremely gravelly loam or very gravelly loam.

Of minor extent in this unit are Josephine and Shastacosta soils on summits and side slopes and Colestine, Knapke, and Fantz soils on side slopes.

This unit is used for timber production. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, and plant competition. The Beekman and Vermisa soils are also limited by soil depth, and the Pollard soils are also limited by clayey subsoil textures.

18. Atring-Kanid-Acker

Moderately deep to very deep, well drained soils that are derived from mudstone and metasedimentary rock, are on mountains, and have warm, wet winters and hot, dry summers

This map unit is on broad summits and side slopes of mountains. Elevation is 400 to 3,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation is 90 to 100 inches, the mean annual air temperature is 47 to 52 degrees F, and the frost-free period is 100 to 150 days.

This unit makes up about 9 percent of the survey area. It is about 30 percent Atring and similar soils, 29 percent Kanid and similar soils, and 8 percent Acker and similar soils. The remaining 33 percent is components of minor extent.

Atring soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very gravelly loam and the subsoil is very gravelly clay loam or very gravelly loam.

Kanid soils are on broad summits and side slopes. These soils are deep and well drained. Typically, the surface layer is very gravelly loam and the subsoil is very gravelly clay loam or extremely gravelly loam.

Acker soils are on broad summits and side slopes. These soils are very deep and well drained. Typically, the surface layer is gravelly loam and the subsoil is gravelly clay loam or clay loam.

Of minor extent in this unit are Vermisa soils on summits and side slopes, Dumont soils on summits, and Sitkum and Steinmetz soils and Rock outcrop on side slopes.

This unit is used for timber production. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, and plant competition. The Atring soils are also limited by soil depth.

19. Rock outcrop-Perdin-Gravecreek

Rock outcrop, and moderately deep, well drained soils that are derived from ultramafic rock, are on mountains, and have warm to cool, wet winters and hot, dry summers

This map unit is on summits and side slopes of mountains. Elevation is 600 to 4,000 feet. Slopes are 3 to 90 percent. The mean annual precipitation is 80 to 120 inches, the mean annual air temperature is 40 to 54 degrees F, and the frost-free period is 60 to 200 days.

This unit makes up about 6 percent of the survey area. It is about 29 percent Rock outcrop, 24 percent Perdin and similar soils, and 17 percent Gravecreek and similar soils (fig. 4). The remaining 30 percent is soils of minor extent.

Rock outcrop is on summits and side slopes. It consists of exposures of barren, hard bedrock.

Perdin soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is cobbly loam and the subsoil is gravelly clay loam or gravelly clay.

Gravecreek soils are on broad summits and side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very cobbly loam and the subsoil is very gravelly clay loam or very cobbly clay loam.

Of minor extent in this unit are Pearsoll soils on narrow summits and side slopes, Eightlar soils on broad summits and side slopes, Cornutt and Dubakella soils on side slopes, and Orthents on narrow summits and side slopes.

This unit is used as watershed, recreation, and wildlife habitat and for limited timber production. The soils are limited by a hazard of erosion, steepness of slope, slope stability, plant nutrient imbalances, seedling mortality, and soil depth.

20. Jayar-Althouse-Skymor

Shallow to deep, well drained soils that are derived from metasedimentary and metavolcanic rock, are on mountains, and have cool, wet winters and hot, dry summers

This map unit is on side slopes of mountains. Elevation is 3,000 to 5,500 feet. Slopes are 30 to 90 percent. The mean annual precipitation is 90 to 120 inches, the mean annual air temperature is 40 to 45 degrees F, and the frost-free period is 60 to 100 days.

This unit makes up about 4 percent of the survey area. It is about 32 percent Jayar and similar soils, 23 percent Althouse and similar soils, and 17 percent Skymor and similar soils. The remaining 28 percent is components of minor extent.

Jayar soils are on side slopes. These soils are moderately deep and well drained. Typically, the surface layer is very gravelly loam and the subsoil is very gravelly loam or extremely gravelly loam.

Althouse soils are on side slopes. These soils are deep and well drained. Typically, the surface layer is

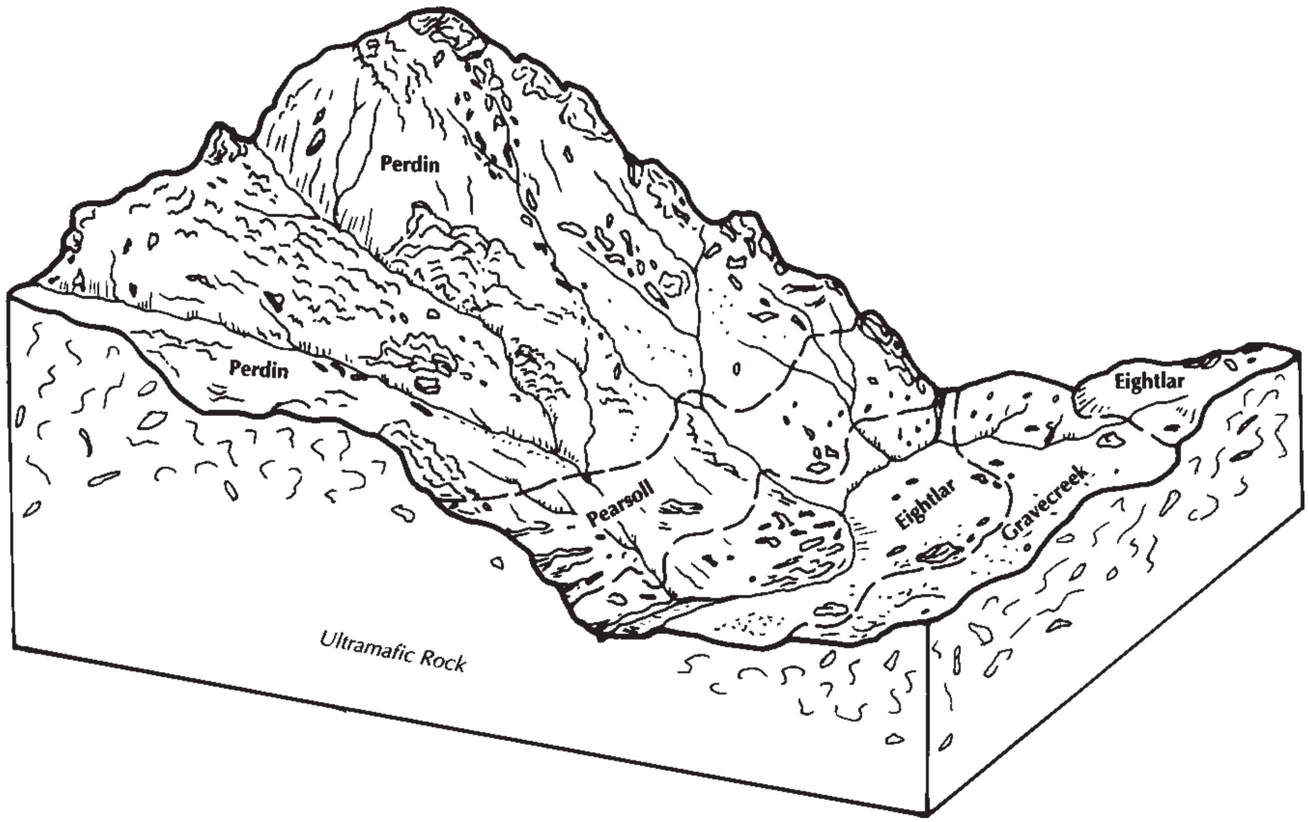


Figure 4.—Typical pattern of soils in general soil map unit 19.

very gravelly loam, and the subsoil is very gravelly loam or extremely gravelly loam.

Skymor soils are on summits and south-facing side slopes. These soils are shallow and well drained. Typically, the surface layer is very gravelly loam and the subsoil is very gravelly loam or very gravelly clay loam.

Of minor extent in this unit are Rogue soils on summits and side slopes; Rock outcrop on side slopes; and Bearcamp, Brandypeak, and Woodseye soils on broad summits and north-facing side slopes.

This unit is used for timber production. The soils in this unit are limited by a hazard of erosion, steepness of slope, susceptibility of the surface layer to compaction and displacement, slope stability, and plant competition. The Jayar and Skymor soils are also limited by soil depth.

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading "Use and Management of the Soils."

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas of the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Winchuck silt loam, 3 to 15 percent slopes, is a phase of the Winchuck series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Agness-Sixes-Goldbeach complex, 30 to 60 percent south slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Beaches is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

1B—Abegg gravelly loam, 2 to 7 percent slopes

Composition

Abegg soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Gently sloping areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 200 to 400 feet
Native plants: Douglas fir, tanoak, western hazel, California laurel, common snowberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 11 inches—very dark grayish brown and dark yellowish brown gravelly loam
11 to 18 inches—dark yellowish brown very gravelly loam
18 to 46 inches—dark yellowish brown extremely cobbly clay loam
46 to 60 inches—dark yellowish brown extremely gravelly loamy sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Central Point, Foehlin, and Takilma soils in nearly level to concave areas of adjacent low stream terraces
- Clawson soils in concave areas of adjacent low stream terraces
- Cove soils in depressions and drainageways of adjacent low stream terraces
- Selmac soils in concave areas of stream terraces
- Pollard and Ruch soils in convex areas of stream terraces and on footslopes

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Susceptibility of the surface layer to compaction when wet, droughtiness in summer, low available water capacity

USFS Plant Association

LIDE3-UMCA (tanoak-California laurel)

1D—Abegg gravelly loam, 7 to 20 percent slopes

Composition

Abegg soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas
Landform: High stream terraces, alluvial fans
Parent material: Alluvium, colluvium
Elevation: 200 to 400 feet
Native plants: Douglas fir, tanoak, western hazel, California laurel, common snowberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 11 inches—very dark grayish brown and dark yellowish brown gravelly loam
11 to 18 inches—dark yellowish brown very gravelly loam
18 to 46 inches—dark yellowish brown extremely cobbly clay loam
46 to 60 inches—dark yellowish brown extremely gravelly loamy sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate

Available water capacity: About 5 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Selmac soils in concave areas
- Pollard and Ruch soils in convex areas of stream terraces and on footslopes
- Atring and Beekman soils on adjacent mountainsides
- Kanid and Shastacosta soils on adjacent footslopes of mountains
- Dumont soils on adjacent toeslopes of mountains
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to compaction when wet, droughtiness in summer, low available water capacity

USFS Plant Association

LIDE3-UMCA (tanoak-California laurel)

2F—Acker-Norling complex, 30 to 60 percent south slopes

Composition

Acker soil and similar inclusions—45 percent
Norling soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Acker—concave areas of footslopes; Norling—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Acker—Douglas fir, tanoak, salal, cascade Oregongrape, western brackenfern; Norling—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Acker Soil

Typical profile

0 to 9 inches—dark brown to dark yellowish brown gravelly loam
9 to 68 inches—strong brown gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate or severe

Norling Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam
4 to 9 inches—dark brown gravelly loam
9 to 21 inches—dark yellowish brown gravelly clay loam
21 to 28 inches—dark yellowish brown very gravelly clay loam
28 inches—weathered mudstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Kanid soils in convex areas of backslopes
- Atring soils on shoulders and in convex areas of backslopes
- Vermisa soils adjacent to areas of Rock outcrop
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Acker and Norling—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, low available water capacity
Norling—soil depth

USFS Plant Association

Acker—LIDE3/GASH-BENE (tanoak/salal-dwarf Oregongrape)
Norling—LIDE3/GASH (tanoak/salal)

3E—Agness-Sixes-Goldbeach complex, 0 to 30 percent slopes

Composition

Agness soil and similar inclusions—35 percent
Sixes soil and similar inclusions—30 percent
Goldbeach soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Agness, Sixes, and Goldbeach—open areas of grassland within forests; Agness—concave areas of summits; Sixes—convex areas of summits; Goldbeach—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 1,000 to 3,000 feet
Native plants: Agness—California oatgrass, woodrush, bentgrass, bluegrass, dock; Sixes—California oatgrass, woodrush, bentgrass, dock, bluegrass; Goldbeach—California oatgrass, bentgrass, woodrush, hedgehog dogtail, bluegrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Agness Soil

Typical profile

0 to 30 inches—very dark grayish brown channery silt loam
30 to 62 inches—dark grayish brown channery silt loam
62 to 72 inches—light olive brown very flaggy silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 9 inches
Hazard of erosion: Moderate

Sixes Soil

Typical profile

0 to 32 inches—very dark grayish brown channery silt loam
32 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Goldbeach Soil

Typical profile

0 to 6 inches—very dark grayish brown channery silt loam
6 to 18 inches—very dark grayish brown to dark grayish brown very channery and extremely channery silt loam
18 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Barkshanty and Deadline soils that are in convex areas of summits and support a forest canopy
- Edson and Irma soils that are in concave areas of summits and support a forest canopy
- Nailkeg soils that are on shoulders and knobs and in convex areas of summits and support a forest canopy
- Greggo and Mislatnah soils that are on shoulders and knobs and in convex areas of summits, are near fault zones, and support a forest canopy

Major Uses

Watershed, recreation, wildlife habitat, limited livestock grazing

Major Management Limitations

Agness, Sixes, and Goldbeach—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer
Sixes and Goldbeach—low available water capacity
Goldbeach—soil depth

4F—Agness-Sixes-Goldbeach complex, 30 to 60 percent south slopes

Composition

Agness soil and similar inclusions—40 percent
Sixes soil and similar inclusions—30 percent
Goldbeach soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Agness, Sixes, and Goldbeach—open areas of grassland within forests; Agness—concave areas of backslopes; Sixes—convex areas of backslopes; Goldbeach—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 1,000 to 3,000 feet
Native plants: Agness—California oatgrass, woodrush, bentgrass, bluegrass, dock; Sixes—California oatgrass, woodrush, bentgrass, dock, bluegrass; Goldbeach—California oatgrass, bentgrass, woodrush, hedgehog dogtail, bluegrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Agness Soil

Typical profile

0 to 30 inches—very dark grayish brown channery silt loam
30 to 62 inches—dark grayish brown channery silt loam
62 to 72 inches—light olive brown very flaggy silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 9 inches
Hazard of erosion: Moderate or severe

Sixes Soil

Typical profile

0 to 32 inches—very dark grayish brown channery silt loam
32 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Severe

Goldbeach Soil

Typical profile

0 to 6 inches—very dark grayish brown channery silt loam
6 to 18 inches—very dark grayish brown to dark grayish brown very channery and extremely channery silt loam
18 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Barkshanty soils that are on stable benches and support a forest canopy
- Deadline soils that are in concave areas of backslopes and support a forest canopy
- Nailkeg soils that are on shoulders and in convex areas of backslopes and support a forest canopy
- Greggo and Mislatnah soils that are on shoulders and knobs and in convex areas of backslopes, are near fault zones, and support a forest canopy
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Uses

Watershed, recreation, wildlife habitat, limited livestock grazing

Major Management Limitations

Agness, Sixes, and Goldbeach—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Sixes and Goldbeach—low available water capacity
Goldbeach—soil depth

5F—Althouse-Jayar-Skymor complex, 30 to 60 percent south slopes

Composition

Althouse soil and similar inclusions—40 percent
Jayar soil and similar inclusions—30 percent
Skymor soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Althouse—concave areas of backslopes; Jayar—convex areas of backslopes; Skymor—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains

Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Althouse—Douglas fir, tanoak, white fir, cascade Oregongrape, western prince's pine; Jayar—Douglas fir, tanoak, cascade Oregongrape, baldhip rose, western rattlesnake plantain; Skymor—Sadler oak, golden chinkapin, white fir, huckleberry oak, greenleaf manzanita
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Althouse Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 32 inches—dark brown to yellowish brown very gravelly loam
32 to 53 inches—light olive brown very gravelly loam
53 inches—weathered metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Jayar Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 31 inches—dark yellowish brown very gravelly loam
31 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Skymor Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 15 inches—yellowish brown very gravelly loam
15 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Althouse, Jayar, and Skymor—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, droughtiness in summer, low available water capacity
Jayar and Skymor—soil depth

USFS Plant Association

Althouse—LIDE3-ABCO (tanoak-white fir)
Jayar—LIDE3/BENE (tanoak/dwarf Oregongrape)
Skymor—ABCO-QUSA-CACH (white fir-Sadler oak-golden chinkapin)

6F—Althouse-Jayar-Woodseye complex, 30 to 60 percent north slopes

Composition

Althouse soil and similar inclusions—40 percent
Jayar soil and similar inclusions—30 percent
Woodseye soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Althouse—concave areas of backslopes; Jayar—convex areas of backslopes; Woodseye—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Althouse—Douglas fir, tanoak, salal, Sadler oak, deerfoot vanillaleaf; Jayar—Douglas fir, white fir, tanoak, salal, cascade Oregongrape, western prince's pine; Woodseye—Douglas fir, tanoak, salal, greenleaf manzanita, common beargrass

Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Althouse Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 32 inches—dark brown to yellowish brown very gravelly loam
32 to 53 inches—light olive brown very gravelly loam
53 inches—weathered metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Jayar Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 31 inches—dark yellowish brown very gravelly loam
31 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Woodseye Soil

Typical profile

0 to 12 inches—very dark brown to very dark grayish brown very gravelly loam
12 to 16 inches—dark grayish brown extremely gravelly loam
16 inches—metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Althouse, Jayar, and Woodseye—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, low available water capacity
Althouse and Jayar—susceptibility of the surface layer to displacement and accelerated erosion
Jayar and Woodseye—soil depth

USFS Plant Association

Althouse, Jayar, and Woodseye—LIDE3/GASH (tanoak/salal)

7D—Aquic Haplohumults-Cryaquepts complex, 0 to 15 percent slopes

Composition

Aquic Haplohumults and similar inclusions—50 percent
Cryaquepts and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Aquic Haplohumults—footslopes and slump benches adjacent to meadows; Cryaquepts—concave areas of meadows
Landform: Mountains
Parent material: Medium- and fine-textured colluvium derived from mixed sources
Elevation: 2,500 to 3,600 feet
Native plants: Aquic Haplohumults—sedges, oatgrass, silver hairgrass, western coneflower, meadow barley; Cryaquepts—rushes, sedges, California pitcherplant, Hall's bentgrass, willows
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Aquic Haplohumults

Reference profile

0 to 12 inches—very dark brown clay loam
12 to 34 inches—mottled, dark brown to dark yellowish brown silty clay

34 to 42 inches—mottled, dark yellowish brown silty clay loam
42 to 52 inches—mottled, dark yellowish brown silty clay
52 to 72 inches—mottled, dark yellowish brown silt loam

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Moderately well drained to somewhat poorly drained
Permeability: Slow or very slow
Available water capacity: About 8 to 10 inches
Depth to water table: 1.5 to 2.0 feet below the surface in October through June
Hazard of erosion: Slight

Cryaquepts

Reference profile

0 to 11 inches—mottled, black silty clay loam
11 to 39 inches—mottled, black to very dark brown silty clay
39 to 72 inches—gleyed and mottled, black silty clay

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Very poorly drained or poorly drained
Permeability: Slow or very slow
Available water capacity: About 6 to 10 inches
Depth to water table: 0.5 foot above the surface to a depth of 0.5 foot below the surface in October through June
Hazard of erosion: Slight

Contrasting Inclusions

- Snowcamp soils that are in convex areas of footslopes and support a forest canopy
- Cedarcamp soils that are in concave areas of footslopes and support a forest canopy
- Flycatcher soils that are on shoulders and knobs and in convex areas of footslopes and support a forest canopy
- Soils that have stones or boulders on the surface

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Aquic Haplohumults and Cryaquepts—short growing season, frost heave, duration of snow cover, high water table, clayey textures, susceptibility of the surface layer to compaction when wet, slow or very slow permeability

8E—Atring-Kanid-Vermisa complex, 12 to 30 percent slopes

Composition

Atring soil and similar inclusions—35 percent
Kanid soil and similar inclusions—30 percent
Vermisa soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of summits; Kanid—concave areas of summits; Vermisa—shoulders, convex areas of summits
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Atring and Kanid—Douglas fir, sugar pine, tanoak, evergreen huckleberry, salal, western swordfern; Vermisa—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid

Available water capacity: About 4 inches
Hazard of erosion: Moderate

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Acker and Dumont soils in concave areas of summits
- Norling soils in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents on shoulders and knobs and in convex areas of summits
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring, Kanid, and Vermisa—susceptibility of the surface layer to compaction when wet, droughtiness in summer, low available water capacity
Atring and Vermisa—soil depth
Vermisa—susceptibility of the surface layer to water erosion

USFS Plant Association

Atring and Kanid—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

9F—Atring-Kanid-Vermisa complex, 30 to 60 percent south slopes

Composition

Atring soil and similar inclusions—40 percent
Kanid soil and similar inclusions—30 percent
Vermisa soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of backslopes; Kanid—concave areas of backslopes; Vermisa—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Atring and Kanid—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Vermisa—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam

3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Acker soils in concave areas of footslopes
- Norling soils in convex areas of backslopes
- Dumont soils on stable benches
- Rock outcrop on ridge crests and shoulders
- Orthents on shoulders and knobs and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring, Kanid, and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, low available water capacity
Atring and Vermisa—soil depth

USFS Plant Association

Atring and Kanid—LIDE3/GASH (tanoak/salal)
Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

9G—Atring-Kanid-Vermisa complex, 60 to 90 percent south slopes

Composition

Atring soil and similar inclusions—35 percent
Kanid soil and similar inclusions—30 percent
Vermisa soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of backslopes; Kanid—concave areas of backslopes; Vermisa—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Atring and Kanid—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Vermisa—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained

Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring, Kanid, and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, low available water capacity
Atring and Vermisa—soil depth

USFS Plant Association

Atring and Kanid—LIDE3/GASH (tanoak/salal)
Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

10F—Atring-Rock outcrop-Kanid complex, 30 to 60 percent north slopes

Composition

Atring soil and similar inclusions—35 percent
Rock outcrop—30 percent
Kanid soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Kanid—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 2,500 feet
Native plants: Douglas fir, sugar pine, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Norling soils in convex areas of backslopes
- Acker soils in concave areas of backslopes
- Dumont soils on stable benches
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring and Kanid—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, low available water capacity
Atring—soil depth

USFS Plant Association

Atring and Kanid—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

11F—Atring-Rock outcrop-Kanid complex, 30 to 60 percent south slopes

Composition

Atring soil and similar inclusions—35 percent
Rock outcrop—30 percent
Kanid soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Kanid—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Norling soils in convex areas of backslopes
- Acker soils in concave areas of footslopes
- Dumont soils on stable benches
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring and Kanid—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, low available water capacity
Atring—soil depth

USFS Plant Association

Atring and Kanid—LIDE3/GASH (tanoak/salal)

12G—Atring-Rock outcrop-Vermisa complex, 60 to 90 percent south slopes

Composition

Atring soil and similar inclusions—35 percent
Rock outcrop—30 percent
Vermisa soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Vermisa—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Atring—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Vermisa—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Kanid soils in concave areas of footslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity

USFS Plant Association

Atring—LIDE3/GASH (tanoak/salal)
Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

13G—Atring-Vermisa complex, 60 to 90 percent north slopes

Composition

Atring soil and similar inclusions—50 percent
Vermisa soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Atring—convex areas of backslopes; Vermisa—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 2,500 feet
Native plants: Atring—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern; Vermisa—Douglas fir, tanoak, cascade Oregongrape, baldhip rose, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid

Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Kanid soils in concave areas of footslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, droughtiness in summer, low available water capacity

USFS Plant Association

Atring—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Vermisa—LIDE3/BENE (tanoak/dwarf Oregongrape)

14G—Atring-Vermisa-Rock outcrop complex, 60 to 90 percent north slopes

Composition

Atring soil and similar inclusions—40 percent
Vermisa soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Atring—convex areas of backslopes; Vermisa—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 2,500 feet
Native plants: Atring—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern; Vermisa—Douglas fir, tanoak, cascade Oregongrape, baldhip rose, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Kanid soils in concave areas of footslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Atring and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, droughtiness in summer, low available water capacity

USFS Plant Association

Atring—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Vermisa—LIDE3/BENE (tanoak/dwarf Oregongrape)

15A—Bagness-Pistolriver complex, 0 to 3 percent slopes

Composition

Bagness soil and similar inclusions—50 percent
Pistolriver soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Bagness—nearly level areas; Pistolriver—relict gravel bars
Landform: Flood plains
Parent material: Alluvium
Elevation: 0 to 100 feet
Native plants: Bagness—redwood, Douglas fir, California laurel, red alder, salmonberry; Pistolriver—redwood, California laurel, red alder, willow, sedge
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Bagness Soil

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 24 inches—very dark grayish brown clay loam
24 to 60 inches—dark grayish brown clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches
Frequency of flooding: Occasional in November through April
Hazard of erosion: Slight, except during periods of flooding

Pistolriver Soil

Typical profile

0 to 11 inches—very dark grayish brown very fine sandy loam
11 to 25 inches—mottled, very dark grayish brown and dark grayish brown gravelly very fine sandy loam
25 to 32 inches—dark grayish brown extremely gravelly coarse sand
32 to 37 inches—dark grayish brown very gravelly loamy sand
37 to 60 inches—dark grayish brown extremely gravelly coarse loamy sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Moderate
Available water capacity: About 5 inches
Frequency of flooding: Occasional in November through April
Depth to water table: 1 to 2 feet below the surface in November through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Bayside soils in depressions and drainageways of flood plains
- Bigriver soils in areas that are slightly lower in elevation and are subject to frequent periods of flooding
- Riverwash

Major Uses

Bagness—livestock grazing, hayland
Pistolriver—livestock grazing

Major Management Limitations

Bagness and Pistolriver—flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity
Pistolriver—high water table, low available water capacity

16E—Barkshanty-Nailkeg-Rock outcrop complex, cool, 0 to 30 percent slopes

Composition

Barkshanty soil and similar inclusions—35 percent
Nailkeg soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Barkshanty—concave areas of summits; Nailkeg—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 800 to 2,500 feet
Native plants: Barkshanty—Douglas fir, western hemlock, evergreen huckleberry, cascade Oregongrape, salal; Nailkeg—Douglas fir, western hemlock, cascade Oregongrape, salal, common beargrass

Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Irma and Edson soils in concave areas of summits
- Deadline soils in convex areas of summits

Major Use

Timber production

Major Management Limitations

Barkshanty and Nailkeg—susceptibility of the surface layer to compaction when wet, slope stability
Barkshanty—susceptibility of the surface layer to displacement and accelerated erosion
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Barkshanty—TSHE-THPL (western hemlock-western redcedar)
Nailkeg—TSHE/GASH (western hemlock/salal)

17E—Barkshanty-Nailkeg-Rock outcrop complex, 0 to 30 percent slopes

Composition

Barkshanty soil and similar inclusions—35 percent
Nailkeg soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Barkshanty—concave areas of summits; Nailkeg—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Barkshanty—Douglas fir, tanoak, Pacific madrone, salal, cascade Oregongrape; Nailkeg—Douglas fir, tanoak, canyon live oak, salal, hairy manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam

15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Deadline soils in convex areas of summits
- Edson soils in concave areas of summits
- Irma soils in nearly level areas of summits
- Agness soils in open areas of grassland in concave areas of summits
- Sixes soils in open areas of grassland in convex areas of summits
- Goldbeach soils in open areas of grassland on shoulders and knobs and in convex areas of summits

Major Use

Timber production

Major Management Limitations

Barkshanty and Nailkeg—susceptibility of the surface layer to compaction when wet, slope stability
Barkshanty—susceptibility of the surface layer to displacement and accelerated erosion
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Barkshanty and Nailkeg—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

18A—Bayside silty clay loam, 0 to 3 percent slopes

Composition

Bayside soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Depressions, drainageways
Landform: Flood plains
Parent material: Alluvium
Elevation: 0 to 50 feet
Native plants: Willow, sedges, rushes, bulrush, bentgrass
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 10 inches—very dark grayish brown silty clay loam
10 to 28 inches—mottled, very dark grayish brown silty clay loam
28 to 50 inches—mottled, dark grayish brown silty clay
50 to 60 inches—gleyed and mottled, dark gray sandy clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Slow
Available water capacity: About 11 inches
Frequency of flooding: Occasional in November through April
Depth to water table: At the surface to a depth of 0.5 foot below the surface in November through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Bagness soils in nearly level areas of flood plains that are slightly higher in elevation
- Pistolriver soils on relict gravel bars on flood plains
- Bigriver soils in nearly level areas that are slightly lower in elevation and are subject to frequent periods of flooding
- Riverwash

Major Uses

Livestock grazing, wildlife habitat

Major Management Limitations

Flooding, ponding, high water table, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

19—Beaches

Composition

Beaches—90 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Adjacent to the Pacific Ocean, along most of the coastline in the survey area
Landform: Ocean beaches

Parent material: Sand
Elevation: 0 to 20 feet
Climatic factors:
Mean annual precipitation—70 to 90 inches
Mean annual air temperature—50 to 57 degrees F
Frost-free period—210 to 330 days

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: About 1 inch
Frequency of flooding: Frequent in January through December
Depth to water table: At the surface to a depth of 6 feet below the surface in January through December
Hazard of erosion: Very severe

Contrasting Inclusions

- Frankport soils that are in undulating areas of stabilized foredunes and support shrubs and other woody vegetation
- Frankport soils, thin surface, and Waldport soils that are on summits and side slopes of stabilized foredunes and support beachgrass
- Heceta soils in interdunal depressions of deflation plains
- Yaquina soils in convex interdunal areas of deflation plains
- Active Dune land that is adjacent to areas of Beaches and does not support vegetation
- Orthents adjacent to areas of Rock outcrop
- Rock outcrop

Major Use

Recreation

Major Management Limitations

Flooding, high water table, susceptibility to water erosion, susceptibility to wind erosion, rapid permeability

20E—Bearcamp-Brandypeak complex, 0 to 30 percent slopes

Composition

Bearcamp soil and similar inclusions—45 percent
Brandypeak soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Bearcamp—concave areas of summits; Brandypeak—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Bearcamp—white fir, Douglas fir, Sadler oak, cascade Oregongrape, western prince's pine; Brandypeak—white fir, Douglas fir, golden chinkapin, Sadler oak, western prince's pine
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Bearcamp Soil

Typical profile

0 to 12 inches—very dark grayish brown very gravelly loam
12 to 21 inches—dark grayish brown very gravelly loam
21 to 39 inches—brown extremely gravelly loam
39 to 47 inches—olive brown extremely gravelly loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Brandypeak Soil

Typical profile

0 to 10 inches—dark brown very cobbly loam
10 to 22 inches—dark brown very cobbly loam
22 to 34 inches—dark yellowish brown extremely cobbly loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Woodseye soils on shoulders and knobs and in convex areas of summits
- Skymor soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Bearcamp and Brandypeak—susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, droughtiness in summer, low available water capacity
Brandypeak—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Bearcamp—ABCO-QUSA/BENE (white fir-Sadler oak/dwarf Oregongrape)
Brandypeak—ABCO-QUSA/CACH (white fir-Sadler oak/golden chinkapin)

21F—Bearcamp-Brandypeak-Woodseye complex, 30 to 60 percent north slopes

Composition

Bearcamp soil and similar inclusions—40 percent
Brandypeak soil and similar inclusions—30 percent
Woodseye soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bearcamp—concave areas of backslopes; Brandypeak—convex areas of backslopes; Woodseye—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Bearcamp—Douglas fir, tanoak, salal, Pacific rhododendron, cascade Oregongrape; Brandycamp—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Woodseye—Douglas fir, tanoak, salal, greenleaf manzanita, common beargrass
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Bearcamp Soil

Typical profile

0 to 12 inches—very dark grayish brown very gravelly loam
12 to 21 inches—dark grayish brown very gravelly loam
21 to 39 inches—brown extremely gravelly loam
39 to 47 inches—olive brown extremely gravelly loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Brandypeak Soil

Typical profile

0 to 10 inches—dark brown very cobbly loam
10 to 22 inches—dark brown very cobbly loam
22 to 34 inches—dark yellowish brown extremely cobbly loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Woodseye Soil

Typical profile

0 to 12 inches—very dark brown to very dark grayish brown very gravelly loam
12 to 16 inches—dark grayish brown extremely gravelly loam
16 inches—metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bearcamp, Brandypeak, and Woodseye—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, low available water capacity
Brandypeak and Woodseye—soil depth

USFS Plant Association

Bearcamp—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)
Brandypeak and Woodseye—LIDE3/GASH (tanoak/salal)

22F—Beekman-Colestine-Orthents complex, 30 to 60 percent south slopes

Composition

Beekman soil and similar inclusions—40 percent
Colestine soil and similar inclusions—30 percent
Orthents and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Beekman—convex areas of backslopes; Colestine—concave areas of backslopes; Orthents—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Beekman—Douglas fir, tanoak, canyon live oak, poison oak, broadleaf starflower; Colestine—Douglas fir, tanoak, cascade Oregongrape, creeping snowberry, broadleaf starflower; Orthents—Douglas fir, canyon live oak, incense cedar, common beargrass, baldhip rose
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Colestine Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 19 inches—light olive brown gravelly loam
19 to 34 inches—light olive brown gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Severe

Orthents

Reference profile

0 to 5 inches—dark yellowish brown to reddish yellow extremely gravelly sandy loam to extremely cobbly clay loam
5 to 60 inches—reddish brown to yellow extremely gravelly loamy sand to extremely cobbly clay loam

Properties and qualities

Depth to bedrock: Less than 20 inches to more than 60 inches
Drainage class: Well drained to excessively drained
Permeability: Moderately rapid to very rapid
Available water capacity: About 0.2 to 6.0 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Shastacosta soils in concave areas of backslopes
- Speaker soils in convex areas of backslopes
- Josephine soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Beekman, Colestine, and Orthents—slope, susceptibility of the surface layer to water erosion,

susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity
Orthents—moderately rapid to very rapid permeability

USFS Plant Association

Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)
Colestine—PSME-LIDE3 (Douglas fir-tanoak)

23G—Beekman-Orthents-Colestine complex, 60 to 90 percent south slopes

Composition

Beekman soil and similar inclusions—35 percent
Orthents and similar inclusions—30 percent
Colestine soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Beekman—convex areas of backslopes; Orthents—narrow summits, shoulders, convex areas of backslopes; Colestine—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Beekman—Douglas fir, tanoak, canyon live oak, poison oak, broadleaf starflower; Orthents—Douglas fir, canyon live oak, incense cedar, common beargrass, baldhip rose; Colestine—Douglas fir, tanoak, cascade Oregongrape, creeping snowberry, broadleaf starflower
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Orthents

Reference profile

0 to 5 inches—dark yellowish brown to reddish yellow extremely gravelly sandy loam to extremely cobbly clay loam
5 to 60 inches—reddish brown to yellow extremely gravelly loamy sand to extremely cobbly clay loam

Properties and qualities

Depth to bedrock: Less than 20 inches to more than 60 inches
Drainage class: Well drained to excessively drained
Permeability: Moderately rapid to very rapid
Available water capacity: About 0.2 to 6.0 inches
Hazard of erosion: Very severe

Colestine Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 19 inches—light olive brown gravelly loam
19 to 34 inches—light olive brown gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Speaker soils on footslopes and in concave areas of backslopes
- Shastacosta soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Beekman, Colestine, and Orthents—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the

surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity
Orthents—moderately rapid to very rapid permeability

USFS Plant Association

Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)
Colestine—PSME-LIDE3 (Douglas fir-tanoak)

24G—Beekman-Rock outcrop-Vermisa complex, 60 to 90 percent south slopes

Composition

Beekman soil and similar inclusions—35 percent
Rock outcrop—30 percent
Vermisa soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Beekman—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Vermisa—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Beekman—Douglas fir, tanoak, canyon live oak, poison oak, broadleaf starflower; Vermisa—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Colestine and Speaker soils on footslopes and in concave areas of backslopes
- Josephine soils on stable benches
- Shastacosta soils in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Beekman and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity

USFS Plant Association

Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)
Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

25G—Beekman-Vermisa complex, 60 to 90 percent south slopes

Composition

Beekman soil and similar inclusions—45 percent
Vermisa soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Beekman—convex areas of

backslopes; Vermisa—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Beekman—Douglas fir, tanoak, canyon live oak, poison oak, broadleaf starflower; Vermisa—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Colestine and Speaker soils on footslopes and in concave areas of backslopes
- Josephine soils on stable benches
- Shastacosta soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Beekman and Vermisa—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity

USFS Plant Association

Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)
Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

26A—Bigriver sandy loam, 0 to 3 percent slopes

Composition

Bigriver soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: Flood plains
Parent material: Alluvium
Elevation: 0 to 100 feet
Native plants: Redwood, Douglas fir, California laurel, bigleaf maple, western brackenfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 17 inches—dark brown sandy loam
17 to 60 inches—brown loamy fine sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 7 inches
Frequency of flooding: Frequent in December through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Bayside soils in depressions and drainageways
- Pistolriver soils in concave areas
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

Flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

27F—Bobsgarden-Rilea-Euchrand complex, cool, 30 to 60 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Euchrand soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Euchrand—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,000 feet
Native plants: Bobsgarden—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Rilea—Douglas fir, western hemlock, tanoak, salal, common beargrass; Euchrand—tanoak, Douglas fir, western hemlock, salal, cascade Oregongrape
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Yorel soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden, Rilea, and Euchrand—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing

season, frost heave, slope stability, south aspects
Rilea and Euchrand—soil depth, low available water capacity

USFS Plant Association

Bobsgarden—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea and Euchrand—LIDE3-TSHE (tanoak-western hemlock)

27G—Bobsgarden-Rilea-Euchrand complex, cool, 60 to 90 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Euchrand soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Euchrand—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,000 feet
Native plants: Bobsgarden—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Rilea—Douglas fir, western hemlock, tanoak, salal, common beargrass; Euchrand—tanoak, Douglas fir, western hemlock, common beargrass, salal
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Yorel soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden, Rilea, and Euchrand—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects

Rilea and Euchrand—soil depth, low available water capacity

USFS Plant Association

Bobsgarden—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea and Euchrand—LIDE3-TSHE (tanoak-western hemlock)

28F—Bobsgarden-Rilea-Euchrand complex, 30 to 60 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Euchrand soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Euchrand—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak, western swordfern, salal, cascade Oregongrape; Rilea—Douglas fir, tanoak, cascade Oregongrape, salal, Pacific rhododendron; Euchrand—Douglas fir, tanoak, canyon live oak, baldhip rose, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Yorel soils in concave areas of backslopes
- Zalea and Pyrady soils on stable benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden, Rilea, and Euchrand—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects
Rilea and Euchrand—soil depth, low available water capacity

USFS Plant Association

Bobsgarden—LIDE3/GASH (tanoak/salal)
Rilea—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)
Euchrand—LIDE3/BENE (tanoak/dwarf Oregongrape)

28G—Bobsgarden-Rilea-Euchrand complex, 60 to 90 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Euchrand soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Euchrand—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak, Pacific madrone, salal, common beargrass; Rilea—Douglas fir, tanoak, cascade Oregongrape, salal, Pacific rhododendron; Euchrand—tanoak, Douglas fir, canyon live oak, baldhip rose, whitevein shinleaf
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Yorel soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden, Rilea, and Euchrand—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects
Rilea and Euchrand—soil depth, low available water capacity

USFS Plant Association

Bobsgarden—LIDE3/GASH (tanoak/salal)

Rilea—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)
Euchrand—LIDE3/BENE (tanoak/dwarf Oregongrape)

29F—Bobsgarden-Rilea-Rock outcrop complex, conglomerate substratum, 30 to 60 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak, canyon live oak, salal, common beargrass; Rilea—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, western prince's pine
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown extremely gravelly clay loam
25 to 68 inches—yellowish brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Stackyards and Yorel soils on backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden and Rilea—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, sloughing, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, south aspects, droughtiness in summer, low available water capacity
Rilea—soil depth

USFS Plant Association

Bobsgarden—LIDE3/BENE (tanoak/dwarf Oregongrape)
Rilea—LIDE3-QUCH (tanoak-canyon live oak)

29G—Bobsgarden-Rilea-Rock outcrop complex, conglomerate substratum, 60 to 90 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak,

canyon live oak, salal, common beargrass; Rilea—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, western prince's pine
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown extremely gravelly clay loam
25 to 68 inches—yellowish brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Stackyards and Yorel soils on backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden and Rilea—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, sloughing, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, south aspects, droughtiness in summer, low available water capacity
Rilea—soil depth

USFS Plant Association

Bobsgarden—LIDE3/BENE (tanoak/dwarf Oregongrape)
Rilea—LIDE3-QUCH (tanoak-canyon live oak)

30F—Bobsgarden-Rilea-Rock outcrop complex, cool, 30 to 60 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,000 feet
Native plants: Bobsgarden—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, western swordfern; Rilea—Douglas fir, western hemlock, tanoak, salal, common beargrass
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden and Rilea—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability
Rilea—susceptibility of the surface layer to water erosion, soil depth, low available water capacity

USFS Plant Association

Bobsgarden—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea—LIDE3-TSHE (tanoak-western hemlock)

31F—Bobsgarden-Rilea-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Bobsgarden soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak, Pacific madrone, salal, cascade Oregongrape; Rilea—Douglas fir, tanoak, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bobsgarden and Rilea—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability
Rilea—soil depth, low available water capacity

USFS Plant Association

Bobsgarden—LIDE3/GASH (tanoak/salal)
Rilea—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)

32E—Bobsgarden-Rilea-Yorel complex, cool, 0 to 30 percent slopes

Composition

Bobsgarden soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Yorel soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of summits; Rilea—convex areas of summits; Yorel—concave areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,000 feet
Native plants: Bobsgarden—Douglas fir, western hemlock, western swordfern, Pacific rhododendron, cascade Oregongrape; Rilea—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Yorel—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, coast fairybells
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Yorel Soil

Typical profile

0 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Euchrand soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways of summits

Major Use

Timber production

Major Management Limitations

Bobsgarden, Rilea, and Yorel—susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability
Bobsgarden and Yorel—susceptibility of the surface layer to displacement and accelerated erosion
Rilea and Yorel—soil depth, low available water capacity

Yorel—susceptibility of the surface layer to water erosion

USFS Plant Association

Bobsgarden and Yorel—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea—TSHE/GASH (western hemlock/salal)

33E—Bobsgarden-Rilea-Yorel complex, 0 to 30 percent slopes

Composition

Bobsgarden soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Yorel soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bobsgarden—concave areas of summits; Rilea—shoulders, knobs, convex areas of summits; Yorel—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak, salal, Pacific rhododendron, cascade Oregongrape; Rilea—Douglas fir, tanoak, Pacific rhododendron, western swordfern, salal; Yorel—Douglas fir, tanoak, Pacific rhododendron, western rattlesnake plantain, salal
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown very gravelly clay loam
25 to 68 inches—yellowish brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Rilea Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Yorel Soil

Typical profile

0 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Euchrand soils on shoulders and knobs and in convex areas of summits
- Pyrady and Zalea soils in concave areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways of summits

Major Use

Timber production

Major Management Limitations

Bobsgarden, Rilea, and Yorel—susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability
Bobsgarden and Yorel—susceptibility of the surface layer to displacement and accelerated erosion
Rilea and Yorel—soil depth, low available water capacity
Yorel—susceptibility of the surface layer to water erosion

USFS Plant Association

Bobsgarden, Rilea, and Yorel—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

34E—Bobsgarden-Rilea complex, conglomerate substratum, 0 to 30 percent slopes

Composition

Bobsgarden soil and similar inclusions—50 percent
Rilea soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Bobsgarden—concave areas of summits; Rilea—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Bobsgarden—Douglas fir, tanoak, canyon live oak, salal, cascade Oregongrape; Rilea—Douglas fir, tanoak, canyon live oak, western swordfern, western prince's pine
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Bobsgarden Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 25 inches—dark yellowish brown extremely gravelly clay loam
25 to 68 inches—yellowish brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Moderate

Contrasting Inclusions

- Euchrand, Stackyards, and Yorel soils that formed in metasedimentary rock and are on summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways of summits

Major Use

Timber production

Major Management Limitations

Bobsgarden and Rilea—slope, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, droughtiness in summer, low available water capacity
Bobsgarden—susceptibility of the surface layer to displacement and accelerated erosion
Rilea—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Bobsgarden—LIDE3/BENE (tanoak/dwarf Oregongrape)
Rilea—LIDE3-QUCH (tanoak-canyon live oak)

35G—Brandypeak-Bearcamp-Woodseye complex, 60 to 90 percent north slopes

Composition

Brandypeak soil and similar inclusions—35 percent
Bearcamp soil and similar inclusions—30 percent
Woodseye soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Brandypeak—convex areas of backslopes; Bearcamp—concave areas of

backslopes; Woodseye—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Brandypeak—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Bearcamp—Douglas fir, tanoak, salal, Pacific rhododendron, cascade Oregongrape; Woodseye—Douglas fir, tanoak, salal, greenleaf manzanita, common beargrass
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Brandypeak Soil

Typical profile

0 to 10 inches—dark brown very cobbly loam
10 to 22 inches—dark brown very cobbly loam
22 to 34 inches—dark yellowish brown extremely cobbly loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Bearcamp Soil

Typical profile

0 to 12 inches—very dark grayish brown very gravelly loam
12 to 21 inches—dark grayish brown very gravelly loam
21 to 39 inches—brown extremely gravelly loam
39 to 47 inches—olive brown extremely gravelly loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Woodseye Soil

Typical profile

0 to 12 inches—very dark brown to very dark grayish brown very gravelly loam
12 to 16 inches—dark grayish brown extremely gravelly loam
16 inches—metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Brandypeak, Bearcamp, and Woodseye—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, low available water capacity
Brandypeak and Woodseye—soil depth

USFS Plant Association

Brandypeak and Woodseye—LIDE3/GASH (tanoak/salal)
Bearcamp—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)

36F—Brandypeak-Rock outcrop-Bearcamp complex, 30 to 60 percent north slopes

Composition

Brandypeak soil and similar inclusions—40 percent
Rock outcrop—30 percent
Bearcamp soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Brandypeak—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Bearcamp—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock

Elevation: 3,000 to 5,500 feet
Native plants: Brandypeak—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Bearcamp—Douglas fir, tanoak, salal, Pacific rhododendron, cascade Oregongrape
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Brandypeak Soil

Typical profile

0 to 10 inches—dark brown very cobbly loam
10 to 22 inches—dark brown very cobbly loam
22 to 34 inches—dark yellowish brown extremely cobbly loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Bearcamp Soil

Typical profile

0 to 12 inches—very dark grayish brown very gravelly loam
12 to 21 inches—dark grayish brown very gravelly loam
21 to 39 inches—brown extremely gravelly loam
39 to 47 inches—olive brown extremely gravelly loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Woodseye soils in convex areas of backslopes
- Skymor soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents on shoulders and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Brandypeak and Bearcamp—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, low available water capacity
Brandypeak—soil depth

USFS Plant Association

Brandypeak—LIDE3/GASH (tanoak/salal)
Bearcamp—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)

37A—Brenner silt loam, 0 to 3 percent slopes

Composition

Brenner soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Depressions, backswamp areas
Landform: Flood plains
Parent material: Alluvium
Elevation: 10 to 100 feet
Native plants: Rushes, sedges, skunkcabbage, forbs, grasses
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 12 inches—mottled, very dark grayish brown silt loam
12 to 34 inches—gleyed and mottled, dark grayish brown silt loam
34 to 60 inches—gleyed and mottled, grayish brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Slow
Available water capacity: About 11 inches
Frequency of flooding: Frequent in December through April
Depth to water table: 0.5 foot above the surface to a depth of 1 foot below the surface in December through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Nestucca soils in concave areas of flood plains
- Nehalem soils in convex areas of flood plains
- Langlois and Chetco soils in depressions and drainageways of flood plains
- Riverwash

Major Uses

Livestock grazing, wildlife habitat

Major Management Limitations

Flooding, high water table, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

38B—Bullards-Bandon-Wadecreek complex, 0 to 8 percent slopes

Composition

Bullards soil and similar inclusions—35 percent
Bandon soil and similar inclusions—30 percent
Wadecreek soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bullards—convex areas of relict sand dunes; Bandon—nearly level areas of relict sand dunes; Wadecreek—concave areas of marine terraces
Landform: Marine terraces
Parent material: Bullards and Bandon—sandy marine and eolian material overlying relict sand dunes; Wadecreek—alluvium
Elevation: 300 to 400 feet
Native plants: Bullards—Douglas fir, grand fir, Port Orford cedar, evergreen huckleberry, salal, western swordfern; Bandon—Douglas fir, Port Orford cedar, shore pine, evergreen huckleberry, salal; Wadecreek—Douglas fir, Port Orford cedar, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Bullards Soil

Typical profile

0 to 8 inches—very dark grayish brown sandy loam
8 to 15 inches—dark yellowish brown gravelly sandy loam
15 to 47 inches—yellowish brown gravelly sandy loam
47 to 60 inches—brownish yellow sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Bandon Soil

Typical profile

0 to 6 inches—very dark grayish brown sandy loam
6 to 34 inches—dark brown and dark reddish brown sandy loam
34 to 48 inches—yellowish red, strongly cemented loamy fine sand
48 to 60 inches—yellowish brown fine sand

Properties and qualities

Depth to cemented layer: 20 to 36 inches
Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow in the cemented pan, moderate above the pan, moderately rapid below the pan
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Wadecreek Soil

Typical profile

0 to 6 inches—very dark grayish brown silt loam
6 to 34 inches—dark brown and brown silty clay loam
34 to 47 inches—mottled, yellowish brown silty clay
47 to 54 inches—mottled, yellowish brown clay loam
54 to 60 inches—mottled, yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in November through May
Hazard of erosion: Slight

Contrasting Inclusions

- Ferrelo and Gearhart soils on side slopes of relict sand dunes that mantle marine terraces
- Horseprairie, Nelscott, and Depoe soils on slightly lower adjacent marine terraces
- Hebo soils in depressions and drainageways
- Grindbrook soils in concave areas of side slopes

Major Uses

Bullards and Bandon—cropland, homesite development, livestock grazing, timber production

Wadecreek—livestock grazing, homesite development, timber production
Bullards—hayland

Major Management Limitations

Bullards, Bandon, and Wadecreek—susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, droughtiness in summer, high humidity, salt spray
Bullards and Bandon—susceptibility of the surface layer to water erosion, susceptibility of the soils to wind erosion, sloughing, low available water capacity
Bullards—poor anchoring medium
Bandon and Wadecreek—slow permeability
Bandon—depth to cemented pan
Wadecreek—high water table, clayey texture

USFS Plant Association

Bullards, Bandon, and Wadecreek—TSHE-CHLA (western hemlock-Port Orford cedar)

38D—Bullards-Bandon-Wadecreek complex, 8 to 20 percent slopes

Composition

Bullards soil and similar inclusions—40 percent
Bandon soil and similar inclusions—30 percent
Wadecreek soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bullards—shoulders and convex areas of backslopes of relict sand dunes; Bandon—convex areas of relict sand dunes; Wadecreek—concave areas of marine terraces
Landform: Marine terraces
Parent material: Bullards and Bandon—sandy marine and eolian material overlying relict sand dunes; Wadecreek—alluvium
Elevation: 300 to 400 feet
Native plants: Bullards—Douglas fir, grand fir, Port Orford cedar, evergreen huckleberry, salal, western swordfern; Bandon—Douglas fir, Port Orford cedar, shore pine, evergreen huckleberry, salal; Wadecreek—Douglas fir, Port Orford cedar, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Bullards Soil

Typical profile

0 to 8 inches—very dark grayish brown sandy loam
8 to 15 inches—dark yellowish brown gravelly sandy loam
15 to 47 inches—yellowish brown gravelly sandy loam
47 to 60 inches—brownish yellow sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Bandon Soil

Typical profile

0 to 6 inches—very dark grayish brown sandy loam
6 to 34 inches—dark brown and dark reddish brown sandy loam
34 to 48 inches—yellowish red strongly cemented loamy fine sand
48 to 60 inches—yellowish brown fine sand

Properties and qualities

Depth to cemented layer: 20 to 36 inches
Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow in the cemented pan, moderate above the pan, moderately rapid below the pan
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Wadecreek Soil

Typical profile

0 to 6 inches—very dark grayish brown silt loam
6 to 34 inches—dark brown and brown silty clay loam
34 to 47 inches—mottled, yellowish brown silty clay
47 to 54 inches—mottled, yellowish brown clay loam
54 to 60 inches—mottled, yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in November through May
Hazard of erosion: Slight

Contrasting Inclusions

- Ferrelo and Gearhart soils on side slopes of relict sand dunes that mantle marine terraces
- Nelscott and Depoe soils on slightly lower adjacent marine terraces
- Hebo soils in depressions and drainageways
- Horseprairie soils on slightly lower adjacent marine terraces
- Grindbrook soils in nearly level and concave areas

Major Uses

Bullards, Bandon, and Wadecreek—livestock grazing, homesite development, timber production
Bullards and Wadecreek—hayland

Major Management Limitations

Bullards, Bandon, and Wadecreek—slope, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, droughtiness in summer, high humidity, salt spray
Bullards—poor anchoring medium
Bandon—depth to cemented pan
Bandon and Wadecreek—slow permeability
Wadecreek—high water table, clayey texture
Bullards and Bandon—susceptibility of the surface layer to water erosion, susceptibility of the soils to wind erosion, sloughing, low available water capacity

USFS Plant Association

Bullards, Bandon, and Wadecreek—TSHE-CHLA (western hemlock-Port Orford cedar)

39D—Bullards-Ferrelo-Hebo complex, 0 to 20 percent slopes

Composition

Bullards soil and similar inclusions—40 percent
Ferrelo soil and similar inclusions—30 percent
Hebo soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Bullards—convex areas of relict sand dunes; Ferrelo—nearly level to undulating areas of relict sand dunes; Hebo—depressions and drainageways
Landform: Marine terraces
Parent material: Bullards—sandy marine and eolian material overlying relict sand dunes; Ferrelo—sandy marine and eolian material; Hebo—alluvium
Elevation: 100 to 200 feet
Native plants: Bullards—Douglas fir, grand fir, western hemlock, Port Orford cedar, shore pine, evergreen huckleberry, Pacific rhododendron; Ferrelo—Douglas fir, grand fir, western hemlock, Sitka spruce, evergreen huckleberry, western azalea; Hebo—Sitka spruce, western hemlock, Douglas fir, red alder, rushes, salmonberry, skunkcabbage
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Bullards Soil

Typical profile

0 to 8 inches—very dark grayish brown sandy loam
8 to 15 inches—dark yellowish brown gravelly sandy loam
15 to 47 inches—yellowish brown gravelly sandy loam
47 to 60 inches—brownish yellow sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Ferrelo Soil

Typical profile

0 to 27 inches—dark reddish brown and dark brown loam
27 to 41 inches—dark brown fine sandy loam
41 to 58 inches—yellowish brown loamy fine sand
58 to 68 inches—variegated, light brownish gray, yellowish brown, and dark reddish brown fine sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of erosion: Severe

Hebo Soil

Typical profile

0 to 5 inches—mottled, black silty clay loam
5 to 14 inches—mottled, very dark gray silty clay
14 to 38 inches—gleyed and mottled, dark gray and gray silty clay or clay
38 to 46 inches—gleyed and mottled, grayish brown silty clay

46 to 60 inches—gleyed and mottled, light brownish gray silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 0.5 foot above the surface to a depth of 1 foot below the surface in November through June
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Frankport and Waldport soils on recently stabilized sand dunes that mantle marine terraces
- Depoe and Nelscott soils on adjacent slightly higher marine terraces
- Grindbrook soils in nearly level and concave areas of adjacent slightly higher marine terraces
- Wadecreek soils in concave areas of adjacent slightly higher marine terraces

Major Uses

Bullards and Ferrelo—timber production, homesite development, hayland, livestock grazing
Hebo—timber production, livestock grazing

Major Management Limitations

Bullards, Ferrelo, and Hebo—slope, susceptibility of the surface layer to water erosion, susceptibility of the soils to wind erosion, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, slope stability, sloughing, poor anchoring medium, salt spray, droughtiness in summer, high humidity
Bullards—low available water capacity
Hebo—high water table

USFS Plant Association

Bullards, Ferrelo, and Hebo—TSHE-CHLA (western hemlock-Port Orford cedar)

40E—Bullgulch-Hunterscove complex, 0 to 30 percent slopes

Composition

Bullgulch soil and similar inclusions—55 percent
Hunterscove soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Bullgulch—concave areas of summits; Hunterscove—convex areas of summits
Landform: Coastal hills and mountains
Parent material: Arkosic sandstone or siltstone
Elevation: 50 to 1,000 feet
Native plants: Bullgulch—Douglas fir, grand fir, Sitka spruce, tanoak, evergreen huckleberry, western swordfern; Hunterscove—Douglas fir, grand fir, Sitka spruce, tanoak, evergreen huckleberry, salal
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Bullgulch Soil

Typical profile

0 to 22 inches—very dark brown to very dark grayish brown silty clay loam
22 to 59 inches—dark brown to yellowish brown silty clay
59 to 70 inches—yellowish brown to grayish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 13 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Hunterscove Soil

Typical profile

0 to 14 inches—dark brown silty clay loam
14 to 28 inches—dark brown silty clay
28 inches—weathered siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Contrasting Inclusions

- Millicoma and Whaleshead soils on shoulders and knobs and in convex areas of summits
- Wet soils in drainageways of summits

Major Uses

Timber production, homesite development

Major Management Limitations

Bullgulch and Hunterscove—slope, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, salt spray, high shrink-swell potential, slow permeability
Hunterscove—susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, soil depth

USFS Plant Association

Bullgulch and Hunterscove—LIDE3/VAOV2 (tanoak/ evergreen huckleberry)

41F—Bullgulch-Hunterscove complex, 30 to 60 percent north slopes

Composition

Bullgulch soil and similar inclusions—50 percent
Hunterscove soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Bullgulch—concave areas of backslopes; Hunterscove—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Arkosic sandstone or siltstone
Elevation: 50 to 1,000 feet
Native plants: Bullgulch—Douglas fir, grand fir, Sitka spruce, tanoak, western swordfern, salmonberry; Hunterscove—Douglas fir, grand fir, Sitka spruce, tanoak, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Bullgulch Soil

Typical profile

0 to 22 inches—very dark brown to very dark grayish brown silty clay loam
22 to 59 inches—dark brown to yellowish brown silty clay
59 to 70 inches—yellowish brown to grayish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 13 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Hunterscove Soil

Typical profile

0 to 14 inches—dark brown silty clay loam
14 to 28 inches—dark brown silty clay
28 inches—weathered siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Millicoma soils in convex areas of backslopes
- Whaleshead soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bullgulch and Hunterscove—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, salt spray
Hunterscove—soil depth

USFS Plant Association

Bullgulch and Hunterscove—LIDE3/VAOV2 (tanoak/ evergreen huckleberry)

42F—Bullgulch-Hunterscove complex, 30 to 60 percent south slopes

Composition

Bullgulch soil and similar inclusions—45 percent
Hunterscove soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Bullgulch—concave areas of backslopes; Hunterscove—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Arkosic sandstone or siltstone

Elevation: 50 to 1,000 feet
Native plants: Bullgulch—Douglas fir, Sitka spruce, tanoak, evergreen huckleberry, salal; Hunterscove—Douglas fir, grand fir, tanoak, salal, western swordfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Bullgulch Soil

Typical profile

0 to 22 inches—very dark brown to very dark grayish brown silty clay loam
22 to 59 inches—dark brown to yellowish brown silty clay
59 to 70 inches—yellowish brown to grayish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 13 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Hunterscove Soil

Typical profile

0 to 14 inches—dark brown silty clay loam
14 to 28 inches—dark brown silty clay
28 inches—weathered siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Millicoma soils in convex areas of backslopes
- Whaleshead soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Bullgulch and Hunterscove—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, south aspects, salt spray
Hunterscove—soil depth

USFS Plant Association

Bullgulch—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Hunterscove—LIDE3/GASH (tanoak/salal)

43D—Burnthill-Cashner complex, 0 to 15 percent slopes

Composition

Burnthill soil and similar inclusions—55 percent
Cashner soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Burnthill—convex areas; Cashner—concave areas
Landform: Marine terraces
Parent material: Burnthill—marine sediment; Cashner—medium-textured eolian material over stratified marine sediment
Elevation: 400 to 1,500 feet
Native plants: Burnthill—Sitka spruce, Douglas fir, grand fir, western hemlock, salmonberry, evergreen huckleberry, Pacific rhododendron; Cashner—Douglas fir, Port Orford cedar, Sitka spruce, tanoak, evergreen huckleberry, salal
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Burnthill Soil

Typical profile

0 to 11 inches—very dark grayish brown loam
11 to 31 inches—dark brown and reddish brown loam
31 to 43 inches—brown and strong brown clay loam
43 to 60 inches—yellowish red clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate

Cashner Soil

Typical profile

0 to 12 inches—very dark gray and dark gray loam
12 to 21 inches—mottled, black fine sandy loam
21 to 31 inches—mottled and variegated, dark brown and reddish brown, strongly cemented sandy material with pockets of brownish yellow sandy clay loam
31 to 44 inches—variegated, strong brown and reddish brown, strongly cemented sandy material with pockets of sandy clay loam
44 to 60 inches—variegated, strong brown and brown sandy loam

Properties and qualities

Depth to cemented layer: 20 to 30 inches
Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow through the cemented pan, moderate above the pan, rapid below the pan
Available water capacity: About 3 inches
Depth to water table: 0.5 foot to 1.5 feet below the surface in November through April
Hazard of erosion: Slight

Contrasting Inclusions

- Joeney soils in nearly level areas of adjacent lower marine terraces
- Hebo soils in depressions and drainageways
- Hunterscove and Reedsport soils in convex areas of adjacent coastal hills and mountains
- Capeblanco and Millicoma soils on shoulders and knobs and in convex areas of adjacent coastal hills and mountains
- Hooskanaden, Loneranch, and Reinhart soils on adjacent coastal hills and mountains near shear zones

Major Uses

Homesite development, timber production, livestock grazing, hayland

Major Management Limitations

Burnthill and Cashner—susceptibility of the surface layer to compaction when wet, slow permeability, salt spray, droughtiness in summer, high humidity
Burnthill—clayey textures
Cashner—high water table, depth to cemented pan, susceptibility of the surface layer to displacement and accelerated erosion, low available water capacity

USFS Plant Association

Burnthill—TSHE-RHMA (western hemlock-Pacific rhododendron)
Cashner—LIDE3-CHLA (tanoak-Port Orford cedar)

44E—Burnthill loam, 15 to 30 percent slopes

Composition

Burnthill soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 400 to 1,500 feet
Native plants: Sitka spruce, Douglas fir, grand fir, western hemlock, evergreen huckleberry, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 11 inches—very dark grayish brown loam
11 to 31 inches—dark brown and reddish brown loam
31 to 43 inches—brown and strong brown clay loam
43 to 60 inches—yellowish red clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Hebo soils in depressions and drainageways
- Capeblanco, Millicoma, and Reedsport soils on shoulders and knobs and in convex areas of footslopes of adjacent mountains
- Calfranch and Whaleshead soils on footslopes of adjacent mountains
- Hooskanaden, Loneranch, and Reinhart soils on adjacent coastal hills and mountains near shear zones

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, susceptibility of the surface layer to compaction when wet, slope stability, high shrink-swell potential, salt spray, droughtiness in summer, high humidity

USFS Plant Association

TSHE-RHMA (western hemlock-Pacific rhododendron)

45F—Calfranch-Capeblanco-Watches complex, 30 to 60 percent south slopes

Composition

Calfranch soil and similar inclusions—40 percent
Capeblanco soil and similar inclusions—30 percent
Watches soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Calfranch—convex areas of backslopes; Capeblanco—narrow summits, shoulders, convex areas of backslopes; Watches—concave areas of backslopes
Landform: Coastal hills and mountains
Parent material: Schist or phyllite
Elevation: 100 to 1,000 feet
Native plants: Calfranch—Douglas fir, tanoak, Pacific madrone, evergreen huckleberry, western swordfern; Capeblanco—Douglas fir, tanoak, Pacific madrone, salal, evergreen huckleberry; Watches—Douglas fir, grand fir, tanoak, cascade Oregongrape, salal
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Calfranch Soil

Typical profile

0 to 4 inches—brown very channery loam
4 to 12 inches—dark yellowish brown very channery loam
12 to 17 inches—light olive brown very channery loam
17 to 29 inches—light yellowish brown very channery sandy loam
29 to 42 inches—light yellowish brown extremely flaggy sandy loam
42 to 67 inches—pale olive extremely flaggy sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Capeblanco Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 19 inches—dark yellowish brown very channery clay loam
19 to 35 inches—dark yellowish brown extremely channery sandy clay loam
35 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Severe

Watches Soil

Typical profile

0 to 16 inches—grayish brown channery loam
16 to 38 inches—light olive brown channery clay loam
38 to 49 inches—grayish brown channery clay loam
49 to 65 inches—grayish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Desons soils on stable benches
- Sebastian and Rustybutte soils on narrow summits, on shoulders, and in convex areas of backslopes near fault zones
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Calfranch, Capeblanco, and Watches—slope, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Calfranch—poor anchoring medium, low available water capacity
Capeblanco—susceptibility of the surface layer to displacement and accelerated erosion, soil depth, poor anchoring medium, low available water capacity
Watches—susceptibility of the surface layer to displacement and accelerated erosion

USFS Plant Association

Calfranch—LIDE3/VAOV2 (tanoak/evergreen huckleberry)
Capeblanco—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Watches—LIDE3/GASH (tanoak/salal)

46G—Calfranch-Capeblanco-Watches complex, 60 to 90 percent north slopes

Composition

Calfranch soil and similar inclusions—40 percent
Capeblanco soil and similar inclusions—30 percent
Watches soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Calfranch—concave areas of backslopes; Capeblanco—narrow summits, shoulders, convex areas of backslopes; Watches—footslopes, concave areas of backslopes
Landform: Coastal hills and mountains
Parent material: Schist or phyllite
Elevation: 100 to 1,000 feet
Native plants: Calfranch—Douglas fir, western hemlock, western swordfern, evergreen huckleberry, cascade Oregongrape; Capeblanco—Douglas fir, western hemlock, evergreen huckleberry, western swordfern, cascade Oregongrape; Watches—Douglas fir, grand fir, western hemlock, western swordfern, evergreen huckleberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Calfranch Soil

Typical profile

0 to 4 inches—brown very channery loam
4 to 12 inches—dark yellowish brown very channery loam
12 to 17 inches—light olive brown very channery loam
17 to 29 inches—light yellowish brown very channery sandy loam
29 to 42 inches—light yellowish brown extremely flaggy sandy loam
42 to 67 inches—pale olive extremely flaggy sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Capeblanco Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 19 inches—dark yellowish brown very channery clay loam
19 to 35 inches—dark yellowish brown extremely channery sandy clay loam
35 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Watches Soil

Typical profile

0 to 16 inches—grayish brown channery loam
16 to 38 inches—light olive brown channery clay loam
38 to 49 inches—grayish brown channery clay loam
49 to 65 inches—grayish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Rustybutte and Sebastian soils on narrow summits, on shoulders, and in convex areas of backslopes near fault zones
- Soils that have bedrock at a depth of less than 20 inches and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Calfranch, Capeblanco, and Watches—slope, susceptibility of the surface layer to compaction when wet, slope stability
Calfranch—poor anchoring medium, low available water capacity
Capeblanco—susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, soil depth, poor anchoring medium, low available water capacity
Watches—susceptibility of the surface layer to displacement and accelerated erosion

USFS Plant Association

Calfranch, Capeblanco, and Watches—TSHE/RHMA (western hemlock/Pacific rhododendron)

47F—Calfranch-Watches-Capeblanco complex, 30 to 60 percent north slopes

Composition

Calfranch soil and similar inclusions—40 percent
Watches soil and similar inclusions—25 percent
Capeblanco soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Calfranch—convex areas of backslopes; Watches—concave areas of backslopes; Capeblanco—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Schist or phyllite
Elevation: 100 to 1,000 feet
Native plants: Calfranch—Douglas fir, western hemlock, western swordfern, Pacific rhododendron, evergreen huckleberry; Watches—Douglas fir, grand fir, western hemlock, western swordfern, evergreen huckleberry, Pacific rhododendron; Capeblanco—Douglas fir, western hemlock, evergreen huckleberry, western swordfern, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Calfranch Soil

Typical profile

0 to 4 inches—brown very channery loam
4 to 12 inches—dark yellowish brown very channery loam
12 to 17 inches—light olive brown very channery loam
17 to 29 inches—light yellowish brown very channery sandy loam
29 to 42 inches—light yellowish brown extremely flaggy sandy loam
42 to 67 inches—pale olive extremely flaggy sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Watches Soil

Typical profile

0 to 16 inches—grayish brown channery loam
16 to 38 inches—light olive brown channery clay loam
38 to 49 inches—grayish brown channery clay loam
49 to 65 inches—grayish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Capeblanco Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 19 inches—dark yellowish brown very channery clay loam

19 to 35 inches—dark yellowish brown extremely channery sandy clay loam
35 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Desons soils on stable benches
- Rustybutte and Sebastian soils on narrow summits, on shoulders, and in convex areas of backslopes near fault zones
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Calfranch, Watches, and Capeblanco—slope, susceptibility of the surface layer to compaction when wet, slope stability
Calfranch—poor anchoring medium, low available water capacity
Watches—susceptibility of the surface layer to displacement and accelerated erosion
Capeblanco—susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Calfranch, Watches, and Capeblanco—TSHE/RHMA (western hemlock/Pacific rhododendron)

48G—Capeblanco-Calfranch-Watches complex, 60 to 90 percent south slopes

Composition

Capeblanco soil and similar inclusions—40 percent
Calfranch soil and similar inclusions—30 percent
Watches soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Capeblanco—narrow summits, shoulders, convex areas of backslopes; Calfranch—concave areas of backslopes; Watches—footslopes, concave areas of backslopes
Landform: Coastal hills and mountains
Parent material: Schist or phyllite
Elevation: 100 to 1,000 feet
Native plants: Capeblanco—Douglas fir, tanoak, Pacific madrone, salal, common beargrass; Calfranch—Douglas fir, tanoak, Pacific madrone, cascade Oregongrape, salal; Watches—Douglas fir, grand fir, tanoak, salal, cascade Oregongrape
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Capeblanco Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 19 inches—dark yellowish brown very channery clay loam
19 to 35 inches—dark yellowish brown extremely channery sandy clay loam
35 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Calfranch Soil

Typical profile

0 to 4 inches—brown very channery loam
4 to 12 inches—dark yellowish brown very channery loam
12 to 17 inches—light olive brown very channery loam
17 to 29 inches—light yellowish brown very channery sandy loam
29 to 42 inches—light yellowish brown extremely flaggy sandy loam
42 to 67 inches—pale olive extremely flaggy sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Watches Soil

Typical profile

0 to 16 inches—grayish brown channery loam
16 to 38 inches—light olive brown channery clay loam
38 to 49 inches—grayish brown channery clay loam
49 to 65 inches—grayish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Sebastian and Rustybutte soils on narrow summits, on shoulders, and in convex areas of backslopes near fault zones
- Soils that have bedrock at a depth of less than 20 inches and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Capeblanco, Calfranch, and Watches—slope, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Capeblanco—susceptibility of the surface layer to displacement and accelerated erosion, soil depth, poor anchoring medium, low available water capacity
Calfranch—poor anchoring medium, low available water capacity
Watches—susceptibility of the surface layer to displacement and accelerated erosion

USFS Plant Association

Capeblanco, Calfranch, and Watches—LIDE3/GASH (tanoak/salal)

49F—Carpenterville-Houstenader-Huntley complex, 30 to 60 percent south slopes

Composition

Carpenterville soil and similar inclusions—35 percent
Houstenader soil and similar inclusions—30 percent
Huntley soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Carpenterville, Houstenader, and Huntley—open areas of grassland within forests; Carpenterville—convex areas of backslopes; Houstenader—concave areas of backslopes; Huntley—narrow summits, shoulders, convex areas of backslopes
Landform: Hills and mountains
Parent material: Metasedimentary rock
Elevation: 1,000 to 2,000 feet
Native plants: Carpenterville—grasses, Oregon white oak, Pacific poison oak, western brackenfern, strawberry; Houstenader—grasses, Oregon white oak, Pacific poison oak, strawberry, sedge; Huntley—grasses, Oregon white oak, Pacific poison oak, western brackenfern, strawberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Carpenterville Soil

Typical profile

0 to 6 inches—very dark gray gravelly silty clay loam
6 to 17 inches—very dark grayish brown very cobbly silty clay
17 to 32 inches—mottled, dark grayish brown very cobbly clay
32 inches—shale

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: About 3 inches
Depth to water table: 1.5 to 3.0 feet below the surface in November through April
Hazard of erosion: Severe
Shrink-swell potential: High

Houstenader Soil

Typical profile

0 to 11 inches—very dark brown gravelly loam
11 to 17 inches—mottled, very dark grayish brown gravelly silty clay loam
17 to 23 inches—mottled, grayish brown gravelly silty clay loam
23 to 28 inches—mottled, very dark gray gravelly silty clay loam

28 to 40 inches—mottled, very dark grayish brown gravelly silty clay loam
40 to 60 inches—mottled, very dark grayish brown very gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1 to 4 feet below the surface in November through April
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Huntley Soil

Typical profile

0 to 3 inches—very dark gray gravelly loam
3 to 11 inches—very dark grayish brown gravelly clay loam
11 to 17 inches—dark brown gravelly clay loam
17 inches—shale

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Qualprairie soils in concave areas of backslopes
- Swedeheaven soils in convex areas of backslopes
- Colepoint and Fritsland soils that are in concave areas of backslopes and support a forest canopy
- Bravo and Crutchfield soils that are in convex areas of backslopes and support a forest canopy
- Cassiday soils that are on narrow summits, on shoulders, and in convex areas of backslopes and support a forest canopy
- Greggo and Mislatnah soils that are on shoulders and knobs and in convex areas of backslopes, are near fault zones, and support a forest canopy
- Rock outcrop on ridge crests and shoulders

Major Uses

Watershed, recreation, wildlife habitat, livestock grazing

Major Management Limitations

Carpenterville, Houstenader, and Huntley—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, south aspects
Carpenterville and Houstenader—high water table, high shrink-swell potential, clayey textures
Carpenterville and Huntley—low available water capacity
Carpenterville—slow permeability
Huntley—very slow permeability

50G—Cassiday-Grouslous-Bravo complex, 60 to 90 percent north slopes

Composition

Cassiday soil and similar inclusions—35 percent
Grouslous soil and similar inclusions—30 percent
Bravo soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cassiday—convex areas of backslopes; Grouslous—narrow summits, shoulders, convex areas of backslopes; Bravo—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Cassiday—Douglas fir, tanoak, evergreen huckleberry, salal, cascade Oregongrape; Grouslous—Douglas fir, tanoak, Pacific madrone, salal, cascade Oregongrape; Bravo—Douglas fir, tanoak, evergreen huckleberry, salal, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Cassiday Soil

Typical profile

0 to 8 inches—dark brown very gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate

Available water capacity: About 3 inches
Hazard of erosion: Very severe

Grouslous Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam
4 to 8 inches—brown very gravelly clay loam
8 to 16 inches—brown extremely gravelly clay loam
16 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Bravo Soil

Typical profile

0 to 3 inches—very dark grayish brown loam
3 to 9 inches—dark brown loam
9 to 21 inches—dark brown clay loam
21 to 31 inches—dark yellowish brown gravelly clay loam
31 to 36 inches—brown gravelly clay loam
36 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Fritsland soils on footslopes and in concave areas of backslopes
- Remote soils in concave areas of backslopes
- Crutchfield and Colepoint soils on small metastable slump benches
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Cassiday, Grouslous, and Bravo—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Cassiday and Bravo—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Grouslous—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

51G—Cassiday-Grouslous-Bravo complex, 60 to 90 percent south slopes

Composition

Cassiday soil and similar inclusions—40 percent
Grouslous soil and similar inclusions—30 percent
Bravo soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cassiday—convex areas of backslopes; Grouslous—narrow summits, shoulders, convex areas of backslopes; Bravo—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Cassiday—tanoak, Douglas fir, canyon live oak, cascade Oregongrape, salal; Grouslous—tanoak, Douglas fir, canyon live oak, cascade Oregongrape, common beargrass; Bravo—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Cassiday Soil

Typical profile

0 to 8 inches—dark brown very gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate

Available water capacity: About 3 inches
Hazard of erosion: Very severe

Grouslous Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam
4 to 8 inches—brown very gravelly clay loam
8 to 16 inches—brown extremely gravelly clay loam
16 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Bravo Soil

Typical profile

0 to 3 inches—very dark grayish brown loam
3 to 9 inches—dark brown loam
9 to 21 inches—dark brown clay loam
21 to 31 inches—dark yellowish brown gravelly clay loam
31 to 36 inches—brown gravelly clay loam
36 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Fritsland soils on footslopes and in concave areas of backslopes
- Remote soils in concave areas of backslopes
- Crutchfield and Colepoint soils on small metastable slump benches
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Cassiday, Grouslous, and Bravo—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Cassiday, Grouslous, and Bravo—LIDE3/GASH (tanoak/salal)

52G—Cedarcamp-Flycatcher-Rock outcrop complex, 60 to 90 percent north slopes

Composition

Cedarcamp soil and similar inclusions—40 percent
Flycatcher soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cedarcamp—concave areas of backslopes; Flycatcher—convex areas of backslopes; Rock outcrop—narrow ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Cedarcamp—Jeffrey pine, western white pine, tanoak, California buckthorn, Sadler oak; Flycatcher—Jeffrey pine, western white pine, knobcone pine, huckleberry oak, pinemat manzanita
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very bouldery loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow

Available water capacity: About 5 inches
Hazard of erosion: Very severe

Flycatcher Soil

Typical profile

0 to 4 inches—dark brown very bouldery loam
4 to 9 inches—dark yellowish brown very gravelly clay loam
9 to 15 inches—dark yellowish brown very gravelly sandy clay loam
15 to 18 inches—dark yellowish brown extremely gravelly loam
18 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Snowcamp soils on shoulders and knobs and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Soils that are less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Wet soils in seep areas near fault zones

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Cedarcamp and Flycatcher—toxicity, slope, boulders on the surface, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Flycatcher—soil depth

USFS Plant Association

Cedarcamp—PIJE-PIMO (Jeffrey pine-western white pine)
Flycatcher—PIJE-QUVA (Jeffrey pine-huckleberry oak)

53F—Cedarcamp-Snowcamp-Flycatcher complex, 30 to 60 percent north slopes

Composition

Cedarcamp soil and similar inclusions—40 percent
Snowcamp soil and similar inclusions—30 percent
Flycatcher soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cedarcamp—concave areas of backslopes; Snowcamp—convex areas of backslopes; Flycatcher—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Cedarcamp—Jeffrey pine, western white pine, tanoak, California buckthorn, boxleaf silktassel; Snowcamp—Jeffrey pine, western white pine, tanoak, California buckthorn, huckleberry oak; Flycatcher—Jeffrey pine, knobcone pine, western white pine, huckleberry oak, pinemat manzanita
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very gravelly loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly loam
4 to 10 inches—dark reddish brown very cobbly clay loam

10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Flycatcher Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 9 inches—dark yellowish brown very gravelly clay loam
9 to 15 inches—dark yellowish brown very gravelly sandy clay loam
15 to 18 inches—dark yellowish brown extremely gravelly loam
18 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Soils that are less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Wet soils in seep areas near fault zones
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Cedarcamp, Snowcamp, and Flycatcher—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Snowcamp and Flycatcher—soil depth

USFS Plant Association

Cedarcamp and Snowcamp—PIJE-PIMO (Jeffrey pine-western white pine)
Flycatcher—PIJE-QUVA (Jeffrey pine-huckleberry oak)

54F—Cedarcamp-Snowcamp-Flycatcher complex, 30 to 60 percent south slopes

Composition

Cedarcamp soil and similar inclusions—35 percent
Snowcamp soil and similar inclusions—30 percent
Flycatcher soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cedarcamp—concave areas of backslopes; Snowcamp—convex areas of backslopes; Flycatcher—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Cedarcamp and Snowcamp—knobcone pine, Jeffrey pine, western white pine, California buckthorn, Sadler oak; Flycatcher—knobcone pine, Jeffrey pine, western white pine, Sadler oak, squawcarpet
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very gravelly loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly loam
4 to 10 inches—dark reddish brown very cobbly clay loam
10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Flycatcher Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 9 inches—dark yellowish brown very gravelly clay loam
9 to 15 inches—dark yellowish brown very gravelly sandy clay loam
15 to 18 inches—dark yellowish brown extremely gravelly loam
18 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Soils that are less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Wet soils in seep areas near fault zones
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Cedarcamp, Snowcamp, and Flycatcher—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, low available water capacity
Snowcamp and Flycatcher—soil depth

USFS Plant Association

Cedarcamp and Snowcamp—PIJE-PIMO (Jeffrey pine-western white pine)
Flycatcher—PIJE-QUVA (Jeffrey pine-huckleberry oak)

55F—Cedarcamp-Snowcamp-Rock outcrop complex, 30 to 60 percent north slopes

Composition

Cedarcamp soil and similar inclusions—40 percent
Snowcamp soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cedarcamp—concave areas of backslopes; Snowcamp—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Cedarcamp and Snowcamp—Jeffrey pine, western white pine, tanoak, California buckthorn, huckleberry oak
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very bouldery loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained

Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very bouldery loam
4 to 10 inches—dark reddish brown very cobbly clay loam
10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Flycatcher soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Soils that are less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Wet soils in seep areas near fault zones

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Cedarcamp and Snowcamp—toxicity, slope, boulders on the surface, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Snowcamp—soil depth

USFS Plant Association

Cedarcamp and Snowcamp—PIJE-PIMO (Jeffrey pine-western white pine)

56F—Cedarcamp-Snowcamp-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Cedarcamp soil and similar inclusions—35 percent
Snowcamp soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Cedarcamp—concave areas of backslopes; Snowcamp—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Cedarcamp—knobcone pine, Jeffrey pine, western white pine, California buckthorn, greenleaf manzanita; Snowcamp—knobcone pine, Jeffrey pine, western white pine, Sadler oak, squawcarpet
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very bouldery loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very bouldery loam
4 to 10 inches—dark reddish brown very cobbly clay loam
10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Flycatcher soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Soils that are less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Wet soils in seep areas near fault zones

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Cedarcamp and Snowcamp—toxicity, slope, boulders on the surface, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, low available water capacity
Snowcamp—soil depth

USFS Plant Association

Cedarcamp and Snowcamp—PIJE-PIMO (Jeffrey pine-western white pine)

57A—Central Point sandy loam, 0 to 3 percent slopes

Composition

Central Point soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 200 to 300 feet
Native plants: Douglas fir, Oregon white oak, bigleaf maple, California laurel, Himalaya blackberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 43 inches—very dark brown to dark brown sandy loam
43 to 72 inches—dark brown gravelly sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 6 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Takilma soils in convex areas
- Clawson soils in depressions
- Cove soils in concave areas
- Foehlin soils in undulating areas
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

Susceptibility of the surface layer to compaction when wet, droughtiness in summer, moderately rapid permeability

58A—Chetco silt loam, 0 to 3 percent slopes

Composition

Chetco soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Depressions, drainageways
Landform: Flood plains
Parent material: Silty alluvium over marine clay
Elevation: 0 to 40 feet
Native plants: Rushes, sedges, willow, Oregon ash, skunkcabbage
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 8 inches—mottled, black silt loam
8 to 12 inches—mottled, black and dark grayish brown silty clay loam
12 to 22 inches—mottled, very dark gray silty clay
22 to 31 inches—mottled, dark gray silty clay loam
31 to 54 inches—mottled, gray sandy clay
54 to 60 inches—mottled, olive gray clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Very poorly drained

Permeability: Very slow
Available water capacity: About 6 inches
Frequency of flooding: Frequent in October through May
Depth to water table: At the surface to a depth of 1.5 feet below the surface in October through May
Hazard of erosion: Slight, except during periods of flooding
Shrink-swell potential: High

Contrasting Inclusions

- Nestucca soils in nearly level and slightly convex areas of flood plains
- Nehalem soils in concave areas of flood plains
- Logsden soils in slightly convex areas of low stream terraces
- Euchre soils in slight depressions of low stream terraces
- Gleneden soils in nearly level and concave areas of low stream terraces
- Frankport and Waldport soils on recently stabilized sand dunes

Major Uses

Livestock grazing, hayland, wildlife habitat

Major Management Limitations

Flooding, high water table, susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer, high humidity

59A—Chismore-Pyburn complex, 0 to 3 percent slopes

Composition

Chismore soil and similar inclusions—55 percent
Pyburn soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Chismore—nearly level areas; Pyburn—concave areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: Chismore—Douglas fir, western hemlock, California laurel, tanoak, sedges, rushes; Pyburn—red alder, western swordfern, sedges, rushes, willow
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—51 degrees F
Frost-free period—180 to 220 days

Chismore Soil

Typical profile

0 to 9 inches—very dark grayish brown silt loam
9 to 15 inches—dark brown silty clay loam
15 to 60 inches—mottled, dark yellowish brown to yellowish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 10 inches
Depth to water table: 1.5 to 2.5 feet below the surface in November through March
Hazard of erosion: Slight
Shrink-swell potential: High

Pyburn Soil

Typical profile

0 to 16 inches—mottled, very dark grayish brown silty clay
16 to 27 inches—mottled, dark grayish brown clay
27 to 33 inches—mottled, dark brown silty clay
33 to 60 inches—mottled, dark brown clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: About 10 inches
Depth to water table: At the surface to a depth of 0.5 foot below the surface in October through May
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Meda soils in gently sloping areas
- Bohannon, Digger, and McDuff soils in convex areas of adjacent mountain toeslopes
- Blachly, Orford, and Remote soils in concave areas of adjacent mountain toeslopes

Major Uses

Chismore—timber production, livestock grazing, homesite development
Pyburn—livestock grazing, wildlife habitat

Major Management Limitations

Chismore and Pyburn—high water table, susceptibility of the surface layer to compaction when wet, clayey textures, slow and very slow permeability, droughtiness in summer, high shrink-swell potential

USFS Plant Association

Chismore—TSHE-UMCA (western hemlock-California laurel)

59C—Chismore-Pyburn complex, 3 to 12 percent slopes

Composition

Chismore soil and similar inclusions—60 percent
Pyburn soil and similar inclusions—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Chismore—convex areas; Pyburn—concave areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: Chismore—Douglas fir, western hemlock, California laurel, tanoak, sedges, rushes; Pyburn—red alder, western swordfern, sedges, rushes, willow
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—51 degrees F
Frost-free period—180 to 220 days

Chismore Soil

Typical profile

0 to 9 inches—very dark grayish brown silt loam
9 to 15 inches—dark brown silty clay loam
15 to 60 inches—mottled, dark yellowish brown to yellowish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 10 inches
Depth to water table: 1.5 to 2.5 feet below the surface in November through March
Hazard of erosion: Slight
Shrink-swell potential: High

Pyburn Soil

Typical profile

0 to 16 inches—mottled, very dark grayish brown silty clay
16 to 27 inches—mottled, dark grayish brown clay
27 to 33 inches—mottled, dark brown silty clay
33 to 60 inches—mottled, dark brown clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: About 10 inches
Depth to water table: At the surface to a depth of 0.5 foot below the surface in October through May
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Meda soils in gently sloping areas
- Bohannon, Digger, and McDuff soils in convex areas of adjacent mountain toeslopes
- Blachly, Orford, and Remote soils in concave areas of adjacent mountain toeslopes

Major Uses

Chismore—timber production, livestock grazing, homesite development
Pyburn—livestock grazing, wildlife habitat

Major Management Limitations

Chismore and Pyburn—high water table, susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer, high shrink-swell potential
Chismore—slope, slow permeability
Pyburn—very slow permeability

USFS Plant Association

Chismore—TSHE-UMCA (western hemlock-California laurel)

60B—Chitwood silt loam, 0 to 7 percent slopes

Composition

Chitwood soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level to undulating areas
Landform: Marine terraces
Parent material: Clayey alluvial sediment
Elevation: 50 to 200 feet
Native plants: Douglas fir, Sitka spruce, western hemlock, western redcedar, sedges, rushes, western swordfern
Climatic factors:
Mean annual precipitation—80 inches

Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 15 inches—dark brown silty clay loam
15 to 24 inches—mottled, yellowish brown silty clay loam
24 to 60 inches—mottled, light yellowish brown silty clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: About 10 inches
Depth to water table: 1 to 3 feet below the surface in November through May
Hazard of erosion: Slight

Contrasting Inclusions

- Ekoms soils in convex areas of adjacent slightly higher stream terraces
- Hebo soils in depressions and drainageways
- Nestucca soils in nearly level and slightly convex areas of flood plains
- Nehalem soils in concave areas of flood plains
- Logsden soils in convex areas of low stream terraces
- Euchre soils in depressions on low stream terraces
- Gleneden soils in concave areas of low stream terraces
- Frankport and Waldport soils on recently stabilized sand dunes

Major Uses

Livestock grazing, hayland (fig. 5), homesite development, timber production

Major Management Limitations

High water table, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, droughtiness in summer, high humidity, slow permeability, salt spray

USFS Plant Association

TSHE-THPL (western hemlock-western redcedar)

Figure 5.—Area of Chitwood silt loam, 0 to 7 percent slopes, used as hayland.

61A—Clawson sandy loam, 0 to 3 percent slopes

Composition

Clawson soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Concave areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 200 to 300 feet
Native plants: California oatgrass, sedges, rushes
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 5 inches—mottled, very dark grayish brown sandy loam
5 to 24 inches—mottled, dark grayish brown and grayish brown sandy loam
24 to 64 inches—mottled, brown and light yellowish brown coarse sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Moderately rapid
Available water capacity: About 7 inches
Depth to water table: 1 to 3 feet below the surface in November through June
Hazard of erosion: Slight

Contrasting Inclusions

- Takilma soils in convex areas
- Central Point soils in nearly level areas of low stream terraces
- Cove soils in concave areas
- Foehlin soils in undulating areas
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

High water table, susceptibility of the surface layer to compaction when wet, droughtiness in summer, limited rooting depth, moderately rapid permeability

62F—Colepoint-Bravo-Cassiday complex, cool, 30 to 60 percent north slopes

Composition

Colepoint soil and similar inclusions—40 percent
Bravo soil and similar inclusions—30 percent
Cassiday soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Colepoint—concave areas of backslopes; Bravo—convex areas of backslopes; Cassiday—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,000 feet
Native plants: Colepoint— Douglas fir, western hemlock, tanoak, western redcedar, western swordfern; Bravo—Douglas fir, western hemlock, tanoak, evergreen huckleberry, salal; Cassiday—Douglas fir, western hemlock, tanoak, western swordfern, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Bravo Soil

Typical profile

0 to 3 inches—very dark grayish brown loam
3 to 9 inches—dark brown loam
9 to 21 inches—dark brown clay loam

21 to 31 inches—dark yellowish brown gravelly clay loam
31 to 36 inches—brown gravelly clay loam
36 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Severe

Cassiday Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Skookumhouse soils on stable benches
- Crutchfield soils on knobs
- Grouslous and Averlande soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Colepoint, Bravo, and Cassiday—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Bravo and Cassiday—soil depth, low available water capacity

USFS Plant Association

Colepoint—TSHE-THPL (western hemlock-western redcedar)
Bravo and Cassiday—LIDE3-TSHE (tanoak-western hemlock)

63E—Colepoint-Nailkeg complex, cool, 0 to 30 percent slopes

Composition

Colepoint soil and similar inclusions—60 percent
Nailkeg soil and similar inclusions—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Colepoint—concave areas of summits; Nailkeg—convex areas of summits
Landform: Mountains
Parent material: Schist, phyllite, metasedimentary rock
Elevation: 200 to 2,500 feet
Native plants: Colepoint—Douglas fir, western hemlock, western redcedar, tanoak, western swordfern; Nailkeg—Douglas fir, western hemlock, cascade Oregongrape, salal, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained

Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Edson and Barkshanty soils in concave areas of summits
- Deadline soils in concave areas of summits
- Crutchfield soils on benches
- Remote soils on sandstone shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development

Major Management Limitations

Colepoint and Nailkeg—susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability
Nailkeg—soil depth, low available water capacity

USFS Plant Association

Colepoint—TSHE-THPL (western hemlock-western redcedar)
Nailkeg—TSHE/GASH (western hemlock/salal)

64F—Colepoint-Nailkeg complex, cool, 30 to 60 percent north slopes

Composition

Colepoint soil and similar inclusions—55 percent
Nailkeg soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Colepoint—concave areas of backslopes; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist, phyllite, metasedimentary rock
Elevation: 200 to 2,500 feet
Native plants: Colepoint—Douglas fir, western hemlock, western redcedar, tanoak, western swordfern; Nailkeg—Douglas fir, western hemlock, cascade Oregongrape, salal, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Edson and Barkshanty soils on stable benches
- Deadline soils on footslopes and in concave areas of backslopes
- Crutchfield soils on knobs
- Remote soils on sandstone shoulders and knobs and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Colepoint and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the

surface layer to compaction when wet, slope stability
Nailkeg—soil depth, low available water capacity

USFS Plant Association

Colepoint—TSHE-THPL (western hemlock-western redcedar)
Nailkeg—TSHE/GASH (western hemlock/salal)

65A—Crofland silty clay loam, 0 to 3 percent slopes

Composition

Crofland soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level and concave areas
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 40 to 200 feet
Native plants: Sitka spruce, Douglas fir, red alder, salmonberry, salal
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 14 inches—very dark gray and very dark grayish brown silty clay loam
14 to 22 inches—dark grayish brown silty clay
22 to 46 inches—mottled, dark grayish brown silty clay
46 to 60 inches—mottled, grayish brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: About 10 inches
Depth to water table: 1.5 to 3.0 feet below the surface in December through April
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Klooqueh soils in convex areas of terraces
- Huffling soils in depressions and drainageways
- Winchuck soils in nearly level areas of adjacent low stream terraces
- Wedderburn and Zwagg soils on adjacent coastal hills and mountains
- Urban land

Major Uses

Homesite development, cropland, livestock grazing

Major Management Limitations

High water table, slow permeability, high shrink-swell potential, clayey textures, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

66D—Crutchfield-Colepoint complex, 0 to 15 percent slopes

Composition

Crutchfield soil and similar inclusions—55 percent
Colepoint soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Crutchfield—slightly convex areas of summits and benches; Colepoint—concave areas of summits and benches
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 400 to 2,500 feet
Native plants: Crutchfield—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Colepoint—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Crutchfield Soil

Typical profile

0 to 5 inches—very dark brown loam
5 to 16 inches—very dark grayish brown to dark brown clay loam
16 to 38 inches—brown to dark yellowish brown gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow

Available water capacity: About 5 inches
Hazard of erosion: Slight or moderate

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Skookumhouse soils in nearly level areas of summits and benches
- Hazelcamp soils in slightly convex areas of summits
- Remote and Cassiday soils in convex areas of summits
- Averlande and Grouslous soils on shoulders and in convex areas of summits
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Crutchfield and Colepoint—susceptibility of the surface layer to compaction when wet, slope stability
Crutchfield—soil depth, low available water capacity

USFS Plant Association

Crutchfield—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Colepoint—LIDE3/RHMA (tanoak/Pacific rhododendron)

66E—Crutchfield-Colepoint complex, 15 to 30 percent slopes

Composition

Crutchfield soil and similar inclusions—50 percent
Colepoint soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Crutchfield—convex areas of summits; Colepoint—concave areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 400 to 2,500 feet
Native plants: Crutchfield—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Colepoint—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Crutchfield Soil

Typical profile

0 to 5 inches—very dark brown loam
5 to 16 inches—very dark grayish brown to dark brown clay loam
16 to 38 inches—brown to dark yellowish brown gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Skookumhouse soils in concave areas of summits
- Hazelcamp, Remote, and Cassiday soils in convex areas of summits
- Averlande and Grouslous soils on shoulders and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Crutchfield and Colepoint—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability
Crutchfield—soil depth, low available water capacity

USFS Plant Association

Crutchfield—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Colepoint—LIDE3/RHMA (tanoak/Pacific rhododendron)

67F—Crutchfield-Colepoint complex, 30 to 60 percent north slopes

Composition

Crutchfield soil and similar inclusions—45 percent
Colepoint soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Crutchfield—convex areas of backslopes; Colepoint—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Crutchfield—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Colepoint—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Crutchfield Soil

Typical profile

0 to 5 inches—very dark brown loam
5 to 16 inches—very dark grayish brown to dark brown clay loam
16 to 38 inches—brown to dark yellowish brown gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Severe

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Cassiday soils in convex areas of backslopes
- Grouslous and Averlande soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in concave areas of backslopes
- Skookumhouse and Hazelcamp soils on stable benches
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Crutchfield and Colepoint—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Crutchfield—soil depth, low available water capacity

USFS Plant Association

Crutchfield—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Colepoint—LIDE3/RHMA (tanoak/Pacific rhododendron)

68F—Crutchfield-Colepoint complex, 30 to 60 percent south slopes

Composition

Crutchfield soil and similar inclusions—55 percent
Colepoint soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Crutchfield—convex areas of backslopes; Colepoint—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Crutchfield—Douglas fir, tanoak, salal, cascade Oregongrape, western swordfern; Colepoint—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Crutchfield Soil

Typical profile

0 to 5 inches—very dark brown loam
5 to 16 inches—very dark grayish brown to dark brown clay loam
16 to 38 inches—brown to dark yellowish brown gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Severe

Colepoint Soil

Typical profile

0 to 6 inches—very dark brown loam
6 to 18 inches—very dark grayish brown to dark brown gravelly loam
18 to 26 inches—dark yellowish brown gravelly loam
26 to 47 inches—dark yellowish brown gravelly clay loam
47 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Cassiday soils in convex areas of backslopes
- Grouslous and Averlande soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in concave areas of backslopes
- Skookumhouse and Hazelcamp soils on stable benches
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Crutchfield and Colepoint—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Crutchfield—soil depth, low available water capacity

USFS Plant Association

Crutchfield—LIDE3/GASH (tanoak/salal)
Colepoint—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

69D—Cunniff silty clay loam, 0 to 15 percent slopes

Composition

Cunniff soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Undulating, convex areas
Landform: Marine terraces, high stream terraces
Parent material: Marine sediment or alluvium derived from mixed sources
Elevation: 200 to 600 feet
Native plants: Sitka spruce, Douglas fir, grand fir,

tanoak, red elderberry, evergreen huckleberry, salal

Climatic factors:

Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 12 inches—dark brown silty clay loam
12 to 65 inches—dark reddish brown silty clay
65 to 72 inches—brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 12 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Contrasting Inclusions

- Cashner and Joeney soils in nearly level areas of marine terraces
- Ekoms soils in undulating, slightly convex areas of stream terraces
- Hebo soils in depressions and drainageways of terraces

Major Uses

Homesite development, timber production, livestock grazing, hayland

Major Management Limitations

Clayey textures, susceptibility of the surface layer to compaction when wet, slow permeability, high shrink-swell potential, salt spray, droughtiness in summer, high humidity

USFS Plant Association

LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

69E—Cunniff silty clay loam, 15 to 30 percent slopes

Composition

Cunniff soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas
Landform: Marine terraces, high stream terraces
Parent material: Marine sediment or alluvium derived from mixed sources
Elevation: 200 to 600 feet
Native plants: Sitka spruce, Douglas fir, grand fir, tanoak, western swordfern, red elderberry, salal, evergreen huckleberry
Climatic factors:

Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 12 inches—dark brown silty clay loam
12 to 65 inches—dark reddish brown silty clay
65 to 72 inches—brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 12 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Contrasting Inclusions

- Ekoms soils in convex areas of stream terraces
- Hebo soils in depressions and drainageways
- Millicoma, Reedsport, and Capeblanco soils on shoulders and knobs and in convex areas of footslopes of adjacent mountains
- Calfranch and Whaleshead soils on footslopes of adjacent mountains
- Hooskanaden, Loneranch, and Reinhart soils on adjacent coastal hills and mountains near shear zones

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, susceptibility of the surface layer to compaction when wet, slope stability, slow permeability, high shrink-swell potential, salt spray, droughtiness in summer, high humidity

USFS Plant Association

LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

70D—Cunniff-Joeney complex, 0 to 15 percent slopes

Composition

Cunniff soil and similar inclusions—55 percent
Joeney soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Cunniff—undulating, slightly convex areas; Joeney—nearly level areas
Landform: Marine terraces
Parent material: Cunniff—marine sediment; Joeney—medium-textured eolian material over stratified marine sediment
Elevation: 300 to 600 feet
Native plants: Cunniff—Douglas fir, grand fir, tanoak, evergreen huckleberry, western swordfern, salal; Joeney—Douglas fir, Port Orford cedar, western hemlock, salal, evergreen huckleberry, Pacific rhododendron
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Cunniff Soil

Typical profile

0 to 12 inches—dark brown silty clay loam
12 to 65 inches—dark reddish brown silty clay
65 to 72 inches—brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 12 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Joeney Soil

Typical profile

0 to 7 inches—mottled, dark gray silt loam
7 to 13 inches—mottled, light brownish gray silt loam
13 to 15 inches—mottled, very dark grayish brown silt loam
15 to 19 inches—mottled, dark yellowish brown, weakly cemented clay loam
19 to 26 inches—mottled, dark yellowish brown, strongly cemented clay loam
26 to 60 inches—mottled, dark yellowish brown silty clay loam

Properties and qualities

Depth to cemented layer: 10 to 20 inches
Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow through the cemented pan, moderate above the pan, moderately slow below the pan
Available water capacity: About 3 inches
Depth to water table: At the surface to a depth of 1.5 feet below the surface in November through March
Hazard of erosion: Moderate

Contrasting Inclusions

- Cashner soils in nearly level areas of adjacent higher marine terraces
- Hebo soils in depressions and drainageways
- Millicoma, Reedsport, and Capeblanco soils on shoulders and knobs and in convex areas of footslopes of adjacent mountains
- Calfranch and Whaleshead soils on toeslopes of adjacent mountains
- Hooskanaden, Loneranch, and Reinhart soils on adjacent coastal hills and mountains near shear zones

Major Uses

Timber production, livestock grazing, homesite development

Major Management Limitations

Cunniff and Joeney—susceptibility of the surface layer to compaction when wet, slow permeability, salt spray, droughtiness in summer, high humidity
Cunniff—clayey textures, high shrink-swell potential
Joeney—high water table, depth to cemented pan, susceptibility of the surface layer to displacement and accelerated erosion, low available water capacity

USFS Plant Association

Cunniff—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Joeney—TSHE-CHLA (western hemlock-Port Orford cedar)

71F—Deadline-Barkshanty-Nailkeg complex, cool, 30 to 60 percent north slopes

Composition

Deadline soil and similar inclusions—35 percent
Barkshanty soil and similar inclusions—30 percent

Nailkeg soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—convex areas of backslopes; Barkshanty—footslopes and concave areas that have slopes of as much as 40 percent; Nailkeg—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 600 to 2,500 feet
Native plants: Deadline—Douglas fir, western hemlock, evergreen huckleberry, western swordfern, salal; Barkshanty—Douglas fir, western hemlock, evergreen huckleberry, western swordfern, cascade Oregongrape; Nailkeg—Douglas fir, western hemlock, cascade Oregongrape, salal, western prince's pine
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Irma soils in concave areas of backslopes
- Edson soils on stable benches
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline, Barkshanty, and Nailkeg—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Deadline and Nailkeg—low available water capacity
Deadline—susceptibility of the surface layer to water erosion, poor anchoring medium
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium

USFS Plant Association

Deadline and Barkshanty—TSHE-THPL (western hemlock-western redcedar)
Nailkeg—TSHE/GASH (western hemlock/salal)

72F—Deadline-Barkshanty-Nailkeg complex, 30 to 60 percent north slopes

Composition

Deadline soil and similar inclusions—35 percent
Barkshanty soil and similar inclusions—30 percent
Nailkeg soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Barkshanty—stable benches that have slopes of as much as 40 percent; Nailkeg—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Deadline—Douglas fir, tanoak, cascade Oregongrape, salal, Pacific rhododendron, evergreen huckleberry; Barkshanty—Douglas fir, tanoak, evergreen huckleberry, cascade Oregongrape, western rattlesnake plantain; Nailkeg—Douglas fir, tanoak, evergreen huckleberry, cascade Oregongrape, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Edson soils on stable benches
- Irma soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline, Barkshanty, and Nailkeg—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Deadline and Nailkeg—low available water capacity

Deadline—susceptibility of the surface layer to water erosion, poor anchoring medium
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium

USFS Plant Association

Deadline and Barkshanty—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Nailkeg—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

73F—Deadline-Barkshanty-Nailkeg complex, 30 to 60 percent south slopes

Composition

Deadline soil and similar inclusions—45 percent
Barkshanty soil and similar inclusions—25 percent
Nailkeg soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Barkshanty—stable benches that have slopes of as much as 40 percent; Nailkeg—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 3,000 feet
Native plants: Deadline—Douglas fir, tanoak, cascade Oregongrape, salal, western swordfern; Barkshanty—Douglas fir, tanoak, salal, evergreen huckleberry, common beargrass; Nailkeg—Douglas fir, tanoak, cascade Oregongrape, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Edson soils on stable benches
- Irma soils on footslopes and in concave areas of backslopes
- Agness soils in open areas of grassland in concave areas of backslopes
- Goldbeach soils in open areas of grassland on narrow summits, on shoulders, and in convex areas of backslopes

- Sixes soils in open areas of grassland in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline, Barkshanty, and Nailkeg—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Deadline and Nailkeg—low available water capacity
Deadline—susceptibility of the surface layer to water erosion, poor anchoring medium
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium

USFS Plant Association

Deadline and Nailkeg—LIDE3/GASH (tanoak/salal)
Barkshanty—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

74F—Deadline-Barkshanty-Rock outcrop complex, 30 to 60 percent north slopes

Composition

Deadline soil and similar inclusions—40 percent
Barkshanty soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Barkshanty—stable benches that have slopes of as much as 40 percent; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Deadline—Douglas fir, tanoak, Pacific madrone, cascade Oregongrape, salal, Pacific rhododendron, evergreen huckleberry; Barkshanty—Douglas fir, tanoak, Pacific madrone, cascade Oregongrape, salal, Pacific rhododendron, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Edson soils on stable benches
- Irma soils on footslopes and in concave areas of backslopes
- Nailkeg soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Barkshanty—slope, susceptibility of the surface layer to displacement and accelerated

erosion, susceptibility of the surface layer to compaction when wet, slope stability
Deadline—susceptibility of the surface layer to water erosion, poor anchoring medium, low available water capacity

USFS Plant Association

Deadline and Barkshanty—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)

75E—Deadline-Irma-Nailkeg complex, cool, 0 to 30 percent slopes

Composition

Deadline soil and similar inclusions—35 percent
Irma soil and similar inclusions—35 percent
Nailkeg soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—convex areas of summits; Irma—concave areas of summits; Nailkeg—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 800 to 2,500 feet
Native plants: Deadline—Douglas fir, western hemlock, salal, evergreen huckleberry, western swordfern; Irma—Douglas fir, western hemlock, western swordfern, evergreen huckleberry, Oregon oxalis; Nailkeg—Douglas fir, western hemlock, cascade Oregongrape, evergreen huckleberry, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Irma Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 14 inches—brown channery loam
14 to 42 inches—dark yellowish brown channery clay loam
42 to 55 inches—yellowish brown channery clay loam
55 to 72 inches—light yellowish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 8 inches
Hazard of erosion: Moderate

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Barkshanty soils in concave areas of summits
- Edson soils in concave areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Deadline, Irma, and Nailkeg—susceptibility of the

surface layer to compaction when wet, slope stability
Deadline and Nailkeg—low available water capacity
Deadline—susceptibility of the surface layer to water erosion, poor anchoring medium
Irma—susceptibility of the surface layer to displacement and accelerated erosion
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium

USFS Plant Association

Deadline and Irma—TSHE-THPL (western hemlock-western redcedar)
Nailkeg—TSHE/GASH (western hemlock/salal)

76E—Deadline-Irma-Nailkeg complex, 0 to 30 percent slopes

Composition

Deadline soil and similar inclusions—35 percent
Irma soil and similar inclusions—35 percent
Nailkeg soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—convex areas of summits; Irma—concave areas of summits; Nailkeg—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 1,000 to 2,500 feet
Native plants: Deadline—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, western swordfern, cascade Oregongrape; Irma—Douglas fir, tanoak, evergreen huckleberry, salal, common beargrass; Nailkeg—Douglas fir, tanoak, Pacific madrone, salal, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Irma Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 14 inches—brown channery loam
14 to 42 inches—dark yellowish brown channery clay loam
42 to 55 inches—yellowish brown channery clay loam
55 to 72 inches—light yellowish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 8 inches
Hazard of erosion: Moderate

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Barkshanty soils in nearly level areas
- Edson soils in nearly level and concave areas
- Agness soils in open areas of grassland in concave areas of summits
- Goldbeach soils in open areas of grassland in convex areas of summits and on shoulders and knobs
- Sixes soils in open areas of grassland in convex areas of summits

- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development

Major Management Limitations

Deadline, Irma, and Nailkeg—susceptibility of the surface layer to compaction when wet, slope stability
Deadline and Nailkeg—low available water capacity
Deadline—susceptibility of the surface layer to water erosion, poor anchoring medium
Irma—susceptibility of the surface layer to displacement and accelerated erosion
Nailkeg—susceptibility of the surface layer to water erosion, soil depth, poor anchoring medium

USFS Plant Association

Deadline—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Irma and Nailkeg—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

77G—Deadline-Nailkeg complex, cool, 60 to 90 percent north slopes

Composition

Deadline soil and similar inclusions—50 percent
Nailkeg soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 600 to 2,500 feet
Native plants: Deadline—Douglas fir, western hemlock, western redcedar, salal, cascade Oregongrape, common beargrass; Nailkeg—Douglas fir, western hemlock, salal, cascade Oregongrape, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Barkshanty soils on stable benches that have slopes of as much as 40 percent
- Irma soils on metastable slump benches that have slopes of as much as 30 percent
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, low available water capacity
Nailkeg—soil depth

USFS Plant Association

Deadline—TSHE-THPL (western hemlock-western redcedar)
Nailkeg—TSHE/GASH (western hemlock/salal)

78G—Deadline-Nailkeg complex, 60 to 90 percent north slopes

Composition

Deadline soil and similar inclusions—50 percent
Nailkeg soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Deadline—Douglas fir, tanoak, Pacific rhododendron, salal, evergreen huckleberry, common beargrass; Nailkeg—Douglas fir, tanoak, Pacific madrone, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Barkshanty soils on stable benches that have slopes of as much as 40 percent
- Irma soils on metastable slump benches that have slopes of as much as 30 percent
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, low available water capacity
Nailkeg—soil depth

USFS Plant Association

Deadline—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Nailkeg—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

79G—Deadline-Nailkeg complex, 60 to 90 percent south slopes

Composition

Deadline soil and similar inclusions—45 percent
Nailkeg soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite

Elevation: 200 to 3,000 feet
Native plants: Deadline—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Nailkeg—tanoak, Douglas fir, canyon live oak, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Barkshanty soils on stable benches that have slopes of as much as 40 percent
- Irma soils on metastable slump benches that have slopes of as much as 30 percent
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, south aspects, low available water capacity
Nailkeg—soil depth

USFS Plant Association

Deadline and Nailkeg—LIDE3/GASH (tanoak/salal)

80F—Deadline-Rock outcrop-Nailkeg complex, 30 to 60 percent south slopes

Composition

Deadline soil and similar inclusions—40 percent
Rock outcrop—30 percent
Nailkeg soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Rock outcrop—ridge crests, shoulders; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 3,000 feet
Native plants: Deadline—Douglas fir, tanoak, canyon live oak, salal, cascade Oregongrape; Nailkeg—Douglas fir, tanoak, canyon live oak, salal, hairy manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam

48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Irma soils on metastable slump benches that have slopes of as much as 30 percent
- Barkshanty soils on stable benches that have slopes of as much as 40 percent
- Orthents adjacent to areas of Rock outcrop
- Agness soils in open areas of grassland in concave areas of backslopes
- Goldbeach soils in open areas of grassland in convex areas of backslopes, on narrow summits, and on shoulders
- Sixes soils in open areas of grassland in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, south aspects, low available water capacity
Nailkeg—soil depth

USFS Plant Association

Deadline and Nailkeg—LIDE3/GASH (tanoak/salal)

81G—Deadline-Rock outcrop-Nailkeg complex, 60 to 90 percent north slopes

Composition

Deadline soil and similar inclusions—40 percent
Rock outcrop—30 percent
Nailkeg soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Rock outcrop—ridge crests, shoulders; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Deadline—Douglas fir, tanoak, Pacific rhododendron, Pacific madrone, salal, cascade Oregongrape; Nailkeg—Douglas fir, tanoak, evergreen huckleberry, cascade Oregongrape, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam

6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Barkshanty soils on stable benches that have slopes of as much as 40 percent
- Irma soils on metastable slump benches that have slopes of as much as 30 percent
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, low available water capacity
Nailkeg—soil depth

USFS Plant Association

Deadline—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Nailkeg—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

82G—Deadline-Rock outcrop-Nailkeg complex, 60 to 90 percent south slopes

Composition

Deadline soil and similar inclusions—35 percent
Rock outcrop—30 percent
Nailkeg soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Deadline—concave areas of backslopes; Rock outcrop—ridge crests, shoulders; Nailkeg—convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 3,000 feet
Native plants: Deadline—tanoak, Douglas fir, canyon live oak, salal, common beargrass; Nailkeg—tanoak, Douglas fir, canyon live oak, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Deadline Soil

Typical profile

0 to 8 inches—very dark grayish brown very channery loam
8 to 19 inches—brown very channery loam
19 to 33 inches—dark yellowish brown very channery clay loam
33 to 48 inches—light olive brown very channery clay loam
48 to 57 inches—light olive brown extremely channery loam
57 inches—schist

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Nailkeg Soil

Typical profile

0 to 6 inches—dark brown very channery loam
6 to 15 inches—dark yellowish brown very channery loam
15 to 27 inches—yellowish brown very channery clay loam
27 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Barkshanty soils on stable benches that have slopes of as much as 40 percent
- Irma soils on metastable slump benches that have slopes of as much as 30 percent

- Agness soils in open areas of grassland in concave areas of backslopes
- Goldbeach soils in open areas of grassland in convex areas of backslopes, on narrow summits, and on shoulders
- Sixes soils in open areas of grassland in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Deadline and Nailkeg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, south aspects, low available water capacity

Nailkeg—soil depth

USFS Plant Association

Deadline and Nailkeg—LIDE3/GASH (tanoak/salal)

83E—Desons-Watches-Calfranch complex, 0 to 30 percent slopes

Composition

Desons soil and similar inclusions—40 percent
Watches soil and similar inclusions—30 percent
Calfranch soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Desons—concave areas of summits; Watches—gently sloping areas of summits; Calfranch—convex areas of summits
Landform: Coastal hills and mountains
Parent material: Schist or phyllite
Elevation: 100 to 1,000 feet
Native plants: Desons—Douglas fir, tanoak, western hemlock, western swordfern, evergreen huckleberry; Watches—Douglas fir, grand fir, tanoak, western hemlock, evergreen huckleberry, western swordfern; Calfranch—Douglas fir, grand fir, tanoak, western hemlock, evergreen huckleberry, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Desons Soil

Typical profile

0 to 8 inches—reddish brown channery clay loam
8 to 46 inches—reddish brown channery silty clay
46 to 60 inches—yellowish red channery silty clay loam
60 to 72 inches—yellowish brown channery silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Watches Soil

Typical profile

0 to 16 inches—grayish brown channery loam
16 to 38 inches—light olive brown channery clay loam
38 to 49 inches—grayish brown channery clay loam
49 to 65 inches—grayish brown very channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate

Calfranch Soil

Typical profile

0 to 4 inches—brown very channery loam
4 to 12 inches—dark yellowish brown very channery loam
12 to 17 inches—light olive brown very channery loam
17 to 29 inches—light yellowish brown very channery sandy loam
29 to 42 inches—light yellowish brown extremely flaggy sandy loam
42 to 67 inches—pale olive extremely flaggy sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Capeblanco soils on shoulders and knobs and in convex areas of summits
- Rustybutte and Sebastian soils on narrow summits and shoulders and in convex areas of summits near fault zones
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development

Major Management Limitations

Desons, Watches, and Calfranch—slope, susceptibility of the surface layer to compaction when wet, slope stability
Desons—susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, high shrink-swell potential, slow permeability
Calfranch—poor anchoring medium, low available water capacity

USFS Plant Association

Desons, Watches, and Calfranch—LIDE3-TSHE (tanoak-western hemlock)

84G—Digger-Preacher-Bohannon complex, 60 to 90 percent north slopes

Composition

Digger soil and similar inclusions—35 percent
Preacher soil and similar inclusions—30 percent
Bohannon soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—convex areas of backslopes; Preacher—footslopes, concave areas of backslopes; Bohannon—concave areas of backslopes
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 2,000 feet
Native plants: Digger—Douglas fir, western hemlock, western redcedar, western swordfern, evergreen huckleberry; Preacher—Douglas fir, western hemlock, Port Orford cedar, western swordfern, Pacific rhododendron; Bohannon—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Preacher Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Very severe

Bohannon Soil

Typical profile

0 to 14 inches—dark brown gravelly loam
14 to 34 inches—dark yellowish brown gravelly loam
34 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils in concave areas of backslopes
- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes

- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger, Preacher, and Bohannon—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger and Bohannon—soil depth, low available water capacity

USFS Plant Association

Digger—TSHE-THPL (western hemlock-western redcedar)
Preacher—TSHE-CHLA (western hemlock-Port Orford cedar)
Bohannon—TSHE/GASH (western hemlock/salal)

85F—Digger-Preacher-Bohannon complex, warm, 30 to 60 percent south slopes

Composition

Digger soil and similar inclusions—40 percent
Preacher soil and similar inclusions—30 percent
Bohannon soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—convex areas of backslopes; Preacher—footslopes, concave areas of backslopes; Bohannon—concave areas of backslopes
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Preacher—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Bohannon—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Preacher Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Moderate or severe

Bohannon Soil

Typical profile

0 to 14 inches—dark brown gravelly loam
14 to 34 inches—dark yellowish brown gravelly loam
34 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Remote soils in concave areas of backslopes
- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger, Preacher, and Bohannon—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Digger and Bohannon—soil depth, low available water capacity

USFS Plant Association

Digger and Bohannon—LIDE3/GASH (tanoak/salal)
Preacher—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

86G—Digger-Preacher-Bohannon complex, warm, 60 to 90 percent north slopes

Composition

Digger soil and similar inclusions—35 percent
Preacher soil and similar inclusions—30 percent
Bohannon soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—convex areas of backslopes; Preacher—footslopes, concave areas of backslopes; Bohannon—concave areas of backslopes
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 2,500 feet
Native plants: Digger—Douglas fir, tanoak, evergreen huckleberry, salal, creambush oceanspray; Preacher—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Bohannon—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Preacher Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Very severe

Bohannon Soil

Typical profile

0 to 14 inches—dark brown gravelly loam
14 to 34 inches—dark yellowish brown gravelly loam
34 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils in concave areas of backslopes
- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger, Preacher, and Bohannon—slope, susceptibility of the surface layer to water erosion, susceptibility

of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger and Bohannon—soil depth, low available water capacity

USFS Plant Association

Digger—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Preacher—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Bohannon—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

87F—Digger-Remote-Rock outcrop complex, warm, 30 to 60 percent south slopes

Composition

Digger soil and similar inclusions—35 percent
Remote soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—convex areas of backslopes; Remote—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Sedimentary, metasedimentary, or metavolcanic rock
Elevation: 1,000 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, canyon live oak, salal, common beargrass; Remote—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Remote Soil

Typical profile

0 to 6 inches—very dark grayish brown gravelly loam
6 to 14 inches—dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Fritsland soils in concave areas of backslopes
- Bravo soils in convex areas of backslopes
- Grouslous soils on narrow summits and shoulders
- Soils that have serpentinitic mineralogy and are on backslopes near fault zones
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger and Remote—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Digger—soil depth, low available water capacity

USFS Plant Association

Digger and Remote—LIDE3/GASH (tanoak/salal)

88F—Digger-Remote-Umpcoos complex, warm, 30 to 60 percent south slopes

Composition

Digger soil and similar inclusions—35 percent
Remote soil and similar inclusions—30 percent
Umpcoos soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—convex areas of

backslopes; Remote—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Remote—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Umpcoos—tanoak, Douglas fir, salal, cascade Oregongrape, western fescue
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Remote Soil

Typical profile

0 to 6 inches—very dark grayish brown very gravelly loam
6 to 14 inches—dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Blachly soils on slump benches
- Preacher and Bohannon soils in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Dystrochrepts and Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger, Remote, and Umpcoos—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Digger and Umpcoos—soil depth, low available water capacity

USFS Plant Association

Digger, Remote, and Umpcoos—LIDE3/GASH (tanoak/salal)

89E—Digger-Remote complex, 3 to 30 percent slopes

Composition

Digger soil and similar inclusions—45 percent
Remote soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Digger—convex areas of summits; Remote—gently sloping areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Digger—Douglas fir, western hemlock, western redcedar, western swordfern, evergreen huckleberry; Remote—Douglas fir, western

hemlock, cascade Oregongrape, salal, Pacific rhododendron

Climatic factors:

Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Umpcoos soils on shoulders and knobs and in convex areas of summits
- Preacher and Blachly soils in concave areas of summits
- Bohannon soils in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger and Remote—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability

Digger—susceptibility of the surface layer to water erosion, soil depth, low available water capacity

USFS Plant Association

Digger—TSHE-THPL (western hemlock-western redcedar)
Remote—TSHE/GASH (western hemlock/salal)

90E—Digger-Remote complex, warm, 3 to 30 percent slopes

Composition

Digger soil and similar inclusions—45 percent
Remote soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Digger—convex areas of summits; Remote—gently sloping areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Digger—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Remote—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:

Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam

14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Umpcoos soils on shoulders and knobs and in convex areas of summits
- Preacher and Blachly soils in concave areas of summits
- Bohannon soils in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger and Remote—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger—susceptibility of the surface layer to water erosion, soil depth, low available water capacity

USFS Plant Association

Digger and Remote—LIDE3/GASH (tanoak/salal)

91F—Digger-Umpcoos-Dystrochrepts complex, warm, 30 to 60 percent south slopes

Composition

Digger soil and similar inclusions—35 percent
Umpcoos soil and similar inclusions—30 percent
Dystrochrepts and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes; Dystrochrepts—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Umpcoos—tanoak, Douglas fir, salal, cascade Oregongrape, western fescue; Dystrochrepts—Douglas fir, tanoak, canyon live oak, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 16 inches—dark brown to dark yellowish brown very gravelly loam
16 to 23 inches—dark yellowish brown very cobbly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely gravelly loam to yellowish brown very cobbly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 24 to 60 inches or more
Drainage class: Well drained to excessively drained

Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Severe or very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger, Umpcoos, and Dystrochrepts—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Digger and Umpcoos—LIDE3/GASH (tanoak/salal)

91G—Digger-Umpcoos-Dystrochrepts complex, warm, 60 to 90 percent south slopes

Composition

Digger soil and similar inclusions—35 percent
Umpcoos soil and similar inclusions—30 percent
Dystrochrepts and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes; Dystrochrepts—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, canyon live oak, salal, common beargrass; Umpcoos—tanoak, Douglas fir, salal, cascade Oregongrape, western fescue; Dystrochrepts—tanoak, canyon live oak, Douglas fir, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 16 inches—dark brown to dark yellowish brown very gravelly loam
16 to 23 inches—dark yellowish brown very cobbly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely gravelly loam to yellowish brown very cobbly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 24 to 60 inches or more
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches

- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger, Umpcoos, and Dystrochrepts—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Digger and Umpcoos—LIDE3/GASH (tanoak/salal)

92G—Digger-Umpcoos-Rock outcrop complex, warm, 60 to 90 percent south slopes

Composition

Digger soil and similar inclusions—35 percent
Umpcoos soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Digger—concave areas of backslopes; Umpcoos—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Umpcoos—tanoak, Douglas fir, salal, cascade Oregongrape, western fescue
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils in concave areas of backslopes
- Bohannon soils on footslopes and in concave areas of backslopes
- Preacher soils on stable benches
- Blachly soils on slump benches
- Orthents and Dystrochrepts adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger and Umpcoos—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Digger and Umpcoos—LIDE3/GASH (tanoak/salal)

93G—Digger-Umpcoos-Rock outcrop complex, warm, 60 to 90 percent south slopes, stony

Composition

Digger soil and similar inclusions—35 percent
Umpcoos soil and similar inclusions—25 percent

Rock outcrop—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Digger—concave areas of backslopes; Umpcoos—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or igneous rock
Elevation: 1,000 to 3,000 feet
Native plants: Digger—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Umpcoos—tanoak, Douglas fir, salal, cascade Oregongrape, western fescue
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Digger Soil

Typical profile

0 to 3 inches—dark brown stony loam
3 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown stony loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Dystrochrepts and Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Digger and Umpcoos—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, stones on the surface, low available water capacity

USFS Plant Association

Digger and Umpcoos—LIDE3/GASH (tanoak/salal)

94F—Dubakella-Cornutt-Pearsoll complex, 20 to 60 percent south slopes

Composition

Dubakella soil and similar inclusions—40 percent
Cornutt soil and similar inclusions—30 percent
Pearsoll soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dubakella—convex areas of backslopes; Cornutt—concave areas of backslopes; Pearsoll—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 1,800 feet
Native plants: Dubakella—Jeffrey pine, Douglas fir, huckleberry oak, whiteleaf manzanita, bearded fescue; Cornutt—Douglas fir, tanoak, salal, cascade Oregongrape, poison oak; Pearsoll—Jeffrey pine, whiteleaf manzanita, wedgeleaf ceanothus, Sandberg bluegrass, red fescue
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Dubakella Soil

Typical profile

0 to 13 inches—dark reddish brown to reddish brown very cobbly clay loam

13 to 28 inches—reddish brown very cobbly clay
28 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 2 inches
Hazard of erosion: Severe
Shrink-swell potential: High

Cornutt Soil

Typical profile

0 to 11 inches—dark brown to dark reddish brown cobbly clay loam
11 to 27 inches—reddish brown to yellowish red gravelly clay
27 to 52 inches—yellowish red cobbly clay
52 inches—weathered, partially serpentinized metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Severe
Shrink-swell potential: High

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Dubakella, Cornutt, and Pearsoll—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, south aspects, droughtiness in summer, high shrink-swell potential, slow permeability
Dubakella and Pearsoll—soil depth, low available water capacity

USFS Plant Association

Dubakella—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Cornutt—LIDE3/GASH-BENE (tanoak/salal-dwarf Oregongrape)
Pearsoll—PIJE/Grass (Jeffrey pine/grass)

95G—Dulandy-Bosland-Floras complex, 60 to 90 percent north slopes

Composition

Dulandy soil and similar inclusions—35 percent
Bosland soil and similar inclusions—30 percent
Floras soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dulandy—convex areas of backslopes; Bosland—concave areas of backslopes; Floras—concave areas of footslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Dulandy—Douglas fir, redwood, tanoak, Pacific rhododendron, salmonberry; Bosland—Douglas fir, redwood, California laurel, evergreen huckleberry, western swordfern; Floras—Douglas fir, redwood, California laurel, evergreen huckleberry, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 270 days

Dulandy Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 28 inches—brown gravelly clay loam
28 to 37 inches—strong brown very gravelly clay loam
37 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Bosland Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 26 inches—reddish brown silty clay loam
26 to 39 inches—brown gravelly silty clay loam
39 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Very severe

Floras Soil

Typical profile

0 to 9 inches—dark reddish brown silty clay loam
9 to 18 inches—reddish brown silty clay loam
18 to 35 inches—reddish brown gravelly silty clay loam
35 to 48 inches—brown gravelly silty clay loam
48 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Loeb and Macklyn soils that are on stable benches and have slopes of as much as 30 percent
- Guerin soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Dulandy, Bosland, and Floras—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, salt spray
Dulandy and Bosland—soil depth
Dulandy—low available water capacity
Floras—clayey textures

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Dulandy, Bosland, and Floras—LIDE3-SESE2 (tanoak-coast redwood)

96G—Dulandy-Bosland-Floras complex, 60 to 90 percent south slopes

Composition

Dulandy soil and similar inclusions—35 percent
Bosland soil and similar inclusions—30 percent
Floras soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dulandy—convex areas of backslopes; Bosland—concave areas of backslopes; Floras—footslopes, concave areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Dulandy—Douglas fir, redwood, tanoak, salal, common beargrass; Bosland—Douglas fir, redwood, tanoak, evergreen huckleberry, salal; Floras—Douglas fir, redwood, tanoak, cascade Oregongrape, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 300 days

Dulandy Soil

Typical profile

0 to 11 inches—dark brown loam
11 to 28 inches—brown gravelly clay loam
28 to 37 inches—strong brown very gravelly clay loam
37 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Bosland Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 26 inches—reddish brown silty clay loam
26 to 39 inches—brown gravelly silty clay loam
39 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Very severe

Floras Soil

Typical profile

0 to 9 inches—dark reddish brown silty clay loam
9 to 18 inches—reddish brown silty clay loam
18 to 35 inches—reddish brown gravelly silty clay loam
35 to 48 inches—brown gravelly silty clay loam
48 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Loeb and Macklyn soils that are on stable benches and have slopes of as much as 30 percent
- Guerin soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Dulandy, Bosland, and Floras—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, salt spray
Dulandy and Bosland—soil depth
Dulandy—low available water capacity
Floras—clayey textures

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Dulandy, Bosland, and Floras—LIDE3-SESE2 (tanoak-coast redwood)

97E—Dulandy-Guerin-Bosland complex, 0 to 30 percent slopes

Composition

Dulandy soil and similar inclusions—35 percent
Guerin soil and similar inclusions—30 percent
Bosland soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dulandy—convex areas of summits; Guerin—shoulders, knobs, convex areas of summits; Bosland—gently sloping areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Dulandy—Douglas fir, redwood, evergreen huckleberry, California laurel, salmonberry; Guerin—Douglas fir, tanoak, redwood, salal, red huckleberry; Bosland—Douglas fir, redwood, California laurel, Pacific rhododendron, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 270 days

Dulandy Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 28 inches—brown gravelly clay loam
28 to 37 inches—strong brown very gravelly clay loam
37 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Guerin Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam

4 to 9 inches—dark brown very cobbly loam
9 to 16 inches—brown extremely cobbly loam
16 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Moderate or severe

Bosland Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 26 inches—reddish brown silty clay loam
26 to 39 inches—brown gravelly silty clay loam
39 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Loeb soils in concave areas of summits
- Macklyn soils in convex areas of summits
- Vondergreen soils in concave areas of summits
- Rock outcrop on ridge crests and shoulders

Major Uses

Timber production, homesite development

Major Management Limitations

Dulandy, Guerin, and Bosland—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, salt spray
Dulandy and Guerin—low available water capacity

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Delandy, Guerin, and Bosland—LIDE3-SESE2 (tanoak-coast redwood)

98G—Dulandy-Guerin-Rock outcrop complex, 60 to 90 percent south slopes

Composition

Dulandy soil and similar inclusions—40 percent
Guerin soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dulandy—concave areas of backslopes; Guerin—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Dulandy—Douglas fir, redwood, tanoak, salal, common beargrass; Guerin—tanoak, Douglas fir, salal, common beargrass, trailing blackberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 300 days

Dulandy Soil

Typical profile

0 to 11 inches—dark brown loam
11 to 28 inches—brown gravelly clay loam
28 to 37 inches—strong brown very gravelly clay loam
37 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Guerin Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam
4 to 9 inches—dark brown very cobbly loam
9 to 16 inches—brown extremely cobbly loam
16 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Orthents adjacent to areas of Rock outcrop
- Floras soils on footslopes and in concave areas of backslopes

- Bosland soils in convex areas of backslopes
- Loeb and Macklyn soils that are on stable benches and have slopes of as much as 30 percent
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Dulandy and Guerin—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity, salt spray

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Dulandy and Guerin—LIDE3-SESE2 (tanoak-coast redwood)

99E—Dumont-Acker-Kanid complex, 0 to 30 percent slopes

Composition

Dumont soil and similar inclusions—40 percent
Acker soil and similar inclusions—30 percent
Kanid soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dumont—concave areas of summits; Acker—gently sloping areas of summits; Kanid—convex areas of summits
Landform: Mountains
Parent material: Mudstone and metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Douglas fir, sugar pine, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Dumont Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 61 inches—brown to yellowish red silty clay
61 to 99 inches—yellowish red to yellowish brown clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 15 inches
Hazard of erosion: Moderate

Acker Soil

Typical profile

0 to 9 inches—dark brown to dark yellowish brown gravelly loam
9 to 68 inches—strong brown gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Norling soils in convex areas of summits
- Atring soils on shoulders and knobs and in convex areas of summits
- Vermisa soils on narrow summits and shoulders and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Dumont, Acker, and Kanid—susceptibility of the surface layer to compaction when wet, droughtiness in summer
Dumont and Acker—susceptibility of the surface layer to displacement and accelerated erosion
Dumont—clayey textures
Kanid—low available water capacity

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Dumont, Acker, and Kanid—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

100G—Dystrochrepts-Rock outcrop-Rubble land complex, 60 to 100 percent south slopes

Composition

Dystrochrepts and similar inclusions—35 percent
Rock outcrop—30 percent
Rubble land—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dystrochrepts—convex to concave areas of backslopes; Rock outcrop—ridge crests, shoulders; Rubble land—adjacent to areas of Rock outcrop
Landform: Mountains
Parent material: Intrusive igneous rock
Elevation: 2,600 to 4,400 feet
Native plants: Dystrochrepts—Douglas fir, salal, golden chinkapin, canyon live oak, Sadler oak
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely stony loam to yellowish brown very gravelly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Bobsgarden soils on footslopes and in concave areas of backslopes
- Rilea soils in convex areas of backslopes
- Yorel soils in convex areas of backslopes
- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Dystrochrepts—slope, susceptibility of the surface layer to water erosion, stones on the surface, duration of snow cover, short growing season, frost heave, soil depth, south aspects, droughtiness in summer, low available water capacity

101F—Dystrochrepts-Rubble land-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Dystrochrepts and similar inclusions—40 percent
Rubble land—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Dystrochrepts—convex to concave areas of backslopes; Rubble land—adjacent to areas of Rock outcrop; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Intrusive igneous rock
Elevation: 2,600 to 4,400 feet
Native plants: Dystrochrepts—Douglas fir, canyon live oak, salal, Sadler oak, cascade Oregongrape
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely stony loam to yellowish brown very gravelly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid

Available water capacity: About 1 to 4 inches
Hazard of erosion: Severe or very severe

Contrasting Inclusions

- Bobsgarden soils on footslopes and in concave areas of backslopes
- Rilea soils in convex areas of backslopes
- Yorel soils in convex areas of backslopes
- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Dystrochrepts—slope, susceptibility of the surface layer to water erosion, stones on the surface, duration of snow cover, short growing season, frost heave, soil depth, south aspects, droughtiness in summer, low available water capacity

102D—Edson-Barkshanty complex, cool, 0 to 15 percent slopes

Composition

Edson soil and similar inclusions—55 percent
Barkshanty soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Edson—concave areas of summits; Barkshanty—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 1,000 to 2,600 feet
Native plants: Edson—Douglas fir, western hemlock, tanoak, salal, western swordfern, Pacific rhododendron; Barkshanty—Douglas fir, western hemlock, Pacific rhododendron, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Edson Soil

Typical profile

0 to 13 inches—reddish brown channery clay loam
13 to 21 inches—reddish brown channery silty clay
21 to 72 inches—yellowish red channery silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 9 inches
Hazard of erosion: Slight
Shrink-swell potential: High

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Deadline soils in concave areas of backslopes
- Nailkeg soils on shoulders and knobs and in convex areas of summits
- Irma soils on footslopes and in concave areas of summits
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Edson and Barkshanty—susceptibility of the surface layer to compaction when wet
Edson—clayey textures, high shrink-swell potential, slow permeability
Barkshanty—susceptibility of the surface layer to displacement and accelerated erosion

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Edson—LIDE3-TSHE (tanoak-western hemlock)
Barkshanty—TSHE-THPL (western hemlock-western redcedar)

102E—Edson-Barkshanty complex, cool, 15 to 30 percent slopes

Composition

Edson soil and similar inclusions—50 percent
Barkshanty soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Edson—concave areas of summits; Barkshanty—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 1,000 to 2,600 feet
Native plants: Edson—Douglas fir, western hemlock, tanoak, Pacific rhododendron, cascade Oregongrape, western swordfern; Barkshanty—Douglas fir, western hemlock, evergreen huckleberry, western swordfern, Pacific rhododendron
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Edson Soil

Typical profile

0 to 13 inches—reddish brown channery clay loam
13 to 21 inches—reddish brown channery silty clay
21 to 72 inches—yellowish red channery silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Deadline soils in concave areas of backslopes
- Nailkeg soils on shoulders and knobs and in convex areas of summits
- Irma soils on footslopes and in concave areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Edson and Barkshanty—slope, susceptibility of the surface layer to compaction when wet, slope stability
Edson—clayey textures, high shrink-swell potential, slow permeability
Barkshanty—susceptibility of the surface layer to displacement and accelerated erosion

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Edson—LIDE3-TSHE (tanoak-western hemlock)
Barkshanty—TSHE-THPL (western hemlock-western redcedar)

103D—Edson-Barkshanty complex, 0 to 15 percent slopes

Composition

Edson soil and similar inclusions—55 percent
Barkshanty soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Edson—concave areas of summits; Barkshanty—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Edson—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Barkshanty—Douglas fir, tanoak, evergreen huckleberry, western swordfern, Pacific rhododendron

Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Edson Soil

Typical profile

0 to 13 inches—reddish brown channery clay loam
13 to 21 inches—reddish brown channery silty clay
21 to 72 inches—yellowish red channery silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Slight
Shrink-swell potential: High

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Deadline soils in concave areas of backslopes
- Nailkeg soils on shoulders and knobs and in convex areas of summits
- Irma soils on footslopes and in concave areas of summits
- Agness soils in open areas of grassland in areas concave areas
- Goldbeach soils in open areas of grassland in convex areas of summits, on shoulders, and on knobs
- Sixes soils in open areas of grassland in convex areas of summits
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Edson and Barkshanty—susceptibility of the surface layer to compaction when wet
Edson—clayey textures, high shrink-swell potential, slow permeability
Barkshanty—susceptibility of the surface layer to displacement and accelerated erosion

USFS Plant Association

Edson and Barkshanty—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)

103E—Edson-Barkshanty complex, 15 to 30 percent slopes

Composition

Edson soil and similar inclusions—50 percent
Barkshanty soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Edson—concave areas of summits; Barkshanty—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 200 to 2,500 feet
Native plants: Edson—Douglas fir, tanoak, evergreen huckleberry, salal, Pacific rhododendron; Barkshanty—Douglas fir, tanoak, evergreen huckleberry, western swordfern, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Edson Soil

Typical profile

0 to 13 inches—reddish brown channery clay loam
13 to 21 inches—reddish brown channery silty clay
21 to 72 inches—yellowish red channery silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained

Permeability: Slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Barkshanty Soil

Typical profile

0 to 5 inches—dark brown channery loam
5 to 13 inches—dark brown channery clay loam
13 to 20 inches—strong brown very channery clay loam
20 to 39 inches—strong brown very flaggy clay loam
39 to 66 inches—strong brown extremely flaggy clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Deadline soils in concave areas of backslopes
- Nailkeg soils on shoulders and knobs and in convex areas of summits
- Irma soils on footslopes and in concave areas of summits
- Agness soils in open areas of grassland in concave areas of summits
- Goldbeach soils in open areas of grassland in convex areas of summits, on shoulders, and on knobs
- Sixes soils in open areas of grassland in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Edson and Barkshanty—slope, susceptibility of the surface layer to compaction when wet, slope stability
Edson—clayey textures, high shrink-swell potential, slow permeability
Barkshanty—susceptibility of the surface layer to displacement and accelerated erosion

USFS Plant Association

Edson and Barkshanty—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)

104E—Eightlar-Gravecreek-Pearsoll complex, 3 to 30 percent slopes

Composition

Eightlar soil and similar inclusions—35 percent
Gravecreek soil and similar inclusions—30 percent
Pearsoll soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Eightlar—concave areas of summits; Gravecreek—convex areas of summits; Pearsoll—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,900 feet
Native plants: Eightlar—Jeffrey pine, Douglas fir, incense cedar, huckleberry oak, bearded fescue; Gravecreek—Jeffrey pine, Douglas fir, sugar pine, huckleberry oak, boxleaf silktassel; Pearsoll—Jeffrey pine, incense cedar, squawcarpet, whiteleaf manzanita, Lemmon needlegrass
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Eightlar Soil

Typical profile

0 to 13 inches—dark reddish brown very stony clay loam
13 to 65 inches—dark reddish brown extremely stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Very slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam

4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Eightlar, Gravecreek, and Pearsoll—toxicity, cobbles and stones on the surface, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, low available water capacity
Eightlar and Pearsoll—clayey textures, high shrink-swell potential, very slow and slow permeability
Gravecreek and Pearsoll—soil depth

USFS Plant Association

Eightlar and Gravecreek—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Pearsoll—PIJE/Grass (Jeffrey pine/grass)

105F—Eightlar-Gravecreek-Pearsoll complex, 30 to 60 percent north slopes

Composition

Eightlar soil and similar inclusions—40 percent
Gravecreek soil and similar inclusions—30 percent
Pearsoll soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Eightlar—concave areas of backslopes; Gravecreek—convex areas of backslopes; Pearsoll—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,500 feet
Native plants: Eightlar—Jeffrey pine, Douglas fir, incense cedar, huckleberry oak, bearded fescue; Gravecreek—Jeffrey pine, Douglas fir, sugar pine, huckleberry oak, boxleaf silktassel; Pearsoll—Jeffrey pine, incense cedar, squawcarpet, whiteleaf manzanita, Lemmon needlegrass, dwarf ceanothus
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Eightlar Soil

Typical profile

0 to 13 inches—dark reddish brown very stony clay loam
13 to 65 inches—dark reddish brown extremely stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Very slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Eightlar, Gravecreek, and Pearsoll—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, low available water capacity
Eightlar and Pearsoll—clayey textures, high shrink-swell potential, very slow and slow permeability
Gravecreek and Pearsoll—soil depth

USFS Plant Association

Eightlar and Gravecreek—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Pearsoll—PIJE/CEPU (Jeffrey pine/dwarf ceanothus)

106B—Eilertsen-Zyzzug complex, 0 to 7 percent slopes

Composition

Eilertsen soil and similar inclusions—60 percent
Zyzzug soil and similar inclusions—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Eilertsen—nearly level areas; Zyzzug—concave areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: Eilertsen—Douglas fir, California laurel, western hemlock, tanoak, western swordfern, evergreen huckleberry; Zyzzug—rushes, sedges, skunkcabbage, Douglas iris, western brackenfern
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—51 degrees F
Frost-free period—180 to 220 days

Eilertsen Soil

Typical profile

0 to 17 inches—very dark grayish brown and dark brown silt loam
17 to 42 inches—dark yellowish brown silty clay loam
42 to 56 inches—mottled, brown loam
56 to 72 inches—mottled, yellowish brown fine sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 12 inches
Hazard of erosion: Slight

Zyzzug Soil

Typical profile

0 to 17 inches—mottled, very dark grayish brown silt loam
17 to 25 inches—gleyed and mottled, dark grayish brown silty clay loam
25 to 60 inches—mottled, yellowish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained

Permeability: Moderately slow
Available water capacity: About 11 inches
Frequency of flooding: Rare
Depth to water table: At the surface to a depth of 1.5 feet below the surface in November through April
Hazard of erosion: Slight, except during rare periods of flooding
Shrink-swell potential: High

Contrasting Inclusions

- Kirkendall and Quosatana soils on flood plains
- Chismore soils on adjacent high stream terraces
- Meda soils on alluvial fans
- Blachly and Orford soils in concave areas of adjacent mountain toeslopes

Major Uses

Eilertsen and Zyzzug—livestock grazing, hayland
Eilertsen—timber production

Major Management Limitations

Eilertsen and Zyzzug—susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity
Zyzzug—rare flooding, high water table

USFS Plant Association

Eilertsen—TSHE-UMCA (western hemlock-California laurel)

107C—Ekoms loam, 0 to 12 percent slopes

Composition

Ekoms soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level to strongly sloping areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 50 to 200 feet
Native plants: Douglas fir, western hemlock, California laurel, tanoak, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 5 inches—very dark grayish brown loam
5 to 12 inches—dark brown clay loam
12 to 44 inches—dark yellowish brown gravelly clay loam
44 to 60 inches—yellowish brown gravelly loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Logsden soils in nearly level areas of adjacent low stream terraces
- Euchre soils in concave areas of adjacent low stream terraces
- Quillamook soils in nearly level and concave areas of stream terraces
- Bullards, Ferrelo, and Gearhart soils on side slopes of relict sand dunes that mantle adjacent marine terraces
- Hebo soils in depressions and drainageways of adjacent marine terraces

Major Uses

Livestock grazing, homesite development, timber production, hayland

Major Management Limitations

Slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer, high humidity

USFS Plant Association

TSHE-UMCA (western hemlock-California laurel)

108F—Etelka-Remote-Whobrey complex, 30 to 60 percent north slopes

Composition

Etelka soil and similar inclusions—35 percent
Remote soil and similar inclusions—30 percent
Whobrey soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Etelka—concave areas of backslopes; Remote—convex areas of backslopes; Whobrey—footslopes, concave areas of backslopes

Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 500 to 2,500 feet
Native plants: Etelka—Douglas fir, tanoak, Port Orford cedar, red huckleberry, western swordfern; Remote—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Whobrey—Douglas fir, Port Orford cedar, tanoak, salal, evergreen huckleberry, trailing blackberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Etelka Soil

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 20 inches—dark brown silty clay loam
20 to 30 inches—dark brown silty clay
30 to 41 inches—mottled, olive brown silty clay
41 to 60 inches—mottled, light olive brown clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in December through March
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Whobrey Soil

Typical profile

0 to 12 inches—very dark grayish brown to dark grayish brown silt loam
12 to 22 inches—mottled, brown silty clay loam
22 to 31 inches—mottled, very dark gray clay
31 to 66 inches—very dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1.5 to 2.5 feet below the surface in December through March
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Contrasting Inclusions

- Digger soils on shoulders and knobs and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Umpcoos soils adjacent to areas of Rock outcrop

Major Uses

Timber production, livestock grazing

Major Management Limitations

Etelka, Remote, and Whobrey—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Etelka and Whobrey—high water table, limited rooting depth

USFS Plant Association

Etelka and Whobrey—LIDE3-CHLA (tanoak-Port Orford cedar)
Remote—TSHE/GASH (western hemlock/salal)

109F—Etelka-Remote-Whobrey complex, 30 to 60 percent south slopes

Composition

Etelka soil and similar inclusions—35 percent
Remote soil and similar inclusions—30 percent
Whobrey soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Etelka—concave areas of backslopes; Remote—convex areas of backslopes; Whobrey—footslopes, concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 500 to 2,500 feet
Native plants: Etelka—Douglas fir, tanoak, salal, western swordfern, red huckleberry;

Remote—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Whobrey—Douglas fir, tanoak, salal, common snowberry, dwarf Oregongrape, trailing blackberry

Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Etelka Soil

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 20 inches—dark brown silty clay loam
20 to 30 inches—dark brown silty clay
30 to 41 inches—mottled, olive brown silty clay
41 to 60 inches—mottled, light olive brown clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in December through March
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Whobrey Soil

Typical profile

0 to 12 inches—very dark grayish brown to dark grayish brown silt loam
12 to 22 inches—mottled, brown silty clay loam
22 to 31 inches—mottled, very dark gray clay
31 to 66 inches—very dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1.5 to 2.5 feet below the surface in December through March
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Contrasting Inclusions

- Digger soils on shoulders and knobs and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Umpcoos soils adjacent to areas of Rock outcrop

Major Uses

Livestock grazing, timber production

Major Management Limitations

Etelka, Remote, and Whobrey—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Etelka and Whobrey—high water table, limited rooting depth
Remote—low available water capacity

USFS Plant Association

Etelka and Remote—LIDE3/GASH (tanoak/salal)
Whobrey—LIDE3/GASH-BENE (tanoak/salal-dwarf Oregongrape)

110D—Etelka-Whobrey-Remote complex, 7 to 15 percent slopes

Composition

Etelka soil and similar inclusions—40 percent
Whobrey soil and similar inclusions—30 percent
Remote soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Etelka—convex areas of summits; Whobrey—concave areas of summits; Remote—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 500 to 2,500 feet
Native plants: Etelka—Douglas fir, tanoak, Port Orford cedar, red huckleberry, salmonberry; Whobrey—Douglas fir, tanoak, Port Orford cedar, common snowberry, trailing blackberry, white hawkweed;

Remote—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Etelka Soil

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 20 inches—dark brown silty clay loam
20 to 30 inches—dark brown silty clay
30 to 41 inches—mottled, olive brown silty clay
41 to 60 inches—mottled, light olive brown clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in December through March
Hazard of erosion: Slight
Shrink-swell potential: High

Whobrey Soil

Typical profile

0 to 12 inches—very dark grayish brown to dark grayish brown silt loam
12 to 22 inches—mottled, brown silty clay loam
22 to 31 inches—mottled, very dark gray clay
31 to 66 inches—very dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1.5 to 2.5 feet below the surface in December through March
Hazard of erosion: Slight
Shrink-swell potential: High

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Digger soils on shoulders and knobs and in convex areas of summits
- Umpcoos soils adjacent to areas of Rock outcrop
- Rock outcrop on ridge crests and shoulders

Major Uses

Etelka—livestock grazing, homesite development, timber production
Whobrey—livestock grazing, timber production
Remote—timber production, homesite development, livestock grazing

Major Management Limitations

Etelka, Whobrey, and Remote—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Etelka and Whobrey—clayey textures, high water table, limited rooting depth, high shrink-swell potential, slow and very slow permeability

USFS Plant Association

Etelka and Whobrey—LIDE3-CHLA (tanoak-Port Orford cedar)
Remote—LIDE3/GASH (tanoak/salal)

110E—Etelka-Whobrey-Remote complex, 15 to 30 percent slopes

Composition

Etelka soil and similar inclusions—40 percent
Whobrey soil and similar inclusions—30 percent
Remote soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Etelka—convex areas of summits; Whobrey—concave areas of summits; Remote—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 500 to 2,500 feet
Native plants: Etelka—Douglas fir, tanoak, Port Orford cedar, western swordfern, red huckleberry; Whobrey—Douglas fir, tanoak, Port Orford cedar, common snowberry, trailing blackberry, white

hawkweed; Remote—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape

Climatic factors:

Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Etelka Soil

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 20 inches—dark brown silty clay loam
20 to 30 inches—dark brown silty clay
30 to 41 inches—mottled, olive brown silty clay
41 to 60 inches—mottled, light olive brown clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in December through March
Hazard of erosion: Moderate
Shrink-swell potential: High

Whobrey Soil

Typical profile

0 to 12 inches—very dark grayish brown to dark grayish brown silt loam
12 to 22 inches—mottled, brown silty clay loam
22 to 31 inches—mottled, very dark gray clay
31 to 66 inches—very dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1.5 to 2.5 feet below the surface in December through March
Hazard of erosion: Moderate
Shrink-swell potential: High

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Digger soils on shoulders and knobs and in convex areas of summits
- Umpcoos soils adjacent to areas of Rock outcrop
- Rock outcrop on ridge crests and shoulders

Major Uses

Etelka—livestock grazing, homesite development, timber production
Whobrey—livestock grazing, timber production
Remote—timber production, homesite development, livestock grazing

Major Management Limitations

Etelka, Whobrey, and Remote—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Etelka and Whobrey—clayey textures, high water table, limited rooting depth, high shrink-swell potential, slow and very slow permeability

USFS Plant Association

Etelka and Whobrey—LIDE3-CHLA (tanoak-Port Orford cedar)
Remote—LIDE3/GASH (tanoak/salal)

111A—Ettersburg loam, 0 to 3 percent slopes

Composition

Ettersburg soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 40 to 100 feet
Native plants: Douglas fir, tanoak, California laurel, redwood, western swordfern, salmonberry
Climatic factors:

Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 17 inches—very dark grayish brown and dark brown loam

17 to 43 inches—dark brown and dark yellowish brown gravelly clay loam
43 to 60 inches—grayish brown very gravelly fine sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 8 inches
Frequency of flooding: Rare
Hazard of erosion: Slight, except during rare periods of flooding

Contrasting Inclusions

- Pistolriver soils on relict gravel bars of flood plains
- Bayside soils in small depressional areas or narrow drainageways of flood plains
- Bigriver soils in gently sloping areas and convex areas of flood plains
- Riverwash on flood plains

Major Uses

Livestock grazing, hayland, homesite development, cropland

Major Management Limitations

Rare flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

USFS Plant Association

LIDE3-UMCA (tanoak-California laurel)

112A—Evans silt loam, 0 to 3 percent slopes

Composition

Evans soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level to slightly convex areas
Landform: Flood plains
Parent material: Alluvium
Elevation: 100 to 200 feet
Native plants: Himalaya blackberry, bigleaf maple, Oregon white oak, common snowberry, western fescue
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 39 inches—very dark grayish brown and dark brown silt loam
39 to 60 inches—dark grayish brown very fine sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 11 inches
Frequency of flooding: Occasional in December through March
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Clawson soils in depressions and drainageways of low stream terraces
- Takilma soils in gently sloping, convex areas of low stream terraces
- Riverwash on flood plains
- Soils on relict gravel bars that are subject to frequent periods of flooding

Major Use

Livestock grazing

Major Management Limitations

Flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer

113F—Fantz-Knapke complex, 30 to 60 percent south slopes

Composition

Fantz soil and similar inclusions—45 percent
Knapke soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Fantz—convex areas of backslopes; Knapke—concave areas of backslopes
Landform: Mountains
Parent material: Gabbro
Elevation: 200 to 1,800 feet
Native plants: Fantz—Douglas fir, ponderosa pine, California black oak, poison oak, California

honeysuckle; Knapke—Douglas fir, tanoak, sugar pine, poison oak, western brackenfern
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Fantz Soil

Typical profile

0 to 16 inches—very dark grayish brown to dark brown very gravelly loam
16 to 32 inches—dark brown very cobbly loam
32 inches—metagabbro

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Knapke Soil

Typical profile

0 to 17 inches—very dark grayish brown to dark brown extremely gravelly loam
17 to 65 inches—brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Dubakella and Pearsoll soils in convex areas of backslopes, shoulders, and knobs
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Fantz and Knapke—slope, susceptibility of the surface layer to water erosion, slope stability, south aspects, droughtiness in summer, low available water capacity
Fantz—susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Fantz—PSME/RHDI (Douglas fir/poison oak)
Knapke—PSME-LIDE3/RHDI (Douglas fir-tanoak/poison oak)

113G—Fantz-Knapke complex, 60 to 90 percent south slopes

Composition

Fantz soil and similar inclusions—45 percent
Knapke soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Fantz—convex areas of backslopes; Knapke—concave areas of backslopes
Landform: Mountains
Parent material: Gabbro
Elevation: 200 to 1,800 feet
Native plants: Fantz—Douglas fir, ponderosa pine, California black oak, poison oak, California honeysuckle; Knapke—Douglas fir, tanoak, sugar pine, poison oak, western brackenfern
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Fantz Soil

Typical profile

0 to 16 inches—very dark grayish brown to dark brown very gravelly loam
16 to 32 inches—dark brown very cobbly loam
32 inches—metagabbro

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Knapke Soil

Typical profile

0 to 17 inches—very dark grayish brown to dark brown extremely gravelly loam
17 to 65 inches—brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Dubakella and Pearsoll soils in convex areas of backslopes, shoulders, and knobs
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Fantz and Knapke—slope, susceptibility of the surface layer to water erosion, slope stability, south aspects, droughtiness in summer, low available water capacity
Fantz—susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Fantz—PSME/RHDI (Douglas fir/poison oak)
Knapke—PSME-LIDE3/RHDI (Douglas fir-tanoak/ poison oak)

114G—Fantz-Knapke complex, 60 to 90 percent north slopes

Composition

Fantz soil and similar inclusions—45 percent
Knapke soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Fantz—convex areas of backslopes; Knapke—concave areas of backslopes
Landform: Mountains
Parent material: Gabbro
Elevation: 200 to 1,800 feet
Native plants: Fantz—Douglas fir, tanoak, salal, baldhip rose, cascade Oregongrape; Knapke—Douglas fir, tanoak, sugar pine, salal, baldhip rose
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—150 to 170 days

Fantz Soil

Typical profile

0 to 16 inches—very dark grayish brown to dark brown very gravelly loam
16 to 32 inches—dark brown very cobbly loam
32 inches—metagabbro

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Knapke Soil

Typical profile

0 to 17 inches—very dark grayish brown to dark brown extremely gravelly loam
17 to 65 inches—brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Dubakella and Pearsoll soils in convex areas of backslopes, shoulders, and knobs
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Fantz and Knapke—slope, susceptibility of the surface layer to water erosion, slope stability, droughtiness in summer, low available water capacity
Fantz—susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Fantz and Knapke—PSME-LIDE3/GASH (Douglas fir-tanoak/salal)

115F—Ferrelo-Bullards complex, 20 to 40 percent slopes

Composition

Ferrelo soil and similar inclusions—45 percent
Bullards soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Ferrelo—concave areas of backslopes of relict sand dunes;

Bullards—shoulders, knobs, convex areas of backslopes of relict sand dunes
Landform: Marine terraces
Parent material: Ferrelo—sandy marine and eolian material; Bullards—sandy marine and eolian material overlying relict sand dunes
Elevation: 100 to 200 feet
Native plants: Ferrelo—Douglas fir, Sitka spruce, grand fir, Port Orford cedar, shore pine, salal, western brackenfern; Bullards—Douglas fir, Sitka spruce, grand fir, Port Orford cedar, shore pine, evergreen huckleberry, salal
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Ferrelo Soil

Typical profile

0 to 27 inches—dark reddish brown and dark brown loam
27 to 41 inches—dark brown fine sandy loam
41 to 58 inches—yellowish brown loamy fine sand
58 to 68 inches—variegated, light brownish gray, yellowish brown, and dark reddish brown fine sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of erosion: Severe

Bullards Soil

Typical profile

0 to 8 inches—very dark grayish brown sandy loam
8 to 15 inches—dark yellowish brown gravelly sandy loam
15 to 47 inches—yellowish brown gravelly sandy loam
47 to 60 inches—brownish yellow sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Frankport and Waldport soils on stabilized sand dunes that mantle marine terraces
- Depoe and Nelscott soils on adjacent slightly higher marine terraces
- Grindbrook soils in nearly level and concave areas of adjacent slightly higher marine terraces
- Wadecreek soils in concave areas of adjacent slightly higher marine terraces

Major Uses

Timber production, livestock grazing

Major Management Limitations

Ferrelo and Bullards—slope, susceptibility of the surface layer to water erosion, susceptibility of the soils to wind erosion, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, slope stability, sloughing, poor anchoring medium, salt spray, droughtiness in summer, high humidity
Bullards—low available water capacity

USFS Plant Association

Ferrelo and Bullards—TSHE-CHLA (western hemlock-Port Orford cedar)

116D—Ferrelo-Gearhart complex, 0 to 15 percent slopes

Composition

Ferrelo soil and similar inclusions—55 percent
Gearhart soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Ferrelo—nearly level summits to strongly sloping backslopes of relict sand dunes; Gearhart—side slopes of relict sand dunes
Landform: Marine terraces
Parent material: Ferrelo—sandy marine and eolian material; Gearhart—mixed eolian sand
Elevation: 20 to 200 feet
Native plants: Ferrelo—Douglas fir, grand fir, Sitka spruce, western hemlock, Port Orford cedar, Pacific rhododendron, evergreen huckleberry; Gearhart—Sitka spruce, Douglas fir, western hemlock, Port Orford cedar, shore pine, salal, western swordfern, trailing blackberry
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Ferrelo Soil

Typical profile

0 to 27 inches—dark reddish brown and dark brown loam
27 to 41 inches—dark brown fine sandy loam
41 to 58 inches—yellowish brown loamy fine sand
58 to 68 inches—variegated, light brownish gray, yellowish brown, and dark reddish brown fine sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of wind erosion: Severe

Gearhart Soil

Typical profile

0 to 12 inches—very dark gray fine sandy loam
12 to 23 inches—dark brown and dark yellowish brown fine sand
23 to 60 inches—yellowish brown and light olive brown fine sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Very rapid
Available water capacity: About 4 inches
Hazard of wind erosion: Severe

Contrasting Inclusions

- Hebo soils in depressions and drainageways
- Bullards soils in convex areas of backslopes of relict sand dunes
- Frankport and Waldport soils on stabilized sand dunes that mantle marine terraces
- Depoe and Nelscott soils on adjacent slightly higher marine terraces
- Grindbrook soils in nearly level and concave areas of adjacent slightly higher marine terraces
- Wadecreek soils in concave areas of adjacent slightly higher marine terraces

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Ferrelo and Gearhart—susceptibility of the soils to wind erosion, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, slope stability, sloughing, poor anchoring medium, salt spray, droughtiness in summer, high humidity
Gearhart—susceptibility of the surface layer to water erosion, limited rooting depth, very rapid permeability, low available water capacity

USFS Plant Association

Ferrelo and Gearhart—TSHE-CHLA (western hemlock-Port Orford cedar)

116E—Ferrelo-Gearhart complex, 15 to 30 percent slopes

Composition

Ferrelo soil and similar inclusions—50 percent
Gearhart soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Ferrelo—convex areas of backslopes of relict sand dunes; Gearhart—backslopes of relict sand dunes
Landform: Marine terraces
Parent material: Ferrelo—sandy marine and eolian material; Gearhart—mixed eolian sand
Elevation: 20 to 200 feet
Native plants: Ferrelo—Douglas fir, Sitka spruce, grand fir, western hemlock, Port Orford cedar, shore pine, evergreen huckleberry, salal; Gearhart—Sitka spruce, Douglas fir, western hemlock, Port Orford cedar, shore pine, salal, western swordfern, trailing blackberry
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Ferrelo Soil

Typical profile

0 to 27 inches—dark reddish brown and dark brown loam
27 to 41 inches—dark brown fine sandy loam
41 to 58 inches—variegated, yellowish brown loamy fine sand
58 to 68 inches—variegated, light brownish gray, yellowish brown, and dark reddish brown fine sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of wind erosion: Severe

Gearhart Soil

Typical profile

0 to 12 inches—very dark gray fine sandy loam
12 to 23 inches—dark brown and dark yellowish brown fine sand
23 to 60 inches—yellowish brown and light olive brown fine sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Very rapid
Available water capacity: About 4 inches
Hazard of wind erosion: Severe

Contrasting Inclusions

- Bullards soils in convex areas of backslopes of relict sand dunes
- Frankport and Waldport soils on recently stabilized sand dunes that mantle marine terraces
- Depoe and Nelscott soils on adjacent slightly higher marine terraces
- Grindbrook soils in nearly level and concave areas of adjacent slightly higher marine terraces
- Wadecreek soils in concave areas of adjacent slightly higher marine terraces
- Wet soils in seep areas

Major Uses

Timber production, livestock grazing, homesite development

Major Management Limitations

Ferrelo and Gearhart—slope, susceptibility of the soils to wind erosion, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, slope stability, sloughing, poor anchoring medium, salt spray, droughtiness in summer
Gearhart—susceptibility of the surface layer to water erosion, limited rooting depth, very rapid permeability, low available water capacity

USFS Plant Association

Ferrelo and Gearhart—TSHE-CHLA (western hemlock-Port Orford cedar)

117F—Floras-Bosland-Dulandy complex, 30 to 60 percent north slopes

Composition

Floras soil and similar inclusions—40 percent
Bosland soil and similar inclusions—30 percent
Dulandy soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Floras—footslopes, concave areas of backslopes; Bosland—convex areas of backslopes; Dulandy—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Floras—Douglas fir, redwood, California laurel, Pacific rhododendron, evergreen huckleberry; Bosland—Douglas fir, redwood, California laurel, Pacific rhododendron, western swordfern; Dulandy—Douglas fir, redwood, California laurel, Pacific rhododendron, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 270 days

Floras Soil

Typical profile

0 to 9 inches—dark reddish brown silty clay loam
9 to 18 inches—reddish brown silty clay loam
18 to 35 inches—reddish brown gravelly silty clay loam
35 to 48 inches—brown gravelly silty clay loam
48 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Bosland Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 26 inches—reddish brown silty clay loam
26 to 39 inches—brown gravelly silty clay loam
39 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Severe

Dulandy Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 28 inches—brown gravelly clay loam
28 to 37 inches—strong brown very gravelly clay loam
37 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Guerin soils on narrow summits, on shoulders, and in convex areas of backslopes
- Loeb and Macklyn soils that are on stable benches and have slopes of as much as 30 percent
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Floras, Bosland, and Dulandy—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, salt spray
Bosland and Dulandy—soil depth
Floras—clayey textures
Dulandy—low available water capacity

USFS Plant Association

Floras, Bosland, and Dulandy—LIDE3-SESE2 (tanoak-coast redwood)

118F—Floras-Bosland-Dulandy complex, 30 to 60 percent south slopes

Composition

Floras soil and similar inclusions—35 percent
Bosland soil and similar inclusions—30 percent
Dulandy soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Floras—footslopes and concave areas of backslopes; Bosland—convex areas of backslopes; Dulandy—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Floras—Douglas fir, redwood, tanoak, evergreen huckleberry, cascade Oregongrape; Bosland—Douglas fir, redwood, tanoak, evergreen huckleberry, salal; Dulandy—Douglas fir, redwood, tanoak, western swordfern, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 300 days

Floras Soil

Typical profile

0 to 9 inches—dark reddish brown silty clay loam
9 to 18 inches—reddish brown silty clay loam
18 to 35 inches—reddish brown gravelly silty clay loam
35 to 48 inches—brown gravelly silty clay loam
48 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Bosland Soil

Typical profile

0 to 11 inches—dark brown silt loam
11 to 26 inches—reddish brown silty clay loam
26 to 39 inches—brown gravelly silty clay loam
39 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Severe

Dulandy Soil

Typical profile

0 to 11 inches—dark brown loam
11 to 28 inches—brown gravelly clay loam
28 to 37 inches—strong brown very gravelly clay loam
37 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Guerin soils on narrow summits, on shoulders, and in convex areas of backslopes
- Loeb and Macklyn soils that are on stable benches and have slopes of as much as 30 percent
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Floras, Bosland, and Dulandy—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, salt spray
Bosland and Dulandy—soil depth
Floras—clayey textures
Dulandy—low available water capacity

USFS Plant Association

Floras, Bosland, and Dulandy—LIDE3-SESE2 (tanoak-coast redwood)

119A—Foehlin-Cove complex, 0 to 3 percent slopes

Composition

Foehlin soil and similar inclusions—60 percent
Cove soil and similar inclusions—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Foehlin—nearly level areas; Cove—depressions, drainageways
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 200 to 300 feet
Native plants: Foehlin—bearded fescue, California honeysuckle, Oregon white oak, common snowberry, poison oak; Cove—rushes, sedges, California oatgrass, mannagrass, Oregon ash
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Foehlin Soil

Typical profile

0 to 13 inches—very dark grayish brown and dark brown gravelly loam
13 to 65 inches—dark brown to dark yellowish brown gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Slight

Cove Soil

Typical profile

0 to 8 inches—very dark gray silty clay loam
8 to 60 inches—gleyed and mottled, very dark gray to dark grayish brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Frequency of flooding: Rare
Depth to water table: At the surface to a depth of 1 foot below the surface in December through June
Hazard of erosion: Slight, except during rare periods of flooding
Shrink-swell potential: High

Contrasting Inclusions

- Abegg soils in nearly level areas of adjacent higher stream terraces
- Takilma soils in gently sloping, convex areas
- Clawson soils in depressions and drainageways
- Riverwash
- Soils on relict gravel bars of flood plains

Major Uses

Foehlin—livestock grazing, homesite development
Cove—livestock grazing, wildlife habitat

Major Management Limitations

Foehlin and Cove—susceptibility of the surface layer to compaction when wet, droughtiness in summer
Cove—rare flooding, high water table, clayey textures, limited rooting depth, high shrink-swell potential, very slow permeability

120E—Frankport sand, 0 to 30 percent slopes

Composition

Frankport soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Summits and side slopes
Landform: Sand dunes
Parent material: Mixed eolian sand
Elevation: 100 to 600 feet
Native plants: Shore pine, Pacific madrone, salal, hairy manzanita, coyotebrush
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 4 inches—very dark gray sand
4 to 9 inches—very dark grayish brown sand
9 to 60 inches—dark grayish brown sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: About 2 inches
Hazard of wind erosion: Severe

Contrasting Inclusions

- Heceta soils in interdunal depressions of adjacent deflation plains
- Yaquina soils in slightly convex, interdunal areas of adjacent deflation plains
- Frankport soils, thin surface, on summits and side slopes of recently stabilized sand dunes that do not support woody vegetation
- Horseprairie soils in nearly level and concave areas of slightly higher adjacent marine terraces
- Brenner soils in backswamp areas of flood plains
- Beaches

Major Use

Homesite development

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the soil to wind erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, poor anchoring medium, salt spray, slope stability, sloughing, droughtiness in summer, low available water capacity, very rapid permeability

121E—Frankport sand, thin surface, 0 to 30 percent slopes

Composition

Frankport soil, thin surface, and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Summits and side slopes
Landform: Sand dunes
Parent material: Mixed eolian sand
Elevation: 0 to 150 feet
Native plants: European beachgrass, American dunegrass, beachgrass, coyotebrush, lupine
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 330 days

Typical profile

0 to 2 inches—very dark gray sand
2 to 60 inches—dark grayish brown sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: About 2 inches
Hazard of wind erosion: Severe

Contrasting Inclusions

- Frankport soils in concave areas of sand dunes that support woody vegetation
- Heceta soils in interdunal depressions of deflation plains
- Yaquina soils in slightly convex interdunal depressions of deflation plains
- Brenner soils in backswamp areas of flood plains
- Beaches

Major Uses

Livestock grazing, homesite development (fig. 6)

Major Management Limitations

Susceptibility of the soil to wind erosion, droughtiness in summer, low available water capacity, very rapid permeability, slope stability, sloughing

122F—Fritsland-Bravo-Cassiday complex, 30 to 60 percent north slopes

Composition

Fritsland soil and similar inclusions—40 percent
Bravo soil and similar inclusions—30 percent
Cassiday soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Fritsland—concave areas of backslopes; Bravo—convex areas of backslopes; Cassiday—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Fritsland—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Bravo—Douglas fir, tanoak, evergreen huckleberry, western swordfern, salal; Cassiday—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Fritsland Soil

Typical profile

0 to 8 inches—very dark grayish brown silt loam
8 to 20 inches—dark brown loam
20 to 32 inches—dark yellowish brown clay loam
32 to 44 inches—yellowish brown gravelly clay loam
44 to 48 inches—light yellowish brown gravelly clay loam
48 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate

Figure 6.—Homesite development in an area of Frankport sand, thin surface, 0 to 30 percent slopes.

Available water capacity: About 8 inches
Hazard of erosion: Moderate or severe

Bravo Soil

Typical profile

0 to 3 inches—very dark grayish brown loam
3 to 9 inches—dark brown loam
9 to 21 inches—dark brown clay loam
21 to 31 inches—dark yellowish brown gravelly clay loam
31 to 36 inches—brown gravelly clay loam
36 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Severe

Cassiday Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Skookumhouse and Hazelcamp soils on stable benches
- Grouslous soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Fritsland, Bravo, and Cassiday—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Bravo and Cassiday—soil depth, low available water capacity

USFS Plant Association

Fritsland—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Bravo and Cassiday—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

123F—Fritsland-Bravo-Cassiday complex, 30 to 60 percent south slopes

Composition

Fritsland soil and similar inclusions—35 percent
Bravo soil and similar inclusions—30 percent
Cassiday soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Fritsland—concave areas of backslopes; Bravo—convex areas of backslopes; Cassiday—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Fritsland—Douglas fir, tanoak, evergreen huckleberry, salal, cascade Oregongrape; Bravo—Douglas fir, tanoak, salal, cascade Oregongrape, common beargrass; Cassiday—Douglas fir, tanoak, cascade Oregongrape, salal, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Fritsland Soil

Typical profile

0 to 8 inches—very dark grayish brown loam
8 to 20 inches—dark brown loam
20 to 32 inches—dark yellowish brown clay loam
32 to 44 inches—yellowish brown gravelly clay loam
44 to 48 inches—light yellowish brown gravelly clay loam
48 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate

Available water capacity: About 8 inches
Hazard of erosion: Moderate or severe

Bravo Soil

Typical profile

0 to 3 inches—very dark grayish brown loam
3 to 9 inches—dark brown loam
9 to 21 inches—dark brown clay loam
21 to 31 inches—dark yellowish brown gravelly clay loam
31 to 36 inches—brown gravelly clay loam
36 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Severe

Cassiday Soil

Typical profile

0 to 8 inches—dark brown very gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Skookumhouse and Hazelcamp soils on stable benches
- Grouslous soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Fritsland, Bravo, and Cassiday—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Bravo and Cassiday—soil depth, low available water capacity

USFS Plant Association

Fritsland—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Bravo and Cassiday—LIDE3/GASH (tanoak/salal)

124E—Gamelake-Tincup complex, 0 to 30 percent slopes

Composition

Gamelake soil and similar inclusions—55 percent
Tincup soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Gamelake—concave areas of summits; Tincup—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,800 to 5,500 feet
Native plants: Gamelake—white fir, Shasta red fir, Douglas fir, baldhip rose, creeping snowberry; Tincup—Douglas fir, white fir, Shasta red fir, Sadler oak, cascade Oregongrape
Climatic factors:
Mean annual precipitation—140 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Gamelake Soil

Typical profile

0 to 13 inches—very dark grayish brown to dark brown very gravelly loam
13 to 23 inches—dark brown very gravelly sandy loam
23 to 39 inches—dark yellowish brown extremely gravelly sandy loam
39 to 50 inches—yellowish brown very gravelly sandy loam
50 to 72 inches—yellowish brown very gravelly coarse sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Tincup Soil

Typical profile

0 to 7 inches—very dark grayish brown very cobbly loam
7 to 28 inches—dark yellowish brown extremely cobbly loam
28 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 2 inches
Hazard of erosion: Moderate

Contrasting Inclusions

• Skymor and Woodseye soils on narrow summits, on shoulders, and in convex areas of summits
• Rock outcrop on ridge crests and shoulders
• Orthents adjacent to areas of Rock outcrop
• Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Gamelake and Tincup—susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Tincup—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Gamelake—ABCO-ABMAS/ROGY (white fir-Shasta red fir/baldhip rose)
Tincup—ABCO-QUSA/BENE (white fir-Sadler oak/dwarf Oregongrape)

125F—Gamelake-Tincup complex, 30 to 60 percent south slopes

Composition

Gamelake soil and similar inclusions—55 percent
Tincup soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Gamelake—concave areas of backslopes; Tincup—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,800 to 5,500 feet
Native plants: Gamelake—white fir, Shasta red fir, Douglas fir, Sadler oak, deerfoot vanillaleaf, western prince's pine; Tincup—Douglas fir, white fir, Shasta red fir, Sadler oak, cascade Oregongrape, western prince's pine
Climatic factors:
Mean annual precipitation—140 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Gamelake Soil

Typical profile

0 to 13 inches—very dark grayish brown to dark brown very gravelly loam
13 to 23 inches—dark brown very gravelly sandy loam
23 to 39 inches—dark yellowish brown extremely gravelly sandy loam
39 to 50 inches—yellowish brown very gravelly sandy loam
50 to 72 inches—yellowish brown very gravelly coarse sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Tincup Soil

Typical profile

0 to 7 inches—very dark grayish brown very cobbly loam
7 to 28 inches—dark yellowish brown extremely cobbly loam
28 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

• Skymor and Woodseye soils on narrow summits, on shoulders, and in convex areas of backslopes
• Rock outcrop on ridge crests and shoulders
• Orthents adjacent to areas of Rock outcrop
• Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Gamelake and Tincup—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, low available water capacity
Tincup—susceptibility of the surface layer to displacement and accelerated erosion, soil depth

USFS Plant Association

Gamelake—ABCO-QUSA/CHUM (white fir-Sadler oak/western prince's pine)
Tincup—ABCO-QUSA/BENE (white fir-Sadler oak/ dwarf Oregongrape)

125G—Gamelake-Tincup complex, 60 to 90 percent south slopes

Composition

Gamelake soil and similar inclusions—50 percent
Tincup soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Gamelake—concave areas of backslopes; Tincup—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,800 to 5,500 feet
Native plants: Gamelake—Douglas fir, white fir, Shasta red fir, Sadler oak, cascade Oregongrape, western rattlesnake plantain; Tincup—Douglas fir, white fir, Shasta red fir, Sadler oak, cascade Oregongrape, western prince's pine
Climatic factors:
Mean annual precipitation—140 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Gamelake Soil

Typical profile

0 to 13 inches—very dark grayish brown to dark brown very gravelly loam
13 to 23 inches—dark brown very gravelly sandy loam
23 to 39 inches—dark yellowish brown extremely gravelly sandy loam
39 to 50 inches—yellowish brown very gravelly sandy loam
50 to 72 inches—yellowish brown very gravelly coarse sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Tincup Soil

Typical profile

0 to 7 inches—very dark grayish brown very cobbly loam
7 to 28 inches—dark yellowish brown extremely cobbly loam
28 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Skymor and Woodseye soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Gamelake and Tincup—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, low available water capacity
Tincup—susceptibility of the surface layer to displacement and accelerated erosion, soil depth

USFS Plant Association

Gamelake—ABCO-QUSA/CHUM (white fir-Sadler oak/western prince's pine)
Tincup—ABCO-QUSA/BENE (white fir-Sadler oak/ dwarf Oregongrape)

126A—Gauldy loam, 0 to 3 percent slopes

Composition

Gauldy soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas of relict gravel bars
Landform: Flood plains
Parent material: Alluvium
Elevation: 10 to 100 feet
Native plants: Grasses, salmonberry, red alder, willow, California laurel
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 12 inches—dark brown loam
12 to 28 inches—dark yellowish brown gravelly loam
28 to 60 inches—dark grayish brown extremely gravelly fine sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Frequency of flooding: Occasional in November through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Yachats soils in nearly level areas of flood plains
- Nehalem soils in convex areas of flood plains
- Nestucca soils in concave areas of flood plains
- Willanch soils in depressions and drainageways of flood plains
- Brenner soils in backswamp areas of flood plains
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

Flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity, moderately rapid permeability, low available water capacity

127A—Gauldy-Willanch complex, 0 to 3 percent slopes

Composition

Gauldy soil and similar inclusions—60 percent
Willanch soil and similar inclusions—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Gauldy—nearly level areas of relict gravel bars; Willanch—depressions, drainageways
Landform: Flood plains
Parent material: Alluvium
Elevation: 0 to 100 feet
Native plants: Gauldy—grasses, salmonberry, red alder, willow, California laurel; Willanch—sedges, rushes, bentgrass
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Gauldy Soil

Typical profile

0 to 12 inches—dark brown loam
12 to 28 inches—dark yellowish brown gravelly loam
28 to 60 inches—dark grayish brown extremely gravelly fine sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Frequency of flooding: Occasional in November through April
Hazard of erosion: Slight, except during periods of flooding

Willanch Soil

Typical profile

0 to 16 inches—mottled, very dark brown and very dark grayish brown fine sandy loam
16 to 34 inches—mottled, dark grayish brown sandy loam
34 to 60 inches—gleyed and mottled, dark grayish brown and dark gray loamy sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained

Permeability: Moderately rapid
Available water capacity: About 7 inches
Frequency of flooding: Frequent in November through March
Depth to water table: 0.5 foot above the surface to a depth of 0.5 foot below the surface in November through March
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Yachats soils in nearly level areas of flood plains
- Nehalem soils in convex areas of flood plains
- Nestucca soils in concave areas of flood plains
- Brenner soils in backswamp areas of flood plains
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

Gauldy and Willanch—flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity, moderately rapid permeability
Gauldy—low available water capacity
Willanch—high water table

128A—Gleneden silt loam, 0 to 3 percent slopes

Composition

Gleneden soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level and concave areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 25 to 100 feet
Native plants: Grasses, sedges, rushes, red alder, willow
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 15 inches—very dark grayish brown and dark brown silty clay loam
15 to 21 inches—dark brown silty clay
21 to 32 inches—mottled, brown silty clay
32 to 60 inches—gleyed and mottled, grayish brown and light brownish gray clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.5 to 2.0 feet below the surface in December through April
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Quillamook soils on remnant high stream terraces
- Hebo soils in depressions and drainageways on adjacent marine terraces
- Ekoms soils on adjacent high stream terraces

Major Uses

Livestock grazing, homesite development

Major Management Limitations

High water table, susceptibility of the surface layer to compaction when wet, high humidity, high shrink-swell potential, clayey textures, very slow permeability

129E—Grassyknob silt loam, 0 to 30 percent slopes

Composition

Grassyknob soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Open areas of grassland within forests in convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Grasses, western brackenfern, western swordfern, western azalea, Douglas iris
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Typical profile

0 to 12 inches—very dark gray silt loam
12 to 28 inches—dark grayish brown silty clay loam
28 to 36 inches—brown cobbly clay loam
36 inches—sandstone

Soil Properties and Qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Reinhart soils in open areas of grassland on shoulders and knobs and in convex areas of summits
- Hooskanaden soils in open areas of grassland in concave areas of summits
- Reedsport soils that are on shoulders and knobs and in convex areas of summits and support a forest canopy
- Svensen soils that are in concave areas of summits and support a forest canopy
- Rustybutte and Sebastian soils that are on shoulders and knobs and in convex areas of summits and are near fault zones
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Use

Livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, salt spray

130F—Grassyknob silt loam, 30 to 60 percent south slopes

Composition

Grassyknob soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Open areas of grassland within forests in convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Grasses, western brackenfern, western swordfern, western azalea, Douglas iris
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Typical profile

0 to 12 inches—very dark gray silt loam
12 to 28 inches—dark grayish brown silty clay loam
28 to 36 inches—brown cobbly clay loam
36 inches—sandstone

Soil Properties and Qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Reinhart soils in open areas of grassland on summits and shoulders
- Hooskanaden soils in open areas of grassland on footslopes and in concave areas of backslopes
- Reedsport soils that are on shoulders and knobs and in convex areas of backslopes and support a forest canopy
- Svensen soils that are in concave areas of backslopes and support a forest canopy
- Rustybutte and Sebastian soils that are on shoulders and knobs and in convex areas of backslopes and are near fault zones
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, south aspects, salt spray

131G—Gravecreek-Eightlar-Pearsoll complex, 60 to 90 percent north slopes

Composition

Gravecreek soil and similar inclusions—40 percent
Eightlar soil and similar inclusions—30 percent
Pearsoll soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Gravecreek—convex areas of backslopes; Eightlar—concave areas of backslopes; Pearsoll—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains

Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,500 feet
Native plants: Eightlar—Jeffrey pine, Douglas fir, incense cedar, huckleberry oak, bearded fescue; Gravecreek—Jeffrey pine, Douglas fir, sugar pine, huckleberry oak, boxleaf silktassel; Pearsoll—Jeffrey pine, incense cedar, squawcarpet, dwarf ceanothus, whiteleaf manzanita, Lemmon needlegrass
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Eightlar Soil

Typical profile

0 to 13 inches—dark reddish brown very stony clay loam
13 to 65 inches—dark reddish brown extremely stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Very slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe
Shrink-swell potential: High

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Gravecreek, Eightlar, and Pearsoll—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, low available water capacity
Eightlar and Pearsoll—clayey textures, high shrink-swell potential
Gravecreek and Pearsoll—soil depth
Eightlar—very slow permeability
Pearsoll—slow permeability

USFS Plant Association

Gravecreek and Eightlar—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Pearsoll—PIJE/CEPU (Jeffrey pine/dwarf ceanothus)

132F—Gravecreek-Eightlar-Pearsoll complex, 30 to 60 percent south slopes

Composition

Gravecreek soil and similar inclusions—35 percent
Eightlar soil and similar inclusions—30 percent
Pearsoll soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Gravecreek—convex areas of backslopes; Eightlar—concave areas of backslopes; Pearsoll—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains

Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,900 feet
Native plants: Gravecreek—Jeffrey pine, Port Orford cedar, tanoak, California laurel, California buckthorn, California coffeeberry, red huckleberry; Eightlar—Jeffrey pine, incense cedar, whiteleaf manzanita, red fescue, blue wildrye; Pearsoll—Jeffrey pine, whiteleaf manzanita, wedgeleaf ceanothus, Sandberg bluegrass, red fescue
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Eightlar Soil

Typical profile

0 to 13 inches—dark reddish brown very stony clay loam
13 to 65 inches—dark reddish brown extremely stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Very slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Gravecreek, Eightlar, and Pearsoll—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, low available water capacity
Eightlar and Pearsoll—clayey textures, high shrink-swell potential
Gravecreek and Pearsoll—soil depth
Eightlar—very slow permeability
Pearsoll—slow permeability

USFS Plant Association

Gravecreek—LIDE3/RHCA (tanoak/California coffeeberry)
Eightlar and Pearsoll—PIJE/Grass (Jeffrey pine/grass)

133G—Gravecreek-Pearsoll-Eightlar complex, 60 to 90 percent south slopes

Composition

Gravecreek soil and similar inclusions—40 percent
Pearsoll soil and similar inclusions—25 percent
Eightlar soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Gravecreek—convex areas of backslopes; Pearsoll—narrow summits, shoulders, convex areas of backslopes; Eightlar—concave areas of backslopes
Landform: Mountains

Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,900 feet
Native plants: Gravecreek—Jeffrey pine, Port Orford cedar, tanoak, California laurel, California buckthorn, California coffeeberry, red huckleberry; Pearsoll—Jeffrey pine, whiteleaf manzanita, wedgeleaf ceanothus, Sandberg bluegrass, red fescue; Eightlar—Jeffrey pine, incense cedar, whiteleaf manzanita, red fescue, blue wildrye
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Eightlar Soil

Typical profile

0 to 13 inches—dark reddish brown very stony clay loam
13 to 65 inches—dark reddish brown extremely stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Very slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Gravecreek, Pearsoll, and Eightlar—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, low available water capacity
Gravecreek and Pearsoll—soil depth
Pearsoll and Eightlar—clayey textures, high shrink-swell potential
Eightlar—very slow permeability
Pearsoll—slow permeability

USFS Plant Association

Gravecreek—LIDE3/RHCA (tanoak/California coffeeberry)
Pearsoll and Eightlar—PIJE/Grass (Jeffrey pine/grass)

134E—Greggo-Mislatnah-Rock outcrop complex, 0 to 30 percent slopes

Composition

Greggo soil and similar inclusions—35 percent
Mislatnah soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Greggo—shoulders, knobs, convex areas of summits; Mislatnah—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock

Elevation: 1,600 to 2,500 feet
Native plants: Greggo—Jeffrey pine, western white pine, tanoak, pinemat manzanita, squawcarpet; Mislatnah—Jeffrey pine, incense cedar, tanoak, California buckthorn, huckleberry oak
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Moderate or severe

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Serpentano soils in gently sloping areas of summits
- Redflat soils in concave areas of summits
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, limited homesite development, watershed, recreation, wildlife habitat

Major Management Limitations

Greggo and Mislatnah—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Greggo—PIJE-PIMO (Jeffrey pine-western white pine)
Mislatnah—PIJE-QUVA (Jeffrey pine-huckleberry oak)

135F—Greggo-Mislatnah-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Greggo soil and similar inclusions—35 percent
Mislatnah soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Greggo—narrow summits, shoulders, convex areas of backslopes; Mislatnah—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,400 to 3,000 feet
Native plants: Greggo—knobcone pine, Jeffrey pine, tanoak, pinemat manzanita, common beargrass; Mislatnah—Jeffrey pine, western white pine, lodgepole pine, California buckthorn, whiteleaf manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Severe

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Serpentano soils in concave areas of backslopes
- Redflat soils on footslopes and in concave areas of backslopes
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Greggo and Mislatnah—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Greggo and Mislatnah—PIJE-PIMO (Jeffrey pine-western white pine)

136G—Greggo-Rock outcrop-Mislatnah complex, 60 to 90 percent north slopes

Composition

Greggo soil and similar inclusions—35 percent
Rock outcrop—30 percent
Mislatnah soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Greggo—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Mislatnah—concave areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,400 to 2,500 feet
Native plants: Greggo—western white pine, Jeffrey pine, tanoak, pinemat manzanita, common beargrass; Mislatnah—incense cedar, Jeffrey pine, lodgepole pine, California buckthorn, huckleberry oak
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Serpentano soils in concave areas of backslopes
- Redflat soils on slump benches
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Greggo and Mislatnah—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Greggo—PIJE-PIMO (Jeffrey pine-western white pine)
Mislatnah—PIJE-QUVA (Jeffrey pine-huckleberry oak)

137G—Greggo-Rock outcrop-Mislatnah complex, 60 to 90 percent south slopes

Composition

Greggo soil and similar inclusions—35 percent
Rock outcrop—30 percent
Mislatnah soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Greggo—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Mislatnah—concave areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,400 to 3,000 feet
Native plants: Greggo—knobcone pine, Jeffrey pine, western white pine, tanoak, pinemat manzanita, common beargrass; Mislatnah—western white pine, Jeffrey pine, lodgepole pine, whiteleaf manzanita, California buckthorn
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Serpentano soils in concave areas of backslopes
- Redflat soils on slump benches
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Greggo and Mislatnah—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Greggo and Mislatnah—PIJE-PIMO (Jeffrey pine-western white pine)

138B—Grindbrook-Wadecreek complex, 0 to 8 percent slopes

Composition

Grindbrook soil and similar inclusions—50 percent
Wadecreek soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Grindbrook—convex areas; Wadecreek—concave areas
Landform: Marine terraces

Parent material: Alluvium
Elevation: 200 to 300 feet
Native plants: Grindbrook—Douglas fir, Sitka spruce, western hemlock, western swordfern, salal, grasses; Wadecreek—Douglas fir, Sitka spruce, western hemlock, Port Orford cedar, western swordfern, grasses
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Grindbrook Soil

Typical profile

0 to 26 inches—very dark brown and very dark grayish brown silt loam
26 to 60 inches—mottled, brown and yellowish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 10 inches
Depth to water table: 2 to 3 feet below the surface in November through May
Hazard of erosion: Slight

Wadecreek Soil

Typical profile

0 to 6 inches—very dark grayish brown silt loam
6 to 34 inches—dark brown and brown silty clay loam
34 to 47 inches—mottled, yellowish brown silty clay
47 to 54 inches—mottled, yellowish brown clay loam
54 to 60 inches—mottled, yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 2 to 3 feet below the surface in November through May
Hazard of erosion: Slight

Contrasting Inclusions

- Bandon and Bullards soils in nearly level areas of relict sand dunes
- Hebo soils in depressions and drainageways
- Ferrelo and Gearhart soils on side slopes of relict sand dunes
- Horseprairie soils in nearly level to undulating areas of adjacent slightly lower marine terraces
- Ekoms soils in nearly level to gently sloping, convex areas of adjacent high stream terraces

Major Uses

Livestock grazing, homesite development, timber production

Major Management Limitations

Grindbrook and Wadecreek—high water table, clayey textures, susceptibility of the surface layer to compaction when wet, slow permeability, droughtiness in summer, high humidity, salt spray
Wadecreek—susceptibility of the surface layer to displacement and accelerated erosion

USFS Plant Association

Grindbrook—TSHE/GASH (western hemlock/salal)
Wadecreek—TSHE/CHLA (western hemlock/Port Orford cedar)

139G—Grouslous-Cassiday-Rock outcrop complex, 60 to 90 percent south slopes, stony

Composition

Grouslous soil and similar inclusions—35 percent
Cassiday soil and similar inclusions—25 percent
Rock outcrop—25 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Grouslous—convex areas of backslopes; Cassiday—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,800 feet
Native plants: Grouslous—tanoak, Douglas fir, canyon live oak, common beargrass, cascade Oregongrape, salal; Cassiday—tanoak, Douglas fir, canyon live oak, cascade Oregongrape, common beargrass, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Grouslous Soil

Typical profile

0 to 4 inches—very dark grayish brown very stony loam
4 to 8 inches—brown very gravelly clay loam
8 to 16 inches—brown extremely gravelly clay loam
16 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Cassiday Soil

Typical profile

0 to 8 inches—dark brown very stony loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Fritsland soils in convex areas of backslopes
- Bravo soils on shoulders and knobs and in convex areas of backslopes
- Remote soils on footslopes and in concave areas of backslopes
- Dystrochrepts adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Grouslous and Cassiday—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity, stones on the surface

USFS Plant Association

Grouslous and Cassiday—LIDE3/GASH (tanoak/salal)

140F—Haplumbrepts-Rock outcrop-Cryaquepts complex, 0 to 75 percent north slopes

Composition

Haplumbrepts and similar inclusions—45 percent
Rock outcrop—30 percent
Cryaquepts and similar inclusions—15 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Haplumbrepts—convex and concave areas of backslopes, shoulders, and knobs; Rock outcrop—headwalls, ridge crests, shoulders; Cryaquepts—concave areas of meadows
Landform: Glacial moraines on north-facing side slopes of mountains
Parent material: Glacial drift and till
Elevation: 3,800 to 5,500 feet
Native plants: Haplumbrepts—Douglas fir, Shasta red fir, white fir, Sadler oak, deerfoot vanillaleaf; Cryaquepts—sedges, rushes, California pitcherplant, Hall's bentgrass, willow
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Haplumbrepts

Reference profile

0 to 9 inches—very dark grayish brown extremely gravelly sandy loam
9 to 25 inches—dark brown and dark yellowish brown extremely gravelly loam
25 inches—intrusive igneous rock

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Severe or very severe

Cryaquepts

Reference profile

0 to 11 inches—mottled, black silty clay loam

11 to 39 inches—mottled, black to very dark brown silty clay
39 to 72 inches—gleyed and mottled, black silty clay

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Poorly drained or very poorly drained
Permeability: Slow or very slow
Available water capacity: About 6 to 10 inches
Depth to water table: 0.5 foot above the surface to a depth of 0.5 foot below the surface in October through June
Hazard of erosion: Slight

Contrasting Inclusions

- Aquic Haplohumults in concave areas of footslopes and adjacent to Cryaquepts
- Dystrochrepts in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Rubble land below headwalls of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat, limited timber production

Major Management Limitations

Haplumbrepts and Cryaquepts—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave
Haplumbrepts—slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, slope stability, soil depth, low available water capacity
Cryaquepts—high water table, ponding, clayey textures, limited rooting depth, slow or very slow permeability

141G—Haplumbrepts-Rock outcrop-Rubble land complex, 60 to 100 percent north slopes

Composition

Haplumbrepts and similar inclusions—45 percent
Rock outcrop—25 percent
Rubble land—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Haplumbrepts—convex to concave areas of backslopes; Rock outcrop—ridge crests, shoulders; Rubble land—adjacent to areas of Rock outcrop
Landform: Mountains
Parent material: Intrusive igneous rock
Elevation: 2,600 to 4,400 feet
Native plants: Haplumbrepts—Douglas fir, white fir, Sadler oak, salal, western prince's pine
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Haplumbrepts

Reference profile

0 to 9 inches—very dark grayish brown extremely gravelly sandy loam
9 to 25 inches—dark brown and dark yellowish brown extremely gravelly loam
25 inches—intrusive igneous rock

Properties and qualities

Depth to bedrock: 20 to 70 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Rilea soils in convex areas of backslopes
- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Stackyards soils on footslopes and in concave areas of backslopes
- Yorel soils in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Haplumbrepts—slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, duration of snow cover, short growing season, frost heave, soil depth, droughtiness in summer, low available water capacity

142E—Hazelcamp-Averlande-Rock outcrop complex, 0 to 30 percent slopes

Composition

Hazelcamp soil and similar inclusions—35 percent
Averlande soil and similar inclusions—30 percent

Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Hazelcamp—convex areas of summits; Averlande—shoulders, knobs, convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 400 to 2,500 feet
Native plants: Hazelcamp—Douglas fir, tanoak, evergreen huckleberry, salal, common beargrass; Averlande—Douglas fir, tanoak, canyon live oak, salal, common beargrass, evergreen huckleberry, Pacific rhododendron
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Hazelcamp Soil

Typical profile

0 to 12 inches—dark reddish brown silty clay loam
12 to 18 inches—reddish brown silty clay loam
18 to 25 inches—reddish brown gravelly silty clay
25 to 36 inches—red gravelly silty clay
36 inches—weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Averlande Soil

Typical profile

0 to 3 inches—dark brown gravelly loam
3 to 7 inches—yellowish red very gravelly loam
7 to 14 inches—red very gravelly clay loam
14 inches—partially weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Skookumhouse soils in concave areas of summits
- Crutchfield and Colepoint soils on benches
- Cassiday soils in convex areas of summits
- Grouslous soils on narrow summits, on shoulders, and in convex areas of summits
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Hazelcamp and Averlande—susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth
Hazelcamp—clayey textures
Averlande—low available water capacity

USFS Plant Association

Hazelcamp—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Averlande—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)

143B—Hebo silty clay loam, 0 to 7 percent slopes

Composition

Hebo soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Depressions, drainageways
Landform: Marine terraces
Parent material: Alluvium
Elevation: 25 to 300 feet
Native plants: Sitka spruce, Douglas fir, western hemlock, Port Orford cedar, red alder, rushes, skunkcabbage, sedge
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 5 inches—mottled, black silty clay loam
5 to 14 inches—mottled, very dark gray silty clay
14 to 38 inches—gleyed and mottled, dark gray and gray silty clay or clay
38 to 46 inches—gleyed and mottled, grayish brown silty clay
46 to 60 inches—gleyed and mottled, light brownish gray silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 0.5 foot above the surface to a depth of 1 foot below the surface in November through June
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Bullards and Ferrelo soils in gently sloping, convex areas of relict sand dunes that mantle marine terraces
- Horseprairie soils in nearly level areas of marine terraces
- Gearhart soils on side slopes of relict sand dunes
- Grindbrook soils in nearly level, concave areas of marine terraces
- Wadecreek soils in concave areas of marine terraces
- Ekoms soils in nearly level to gently sloping, convex areas of adjacent high stream terraces

Major Uses

Livestock grazing, timber production, wildlife habitat

Major Management Limitations

High water table, ponding, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, high shrink-swell potential, salt spray

USFS Plant Association

TSHE/CHLA (western hemlock/Port Orford cedar)

144A—Heceta fine sand, 0 to 3 percent slopes

Composition

Heceta soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Interdunal depressions
Landform: Deflation plains
Parent material: Mixed eolian sand
Elevation: 0 to 80 feet
Native plants: Rushes, sedges, Pacific gentian, salal, willow
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 6 inches—very dark grayish brown fine sand
6 to 29 inches—mottled, grayish brown fine sand
29 to 60 inches—mottled, gray sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Rapid
Available water capacity: About 4 inches
Depth to water table: 1 foot above the surface to a depth of 2 feet below the surface in October through May
Hazard of erosion: Slight

Contrasting Inclusions

- Chetco and Langlois soils on flood plains adjacent to deflation plains
- Yaquina soils in slightly convex interdunal areas of deflation plains
- Waldport soils on side slopes of recently stabilized sand dunes
- Bullards soils on side slopes of relict sand dunes
- Brenner soils in backswamp areas of flood plains
- Beaches

Major Uses

Livestock grazing, wildlife habitat

Major Management Limitations

High water table, ponding, rapid permeability, low available water capacity

145E—Honeygrove-Shivigny complex, 3 to 30 percent slopes

Composition

Honeygrove soil and similar inclusions—55 percent
Shivigny soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Honeygrove—concave areas of summits; Shivigny—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or igneous rock
Elevation: 1,000 to 2,500 feet

Native plants: Honeygrove—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, western swordfern, salal; Shivigny—Douglas fir, western hemlock, tanoak, Pacific dogwood, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Honeygrove Soil

Typical profile

0 to 15 inches—dark brown gravelly clay loam
15 to 78 inches—reddish brown to yellowish red clay
78 to 99 inches—yellowish red gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate

Shivigny Soil

Typical profile

0 to 13 inches—dark brown very gravelly loam
13 to 41 inches—strong brown very stony clay loam
41 to 78 inches—strong brown very stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Remote soils in convex areas of summits
- Digger soils on shoulders and knobs and in convex areas of summits
- Preacher and Bohannon soils in convex and concave areas of summits
- Umpcoos soils on narrow summits, on shoulders, and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Honeygrove and Shivigny—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability

USFS Plant Association

Honeygrove—TSHE/GASH (western hemlock-salal)
Shivigny—LIDE3-TSHE (tanoak-western hemlock)

146F—Honeygrove-Shivigny complex, 30 to 60 percent north slopes

Composition

Honeygrove soil and similar inclusions—50 percent
Shivigny soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Honeygrove—concave areas of backslopes; Shivigny—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or igneous rock
Elevation: 1,000 to 2,500 feet
Native plants: Honeygrove—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, western swordfern, salal; Shivigny—Douglas fir, western hemlock, tanoak, cascade Oregongrape, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Honeygrove Soil

Typical profile

0 to 15 inches—dark brown gravelly clay loam
15 to 78 inches—reddish brown to yellowish red clay
78 to 99 inches—yellowish red gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 12 inches
Hazard of erosion: Moderate or severe

Shivigny Soil

Typical profile

0 to 13 inches—dark brown very gravelly loam
13 to 41 inches—strong brown very stony clay loam
41 to 78 inches—strong brown very stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes
- Preacher and Bohannon soils on footslopes and in concave areas of backslopes
- Milbury soils in convex areas of backslopes
- Remote soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Honeygrove and Shivigny—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability

USFS Plant Association

Honeygrove—TSHE/GASH (western hemlock/salal)
Shivigny—LIDE3-TSHE (tanoak-western hemlock)

147E—Honeygrove-Shivigny complex, warm, 3 to 30 percent slopes

Composition

Honeygrove soil and similar inclusions—55 percent
Shivigny soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Honeygrove—concave areas of summits; Shivigny—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or igneous rock
Elevation: 1,000 to 2,500 feet
Native plants: Honeygrove—Douglas fir, sugar pine, tanoak, salal, western swordfern, cascade Oregongrape; Shivigny—Douglas fir, tanoak, Pacific madrone, red huckleberry, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Honeygrove Soil

Typical profile

0 to 15 inches—dark brown gravelly clay loam
15 to 78 inches—reddish brown to yellowish red clay
78 to 99 inches—yellowish red gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 12 inches
Hazard of erosion: Moderate

Shivigny Soil

Typical profile

0 to 13 inches—dark brown very gravelly loam
13 to 41 inches—strong brown very stony clay loam
41 to 78 inches—strong brown very stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Remote soils in slightly convex areas of summits
- Digger soils on shoulders and knobs and in convex areas of summits
- Preacher and Bohannon soils in convex and concave areas of summits
- Umpcoos soils on narrow summits, on shoulders, and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Honeygrove and Shivigny—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability

USFS Plant Association

Honeygrove and Shivigny—LIDE3/GASH (tanoak/salal)

148D—Hooskanaden-Loneranch-Millicoma complex, 0 to 15 percent slopes

Composition

Hooskanaden soil and similar inclusions—40 percent
Loneranch soil and similar inclusions—30 percent
Millicoma soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Hooskanaden—open areas of grassland within forests in concave areas of summits; Loneranch—open areas of grassland within forests in convex areas of summits; Millicoma—shoulders, knobs, and convex areas of summits in areas that support a forest canopy
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Hooskanaden—bentgrass, crinkleawn fescue, sedges, western swordfern, red alder; Loneranch—bentgrass, crinkleawn fescue, sedges, western brackenfern, western swordfern; Millicoma—Douglas fir, grand fir, Sitka spruce, tanoak, cascade Oregongrape, western swordfern, evergreen huckleberry, salal
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Hooskanaden Soil

Typical profile

0 to 5 inches—very dark gray gravelly clay loam
5 to 15 inches—very dark grayish brown gravelly clay loam
15 to 35 inches—mottled, olive brown and dark gray clay
35 to 60 inches—mottled, dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Slight
Shrink-swell potential: High

Loneranch Soil

Typical profile

0 to 3 inches—very dark gray gravelly clay loam
3 to 24 inches—very dark grayish brown gravelly clay loam
24 to 27 inches—mottled, dark brown very gravelly clay loam
27 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Depth to water table: 2.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Slight or moderate

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Burnthill and Cunniff soils on adjacent remnants of high marine terraces
- Bullgulch and Hunterscove soils on stable benches
- Reedsport soils in convex areas of summits
- Rustybutte and Sebastian soils that are on shoulders and knobs and in convex areas of summits and are near fault zones
- Whaleshead soils in concave areas of footslopes
- Rock outcrop on ridge crests and shoulders

Major Uses

Hooskanaden, Loneranch, and Millicoma—livestock grazing, homesite development
Millicoma—timber production

Major Management Limitations

Hooskanaden, Loneranch, and Millicoma—slope, susceptibility of the surface layer to water erosion,

slope stability, susceptibility of the surface layer to compaction when wet, salt spray
Hooskanaden—high water table, high shrink-swell potential, clayey textures, very slow permeability, limited rooting depth
Loneranch and Millicoma—soil depth, low available water capacity

USFS Plant Association

Millicoma—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

148E—Hooskanaden-Loneranch-Millicoma complex, 15 to 30 percent slopes

Composition

Hooskanaden soil and similar inclusions—40 percent
Loneranch soil and similar inclusions—30 percent
Millicoma soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Hooskanaden—open areas of grassland within forests in concave areas of summits; Loneranch—open areas of grassland within forests in convex areas of summits; Millicoma—shoulders, knobs, and convex areas of summits in areas that support a forest canopy
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Hooskanaden—bentgrass, crinkleawn fescue, sedges, western swordfern, Sitka spruce; Loneranch—bentgrass, crinkleawn fescue, sedges, western brackenfern, western swordfern; Millicoma—Douglas fir, grand fir, Sitka spruce, tanoak, cascade Oregongrape, western swordfern, evergreen huckleberry, salal
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Hooskanaden Soil

Typical profile

0 to 5 inches—very dark gray gravelly clay loam
5 to 15 inches—very dark grayish brown gravelly clay loam
15 to 35 inches—mottled, olive brown and dark gray clay
35 to 60 inches—mottled, dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate
Shrink-swell potential: High

Loneranch Soil

Typical profile

0 to 3 inches—very dark gray gravelly clay loam
3 to 24 inches—very dark grayish brown gravelly clay loam
24 to 27 inches—mottled, dark brown very gravelly clay loam
27 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Depth to water table: 2.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

• Burnthill and Cunniff soils on adjacent remnants of high marine terraces
• Bullgulch and Hunterscove soils on stable benches
• Reedsport soils in convex areas of summits
• Rustybutte and Sebastian soils that are on narrow summits, on shoulders, and in convex areas of summits and are near fault zones

- Whaleshead soils in concave areas of footslopes
- Rock outcrop on ridge crests and shoulders

Major Uses

Hooskanaden, Loneranch, and Millicoma—livestock grazing, homesite development
Millicoma—timber production

Major Management Limitations

Hooskanaden, Loneranch, and Millicoma—slope, susceptibility of the surface layer to water erosion, slope stability, susceptibility of the surface layer to compaction when wet, salt spray
Hooskanaden—high water table, high shrink-swell potential, clayey textures, very slow permeability, limited rooting depth
Loneranch and Millicoma—soil depth, low available water capacity

USFS Plant Association

Millicoma—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

149E—Hooskanaden-Loneranch-Reinhart complex, 0 to 30 percent slopes

Composition

Hooskanaden soil and similar inclusions—40 percent
Loneranch soil and similar inclusions—30 percent
Reinhart soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Hooskanaden, Loneranch, and Reinhart—open areas of grassland within forests; Hooskanaden—concave areas of summits; Loneranch—convex areas of summits; Reinhart—shoulders, knobs, convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,000 feet
Native plants: Hooskanaden—bentgrass, Sitka spruce, rushes, western swordfern, sedges; Loneranch—bentgrass, Douglas fir, sedges, western brackenfern, western swordfern; Reinhart—crinkleawn fescue, bentgrass, western brackenfern, Pacific poison oak, red alder
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Hooskanaden Soil

Typical profile

0 to 5 inches—very dark gray clay loam
5 to 15 inches—very dark grayish brown clay loam
15 to 35 inches—mottled, olive brown and dark gray clay
35 to 60 inches—mottled, dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate
Shrink-swell potential: High

Loneranch Soil

Typical profile

0 to 3 inches—very dark gray gravelly clay loam
3 to 24 inches—very dark grayish brown gravelly clay loam
24 to 27 inches—mottled, dark brown very gravelly clay loam
27 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Depth to water table: 2.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate

Reinhart Soil

Typical profile

0 to 2 inches—very dark gray gravelly clay loam
2 to 8 inches—very dark grayish brown very gravelly clay loam
8 to 13 inches—dark brown very gravelly clay loam
13 to 18 inches—dark brown extremely gravelly clay loam
18 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow

Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Burnthill and Cunniff soils on adjacent remnant high marine terraces
- Bullgulch and Hunterscove soils on stable benches
- Millicoma soils on shoulders and knobs and in convex areas of summits
- Reedsport soils in convex areas of summits
- Rustybutte and Sebastian soils that are on narrow summits, on shoulders, and in convex areas of summits and are near fault zones
- Whaleshead soils in concave areas
- Rock outcrop on ridge crests and shoulders

Major Uses

Livestock grazing, limited homesite development, watershed, recreation, wildlife habitat

Major Management Limitations

Hooskanaden, Loneranch, and Reinhart—slope, susceptibility of the surface layer to water erosion, slope stability, susceptibility of the surface layer to compaction when wet, salt spray
Hooskanaden—high water table, high shrink-swell potential, clayey textures, very slow permeability, limited rooting depth
Loneranch and Reinhart—soil depth, low available water capacity

150F—Hooskanaden-Loneranch-Reinhart complex, 30 to 60 percent north slopes

Composition

Hooskanaden soil and similar inclusions—35 percent
Loneranch soil and similar inclusions—30 percent
Reinhart soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Hooskanaden, Loneranch, and Reinhart—open areas of grassland within forests; Hooskanaden—concave areas of backslopes; Loneranch—convex areas of backslopes; Reinhart—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,000 feet
Native plants: Hooskanaden—Douglas fir, western hazel, western swordfern, sedges, western brackenfern; Loneranch—red alder, salmonberry, western brackenfern, velvetgrass, Douglas fir; Reinhart—red alder, crinkleawn fescue, salmonberry, western brackenfern, velvetgrass
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Hooskanaden Soil

Typical profile

0 to 5 inches—very dark gray clay loam
5 to 15 inches—very dark grayish brown clay loam
15 to 35 inches—mottled, olive brown and dark gray clay
35 to 60 inches—mottled, dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Loneranch Soil

Typical profile

0 to 3 inches—very dark gray gravelly clay loam
3 to 24 inches—very dark grayish brown gravelly clay loam
24 to 27 inches—mottled, dark brown very gravelly clay loam
27 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Depth to water table: 2.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Severe

Reinhart Soil

Typical profile

0 to 2 inches—very dark gray gravelly clay loam
2 to 8 inches—very dark grayish brown very gravelly clay loam
8 to 13 inches—dark brown very gravelly clay loam

13 to 18 inches—dark brown extremely gravelly clay loam
18 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Millicoma soils on narrow summits, on shoulders, and in convex areas of backslopes
- Reedsport soils in convex areas of backslopes
- Rustybutte and Sebastian soils that are on shoulders and knobs and in convex areas of backslopes and are near fault zones
- Whaleshead soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders

Major Uses

Livestock grazing, watershed, recreation, wildlife habitat

Major Management Limitations

Hooskanaden, Loneranch, and Reinhart—slope, susceptibility of the surface layer to water erosion, slope stability, salt spray
Hooskanaden—high water table, high shrink-swell potential, clayey textures, very slow permeability, limited rooting depth
Loneranch and Reinhart—soil depth, low available water capacity

151D—Horseprairie silt loam, 0 to 15 percent slopes

Composition

Horseprairie soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level to strongly sloping areas
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 200 to 400 feet
Native plants: Sitka spruce, Douglas fir, grand fir, western hemlock, Port Orford cedar, salmonberry, evergreen huckleberry
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 18 inches—very dark brown and very dark grayish silt loam
18 to 61 inches—dark brown and dark yellowish brown silty clay loam
61 to 72 inches—yellowish brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 15 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Bandon soils in nearly level areas of marine terraces
- Hebo soils in depressions and drainageways of marine terraces
- Wadecreek soils in convex areas of marine terraces
- Ferrelo and Gearhart soils on side slopes of relict sand dunes
- Grindbrook soils in nearly level and concave areas of marine terraces
- Chitwood soils in nearly level to undulating areas of terraces

Major Uses

Homesite development, timber production, livestock grazing, hayland

Major Management Limitations

Slope, clayey textures, susceptibility of the surface layer to compaction when wet, salt spray, droughtiness in summer

USFS Plant Association

TSHE-CHLA (western hemlock-Port Orford cedar)

151E—Horseprairie silt loam, 15 to 30 percent slopes

Composition

Horseprairie soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Moderately steep, convex areas
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 200 to 400 feet

Native plants: Sitka spruce, Douglas fir, grand fir, western hemlock, Port Orford cedar, evergreen huckleberry, salal

Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 18 inches—very dark brown and very dark grayish silt loam
18 to 61 inches—dark brown and dark yellowish brown silty clay loam
61 to 72 inches—yellowish brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 15 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

• Bandon soils in less sloping areas of marine terraces
• Hebo soils in depressions and drainageways of marine terraces
• Wadecreek soils in convex areas of marine terraces
• Ferrelo and Gearhart soils on side slopes of relict sand dunes
• Grindbrook soils in nearly level and concave areas of marine terraces
• Chitwood soils in nearly level to gently sloping areas of terraces

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, clayey textures, susceptibility of the surface layer to compaction when wet, salt spray, droughtiness in summer

USFS Plant Association

TSHE-CHLA (western hemlock-Port Orford cedar)

152E—Houstenader-Carpenterville-Huntley complex, 0 to 30 percent slopes

Composition

Houstenader soil and similar inclusions—35 percent
Carpenterville soil and similar inclusions—30 percent
Huntley soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Houstenader, Carpenterville, and Huntley—open areas of grassland within forests; Houstenader—concave areas of summits; Carpenterville—convex areas of summits; Huntley—shoulders, knobs, convex areas of summits
Landform: Hills and mountains
Parent material: Metasedimentary rock
Elevation: 1,000 to 2,000 feet
Native plants: Houstenader—grasses, Oregon white oak, Pacific poison oak, strawberry, sedge; Carpenterville and Huntley—grasses, Oregon white oak, Pacific poison oak, western brackenfern, strawberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Houstenader Soil

Typical profile

0 to 11 inches—very dark brown gravelly loam
11 to 17 inches—mottled, very dark grayish brown gravelly silty clay loam
17 to 23 inches—mottled, grayish brown gravelly silty clay loam
23 to 28 inches—mottled, very dark gray gravelly silty clay loam
28 to 40 inches—mottled, very dark grayish brown gravelly silty clay loam
40 to 60 inches—mottled, very dark grayish brown very gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1 to 4 feet below the surface in November through April
Hazard of erosion: Moderate
Shrink-swell potential: High

Carpenterville Soil

Typical profile

0 to 6 inches—very dark gray gravelly silty clay loam
6 to 17 inches—very dark grayish brown very cobbly silty clay

17 to 32 inches—mottled, dark grayish brown very cobbly clay
32 inches—shale

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: About 3 inches
Depth to water table: 1.5 to 3.0 feet below the surface in November through April
Hazard of erosion: Moderate
Shrink-swell potential: High

Huntley Soil

Typical profile

0 to 3 inches—very dark gray gravelly loam
3 to 11 inches—very dark grayish brown gravelly clay loam
11 to 17 inches—dark brown gravelly clay loam
17 inches—shale

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Quailprairie soils in open areas of grassland in convex areas of summits
- Swedeheaven soils in open areas of grassland on shoulders and knobs and in convex areas of summits
- Colepoint and Skookumhouse soils that are in concave areas of summits and support a forest canopy
- Crutchfield and Hazelcamp soils that are in convex areas of summits and support a forest canopy
- Greggo and Mislatnah soils that are on shoulders and knobs and in convex areas, are near fault zones, and support a forest canopy
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Watershed, recreation, wildlife habitat, livestock grazing, limited homesite development

Major Management Limitations

Houstenader, Carpenterville, and Huntley—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet
Houstenader and Carpenterville—high water table, high shrink-swell potential, clayey textures, limited rooting depth
Carpenterville and Huntley—soil depth, low available water capacity
Carpenterville—slow permeability
Houstenader—very slow permeability

153A—Huffling silty clay loam, 0 to 3 percent slopes

Composition

Huffling soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Depressions, drainageways
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 40 to 200 feet
Native plants: Sitka spruce, willow, sedges, skunkcabbage, red alder
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 12 inches—mottled, black silty clay loam
12 to 41 inches—mottled, very dark grayish brown and gray silty clay loam
41 to 52 inches—mottled, gray clay loam
52 to 65 inches—mottled, grayish brown loam
65 inches—dense consolidated gravelly material

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Slow
Available water capacity: About 11 inches
Depth to water table: 0.5 foot above the surface to a depth of 1.5 feet below the surface in December through April
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Crofland soils in nearly level and concave areas of marine terraces
- Klooqueh soils in convex areas of marine terraces
- Urban land
- Wedderburn and Zwagg soils on adjacent side slopes of coastal hills and mountains

Major Uses

Limited homesite development, cropland, livestock grazing

Major Management Limitations

High water table, slow permeability, high shrink-swell potential, clayey textures, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

154G—Jayar-Althouse-Woodseye complex, 60 to 90 percent north slopes

Composition

Jayar soil and similar inclusions—35 percent
Althouse soil and similar inclusions—30 percent
Woodseye soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Jayar—convex areas of backslopes; Althouse—concave areas of backslopes; Woodseye—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Jayar—Douglas fir, white oak, tanoak, salal, cascade Oregongrape, western prince's pine; Althouse—Douglas fir, tanoak, salal, Sadler oak, deerfoot vanillaleaf; Woodseye—Douglas fir, tanoak, salal, greenleaf manzanita, common beargrass
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Jayar Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 31 inches—dark yellowish brown very gravelly loam
31 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Althouse Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 32 inches—dark brown to yellowish brown very gravelly loam
32 to 53 inches—light olive brown very gravelly loam
53 inches—weathered metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Woodseye Soil

Typical profile

0 to 12 inches—very dark brown to very dark grayish brown very gravelly loam
12 to 16 inches—dark grayish brown extremely gravelly loam
16 inches—metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Jayar, Althouse, and Woodseye—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, low available water capacity
Jayar and Althouse—susceptibility of the surface layer to displacement and accelerated erosion
Jayar and Woodseye—soil depth

USFS Plant Association

Jayar, Althouse, and Woodseye—LIDE3/GASH (tanoak/salal)

155F—Jayar-Rock outcrop-Althouse complex, 30 to 60 percent south slopes

Composition

Jayar soil and similar inclusions—40 percent
Rock outcrop—30 percent
Althouse soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Jayar—convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Althouse—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Jayar—Douglas fir, tanoak, sugar pine, cascade Oregongrape, baldhip rose, western rattlesnake plantain; Althouse—Douglas fir, tanoak, white fir, sugar pine, cascade Oregongrape, western prince's pine
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Jayar Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 31 inches—dark yellowish brown very gravelly loam
31 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Althouse Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 32 inches—dark brown to yellowish brown very gravelly loam
32 to 53 inches—light olive brown very gravelly loam
53 inches—weathered metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Skymor soils adjacent to areas of Rock outcrop
- Woodseye soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Jayar and Althouse—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, droughtiness in summer, low available water capacity
Jayar—soil depth

USFS Plant Association

Jayar—LIDE3/BENE (tanoak/dwarf Oregongrape)
Althouse—LIDE3-ABCO (tanoak-white fir)

156G—Jayar-Skymor-Althouse complex, 60 to 90 percent south slopes

Composition

Jayar soil and similar inclusions—35 percent
Skymor soil and similar inclusions—30 percent
Althouse soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Jayar—convex areas of backslopes; Skymor—narrow summits, shoulders, convex areas of backslopes; Althouse—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Jayar—Douglas fir, tanoak, cascade Oregongrape, baldhip rose, western rattlesnake plantain; Skymor—Sadler oak, golden chinkapin, white fir, huckleberry oak, greenleaf manzanita; Althouse—Douglas fir,

tanoak, white fir, cascade Oregongrape, western prince's pine
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Jayar Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 31 inches—dark yellowish brown very gravelly loam
31 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Skymor Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 15 inches—yellowish brown very gravelly loam
15 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Althouse Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 32 inches—dark brown to yellowish brown very gravelly loam
32 to 53 inches—light olive brown very gravelly loam
53 inches—weathered metasedimentary rock

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Jayar, Skymor, and Althouse—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, south aspects, droughtiness in summer, low available water capacity
Jayar and Skymor—soil depth

USFS Plant Association

Jayar—LIDE3/BENE (tanoak/dwarf Oregongrape)
Skymor—ABCO-QUSA-CACH (white fir-Sadler oak-golden chinkapin)
Althouse—LIDE3-ABCO (tanoak-white fir)

157E—Josephine-Pollard-Speaker complex, 2 to 30 percent slopes

Composition

Josephine soil and similar inclusions—40 percent
Pollard soil and similar inclusions—30 percent
Speaker soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Josephine—gently sloping areas of summits; Pollard—concave areas of summits; Speaker—convex areas of summits
Landform: Mountains
Parent material: Mudstone and metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Josephine—Douglas fir, tanoak, ponderosa pine, Pacific madrone, cascade Oregongrape, western rattlesnake plantain; Pollard—Douglas fir, tanoak, Pacific madrone, cascade Oregongrape, deerfoot vanillaleaf; Speaker—Douglas fir, tanoak, ponderosa pine, canyon live oak, California honeysuckle, poison oak
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Josephine Soil

Typical profile

0 to 15 inches—dark grayish brown to dark brown gravelly loam
15 to 58 inches—reddish brown to yellowish red gravelly clay loam
58 inches—weathered mudstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate

Pollard Soil

Typical profile

0 to 10 inches—dark brown gravelly loam
10 to 32 inches—dark brown to reddish brown clay loam
32 to 69 inches—reddish brown to strong brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Speaker Soil

Typical profile

0 to 13 inches—dark brown gravelly loam
13 to 35 inches—yellowish red gravelly clay loam
35 inches—weathered mudstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Beekman and Colestine soils on shoulders and knobs and in convex areas of backslopes
- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Shastacosta soils in convex and concave areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, limited homesite development

Major Management Limitations

Josephine, Pollard, and Speaker—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer
Speaker—susceptibility of the surface layer to water erosion, soil depth, low available water capacity

USFS Plant Association

Josephine and Pollard—LIDE3/BENE (tanoak/dwarf Oregongrape)
Speaker—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

158F—Kanid-Acker-Atring complex, 30 to 60 percent north slopes

Composition

Kanid soil and similar inclusions—40 percent
Acker soil and similar inclusions—30 percent
Atring soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Kanid—concave areas of backslopes; Acker—footslopes, concave areas of backslopes; Atring—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 2,500 feet
Native plants: Douglas fir, sugar pine, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained

Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Acker Soil

Typical profile

0 to 9 inches—dark brown to dark yellowish brown gravelly loam
9 to 68 inches—strong brown gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate or severe

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Dumont soils on stable benches
- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Norling soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Kanid, Acker, and Atring—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer
Kanid and Atring—low available water capacity
Atring—soil depth

USFS Plant Association

Kanid, Acker, and Atring—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

159F—Kanid-Acker-Atring complex, 30 to 60 percent south slopes

Composition

Kanid soil and similar inclusions—35 percent
Acker soil and similar inclusions—30 percent
Atring soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Kanid—concave areas of backslopes; Acker—footslopes, concave areas of backslopes; Atring—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 3,000 feet
Native plants: Kanid and Atring—Douglas fir, tanoak, sugar pine, salal, western swordfern, cascade Oregongrape; Acker—Douglas fir, tanoak, sugar pine, salal, cascade Oregongrape, western brackenfern
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Acker Soil

Typical profile

0 to 9 inches—dark brown to dark yellowish brown gravelly loam
9 to 68 inches—strong brown gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained

Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate or severe

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Norling soils in concave areas of backslopes
- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Kanid, Acker, and Atring—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Kanid and Atring—low available water capacity
Atring—soil depth

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Kanid and Atring—LIDE3/GASH (tanoak/salal)
Acker—LIDE3/GASH-BENE (tanoak/salal-dwarf Oregongrape)

160F—Kanid-Atring complex, 30 to 60 percent north slopes

Composition

Kanid soil and similar inclusions—50 percent
Atring soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Kanid—concave areas of backslopes; Atring—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 2,500 feet
Native plants: Douglas fir, sugar pine, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Acker soils on footslopes and in concave areas of backslopes
- Norling soils in convex areas of backslopes
- Dumont soils on stable benches
- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Kanid and Atring—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, low available water capacity
Atring—soil depth

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Kanid and Atring—LIDE3/VAOV2-GASH (tanoak/ evergreen huckleberry-salal)

160G—Kanid-Atring complex, 60 to 90 percent north slopes

Composition

Kanid soil and similar inclusions—45 percent
Atring soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Kanid—concave areas of backslopes; Atring—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 2,500 feet
Native plants: Douglas fir, sugar pine, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Kanid Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 47 inches—dark yellowish brown very gravelly clay loam
47 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Atring Soil

Typical profile

0 to 7 inches—dark brown very gravelly loam
7 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 37 inches—dark yellowish brown very gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Kanid and Atring—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, low available water capacity
Atring—soil depth

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Kanid and Atring—LIDE3/VAOV2-GASH (tanoak/ evergreen huckleberry-salal)

161A—Kirkendall-Quosatana complex, 0 to 3 percent slopes

Composition

Kirkendall soil and similar inclusions—55 percent
Quosatana soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Kirkendall—nearly level areas; Quosatana—depressions, drainageways
Landform: Flood plains
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: Kirkendall—Douglas fir, California laurel, western hemlock, tanoak, western swordfern, evergreen huckleberry; Quosatana—willow, California laurel, red alder, sedges, rushes

Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—51 degrees F
Frost-free period—180 to 220 days

Kirkendall Soil

Typical profile

0 to 26 inches—very dark grayish brown and dark brown silt loam
26 to 52 inches—dark yellowish brown and brown silty clay loam
52 to 60 inches—mottled, brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 12 inches
Frequency of flooding: Occasional in November through April
Depth to water table: 3.5 to 4.0 feet below the surface in November through April
Hazard of erosion: Slight, except during periods of flooding

Quosatana Soil

Typical profile

0 to 14 inches—mottled, very dark grayish brown silt loam
14 to 21 inches—gleyed and mottled, dark grayish brown silt loam
21 to 49 inches—gleyed and mottled, grayish brown silty clay loam
49 to 60 inches—gleyed and mottled, light brownish gray loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Slow
Available water capacity: About 12 inches
Frequency of flooding: Frequent in November through April
Depth to water table: At the surface to a depth of 0.5 foot below the surface in November through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Meda soils that are on alluvial fans and have slopes of more than 3 percent
- Soils that have more than 35 percent rock fragments and are in convex areas of flood plains
- Soils that are moderately well drained to somewhat poorly drained and are in depressions and drainageways
- Riverwash

Major Uses

Kirkendall—timber production, livestock grazing, hayland
Quosatana—livestock grazing, hayland

Major Management Limitations

Kirkendall and Quosatana—flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity
Kirkendall—susceptibility of the surface layer to displacement and accelerated erosion, clayey textures
Quosatana—high water table, slow permeability

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Kirkendall—TSHE-UMCA (western hemlock-California laurel)

162A—Klooqueh silty clay loam, 0 to 3 percent slopes

Composition

Klooqueh soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 40 to 200 feet
Native plants: Sitka spruce, Douglas fir, red alder, evergreen huckleberry, salmonberry
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 19 inches—black silty clay loam
19 to 26 inches—dark brown silty clay loam
26 to 60 inches—brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches

Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Crofland soils in nearly level and concave areas of marine terraces
- Huffling soils in depressions and drainageways of marine terraces
- Wedderburn and Zwagg soils on footslopes of adjacent coastal hills and mountains
- Urban land

Major Uses

Homesite development, cropland, livestock grazing

Major Management Limitations

Moderately slow permeability, high shrink-swell potential, clayey textures, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

162B—Klooqueh silty clay loam, 3 to 8 percent slopes

Composition

Klooqueh soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Undulating, convex areas
Landform: Marine terraces
Parent material: Marine sediment
Elevation: 40 to 200 feet
Native plants: Sitka spruce, Douglas fir, red alder, evergreen huckleberry, salmonberry
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 19 inches—black silty clay loam
19 to 26 inches—dark brown silty clay loam
26 to 60 inches—brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Contrasting Inclusions

- Crofland soils in nearly level and concave areas of marine terraces
- Huffling soils in depressions and drainageways of marine terraces
- Wedderburn and Zwagg soils on footslopes of adjacent coastal hills and mountains
- Urban land

Major Uses

Homesite development, cropland, livestock grazing

Major Management Limitations

Slope, moderately slow permeability, high shrink-swell potential, clayey textures, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

163F—Knapke-Fantz complex, 30 to 60 percent north slopes

Composition

Knapke soil and similar inclusions—50 percent
Fantz soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Knapke—concave areas of backslopes; Fantz—convex areas of backslopes
Landform: Mountains
Parent material: Gabbro
Elevation: 200 to 1,800 feet
Native plants: Knapke—Douglas fir, tanoak, sugar pine, salal, baldhip rose; Fantz—Douglas fir, tanoak, sugar pine, salal, baldhip rose, cascade Oregongrape
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—150 to 170 days

Knapke Soil

Typical profile

0 to 17 inches—very dark grayish brown to dark brown extremely gravelly loam
17 to 65 inches—brown extremely gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more

Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Fantz Soil

Typical profile

0 to 16 inches—very dark grayish brown to dark brown very gravelly loam
16 to 32 inches—dark brown very cobbly loam
32 inches—metagabbro

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Dubakella and Pearsoll soils that are in convex areas of backslopes and on shoulders and knobs and are near fault zones
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Knapke and Fantz—slope, susceptibility of the surface layer to water erosion, slope stability, droughtiness in summer, low available water capacity
Fantz—susceptibility of the surface layer to compaction when wet, soil depth

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Knapke and Fantz—PSME-LIDE3/GASH (Douglas fir-tanoak/salal)

164A—Langlois silty clay loam, 0 to 3 percent slopes

Composition

Langlois soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Depressions
Landform: Flood plains, tidal flats
Parent material: Silty alluvium over marine clay
Elevation: 0 to 50 feet
Native plants: Sedges, rushes, bentgrass, Sitka spruce, willow
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 10 inches—mottled, dark grayish brown silty clay loam
10 to 28 inches—gleyed and mottled, dark gray silty clay loam
28 to 60 inches—gleyed and mottled, dark gray clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Very poorly drained
Permeability: Slow
Available water capacity: About 9 inches
Frequency of flooding: Frequent in November through March
Depth to water table: 0.5 foot above the surface to a depth of 0.5 foot below the surface in November through May
Hazard of erosion: Slight, except during periods of flooding
Shrink-swell potential: High

Contrasting Inclusions

- Nestucca soils in convex areas of flood plains
- Nehalem soils in concave areas of flood plains
- Logsden soils in convex areas of low stream terraces
- Euchre soils in concave areas of low stream terraces
- Gleneden soils in concave areas of low stream terraces
- Frankport and Waldport soils on recently stabilized sand dunes

Major Uses

Livestock grazing, hayland, wildlife habitat

Major Management Limitations

Flooding, high water table, susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer, high humidity

165D—Loeb-Macklyn complex, 0 to 15 percent slopes

Composition

Loeb soil and similar inclusions—55 percent
Macklyn soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Loeb—concave areas of summits; Macklyn—convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Loeb—Douglas fir, redwood, tanoak, California laurel, Pacific rhododendron, evergreen huckleberry; Macklyn—Douglas fir, redwood, tanoak, evergreen huckleberry, red huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 300 days

Loeb Soil

Typical profile

0 to 10 inches—dark reddish brown silt loam
10 to 22 inches—reddish brown silty clay loam
22 to 37 inches—reddish brown silty clay
37 to 46 inches—reddish brown gravelly clay
46 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Slight
Shrink-swell potential: High

Macklyn Soil

Typical profile

0 to 12 inches—dark reddish brown silt loam
12 to 22 inches—reddish brown silty clay loam
22 to 29 inches—reddish brown silty clay
29 to 37 inches—reddish brown gravelly clay
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Contrasting Inclusions

- Bosland, Dulandy and Guerin soils on shoulders and knobs and in convex areas of summits
- Vondergreen soils in depressions and drainageways
- Wedderburn soils in concave areas of backslopes
- Zwagg soils in open areas of grassland on shoulders and knobs and in convex areas of summits

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Loeb and Macklyn—susceptibility of the surface layer to compaction when wet, clayey textures, high shrink-swell potential
Macklyn—soil depth

USFS Plant Association

Loeb and Macklyn—LIDE3-SESE3 (tanoak-coast redwood)

165E—Loeb-Macklyn complex, 15 to 30 percent slopes

Composition

Loeb soil and similar inclusions—50 percent
Macklyn soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Loeb—concave areas of summits; Macklyn—convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Loeb—Douglas fir, redwood, tanoak, California laurel, Pacific rhododendron, evergreen huckleberry; Macklyn—Douglas fir, redwood, tanoak, evergreen huckleberry, red huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 300 days

Loeb Soil

Typical profile

0 to 10 inches—dark reddish brown silt loam

10 to 22 inches—reddish brown silty clay loam
22 to 37 inches—reddish brown silty clay
37 to 46 inches—reddish brown gravelly clay
46 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Macklyn Soil

Typical profile

0 to 12 inches—dark reddish brown silt loam
12 to 22 inches—reddish brown silty clay loam
22 to 29 inches—reddish brown silty clay
29 to 37 inches—reddish brown gravelly clay
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Contrasting Inclusions

- Bosland, Dulandy, and Guerin soils on shoulders and knobs and in convex areas of summits
- Vondergreen soils in depressions and drainageways
- Wedderburn soils in concave areas of backslopes
- Zwagg soils in open areas of grassland on shoulders and knobs and in convex areas of summits

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Loeb and Macklyn—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, high shrink-swell potential
Macklyn—soil depth

USFS Plant Association

Loeb and Macklyn—LIDE3-SESE3 (tanoak-coast redwood)

166E—Loeb-Macklyn-Vondergreen complex, 0 to 30 percent slopes

Composition

Loeb soil and similar inclusions—35 percent
Macklyn soil and similar inclusions—30 percent
Vondergreen soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Loeb—concave areas of summits; Macklyn—convex areas of summits; Vondergreen—depressions, drainageways
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Loeb—Douglas fir, redwood, tanoak, California laurel, Pacific rhododendron, evergreen huckleberry; Macklyn—Douglas fir, redwood, tanoak, evergreen huckleberry, red huckleberry; Vondergreen—Douglas fir, redwood, tanoak, bigleaf maple, red huckleberry, salmonberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 300 days

Loeb Soil

Typical profile

0 to 10 inches—dark reddish brown silt loam
10 to 22 inches—reddish brown silty clay loam
22 to 37 inches—reddish brown silty clay
37 to 46 inches—reddish brown gravelly clay
46 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Macklyn Soil

Typical profile

0 to 12 inches—dark reddish brown silt loam
12 to 22 inches—reddish brown silty clay loam
22 to 29 inches—reddish brown silty clay
29 to 37 inches—reddish brown gravelly clay
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Vondergreen Soil

Typical profile

0 to 9 inches—dark brown to brown silt loam
9 to 16 inches—dark yellowish brown silty clay loam
16 to 24 inches—mottled, light olive brown silty clay loam
24 to 38 inches—mottled, gray silty clay
38 to 53 inches—mottled, gray gravelly silty clay
53 inches—weathered shale

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: About 8 inches
Depth to water table: 1 to 3 feet below the surface in November through May
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Bosland, Dulandy and Guerin soils on shoulders and knobs and in convex areas of summits
- Wedderburn soils in concave areas of backslopes
- Zwagg soils in open areas of grassland on shoulders and knobs and in convex areas of summits

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Loeb, Macklyn, and Vondergreen—slope, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, high shrink-swell potential
Loeb and Macklyn—susceptibility of the surface layer to water erosion
Macklyn—soil depth
Vondergreen—high water table, slow permeability

USFS Plant Association

Loeb, Macklyn, and Vondergreen—LIDE3-SESE3 (tanoak-coast redwood)

167A—Logsden silt loam, 0 to 3 percent slopes

Composition

Logsden soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 40 to 100 feet
Native plants: Douglas fir, Sitka spruce, salmonberry, western swordfern, salal
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 17 inches—very dark grayish brown silt loam
17 to 44 inches—brown silt loam
44 to 60 inches—brown fine sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 11 inches
Frequency of flooding: Rare
Hazard of erosion: Slight, except during rare periods of flooding

Contrasting Inclusions

- Euchre soils in concave areas of low stream terraces
- Chetco and Langlois soils in depressions and drainageways of flood plains
- Ekoms soils in nearly level and convex areas of adjacent high stream terraces
- Brenner and Yachats soils on flood plains
- Riverwash

Major Uses

Livestock grazing, homesite development, hayland

Major Management Limitations

Rare flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

168A—Logsden-Euchre complex, 0 to 3 percent slopes

Composition

Logsden soil and similar inclusions—45 percent
Euchre soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Logsden—convex areas; Euchre—concave areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 40 to 100 feet
Native plants: Logsden—Douglas fir, Sitka spruce, salmonberry, western swordfern, salal; Euchre—grasses, sedges, cascara buckthorn, salmonberry, rushes
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Logsden Soil

Typical profile

0 to 17 inches—very dark grayish brown silt loam
17 to 44 inches—brown silt loam
44 to 60 inches—brown fine sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 11 inches
Frequency of flooding: Rare
Hazard of erosion: Slight, except during rare periods of flooding

Euchre Soil

Typical profile

0 to 18 inches—black to very dark grayish brown silt loam
18 to 31 inches—mottled, dark yellowish brown silty clay loam
31 to 51 inches—mottled, yellowish brown clay loam
51 to 60 inches—mottled, grayish brown sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Moderately slow
Available water capacity: About 14 inches
Depth to water table: 1 to 3 feet below the surface in November through May
Hazard of erosion: Slight

Contrasting Inclusions

- Chetco and Langlois soils in depressions and drainageways of flood plains
- Ekoms soils in nearly level and convex areas of adjacent high stream terraces
- Brenner and Yachats soils on flood plains
- Riverwash

Major Uses

Logsden and Euchre—livestock grazing, homesite development
Logsden—hayland

Major Management Limitations

Logsden and Euchre—susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity
Logsden—rare flooding
Euchre—high water table

169F—Loneranch-Hooskanaden-Millicoma complex, 30 to 60 percent slopes

Composition

Loneranch soil and similar inclusions—35 percent
Hooskanaden soil and similar inclusions—30 percent
Millicoma soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Loneranch—open areas of grassland within forests in convex areas of backslopes; Hooskanaden—open areas of grassland within forests in concave areas of backslopes; Millicoma—narrow summits, shoulders, and other convex areas of backslopes under a forest canopy
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet

Native plants: Loneranch—bentgrass, sedges, western brackenfern, western swordfern, salmonberry; Hooskanaden—bentgrass, western swordfern, sedges, western brackenfern, Sitka spruce; Millicoma—Douglas fir, Sitka spruce, tanoak, western hemlock, western swordfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Loneranch Soil

Typical profile

0 to 3 inches—very dark gray gravelly clay loam
3 to 24 inches—very dark grayish brown gravelly clay loam
24 to 27 inches—mottled, dark brown very gravelly clay loam
27 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Depth to water table: 2.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate

Hooskanaden Soil

Typical profile

0 to 5 inches—very dark gray gravelly clay loam
5 to 15 inches—very dark grayish brown gravelly clay loam
15 to 35 inches—mottled, olive brown and dark gray clay
35 to 60 inches—mottled, dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate
Shrink-swell potential: High

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Reedsport soils in convex areas of backslopes
- Rustybutte and Sebastian soils that are near fault zones and are on shoulders and knobs and in convex areas of backslopes
- Whaleshead soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders

Major Uses

Hooskanaden, Loneranch, and Millicoma—livestock grazing
Millicoma—timber production

Major Management Limitations

Loneranch, Hooskanaden, and Millicoma—slope, susceptibility of the surface layer to water erosion, slope stability, salt spray
Loneranch and Millicoma—soil depth, low available water capacity
Hooskanaden—high water table, high shrink-swell potential, clayey textures, very slow permeability, limited rooting depth

USFS Plant Association

Millicoma—LIDE3-TSHE (tanoak-western hemlock)

170F—Loneranch-Hooskanaden-Reinhart complex, 30 to 60 percent south slopes

Composition

Loneranch soil and similar inclusions—35 percent
Hooskanaden soil and similar inclusions—30 percent
Reinhart soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Loneranch, Hooskanaden, Reinhart—open areas of grassland within forests; Loneranch—convex areas of backslopes; Hooskanaden—concave areas of backslopes;

Reinhart—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,000 feet
Native plants: Loneranch—bentgrass, sedges, western brackenfern, Pacific poison oak, Sitka spruce; Hooskanaden—bentgrass, western swordfern, sedges, western brackenfern, Sitka spruce; Reinhart—crinkleawn fescue, bentgrass, western brackenfern, Pacific poison oak, red alder
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Loneranch Soil

Typical profile

0 to 3 inches—very dark gray gravelly clay loam
3 to 24 inches—very dark grayish brown gravelly clay loam
24 to 27 inches—mottled, dark brown very gravelly clay loam
27 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Depth to water table: 2.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Severe

Hooskanaden Soil

Typical profile

0 to 5 inches—very dark gray clay loam
5 to 15 inches—very dark grayish brown clay loam
15 to 35 inches—mottled, olive brown and dark gray clay
35 to 60 inches—mottled, dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 9 inches
Depth to water table: 1.0 to 2.5 feet below the surface in November through April
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Reinhart Soil

Typical profile

0 to 2 inches—very dark gray gravelly clay loam
2 to 8 inches—very dark grayish brown very gravelly clay loam
8 to 13 inches—dark brown very gravelly clay loam
13 to 18 inches—dark brown extremely gravelly clay loam
18 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Burnthill and Cunniff soils on adjacent remnant high marine terraces
- Millicoma soils on narrow summits, on shoulders, and in convex areas of backslopes
- Reedsport soils in convex areas of backslopes
- Rustybutte and Sebastian soils that are near fault zones and are on shoulders and knobs and in convex areas of backslopes
- Whaleshead soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders

Major Uses

Livestock grazing, watershed, recreation, wildlife habitat

Major Management Limitations

Hooskanaden, Loneranch, and Reinhart—slope, susceptibility of the surface layer to water erosion, slope stability, south aspects, salt spray
Hooskanaden—high water table, high shrink-swell potential, clayey textures, very slow permeability, limited rooting depth
Loneranch and Reinhart—soil depth, low available water capacity

171B—McCurdy-Wintley complex, 0 to 7 percent slopes

Composition

McCurdy soil and similar inclusions—45 percent
Wintley soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: McCurdy—gently sloping concave areas; Wintley—nearly level convex areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: McCurdy—Douglas fir, western hemlock, western redcedar, grand fir, western hazel, tall Oregongrape; Wintley—Douglas fir, western hemlock, western redcedar, grand fir, western swordfern, California laurel
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—51 degrees F
Frost-free period—180 to 220 days

McCurdy Soil

Typical profile

0 to 6 inches—very dark grayish brown silt loam
6 to 27 inches—dark yellowish brown silty clay loam
27 to 46 inches—mottled, yellowish brown silty clay loam
46 to 60 inches—mottled, brownish yellow silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: About 12 inches
Depth to water table: 2 to 3 feet below the surface in November through April
Hazard of erosion: Slight
Shrink-swell potential: High

Wintley Soil

Typical profile

0 to 5 inches—dark brown silt loam
5 to 43 inches—dark yellowish brown silty clay loam
43 to 60 inches—yellowish brown gravelly loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Pyburn soils in depressions and drainageways
- Meda soils in convex areas of alluvial fans
- Bohannon, Digger, Milbury, and McDuff soils in convex areas of adjacent mountain footslopes and toeslopes
- Wet soils in depressions and drainageways

Major Uses

Timber production, livestock grazing, hayland, homesite development

Major Management Limitations

McCurdy and Wintley—susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, high shrink-swell potential, clayey textures, moderately slow permeability, droughtiness in summer, high humidity
McCurdy—high water table, limited rooting depth

USFS Plant Association

McCurdy and Wintley—TSHE-THPL (western hemlock-western redcedar)

172C—Meda gravelly loam, 3 to 15 percent slopes

Composition

Meda soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Footslopes, concave areas
Landform: Alluvial fans
Parent material: Alluvium, colluvium
Elevation: 200 to 1,000 feet
Native plants: Douglas fir, red alder, western hemlock, California laurel, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Typical profile

0 to 8 inches—very dark grayish brown gravelly loam
8 to 28 inches—dark brown to dark yellowish brown gravelly loam
28 to 43 inches—dark yellowish brown gravelly sandy loam
43 to 60 inches—yellowish brown very gravelly sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate

Available water capacity: About 6 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Chismore, McCurdy, Pyburn, and Wintley soils on high stream terraces
- Kirkendall and Quosatana soils on flood plains
- Zyzzug soils on low stream terraces
- Wet soils in seep areas

Major Uses

Timber production, livestock grazing, hayland

Major Management Limitations

Susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

USFS Plant Association

TSHE-UMCA (western hemlock-California laurel)

173F—Milbury-Remote-Umpcoos complex, 30 to 60 percent north slopes

Composition

Milbury soil and similar inclusions—40 percent
Remote soil and similar inclusions—30 percent
Umpcoos soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—convex areas of backslopes; Remote—concave areas of backslopes; Umpcoos—shoulders, knobs, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Milbury—Douglas fir, western hemlock, western redcedar, western swordfern, evergreen huckleberry; Remote—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Umpcoos—Douglas fir, western hemlock, California laurel, evergreen huckleberry, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown very gravelly loam
13 to 29 inches—dark brown to brown very gravelly loam
29 to 36 inches—dark yellowish brown very cobbly loam
36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Remote Soil

Typical profile

0 to 6 inches—very dark grayish brown very gravelly loam
6 to 14 inches—dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Preacher and Bohannon soils in convex areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Dystrochrepts and Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Milbury, Remote, and Umpcoos—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability

Milbury and Umpcoos—soil depth, low available water capacity

USFS Plant Association

Milbury—TSHE-THPL (western hemlock-western redcedar)

Remote—TSHE/GASH (western hemlock-salal)

Umpcoos—TSHE-UMCA (western hemlock-California laurel)

174F—Milbury-Remote-Umpcoos complex, warm, 30 to 60 percent north slopes

Composition

Milbury soil and similar inclusions—40 percent
Remote soil and similar inclusions—30 percent
Umpcoos soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—convex areas of backslopes; Remote—concave areas of backslopes; Umpcoos—shoulders, knobs, convex areas of backslopes

Landform: Mountains

Parent material: Metasedimentary or metavolcanic rock

Elevation: 200 to 2,500 feet

Native plants: Milbury—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Remote—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern; Umpcoos—Douglas fir, tanoak, sugar pine, evergreen huckleberry, salal, common beargrass

Climatic factors:

Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown very gravelly loam

13 to 29 inches—dark brown to brown very gravelly loam

29 to 36 inches—dark yellowish brown very cobbly loam

36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Remote Soil

Typical profile

0 to 6 inches—very dark grayish brown very gravelly loam

6 to 14 inches—dark brown gravelly loam

14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam

3 to 13 inches—dark yellowish brown extremely gravelly loam

13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Blachly soils on slump benches
- Preacher and Bohannon soils in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Dystrochrepts and Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Milbury, Remote, and Umpcoos—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability

Milbury and Umpcoos—soil depth, low available water capacity

USFS Plant Association

Milbury—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Remote and Umpcoos—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

175F—Milbury-Umpcoos-Dystrochrepts complex, 30 to 60 percent north slopes

Composition

Milbury soil and similar inclusions—40 percent
Umpcoos soil and similar inclusions—30 percent
Dystrochrepts and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes; Dystrochrepts—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Milbury—Douglas fir, western hemlock, western redcedar, western swordfern, evergreen huckleberry; Umpcoos—Douglas fir, western hemlock, California laurel, evergreen huckleberry, cascade Oregongrape; Dystrochrepts—Douglas fir, western hemlock, evergreen huckleberry, western swordfern, red huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown very gravelly loam
13 to 29 inches—dark brown to brown very gravelly loam
29 to 36 inches—dark yellowish brown very cobbly loam
36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely gravelly loam to yellowish brown very cobbly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 24 to 60 inches or more
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Severe or very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Milbury, Umpcoos, and Dystrochrepts—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Milbury—TSHE-THPL (western hemlock-western redcedar)

Umpcoos—TSHE-UMCA (western hemlock-California laurel)

175G—Milbury-Umpcoos-Dystrochrepts complex, 60 to 90 percent north slopes

Composition

Milbury soil and similar inclusions—40 percent
Umpcoos soil and similar inclusions—30 percent
Dystrochrepts and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes; Dystrochrepts—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Milbury—Douglas fir, western hemlock, western redcedar, western swordfern, evergreen huckleberry; Umpcoos—Douglas fir, western hemlock, California laurel, evergreen huckleberry, cascade Oregongrape; Dystrochrepts—Douglas fir, western hemlock, western swordfern, red huckleberry, Oregon oxalis
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown very gravelly loam
13 to 29 inches—dark brown to brown very gravelly loam
29 to 36 inches—dark yellowish brown very cobbly loam
36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely gravelly loam to yellowish brown very cobbly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 24 to 60 inches or more
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Milbury, Umpcoos, and Dystrochrepts—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Milbury—TSHE-THPL (western hemlock-western redcedar)
Umpcoos—TSHE-UMCA (western hemlock-California laurel)

176F—Milbury-Umpcoos-Dystrochrepts complex, warm, 30 to 60 percent north slopes

Composition

Milbury soil and similar inclusions—40 percent
Umpcoos soil and similar inclusions—30 percent
Dystrochrepts and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes; Dystrochrepts—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Milbury—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Umpcoos—Douglas fir, tanoak, sugar pine, evergreen huckleberry, salal, common beargrass; Dystrochrepts—Douglas fir, tanoak, salal, common beargrass, vine maple
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown very gravelly loam
13 to 29 inches—dark brown to brown very gravelly loam
29 to 36 inches—dark yellowish brown very cobbly loam
36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely gravelly loam to yellowish brown very cobbly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 24 to 60 inches or more
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Severe or very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Milbury, Umpcoos, and Dystrochrepts—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Milbury—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Umpcoos—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

176G—Milbury-Umpcoos-Dystrochrepts complex, warm, 60 to 90 percent north slopes

Composition

Milbury soil and similar inclusions—40 percent
Umpcoos soil and similar inclusions—30 percent
Dystrochrepts and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—concave areas of backslopes; Umpcoos—narrow summits, shoulders, convex areas of backslopes; Dystrochrepts—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Milbury—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Umpcoos—Douglas fir, tanoak, sugar pine, evergreen huckleberry, salal, common beargrass; Dystrochrepts—Douglas fir, tanoak, salal, common beargrass, vine maple
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown very gravelly loam
13 to 29 inches—dark brown to brown very gravelly loam
29 to 36 inches—dark yellowish brown very cobbly loam
36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown very gravelly sandy loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Dystrochrepts

Reference profile

0 to 8 inches—dark brown extremely gravelly loam to yellowish brown very cobbly sandy loam
8 to 24 inches—dark yellowish brown extremely stony clay loam to yellow extremely gravelly sandy loam
24 inches—diorite

Properties and qualities

Depth to bedrock: 24 to 60 inches or more
Drainage class: Well drained to excessively drained
Permeability: Moderate to very rapid
Available water capacity: About 1 to 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Milbury, Umpcoos, and Dystrochrepts—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Milbury—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Umpcoos—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

177G—Milbury-Umpcoos-Rock outcrop complex, 60 to 90 percent north slopes, stony

Composition

Milbury soil and similar inclusions—40 percent
Umpcoos soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Milbury—concave areas of backslopes; Umpcoos—shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or igneous rock
Elevation: 1,000 to 2,500 feet
Native plants: Milbury—Douglas fir, western hemlock, western redcedar, western swordfern, evergreen huckleberry; Umpcoos—Douglas fir, western hemlock, California laurel, evergreen huckleberry, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Milbury Soil

Typical profile

0 to 13 inches—very dark grayish brown stony loam
13 to 29 inches—dark brown to brown very gravelly loam
29 to 36 inches—dark yellowish brown very cobbly loam
36 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Umpcoos Soil

Typical profile

0 to 3 inches—brown stony loam
3 to 13 inches—dark yellowish brown extremely gravelly loam
13 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Remote soils on footslopes and in concave areas of backslopes
- Blachly soils on slump benches
- Dystrochrepts and Orthents adjacent to areas of Rock outcrop
- Wet soil in seep areas

Major Use

Timber production

Major Management Limitations

Milbury and Umpcoos—slope, susceptibility of the surface layer to water erosion, stones and boulders on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Milbury—TSHE-THPL (western hemlock-western redcedar)
Umpcoos—TSHE-UMCA (western hemlock-California laurel)

178F—Millicoma-Whaleshead-Reedsport complex, 30 to 60 percent south slopes

Composition

Millicoma soil and similar inclusions—40 percent
Whaleshead soil and similar inclusions—25 percent
Reedsport soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Millicoma—narrow summits, shoulders, convex areas of backslopes; Whaleshead—concave areas of backslopes; Reedsport—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Millicoma—Douglas fir, grand fir, Sitka spruce, tanoak, salal, cascade Oregongrape, evergreen huckleberry; Whaleshead—Douglas fir,

grand fir, Sitka spruce, tanoak, western swordfern, salal, evergreen huckleberry; Reedsport—Douglas fir, grand fir, tanoak, salmonberry, salal, evergreen huckleberry

Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Svensen soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Millicoma, Whaleshead, and Reedsport—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, salt spray
Millicoma and Reedsport—soil depth

USFS Plant Association

Millicoma, Whaleshead, and Reedsport—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

178G—Millicoma-Whaleshead-Reedsport complex, 60 to 90 percent south slopes

Composition

Millicoma soil and similar inclusions—40 percent
Whaleshead soil and similar inclusions—25 percent
Reedsport soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Millicoma—narrow summits, shoulders, convex areas of backslopes; Whaleshead—concave areas of backslopes; Reedsport—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Millicoma—Douglas fir, Sitka spruce, tanoak, salal, western brackenfern, evergreen huckleberry; Whaleshead—Douglas fir, grand fir, Sitka spruce, tanoak, salal, evergreen violet, evergreen huckleberry; Reedsport—Douglas fir, Sitka spruce, tanoak, salal, cascade Oregongrape, evergreen huckleberry

Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Svensen soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Millicoma, Whaleshead, and Reedsport—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, salt spray, low available water capacity
Millicoma and Reedsport—soil depth

USFS Plant Association

Millicoma, Whaleshead, and Reedsport—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

179G—Millicoma-Whaleshead-Reedsport complex, 60 to 90 percent north slopes

Composition

Millicoma soil and similar inclusions—35 percent
Whaleshead soil and similar inclusions—30 percent
Reedsport soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Millicoma—narrow summits, shoulders, convex areas of backslopes; Whaleshead—concave areas of backslopes; Reedsport—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Millicoma—Douglas fir, grand fir, Sitka spruce, western hemlock, cascade Oregongrape, salal, baldhip rose; Whaleshead—Douglas fir, Sitka spruce, western hemlock, grand fir, western swordfern, evergreen huckleberry, sweetscented bedstraw, Pacific rhododendron; Reedsport—Douglas fir, western hemlock, Sitka spruce, grand fir, cascade Oregongrape, western swordfern, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Svensen soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Millicoma, Whaleshead, and Reedsport—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, salt spray, low available water capacity
Millicoma and Reedsport—soil depth

USFS Plant Association

Millicoma—TSHE/GASH (western hemlock/salal)
Whaleshead and Reedsport—TSHE/RHMA (western hemlock/Pacific rhododendron)

180F—Mislatnah-Greggo-Redflat complex, 30 to 60 percent south slopes

Composition

Mislatnah soil and similar inclusions—35 percent
Greggo soil and similar inclusions—30 percent
Redflat soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Mislatnah—convex areas of backslopes; Greggo—narrow summits, shoulders, convex areas of backslopes; Redflat—footslopes, concave areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 400 to 3,000 feet
Native plants: Mislatnah—western white pine, Jeffrey pine, tanoak, incense cedar, California buckthorn, whiteleaf manzanita; Greggo—knobcone pine, Jeffrey pine, tanoak, western white pine, pinemat manzanita, common beargrass; Redflat—Jeffrey pine, western white pine, incense cedar, boxleaf silktassel, California buckthorn, red huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Severe

Redflat Soil

Typical profile

0 to 7 inches—dark reddish brown gravelly loam
7 to 38 inches—dark reddish brown to strong brown gravelly clay loam
38 to 60 inches—strong brown gravelly silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Serpentano soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Mislatnah, Greggo, and Redflat—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Mislatnah and Greggo—soil depth, low available water capacity

USFS Plant Association

Mislatnah, Greggo, and Redflat—PIJE-PIMO (Jeffrey pine-western white pine)

181F—Mislatnah-Greggo-Rock outcrop complex, 30 to 60 percent north slopes

Composition

Mislatnah soil and similar inclusions—40 percent
Greggo soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Mislatnah—concave areas of backslopes; Greggo—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,400 to 2,500 feet
Native plants: Mislatnah—incense cedar, Jeffrey pine, Douglas fir, tanoak, boxleaf silktassel, huckleberry oak; Greggo—western white pine, Jeffrey pine, Douglas fir, pinemat manzanita, California buckthorn, whiteleaf manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam

4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Serpentano soils in concave areas of backslopes
- Redflat soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Mislatnah and Greggo—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Mislatnah—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Greggo—PIJE-PIMO (Jeffrey pine-western white pine)

182F—Mislatnah-Redflat-Greggo complex, 30 to 60 percent north slopes

Composition

Mislatnah soil and similar inclusions—35 percent
Redflat soil and similar inclusions—30 percent
Greggo soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Mislatnah—convex areas of backslopes; Redflat—footslopes, concave areas of backslopes; Greggo—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 400 to 2,500 feet
Native plants: Mislatnah—incense cedar, Jeffrey pine, western white pine, Douglas fir, California buckthorn, huckleberry oak; Redflat—Jeffrey pine, western white pine, incense cedar, Douglas fir, boxleaf silktassel, California buckthorn, huckleberry oak; Greggo—knobcone pine, Jeffrey pine, tanoak, Douglas fir, western white pine, squawcarpet, pinemat manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Redflat Soil

Typical profile

0 to 7 inches—dark reddish brown gravelly loam
7 to 38 inches—dark reddish brown to strong brown gravelly clay loam
38 to 60 inches—strong brown gravelly silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate or severe

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches

Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Serpentano soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Mislatnah, Redflat, and Greggo—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Mislatnah and Greggo—soil depth, low available water capacity

USFS Plant Association

Mislatnah and Redflat—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Greggo—PIJE-PIMO (Jeffrey pine-western white pine)

183A—Nehalem silt loam, 0 to 3 percent slopes

Composition

Nehalem soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas
Landform: Flood plains
Parent material: Alluvium
Elevation: 20 to 100 feet
Native plants: Douglas fir, red alder, salmonberry, western swordfern, salal
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 18 inches—very dark grayish brown and dark brown silt loam
18 to 60 inches—dark brown silty clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 12 inches
Frequency of flooding: Rare
Hazard of erosion: Slight, except during rare periods of flooding

Contrasting Inclusions

- Nestucca soils in concave areas of flood plains
- Willanch soils in depressions and drainageways
- Gauldy soils on convex gravel bars of flood plains
- Brenner soils in backswamp areas of flood plains
- Riverwash

Major Uses

Livestock grazing (fig. 7), hayland

Major Management Limitations

Rare flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity

184B—Nelscott-Depoe-Bullards complex, 0 to 8 percent slopes

Composition

Nelscott soil and similar inclusions—40 percent
Depoe soil and similar inclusions—30 percent
Bullards soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Nelscott—concave areas; Depoe—nearly level areas; Bullards—convex areas
Landform: Marine terraces
Parent material: Nelscott and Depoe—medium-textured eolian material underlain by stratified marine sediment; Bullards—sandy marine and eolian material underlain by relict sand dunes
Elevation: 200 to 300 feet
Native plants: Nelscott—shore pine, Sitka spruce, Douglas fir, Port Orford cedar, evergreen huckleberry, Pacific rhododendron, salal; Depoe—shore pine, Sitka spruce, Douglas fir, Port Orford cedar, evergreen huckleberry, salal, western azalea; Bullards—Sitka spruce, Douglas fir, grand fir, Port Orford cedar, shore pine, salal, evergreen huckleberry

Figure 7.—Livestock grazing in an area of Nehalem silt loam, 0 to 3 percent slopes.

Climatic factors:
- Mean annual precipitation—80 inches
- Mean annual air temperature—51 degrees F
- Frost-free period—210 to 300 days

Nelscott Soil

Typical profile

0 to 19 inches—very dark brown and very dark grayish brown loam
19 to 32 inches—dark brown loam
32 to 36 inches—mottled, light yellowish brown loamy fine sand
36 to 51 inches—variegated, strong brown and yellowish brown, strongly cemented loamy fine sand
51 to 67 inches—variegated, strong brown and brownish yellow fine sand
67 to 72 inches—variegated, light brownish gray and brownish yellow sandy loam

Properties and qualities

Depth to cemented layer: 24 to 40 inches
Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Moderate above the cemented layer, very slow through the cemented layer, moderately rapid below the cemented layer
Available water capacity: About 6 inches
Depth to water table: 2.0 to 3.5 feet below the surface in November through March
Hazard of erosion: Slight or moderate

Depoe Soil

Typical profile

0 to 3 inches—dark gray loam
3 to 9 inches—mottled, grayish brown loam
9 to 12 inches—yellowish red and reddish yellow, strongly cemented fine sand with dark red bands
12 to 17 inches—strong brown, strongly cemented fine sand with dark red bands
17 to 44 inches—brownish yellow, moderately cemented fine sand with yellowish red irregular bands
44 to 60 inches—light gray sand with thin strong brown bands

Properties and qualities

Depth to cemented layer: 12 to 20 inches
Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Moderate above the cemented layer, very slow through the cemented layer, moderately rapid below the cemented layer
Available water capacity: About 2 inches
Depth to water table: 0.5 foot above the surface to a depth of 2 feet below the surface in October through May
Hazard of erosion: Slight or moderate

Bullards Soil

Typical profile

0 to 8 inches—very dark grayish brown sandy loam
8 to 15 inches—dark yellowish brown gravelly sandy loam
15 to 47 inches—yellowish brown gravelly sandy loam
47 to 60 inches—brownish yellow sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Bandon soils in nearly level areas of relict sand dunes
- Hebo soils in depressions and drainageways of marine terraces
- Wadecreek soils in concave areas of adjacent slightly higher marine terraces
- Ferrelo and Gearhart soils on side slopes of relict sand dunes
- Horseprairie soils in nearly level to undulating areas of adjacent slightly lower marine terraces
- Grindbrook soils in concave areas of marine terraces

Major Uses

Nelscott, Depoe, and Bullards—timber production, cropland, livestock grazing, homesite development
Bullards—hayland

Major Management Limitations

Nelscott, Depoe, and Bullards—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, slope stability, sloughing, droughtiness in summer, high humidity, poor anchoring medium, salt spray
Nelscott and Depoe—high water table, depth to cemented layer, very slow permeability
Depoe and Bullards—low available water capacity
Bullards—susceptibility to wind erosion

USFS Plant Association

Nelscott, Depoe, and Bullards—TSHE-CHLA (western hemlock-Port Orford cedar)

185A—Nestucca silt loam, 0 to 3 percent slopes

Composition

Nestucca soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Concave areas
Landform: Flood plains
Parent material: Alluvium
Elevation: 20 to 100 feet
Native plants: Red alder, willow, sedges, rushes, skunkcabbage
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 18 inches—very dark grayish brown and dark brown silt loam
18 to 43 inches—gleyed and mottled, dark grayish brown silty clay loam
43 to 60 inches—mottled, dark grayish brown silty clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: About 11 inches
Frequency of flooding: Frequent in November through April
Depth to water table: 1.0 to 1.5 feet below the surface in December through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Yachats soils in nearly level areas of flood plains
- Nehalem soils in convex areas of flood plains
- Willanch soils in depressions and drainageways of flood plains

- Gauldy soils on relict gravel bars on flood plains
- Brenner soils in backswamp areas of flood plains
- Riverwash

Major Uses

Livestock grazing, hayland

Major Management Limitations

Flooding, high water table, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity, slow permeability

186D—Orford-McDuff complex, 0 to 15 percent slopes

Composition

Orford soil and similar inclusions—55 percent
McDuff soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Orford—concave areas of summits; McDuff—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or sedimentary rock
Elevation: 400 to 2,300 feet
Native plants: Orford—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, evergreen huckleberry; McDuff—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Orford Soil

Typical profile

0 to 18 inches—dark brown silty clay loam
18 to 67 inches—dark brown to brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches
Hazard of erosion: Slight or moderate

McDuff Soil

Typical profile

0 to 22 inches—dark brown silty clay loam
22 to 37 inches—dark brown silty clay
37 inches—weathered siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Shivigny soils in convex areas of summits
- Remote and Digger soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Umpcoos soils adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Uses

Timber production, livestock grazing, hayland, homesite development

Major Management Limitations

Orford and McDuff—susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer, high humidity
McDuff—soil depth

USFS Plant Association

Orford—TSHE/RHMA (western hemlock/Pacific rhododendron)
McDuff—TSHE/GASH (western hemlock/salal)

186E—Orford-McDuff complex, 15 to 30 percent slopes

Composition

Orford soil and similar inclusions—45 percent
McDuff soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Orford—concave areas of summits; McDuff—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or sedimentary rock
Elevation: 400 to 2,300 feet
Native plants: Orford—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, evergreen huckleberry; McDuff—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron

Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Orford Soil

Typical profile

0 to 18 inches—dark brown silty clay loam
18 to 67 inches—dark brown to brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches
Hazard of erosion: Moderate

McDuff Soil

Typical profile

0 to 22 inches—dark brown silty clay loam
22 to 37 inches—dark brown silty clay
37 inches—weathered siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Shivigny soils in convex areas of summits
- Remote and Digger soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Umpcoos soils adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Uses

Timber production, livestock grazing, homesite development

Major Management Limitations

Orford and McDuff—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, droughtiness in summer, high humidity
McDuff—soil depth

USFS Plant Association

Orford—TSHE/RHMA (western hemlock/Pacific rhododendron)
McDuff—TSHE/GASH (western hemlock/salal)

187B—Orthents, 0 to 10 percent slopes

Composition

Orthents and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level and gently sloping areas
Landform: Stream terraces
Parent material: Alluvium
Elevation: 100 to 800 feet
Native plants: Douglas fir, red alder, California laurel, willow, evergreen huckleberry
Climatic factors:
Mean annual precipitation—80 to 100 inches
Mean annual air temperature—50 to 53 degrees F
Frost-free period—180 to 220 days

Reference Profile

0 to 5 inches—dark yellowish brown to reddish brown extremely gravelly sandy loam to extremely cobbly clay loam
5 to 60 inches—reddish brown to yellow extremely gravelly loamy sand to extremely cobbly clay loam

Soil Properties and Qualities

Depth to bedrock: Less than 20 inches to more than 60 inches
Drainage class: Well drained to excessively drained
Permeability: Moderately rapid to very rapid
Available water capacity: About 0.2 inch to 6 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Soils that are subject to flooding
- Soils that have a high water table and are in depressions and drainageways of stream terraces
- Soils that have less than 35 percent rock fragments in the profile and are on stream terraces

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, droughtiness in summer, low available water capacity, salt spray, rapid permeability

188G—Pearsoll-Gravecreek-Rock outcrop complex, 60 to 90 percent north slopes

Composition

Pearsoll soil and similar inclusions—40 percent
Gravecreek soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Pearsoll—narrow summits, shoulders, convex areas of backslopes; Gravecreek—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,500 feet
Native plants: Pearsoll—Jeffrey pine, Douglas fir, incense cedar, squawcarpet, whiteleaf manzanita, Lemmon needlegrass, dwarf ceanothus; Gravecreek—Jeffrey pine, Douglas fir, sugar pine, huckleberry oak, boxleaf silktassel
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Eightlar soils in convex areas of backslopes
- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Pearsoll and Gravecreek—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, droughtiness in summer, low available water capacity
Pearsoll—clayey textures, slow permeability

USFS Plant Association

Pearsoll—PIJE/CEPU (Jeffrey pine/dwarf ceanothus)
Gravecreek—PIJE-QUVA (Jeffrey pine-huckleberry oak)

189G—Pearsoll-Gravecreek-Rock outcrop complex, 60 to 90 percent south slopes

Composition

Pearsoll soil and similar inclusions—35 percent
Gravecreek soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Pearsoll—narrow summits, shoulders, convex areas of backslopes; Gravecreek—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,900 feet
Native plants: Pearsoll—Jeffrey pine, incense cedar, whiteleaf manzanita, wedgeleaf ceanothus, Sandberg bluegrass, red fescue; Gravecreek—Jeffrey pine, Port Orford cedar, tanoak, California laurel, California buckthorn, red huckleberry

Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Eightlar soils in convex areas of backslopes
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Pearsoll and Gravecreek—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity
Pearsoll—clayey textures, high shrink-swell potential, slow permeability

USFS Plant Association

Pearsoll—PIJE/Grass (Jeffrey pine/grass)
Gravecreek—LIDE3/RHCA (tanoak/California coffeeberry)

190F—Pearsoll-Rock outcrop-Gravecreek complex, 30 to 60 percent north slopes

Composition

Pearsoll soil and similar inclusions—35 percent
Rock outcrop—30 percent
Gravecreek soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Pearsoll—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Gravecreek—convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,500 feet
Native plants: Pearsoll—Jeffrey pine, incense cedar, Douglas fir, squawcarpet, whiteleaf manzanita, Lemmon needlegrass, dwarf ceanothus; Gravecreek—Jeffrey pine, Douglas fir, sugar pine, huckleberry oak, boxleaf silktassel
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe
Shrink-swell potential: High

Gravecreek Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 27 inches—dark brown very gravelly clay loam
27 to 30 inches—dark brown very cobbly clay loam
30 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Eightlar soils in convex areas of backslopes
- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Pearsoll and Gravecreek—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, droughtiness in summer, low available water capacity
Pearsoll—clayey textures, slow permeability

USFS Plant Association

Pearsoll—PIJE/CEPU (Jeffrey pine/dwarf ceanothus)
Gravecreek—PIJE-QUVA (Jeffrey pine-huckleberry oak)

191E—Pearsoll-Rock outcrop complex, 3 to 30 percent slopes

Composition

Pearsoll soil and similar inclusions—50 percent
Rock outcrop—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Pearsoll—shoulders, knobs, convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,900 feet
Native plants: Pearsoll—Jeffrey pine, incense cedar, squawcarpet, whiteleaf manzanita, Lemmon needlegrass
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch
Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Gravecreek soils in concave areas of summits
- Eightlar soils in convex areas of summits
- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Pearsoll—toxicity, susceptibility of the surface layer to water erosion, cobbles on the surface (fig. 8), susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, soil depth, droughtiness in summer, low available water capacity, slow permeability

USFS Plant Association

Pearsoll—PIJE/Grass (Jeffrey pine/grass)

192F—Pearsoll-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Pearsoll soil and similar inclusions—45 percent

Figure 8.—Typical area of Pearsoll-Rock outcrop complex, 3 to 30 percent slopes.

Rock outcrop—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Pearsoll—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 600 to 2,900 feet
Native plants: Pearsoll—Jeffrey pine, whiteleaf manzanita, wedgeleaf ceanothus, Sandberg bluegrass, red fescue
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Pearsoll Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 16 inches—dark reddish brown extremely cobbly clay
16 inches—serpentinite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 1 inch

Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Gravecreek soils in concave areas of backslopes
- Eightlar soils in convex areas of backslopes
- Soils that have a stony or bouldery surface
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Pearsoll—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity, slow permeability

USFS Plant Association

Pearsoll—PIJE/Grass (Jeffrey pine/grass)

193E—Perdin-Rock outcrop complex, 5 to 30 percent slopes

Composition

Perdin soil and similar inclusions—45 percent
Rock outcrop—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Perdin—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite
Elevation: 3,000 to 4,000 feet
Native plants: Perdin—Jeffrey pine, western white pine, incense cedar, pinemat manzanita, boxleaf silktassel
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Perdin Soil

Typical profile

0 to 5 inches—dark brown cobbly loam
5 to 23 inches—dark brown gravelly clay loam
23 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that are more than 40 inches deep to bedrock and are in concave areas of summits
- Soils that have more than 35 percent rock fragments in the profile and are in convex areas of summits
- Soils that are less than 20 inches deep to bedrock and are on shoulders and knobs and in convex areas of summits
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Perdin—toxicity, cobbles on the surface, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, clayey textures, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, high shrink-swell potential, slow permeability, low available water capacity

194F—Perdin-Rock outcrop complex, 30 to 60 percent north slopes

Composition

Perdin soil and similar inclusions—50 percent
Rock outcrop—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Perdin—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite
Elevation: 3,000 to 4,000 feet
Native plants: Perdin—Jeffrey pine, western white pine, incense cedar, pinemat manzanita, boxleaf silktassel
Climatic factors:
Mean annual precipitation—105 inches

Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Perdin Soil

Typical profile

0 to 5 inches—dark brown cobbly loam
5 to 23 inches—dark brown gravelly clay loam
23 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 3 inches
Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have more than 35 percent rock fragments in the profile and are in convex areas of backslopes
- Soils that are more than 40 inches deep to bedrock and are in concave areas of backslopes
- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Perdin—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to compaction when wet, clayey textures, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, high shrink-swell potential, slow permeability, low available water capacity

194G—Perdin-Rock outcrop complex, 60 to 90 percent north slopes

Composition

Perdin soil and similar inclusions—50 percent
Rock outcrop—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Perdin—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite
Elevation: 3,000 to 4,000 feet
Native plants: Perdin—Jeffrey pine, western white pine, incense cedar, pinemat manzanita, boxleaf silktassel
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Perdin Soil

Typical profile

0 to 5 inches—dark brown cobbly loam
5 to 23 inches—dark brown gravelly clay loam
23 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have more than 35 percent rock fragments in the profile and are in convex areas of backslopes
- Soils that are more than 40 inches deep to bedrock and are in concave areas of backslopes
- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Perdin—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to compaction when wet, clayey textures, duration of snow cover, short growing season, frost heave, slope stability, droughtiness in summer, high shrink-swell potential, slow permeability, low available water capacity

195F—Perdin-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Perdin soil and similar inclusions—45 percent

Rock outcrop—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Perdin—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite
Elevation: 3,000 to 4,000 feet
Native plants: Perdin—Jeffrey pine, incense cedar, huckleberry oak, squawcarpet, bearded fescue
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Perdin Soil

Typical profile

0 to 5 inches—dark brown cobbly loam
5 to 23 inches—dark brown gravelly clay loam
23 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 3 inches
Hazard of erosion: Severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have more than 35 percent rock fragments in the profile and are in convex areas of backslopes
- Soils that are more than 40 inches deep to bedrock and are in concave areas of backslopes
- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Perdin—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to compaction when wet, clayey textures, duration of snow cover, short growing season, frost heave, slope stability, south aspects, droughtiness in summer, high shrink-swell potential, slow permeability, low available water capacity

195G—Perdin-Rock outcrop complex, 60 to 90 percent south slopes

Composition

Perdin soil and similar inclusions—45 percent
Rock outcrop—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Perdin—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite
Elevation: 3,000 to 4,000 feet
Native plants: Perdin—Jeffrey pine, incense cedar, huckleberry oak, squawcarpet, bearded fescue
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Perdin Soil

Typical profile

0 to 5 inches—dark brown cobbly loam
5 to 23 inches—dark brown gravelly clay loam
23 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe
Shrink-swell potential: High

Contrasting Inclusions

- Soils that have more than 35 percent rock fragments in the profile and are in convex areas of backslopes
- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that are more than 40 inches deep to bedrock and are in concave areas of backslopes
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Watershed, recreation, wildlife habitat

Major Management Limitations

Perdin—toxicity, slope, susceptibility of the surface layer to water erosion, cobbles on the surface, susceptibility of the surface layer to compaction when wet, clayey textures, duration of snow cover, short growing season, frost heave, slope stability, south aspects, droughtiness in summer, high shrink-swell potential, slow permeability, low available water capacity

196C—Pollard loam, 2 to 15 percent slopes

Composition

Pollard soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Toeslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 600 feet
Native plants: Douglas fir, tanoak, California laurel, western swordfern, western brackenfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 10 inches—dark brown loam
10 to 32 inches—dark brown and reddish brown clay loam
32 to 69 inches—reddish brown to strong brown silty clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

• Selmac soils in concave areas of adjacent low stream terraces
• Kanid and Shastacosta soils on adjacent footslopes of mountains
• Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Susceptibility of the surface layer to compaction when wet, clayey textures, droughtiness in summer

USFS Plant Association

LIDE3-UMCA (tanoak-California laurel)

196D—Pollard loam, 15 to 30 percent slopes

Composition

Pollard soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Footslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 400 to 600 feet
Native plants: Douglas fir, tanoak, California laurel, western swordfern, western brackenfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 10 inches—dark brown loam
10 to 32 inches—dark brown and reddish brown clay loam
32 to 69 inches—reddish brown to strong brown silty clay

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Contrasting Inclusions

• Kanid and Shastacosta soils on adjacent footslopes of mountains
• Wet soils in seep areas

Major Uses

Timber production, livestock grazing, homesite development

Major Management Limitations

Slope, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, droughtiness in summer

USFS Plant Association

LIDE3-UMCA (tanoak-California laurel)

197E—Pollard-Josephine-Shastacosta complex, 2 to 30 percent slopes

Composition

Pollard soil and similar inclusions—40 percent
Josephine soil and similar inclusions—30 percent
Shastacosta soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Pollard—concave areas of summits; Josephine—convex areas of summits; Shastacosta—concave areas of summits
Landform: Mountains
Parent material: Mudstone and metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Pollard—Douglas fir, tanoak, Pacific madrone, cascade Oregongrape, deerfoot vanillaleaf; Josephine—Douglas fir, tanoak, Pacific madrone, cascade Oregongrape, western rattlesnake plantain; Shastacosta—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Pollard Soil

Typical profile

0 to 10 inches—dark brown gravelly loam
10 to 32 inches—dark brown to reddish brown clay loam
32 to 69 inches—reddish brown to strong brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Josephine Soil

Typical profile

0 to 15 inches—dark grayish brown to dark brown gravelly loam
15 to 58 inches—reddish brown to yellowish red gravelly clay loam
58 inches—weathered mudstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate

Shastacosta Soil

Typical profile

0 to 22 inches—very dark grayish brown to dark yellowish brown very gravelly loam
22 to 32 inches—dark yellowish brown very gravelly clay loam
32 to 41 inches—dark yellowish brown extremely cobbly clay loam
41 to 56 inches—dark brown very cobbly clay
56 to 72 inches—dark yellowish brown very gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Contrasting Inclusions

- Beekman soils on shoulders and knobs and in convex areas of summits
- Colestine and Speaker soils in convex areas of summits
- Vermisa soils and Orthents adjacent to areas of Rock outcrop
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, limited homesite development

Major Management Limitations

Pollard, Josephine, and Shastacosta—slope, susceptibility of the surface layer to compaction when wet, droughtiness in summer
Pollard—clayey textures
Josephine—susceptibility of the surface layer to displacement and accelerated erosion
Shastacosta—high shrink-swell potential, slow permeability

USFS Plant Association

Pollard and Josephine—LIDE3/BENE (tanoak/dwarf Oregongrape)

Shastacosta—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)

198E—Preacher-Blachly complex, warm, 0 to 30 percent slopes

Composition

Preacher soil and similar inclusions—45 percent
Blachly soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Preacher—convex areas of summits; Blachly—concave areas of summits
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 3,000 feet
Native plants: Preacher—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Blachly—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Preacher Soil

Typical profile

0 to 6 inches—very dark grayish brown clay loam
6 to 14 inches—dark brown gravelly loam
14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Blachly Soil

Typical profile

0 to 7 inches—dark brown silty clay loam
7 to 38 inches—reddish brown silty clay
38 to 67 inches—reddish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Digger soils on shoulders and knobs and in convex areas of summits
- Bohannon soils in convex areas of backslopes
- Remote soils in concave areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Preacher and Blachly—susceptibility of the surface layer to compaction when wet, slope stability
Blachly—susceptibility of the surface layer to displacement and accelerated erosion, clayey textures

USFS Plant Association

Preacher—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Blachly—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

199E—Preacher-Blachly-Digger complex, 0 to 30 percent slopes

Composition

Preacher soil and similar inclusions—35 percent
Blachly soil and similar inclusions—30 percent
Digger soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Preacher—concave and convex areas of summits; Blachly—concave areas of summits; Digger—shoulders, knobs, and convex areas of summits
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 2,000 feet
Native plants: Preacher—Douglas fir, western hemlock, Port Orford cedar, western swordfern, Pacific rhododendron; Blachly—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, evergreen huckleberry; Digger—Douglas fir, western hemlock, western redcedar, grand fir, western swordfern, evergreen huckleberry

Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Preacher Soil

Typical profile

0 to 6 inches—very dark grayish brown clay loam
6 to 14 inches—dark brown gravelly loam
14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Blachly Soil

Typical profile

0 to 7 inches—dark brown silty clay loam
7 to 38 inches—reddish brown silty clay
38 to 67 inches—reddish brown silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Moderate

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Remote soils in concave areas of summits
- Bohannon soils in convex areas of summits
- Umpcoos soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Preacher, Blachly, and Digger—susceptibility of the surface layer to compaction when wet, slope stability
Blachly and Digger—susceptibility of the surface layer to displacement and accelerated erosion
Blachly—clayey textures
Digger—susceptibility of the surface layer to water erosion, soil depth, low available water capacity

USFS Plant Association

Preacher—TSHE-CHLA (western hemlock-Port Orford cedar)
Blachly—TSHE/RHMA (western hemlock/Pacific rhododendron)
Digger—TSHE-THPL (western hemlock-western redcedar)

200F—Preacher-Digger-Bohannon complex, 30 to 60 percent north slopes

Composition

Preacher soil and similar inclusions—35 percent
Digger soil and similar inclusions—30 percent
Bohannon soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Preacher—concave areas of backslopes; Digger—narrow summits, shoulders, convex areas of backslopes; Bohannon—convex areas of backslopes
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 2,000 feet
Native plants: Preacher—Douglas fir, western hemlock, Port Orford cedar, western swordfern, Pacific rhododendron; Digger—Douglas fir, western hemlock, western redcedar, grand fir, western swordfern, evergreen huckleberry; Bohannon—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Preacher Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Moderate or severe

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Bohannon Soil

Typical profile

0 to 14 inches—dark brown gravelly loam
14 to 34 inches—dark yellowish brown gravelly loam
34 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Preacher, Digger, and Bohannon—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger and Bohannon—soil depth, low available water capacity

USFS Plant Association

Preacher—TSHE-CHLA (western hemlock-Port Orford cedar)
Digger—TSHE-THPL (western hemlock-western redcedar)
Bohannon—TSHE/GASH (western hemlock/salal)

201F—Preacher-Digger-Bohannon complex, warm, 30 to 60 percent north slopes

Composition

Preacher soil and similar inclusions—35 percent
Digger soil and similar inclusions—30 percent
Bohannon soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Preacher—concave areas of backslopes; Digger—narrow summits, shoulders, convex areas of backslopes; Bohannon—convex areas of backslopes
Landform: Mountains
Parent material: Sedimentary rock
Elevation: 300 to 2,500 feet
Native plants: Preacher—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, salal; Digger—Douglas fir, tanoak, evergreen huckleberry, salal, creambush oceanspray; Bohannon—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Preacher Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam

14 to 42 inches—dark brown to dark yellowish brown clay loam
42 to 60 inches—yellowish brown loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 10 inches
Hazard of erosion: Moderate or severe

Digger Soil

Typical profile

0 to 16 inches—dark brown gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Bohannon Soil

Typical profile

0 to 14 inches—dark brown gravelly loam
14 to 34 inches—dark yellowish brown gravelly loam
34 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 5 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes
- Remote soils in concave areas of backslopes
- Blachly soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Preacher, Digger, and Bohannon—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger and Bohannon—soil depth, low available water capacity

USFS Plant Association

Preacher—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)
Digger—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Bohannon—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

202D—Pyrady-Zalea-Yorel complex, 0 to 15 percent slopes

Composition

Pyrady soil and similar inclusions—40 percent
Zalea soil and similar inclusions—30 percent
Yorel soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Pyrady—concave areas of summits; Zalea—convex areas of summits; Yorel—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Pyrady—mudstone; Zalea and Yorel—metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,500 feet
Native plants: Pyrady—Douglas fir, tanoak, Port Orford cedar, salal, cascade Oregongrape; Zalea—Douglas fir, tanoak, Pacific rhododendron, red huckleberry, salal; Yorel—Douglas fir, tanoak, Pacific rhododendron, western rattlesnake plantain, salal
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Pyrady Soil

Typical profile

0 to 6 inches—dark brown clay loam
6 to 21 inches—dark brown to olive brown gravelly clay loam
21 to 34 inches—mottled, olive gravelly silty clay
34 to 43 inches—gleyed and mottled, dark gray gravelly silty clay
43 to 66 inches—mottled, olive gray gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 9 inches
Depth to water table: 2.0 to 2.5 feet below the surface in October through June
Hazard of erosion: Slight
Shrink-swell potential: High

Zalea Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 16 inches—dark yellowish brown gravelly clay loam
16 to 34 inches—light olive brown gravelly clay loam
34 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Slight or moderate

Yorel Soil

Typical profile

0 to 6 inches—dark brown gravelly loam
6 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Bobsgarden soils in convex areas of summits
- Euchrand and Rilea soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Pyrady, Zalea, and Yorel—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability
Zalea and Yorel—soil depth, low available water capacity
Pyrady—clayey textures

USFS Plant Association

Pyrady—LIDE3-CHLA (tanoak-Port Orford cedar)
Zalea and Yorel—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

203B—Quillamook silt loam, 0 to 7 percent slopes

Composition

Quillamook soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Concave areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 200 to 400 feet
Native plants: Sitka spruce, salmonberry, red alder, western swordfern, western brackenfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Quillamook Soil

Typical profile

0 to 8 inches—black silt loam
8 to 28 inches—very dark brown and very dark grayish brown silt loam
28 to 56 inches—dark yellowish brown and yellowish brown silt loam
56 to 60 inches—yellowish brown loamy sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 22 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Bullards, Ferrelo, and Gearhart soils on side slopes of relict sand dunes that mantle adjacent marine terraces
- Ekoms soils in convex areas of stream terraces

- Hebo soils in depressions and drainageways of adjacent marine terraces
- Euchre soils in concave areas of adjacent low stream terraces
- Soils that are in convex areas of relict buried gravel bars and are 20 to 40 inches deep to extremely gravelly sand

Major Uses

Livestock grazing, homesite development, hayland

Major Management Limitations

Susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity, sloughing

204E—Redflat-Mislatnah-Greggo complex, 0 to 30 percent slopes

Composition

Redflat soil and similar inclusions—35 percent
Mislatnah soil and similar inclusions—30 percent
Greggo soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Redflat—concave areas of summits; Mislatnah—convex areas of summits; Greggo—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 400 to 2,500 feet
Native plants: Redflat—Jeffrey pine, western white pine, Douglas fir, boxleaf silktassel, California buckthorn, huckleberry oak; Mislatnah—Jeffrey pine, western white pine, tanoak, Douglas fir, incense cedar, California buckthorn, huckleberry oak, whiteleaf manzanita; Greggo—knobcone pine, Jeffrey pine, western white pine, tanoak, squawcarpet, pinemat manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Redflat Soil

Typical profile

0 to 7 inches—dark reddish brown gravelly loam
7 to 38 inches—dark reddish brown to strong brown gravelly clay loam
38 to 60 inches—strong brown gravelly silty clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 9 inches
Hazard of erosion: Moderate

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Serpentano soils in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, limited homesite development, watershed, recreation, wildlife habitat

Major Management Limitations

Redflat, Mislatnah, and Greggo—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement

and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Mislatnah and Greggo—soil depth, low available water capacity

USFS Plant Association

Redflat and Mislatnah—PIJE-QUVA (Jeffrey pine-huckleberry oak)
Greggo—PIJE-PIMO (Jeffrey pine-western white pine)

205F—Reedsport-Whaleshead complex, 30 to 60 percent south slopes

Composition

Reedsport soil and similar inclusions—50 percent
Whaleshead soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Reedsport—convex areas of backslopes; Whaleshead—concave areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Reedsport—Douglas fir, grand fir, Sitka spruce, tanoak, cascade Oregongrape, salal; Whaleshead—Douglas fir, grand fir, Sitka spruce, tanoak, western swordfern, salal
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Severe

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Millicoma soils on narrow summits, on shoulders, and in convex areas of backslopes
- Svensen soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Reedsport and Whaleshead—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, salt spray, low available water capacity
Reedsport—soil depth

USFS Plant Association

Reedsport and Whaleshead—LIDE3/GASH (tanoak/salal)

206G—Reedsport-Whaleshead-Rock outcrop complex, 60 to 90 percent south slopes

Composition

Reedsport soil and similar inclusions—45 percent
Whaleshead soil and similar inclusions—25 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Reedsport—convex areas of backslopes; Whaleshead—concave areas of backslopes; Rock outcrop—ridge crests, shoulders

Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Reedsport—Douglas fir, grand fir, Sitka spruce, tanoak, salal, vine maple; Whaleshead—Douglas fir, grand fir, Sitka spruce, tanoak, salal, mountain brome
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Millicoma soils on narrow summits, on shoulders, and in convex areas of backslopes
- Svensen soils on footslopes and in concave areas of backslopes
- Soils that have bedrock at a depth of 10 to 20 inches and are on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Reedsport and Whaleshead—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer, salt spray, low available water capacity
Reedsport—soil depth

USFS Plant Association

Reedsport and Whaleshead—LIDE3/GASH (tanoak/salal)

207E—Remote-Digger-Rock outcrop complex, warm, 3 to 30 percent slopes

Composition

Remote soil and similar inclusions—40 percent
Digger soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Remote—concave areas of summits; Digger—shoulders, knobs, convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Sedimentary, metasedimentary, or metavolcanic rock
Elevation: 1,000 to 2,600 feet
Native plants: Remote—Douglas fir, tanoak, canyon live oak, salal, western swordfern, cascade Oregongrape; Digger—Douglas fir, tanoak, canyon live oak, salal, cascade Oregongrape, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Remote Soil

Typical profile

0 to 6 inches—very dark grayish brown gravelly loam
6 to 14 inches—dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Digger Soil

Typical profile

0 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Skookumhouse and Hazelcamp soils in concave areas of summits
- Fritsland and Bravo soils in convex areas of summits
- Grouslous soils on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that are serpentinitic and are near fault zones
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Remote and Digger—slope, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger—soil depth, low available water capacity

USFS Plant Association

Remote and Digger—LIDE3/GASH (tanoak/salal)

208F—Remote-Digger-Rock outcrop complex, warm, 30 to 60 percent north slopes

Composition

Remote soil and similar inclusions—40 percent
Digger soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Remote—concave areas of backslopes; Digger—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Sedimentary, metasedimentary, or metavolcanic rock
Elevation: 1,000 to 2,500 feet
Native plants: Remote—Douglas fir, tanoak, Pacific madrone, evergreen huckleberry, salal, western swordfern; Digger—Douglas fir, tanoak, Pacific madrone, evergreen huckleberry, salal, creambush oceanspray
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Remote Soil

Typical profile

0 to 6 inches—very dark grayish brown gravelly loam
6 to 14 inches—dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Digger Soil

Typical profile

0 to 16 inches—dark brown very gravelly loam
16 to 23 inches—dark yellowish brown very gravelly loam
23 to 31 inches—dark yellowish brown very cobbly loam
31 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Fritsland soils in concave areas of backslopes

- Bravo soils in convex areas of backslopes
- Grouslous soils on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that are serpentinitic and are in areas near fault zones
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Remote and Digger—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Digger—soil depth, low available water capacity

USFS Plant Association

Remote and Digger—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

209F—Remote-Whobrey-Rock outcrop complex, 30 to 60 percent slopes

Composition

Remote soil and similar inclusions—35 percent
Whobrey soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Remote—concave areas of backslopes; Whobrey—footslopes, concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 500 to 2,500 feet
Native plants: Remote—Douglas fir, tanoak, canyon live oak, salal, western swordfern, cascade Oregongrape; Whobrey—Douglas fir, tanoak, grand fir, western redcedar, salal, common snowberry, trailing blackberry, cascade Oregongrape
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Remote Soil

Typical profile

0 to 14 inches—very dark grayish brown to dark brown gravelly loam
14 to 69 inches—dark brown very gravelly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Whobrey Soil

Typical profile

0 to 12 inches—very dark grayish brown to dark grayish brown silt loam
12 to 22 inches—mottled, dark brown silty clay loam
22 to 31 inches—mottled, very dark gray clay
31 to 66 inches—very dark gray clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: About 8 inches
Depth to water table: 1.5 to 2.5 feet below the surface in December through March
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Contrasting Inclusions

- Digger soils on narrow summits, on shoulders, and in convex areas of backslopes
- Umpcoos soils adjacent to areas of Rock outcrop

Major Uses

Livestock grazing, timber production

Major Management Limitations

Remote and Whobrey—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Whobrey—high water table, limited rooting depth

USFS Plant Association

Remote—LIDE3/GASH (tanoak/salal)
Whobrey—LIDE3/GASH-BENE (tanoak/salal-dwarf Oregongrape)

210G—Rilea-Euchrand-Rock outcrop complex, cool, 60 to 90 percent south slopes

Composition

Rilea soil and similar inclusions—35 percent
Euchrand soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rilea—concave areas of backslopes; Euchrand—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,000 feet
Native plants: Rilea—Douglas fir, western hemlock, tanoak, salal, common beargrass; Euchrand—tanoak, Douglas fir, western hemlock, salal, common beargrass
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Bobsgarden soils in concave areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Rilea and Euchrand—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Rilea and Euchrand—LIDE3-TSHE (tanoak-western hemlock)

211G—Rilea-Euchrand-Rock outcrop complex, 60 to 90 percent south slopes

Composition

Rilea soil and similar inclusions—35 percent
Euchrand soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rilea—concave areas of backslopes; Euchrand—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Rilea—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, salal, Pacific rhododendron; Euchrand—tanoak, Douglas fir,

canyon live oak, common beargrass, whitevein shinleaf, cascade Oregongrape

Climatic factors:

Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Bobsgarden soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Rilea and Euchrand—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Rilea—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)
Euchrand—LIDE3/BENE (tanoak/dwarf Oregongrape)

212G—Rilea-Stackyards-Rock outcrop complex, cool, 60 to 90 percent north slopes

Composition

Rilea soil and similar inclusions—40 percent
Stackyards soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rilea—convex areas of backslopes; Stackyards—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,000 to 3,000 feet
Native plants: Rilea—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Stackyards—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, red huckleberry
Climatic factors:

Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam

10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Rilea and Stackyards—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Rilea—TSHE/GASH (western hemlock/salal)
Stackyards—TSHE/RHMA (western hemlock/Pacific rhododendron)

213G—Rilea-Stackyards-Rock outcrop complex, 60 to 90 percent north slopes

Composition

Rilea soil and similar inclusions—40 percent
Stackyards soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rilea—convex areas of backslopes; Stackyards—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Rilea—Douglas fir, tanoak, Pacific rhododendron, western swordfern, salal; Stackyards—Douglas fir, tanoak, golden chinkapin, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Rilea Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes

- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Rilea and Stackyards—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Rilea and Stackyards—LIDE3/RHMA-GASH (tanoak/ Pacific rhododendron-salal)

214—Riverwash

Composition

Riverwash—75 percent
Contrasting inclusions—25 percent

Setting

Landscape position: Areas adjacent to rivers and streams that consist of sand and gravel and do not support vegetation
Landform: Flood plains
Parent material: Highly stratified sandy and gravelly alluvium derived from mixed sources
Elevation: 0 to 500 feet
Climatic factors:
Mean annual precipitation—70 to 100 inches
Mean annual air temperature—50 to 57 degrees F
Frost-free period—185 to 330 days

Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Excessively drained to poorly drained
Permeability: Rapid
Available water capacity: About 1 inch
Frequency of flooding: Frequent in October through July
Depth to water table: At the surface to a depth of 2 feet below the surface year round
Hazard of erosion: Very severe

Contrasting Inclusions

- Bagness and Bigriver soils, which support vegetation, in slightly higher areas along the Chetco and Winchuck Rivers
- Bayside and Pistolriver soils in depressions and drainageways along the Chetco and Winchuck Rivers
- Gauldy and Yachats soils, which support vegetation, in slightly higher areas along coastal rivers and streams in the central and northern parts of the survey area
- Brenner and Willanch soils in depressions and drainageways along coastal rivers and streams in the central and northern parts of the survey area
- Nehalem soils in nearly level to convex areas along coastal rivers and streams in the central and northern parts of the survey area
- Nestucca soils in concave areas along coastal rivers and streams in the central and northern parts of the survey area
- Takilma soils, which support vegetation, in slightly higher areas along the Rogue and Illinois Rivers in the interior part of the survey area
- Clawson soils in depressions and drainageways along the Rogue and Illinois Rivers in the interior part of the survey area

Major Uses

Watershed, recreation, wildlife habitat, source of gravel

Major Management Limitations

Flooding, high water table, susceptibility to water erosion, rapid permeability, low available water capacity

215G—Rock outcrop-Grouslous-Cassiday complex, 60 to 90 percent north slopes

Composition

Rock outcrop—35 percent
Grouslous soil and similar inclusions—30 percent
Cassiday soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rock outcrop—ridge crests, shoulders; Grouslous—backslopes adjacent to areas of Rock outcrop; Cassiday—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 2,500 feet
Native plants: Grouslous—tanoak, Douglas fir, Pacific madrone, cascade Oregongrape,

common beargrass, Pacific rhododendron; Cassiday—Douglas fir, tanoak, salal, cascade Oregongrape, western brackenfern, evergreen huckleberry

Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Grouslous Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam
4 to 8 inches—brown very gravelly clay loam
8 to 16 inches—brown extremely gravelly clay loam
16 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Cassiday Soil

Typical profile

0 to 8 inches—dark brown very gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Fritsland and Colepoint soils on footslopes and in concave areas of backslopes
- Remote soils in concave areas of backslopes
- Bravo and Crutchfield soils in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Grouslous and Cassiday—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity

USFS Plant Association

Grouslous—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Cassiday—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)

216G—Rock outcrop-Grouslous-Cassiday complex, 60 to 90 percent south slopes

Composition

Rock outcrop—35 percent
Grouslous soil and similar inclusions—30 percent
Cassiday soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rock outcrop—ridge crests, shoulders; Grouslous—backslopes adjacent to areas of Rock outcrop; Cassiday—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 3,000 feet
Native plants: Grouslous—tanoak, Douglas fir, canyon live oak, common beargrass, cascade Oregongrape, salal; Cassiday—tanoak, Douglas fir, canyon live oak, cascade Oregongrape, common beargrass, salal
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Grouslous Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly loam
4 to 8 inches—brown very gravelly loam
8 to 16 inches—brown extremely gravelly clay loam
16 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow

Available water capacity: About 2 inches
Hazard of erosion: Very severe

Cassiday Soil

Typical profile

0 to 8 inches—dark brown very gravelly loam
8 to 17 inches—dark brown very gravelly clay loam
17 to 26 inches—brown very gravelly clay loam
26 to 37 inches—brown extremely gravelly clay loam
37 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Fritsland and Colepoint soils on footslopes and in concave areas of backslopes
- Remote soils in concave areas of backslopes
- Bravo and Crutchfield soils in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Grouslous and Cassiday—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Grouslous and Cassiday—LIDE3/GASH (tanoak/salal)

217—Rock outcrop-Orthents complex, 10 to 100 percent slopes

Composition

Rock outcrop—60 percent
Orthents and similar inclusions—35 percent
Contrasting inclusions—5 percent

Setting

Landscape position: Rock outcrop—convex areas on ridge crests, backslopes, and shoulders that have hard bedrock at the surface and do not support vegetation; Orthents—backslopes, shoulders, and footslopes adjacent to areas of Rock outcrop
Landform: Beaches, marine terraces, hills, mountains
Parent material: Igneous, metamorphic, or sedimentary rock; eolian sand deposits; unconsolidated marine sediment; material derived from highly sheared, thrust-faulted bedrock
Elevation: 0 to 5,000 feet
Native plants: Orthents—variable, depending on soil depth, elevation, and aspect
Climatic factors:
Mean annual precipitation—70 to 160 inches
Mean annual air temperature—40 to 57 degrees F
Frost-free period—60 to 330 days

Orthents

Reference profile

0 to 5 inches—dark yellowish brown to reddish brown extremely gravelly sandy loam to extremely cobbly clay loam
5 to 60 inches—reddish brown to yellow extremely gravelly loamy sand to extremely cobbly clay loam

Properties and Qualities

Depth to bedrock: Less than 20 inches to more than 60 inches
Drainage class: Well drained to excessively drained
Permeability: Moderately rapid to very rapid
Available water capacity: About 0.2 inch to 6.0 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Wet soils in depressions and drainageways of terraces, hills, and mountains

Major Uses

Watershed, recreation, wildlife habitat, rock quarries, native pasture, esthetic value

Major Management Limitations

Orthents—slope, susceptibility of the surface layer to water erosion, cobbles and stones on the surface, susceptibility of the surface layer to displacement and accelerated erosion, duration of snow cover, short growing season, frost heave, slope stability, soil depth, poor anchoring medium, toxicity, droughtiness in summer, available water capacity, salt spray, permeability

218E—Rogue cobbly coarse sandy loam, 12 to 30 percent slopes

Composition

Rogue soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas of summits
Landform: Mountains
Parent material: Diorite or granitic rock
Elevation: 3,000 to 4,000 feet
Native plants: Douglas fir, tanoak, sugar pine, salal, cascade Oregongrape, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Typical profile

0 to 5 inches—very dark grayish brown cobbly coarse sandy loam
5 to 30 inches—dark brown to dark yellowish brown cobbly coarse sandy loam
30 to 50 inches—light olive brown gravelly coarse sandy loam
50 inches—weathered diorite

Soil Properties and Qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Soils that have bedrock at a depth of less than 20 inches and are on shoulders and knobs and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, sloughing, duration of snow cover, short growing season, frost heave, poor anchoring medium, droughtiness in summer, low available water capacity

USFS Plant Association

LIDE3/GASH (tanoak/salal)

219F—Rogue cobbly coarse sandy loam, 30 to 60 percent north slopes

Composition

Rogue soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Concave areas of backslopes
Landform: Mountains
Parent material: Diorite or granitic rock
Elevation: 3,000 to 4,000 feet
Native plants: Douglas fir, tanoak, sugar pine, Pacific rhododendron, Sadler oak, salal
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Typical profile

0 to 5 inches—very dark grayish brown cobbly coarse sandy loam
5 to 30 inches—dark brown to dark yellowish brown cobbly coarse sandy loam
30 to 50 inches—light olive brown gravelly coarse sandy loam
50 inches—weathered diorite

Soil Properties and Qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Soils that have bedrock at a depth of less than 20 inches and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, sloughing, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, droughtiness in summer, low available water capacity

USFS Plant Association

LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

220F—Rogue cobbly coarse sandy loam, 30 to 60 percent south slopes

Composition

Rogue soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Concave areas of backslopes
Landform: Mountains
Parent material: Diorite or granitic rock
Elevation: 3,000 to 4,000 feet
Native plants: Douglas fir, tanoak, salal, cascade Oregongrape, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Typical profile

0 to 5 inches—very dark grayish brown cobbly coarse sandy loam
5 to 30 inches—dark brown to dark yellowish brown cobbly coarse sandy loam
30 to 50 inches—light olive brown gravelly coarse sandy loam
50 inches—weathered diorite

Soil Properties and Qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Soils that have bedrock at a depth of less than 20 inches and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, sloughing, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, south aspects, droughtiness in summer, low available water capacity

USFS Plant Association

LIDE3/GASH (tanoak/salal)

221B—Ruch-Selmac complex, 2 to 7 percent slopes

Composition

Ruch soil and similar inclusions—45 percent
Selmac soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Ruch—convex areas; Selmac—concave areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: Ruch—Douglas fir, tanoak, California laurel, Oregon white oak, western brackenfern, broadleaf starflower; Selmac—Douglas fir, tanoak, California laurel, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Ruch Soil

Typical profile

0 to 8 inches—very dark grayish brown and dark yellowish brown loam

8 to 38 inches—dark brown and strong brown clay loam
38 to 72 inches—yellowish red clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches
Hazard of erosion: Slight

Selmac Soil

Typical profile

0 to 5 inches—dark brown loam
5 to 9 inches—dark yellowish brown clay loam
9 to 16 inches—dark yellowish brown gravelly clay loam
16 to 99 inches—mottled, olive brown and light olive brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: About 12 inches
Depth to water table: 1.5 to 3.0 feet below the surface in December through May
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Abegg soils on adjacent slightly lower stream terraces
- Kanid and Shastacosta soils on adjacent footslopes of mountains
- Wet soils in seep areas

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Ruch and Selmac—susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, droughtiness in summer
Selmac—high water table, limited rooting depth, high shrink-swell potential, clayey textures, very slow permeability

USFS Plant Association

Rogue and Selmac—LIDE3-UMCA (tanoak-California laurel)

221D—Ruch-Selmac complex, 7 to 20 percent slopes

Composition

Ruch soil and similar inclusions—55 percent
Selmac soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Ruch—convex areas; Selmac—concave areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 300 to 500 feet
Native plants: Ruch—Douglas fir, tanoak, California laurel, Oregon white oak, cascade Oregongrape, western brackenfern; Selmac—Douglas fir, tanoak, California laurel, evergreen huckleberry, western swordfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Ruch Soil

Typical profile

0 to 8 inches—very dark grayish brown and dark yellowish brown loam
8 to 38 inches—dark brown and strong brown clay loam
38 to 72 inches—yellowish red clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 11 inches
Hazard of erosion: Moderate

Selmac Soil

Typical profile

0 to 5 inches—dark brown loam
5 to 9 inches—dark yellowish brown clay loam
9 to 16 inches—dark yellowish brown gravelly clay loam
16 to 99 inches—mottled, olive brown and light olive brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Very slow

Available water capacity: About 12 inches
Depth to water table: 1.5 to 3.0 feet below the surface in December through May
Hazard of erosion: Moderate
Shrink-swell potential: High

Contrasting Inclusions

- Abegg soils on adjacent slightly lower stream terraces
- Kanid and Shastacosta soils on adjacent footslopes of mountains
- Wet soils in seep areas

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Ruch and Selmac—slope, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, droughtiness in summer
Selmac—high water table, limited rooting depth, high shrink-swell potential, clayey textures, very slow permeability

USFS Plant Association

Ruch and Selmac—LIDE3-UMCA (tanoak-California laurel)

222F—Rustybutte-Sebastian complex, 30 to 60 percent north slopes

Composition

Rustybutte soil and similar inclusions—55 percent
Sebastian soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Rustybutte—convex areas of backslopes; Sebastian—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Serpentinitic metasedimentary or metavolcanic rock
Elevation: 200 to 1,000 feet
Native plants: Rustybutte—Douglas fir, Port Orford cedar, California laurel, western swordfern, sweetscented bedstraw; Sebastian—Douglas fir, Port Orford cedar, common velvetgrass, bentgrass, western brackenfern
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Rustybutte Soil

Typical profile

0 to 8 inches—very dark brown gravelly clay loam
8 to 21 inches—very dark brown very cobbly clay loam
21 to 28 inches—dark brown extremely cobbly clay loam
28 inches—serpentinitic metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Sebastian Soil

Typical profile

0 to 3 inches—dark reddish brown very gravelly loam
3 to 14 inches—dark reddish brown very cobbly clay loam
14 inches—serpentinitic metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Hooskanaden, Loneranch, and Reinhart soils in open areas of grassland on backslopes in the Carpenterville Shear Zone
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Livestock grazing

Major Management Limitations

Rustybutte and Sebastian—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity, salt spray, droughtiness in summer

223F—Rustybutte-Sebastian-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Rustybutte soil and similar inclusions—40 percent
Sebastian soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Rustybutte—convex areas of backslopes; Sebastian—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Coastal hills and mountains
Parent material: Serpentinitic metasedimentary or metavolcanic rock
Elevation: 200 to 1,000 feet
Native plants: Rustybutte—Douglas fir, Sitka spruce, western brackenfern, bentgrass, common velvetgrass; Sebastian—common velvetgrass, bentgrass, western brackenfern, Douglas fir, Port Orford cedar
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—240 to 270 days

Rustybutte Soil

Typical profile

0 to 8 inches—very dark brown gravelly clay loam
8 to 21 inches—very dark brown very cobbly clay loam
21 to 28 inches—dark brown extremely cobbly clay loam
28 inches—serpentinitic metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Sebastian Soil

Typical profile

0 to 3 inches—dark reddish brown very cobbly loam
3 to 14 inches—dark reddish brown very cobbly clay loam
14 inches—serpentinitic metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Hooskanaden, Loneranch, and Reinhart soils in open areas of grassland on backslopes in the Carpenterville Shear Zone
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Rustybutte and Sebastian—livestock grazing

Major Management Limitations

Rustybutte and Sebastian—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, low available water capacity, south aspects, salt spray, droughtiness in summer
Sebastian—cobbles on the surface

224E—Saddlepeak-Threetrees complex, cool, 0 to 30 percent slopes

Composition

Saddlepeak soil and similar inclusions—50 percent
Threetrees soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Saddlepeak—concave areas of summits; Threetrees—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,300 to 3,000 feet
Native plants: Saddlepeak—Douglas fir, western hemlock, Pacific rhododendron, red huckleberry, western swordfern; Threetrees—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, common beargrass, salal
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Scalerock soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Soils that have less than 35 percent rock fragments and are in concave areas of summits
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Saddlepeak and Threetrees—susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, low available water capacity
Threetrees—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Saddlepeak—TSHE/RHMA (western hemlock/Pacific rhododendron)
Threetrees—TSHE/GASH (western hemlock/salal)

225D—Saddlepeak-Threetrees complex, 0 to 15 percent slopes

Composition

Saddlepeak soil and similar inclusions—55 percent
Threetrees soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Saddlepeak—concave areas of summits; Threetrees—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Saddlepeak—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Threetrees—Douglas fir, tanoak, Pacific rhododendron, salal, common beargrass
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 120 days

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Slight

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam

22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

• Scalerock soils on shoulders and knobs and in convex areas of summits
• Agness and Sixes soils in open areas of grassland in convex areas of summits
• Goldbeach soils in open areas of grassland on shoulders and knobs and in convex areas of summits
• Soils that have less than 35 percent rock fragments and are in concave areas of summits
• Rock outcrop on ridge crests and shoulders
• Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Saddlepeak and Threetrees—duration of snow cover, short growing season, frost heave, susceptibility of the surface layer to compaction when wet, poor anchoring medium, low available water capacity
Threetrees—soil depth

USFS Plant Association

Saddlepeak and Threetrees—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

225E—Saddlepeak-Threetrees complex, 15 to 30 percent slopes

Composition

Saddlepeak soil and similar inclusions—50 percent
Threetrees soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Saddlepeak—concave areas of summits; Threetrees—convex areas of summits
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Saddlepeak—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Threetrees—Douglas fir, tanoak, Pacific rhododendron, salal, common beargrass
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 120 days

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

• Scalerock soils on shoulders and knobs and in convex areas of summits
• Agness and Sixes soils in open areas of grassland in convex areas of summits
• Goldbeach soils in open areas of grassland on shoulders and knobs and in convex areas of summits
• Soils that have less than 35 percent rock fragments and are in concave areas of summits
• Rock outcrop on ridge crests and shoulders
• Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Saddlepeak and Threetrees—duration of snow cover, short growing season, frost heave, susceptibility of the surface layer to compaction when wet, slope stability, poor anchoring medium, low available water capacity
Threetrees—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Saddlepeak and Threetrees—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

226E—Saddlepeak-Threetrees-Rock outcrop complex, 0 to 30 percent slopes

Composition

Saddlepeak soil and similar inclusions—40 percent
Threetrees soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Saddlepeak—concave areas of summits; Threetrees—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Saddlepeak—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape; Threetrees—Douglas fir, tanoak, salal, western swordfern, western brackenfern
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 120 days

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Scalerock soils on shoulders and knobs and in convex areas of summits
- Agness and Sixes soils in open areas of grassland in convex areas of summits
- Goldbeach soils in open areas of grassland on shoulders and knobs and in convex areas of summits
- Orthents adjacent to areas of Rock outcrop
- Soils that have less than 35 percent rock fragments and are in concave areas of summits
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Saddlepeak and Threetrees—susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, low available water capacity
Threetrees—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Saddlepeak and Threetrees—LIDE3/GASH (tanoak/salal)

227F—Saddlepeak-Threetrees-Scalerock complex, cool, 30 to 60 percent north slopes

Composition

Saddlepeak soil and similar inclusions—40 percent
Threetrees soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Saddlepeak—concave areas of backslopes; Threetrees—convex areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,300 to 3,000 feet
Native plants: Saddlepeak—Douglas fir, western hemlock, red huckleberry, Pacific rhododendron, western swordfern; Threetrees—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, common beargrass, salal; Scalerock—Douglas fir, western hemlock, tanoak, salal, western swordfern
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Soils that have less than 35 percent rock fragments and are on slump benches
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Saddlepeak, Threetrees, and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Saddlepeak—TSHE/RHMA (western hemlock/Pacific rhododendron)
Threetrees—TSHE/GASH (western hemlock/salal)
Scalerock—LIDE3-TSHE (tanoak-western hemlock)

228F—Saddlepeak-Threetrees-Scalerock complex, 30 to 60 percent north slopes

Composition

Saddlepeak soil and similar inclusions—40 percent
Threetrees soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Saddlepeak—concave areas of backslopes; Threetrees—convex areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Saddlepeak—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Threetrees—Douglas fir, tanoak, Pacific rhododendron, salal, common beargrass; Scalerock—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Soils that have less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Saddlepeak, Threetrees, and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Saddlepeak and Threetrees—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Scalerock—LIDE3/GASH (tanoak/salal)

229E—Sebastian-Rustybutte-Rock outcrop complex, 0 to 30 percent slopes

Composition

Sebastian soil and similar inclusions—35 percent
Rustybutte soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Sebastian—shoulders, knobs, convex areas of summits; Rustybutte—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Coastal hills and mountains
Parent material: Serpentinitic metasedimentary or metavolcanic rock
Elevation: 200 to 1,000 feet
Native plants: Sebastian—common velvetgrass, bentgrass, western brackenfern, Douglas fir, Port Orford cedar; Rustybutte—Douglas fir, Port Orford cedar, Sitka spruce, western brackenfern, bentgrass
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 270 days

Sebastian Soil

Typical profile

0 to 3 inches—dark reddish brown very cobbly loam
3 to 14 inches—dark reddish brown very cobbly clay loam
14 inches—serpentinitic metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Moderate or severe

Rustybutte Soil

Typical profile

0 to 8 inches—very dark brown gravelly clay loam
8 to 21 inches—very dark brown very cobbly clay loam
21 to 28 inches—dark brown extremely cobbly clay loam
28 inches—serpentinitic metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Hooskanaden, Loneranch, and Reinhart soils in open areas of grassland on summits in the Carpenterville Shear Zone
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Livestock grazing, limited homesite development

Major Management Limitations

Sebastian and Rustybutte—toxicity, slope, susceptibility of the surface layer to water erosion, slope stability, soil depth, low available water capacity, salt spray, droughtiness in summer
Sebastian—cobbles on the surface
Rustybutte—susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion

230E—Serpentano-Mislatnah complex, 3 to 30 percent slopes

Composition

Serpentano soil and similar inclusions—45 percent
Mislatnah soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Serpentano—concave areas of summits; Mislatnah—convex areas of summits
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,000 to 3,000 feet
Native plants: Serpentano—Douglas fir, Jeffrey pine, western white pine, incense cedar, evergreen huckleberry, boxleaf silktassel; Mislatnah—Jeffrey pine, Douglas fir, tanoak, incense cedar, California buckthorn, whiteleaf manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 210 days

Serpentano Soil

Typical profile

0 to 6 inches—dark brown very stony loam
6 to 26 inches—dark brown very gravelly clay loam
26 to 53 inches—light olive brown very gravelly clay loam
53 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Greggo soils on shoulders and knobs and in convex areas of summits
- Redflat soils in concave areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Serpentano and Mislatnah—toxicity, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability
Mislatnah—susceptibility of the surface layer to displacement and accelerated erosion, soil depth, low available water capacity

USFS Plant Association

Serpentano and Mislatnah—PIJE-PIMO (Jeffrey pine-western white pine)

231F—Serpentano-Mislatnah-Greggo complex, 30 to 60 percent north slopes

Composition

Serpentano soil and similar inclusions—40 percent
Mislatnah soil and similar inclusions—30 percent
Greggo soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Serpentano—concave areas of backslopes; Mislatnah—convex areas of backslopes; Greggo—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,000 to 3,000 feet
Native plants: Serpentano—Douglas fir, Jeffrey pine, western white pine, tanoak, evergreen huckleberry, huckleberry oak; Mislatnah—Douglas fir, Jeffrey pine, incense cedar, California buckthorn, huckleberry oak, red huckleberry; Greggo—Jeffrey pine, incense cedar, western white pine, tanoak, squawcarpet, pinemat manzanita
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Serpentano Soil

Typical profile

0 to 6 inches—dark brown very stony loam
6 to 26 inches—dark brown very gravelly clay loam
26 to 53 inches—light olive brown very gravelly clay loam
53 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Redflat soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Serpentano, Mislatnah, and Greggo—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability
Mislatnah and Greggo—soil depth, low available water capacity

USFS Plant Association

Serpentano and Greggo—PIJE-PIMO (Jeffrey pine-western white pine)
Mislatnah—PIJE-QUVA (Jeffrey pine-huckleberry oak)

232F—Serpentano-Mislatnah-Greggo complex, 30 to 60 percent south slopes

Composition

Serpentano soil and similar inclusions—35 percent
Mislatnah soil and similar inclusions—30 percent
Greggo soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Serpentano—concave areas of backslopes; Mislatnah—convex areas of backslopes; Greggo—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Serpentinitic peridotite or other serpentinitic rock
Elevation: 1,000 to 3,000 feet
Native plants: Serpentano—Douglas fir, Jeffrey pine, western white pine, tanoak, salal, whiteleaf manzanita; Mislatnah—Jeffrey pine, Douglas fir, western white pine, incense cedar, tanoak, knobcone pine, California buckthorn, whiteleaf manzanita; Greggo—Jeffrey pine, western white pine, tanoak, incense cedar, knobcone pine, pinemat manzanita, grasses
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Serpentano Soil

Typical profile

0 to 6 inches—dark brown very stony loam
6 to 26 inches—dark brown very gravelly clay loam
26 to 53 inches—light olive brown very gravelly clay loam
53 inches—weathered serpentinitic peridotite

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe

Mislatnah Soil

Typical profile

0 to 2 inches—dark reddish brown cobbly clay loam
2 to 19 inches—dark reddish brown cobbly clay loam
19 to 38 inches—reddish brown to brown very cobbly clay loam
38 inches—serpentinite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow

Available water capacity: About 4 inches
Hazard of erosion: Severe

Greggo Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly clay loam
4 to 17 inches—reddish brown extremely gravelly clay loam
17 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Redflat soils on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Serpentano, Mislatnah, and Greggo—toxicity, slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects
Mislatnah and Greggo—soil depth, low available water capacity

USFS Plant Association

Serpentano, Mislatnah, and Greggo—PIJE-PIMO (Jeffrey pine-western white pine)

233F—Shastacosta-Pollard-Beekman complex, 30 to 60 percent south slopes

Composition

Shastacosta soil and similar inclusions—35 percent
Pollard soil and similar inclusions—30 percent
Beekman soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Shastacosta—concave areas of backslopes; Pollard—footslopes, concave areas of backslopes; Beekman—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock, mudstone
Elevation: 400 to 2,300 feet
Native plants: Shastacosta—Douglas fir, tanoak, poison oak, California honeysuckle, whipplevine; Pollard—Douglas fir, tanoak, canyon live oak, baldhip rose, cascade Oregongrape; Beekman—Douglas fir, tanoak, canyon live oak, Pacific madrone, poison oak, western swordfern
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Shastacosta Soil

Typical profile

0 to 22 inches—very dark grayish brown to dark yellowish brown very gravelly loam
22 to 32 inches—dark yellowish brown very gravelly clay loam
32 to 41 inches—dark yellowish brown extremely cobbly clay loam
41 to 56 inches—dark brown very cobbly clay
56 to 72 inches—dark yellowish brown very gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Pollard Soil

Typical profile

0 to 10 inches—dark brown gravelly loam
10 to 32 inches—dark brown to reddish brown clay loam
32 to 69 inches—reddish brown to strong brown silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 10 inches
Hazard of erosion: Moderate or severe

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Josephine soils on backslopes
- Vermisa soils on narrow summits, on shoulders, and in convex areas of backslopes
- Colestine soils in convex areas of backslopes
- Speaker soils in convex areas of backslopes
- Rock outcrop and Orthents on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Shastacosta, Pollard, and Beekman—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Shastacosta—high shrink-swell potential, slow permeability
Pollard—clayey textures
Beekman—soil depth, low available water capacity

USFS Plant Association

Shastacosta—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)
Pollard—LIDE3/BENE (tanoak/dwarf Oregongrape)
Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)

234F—Shivigny-Honeygrove complex, warm, 30 to 60 percent south slopes

Composition

Shivigny soil and similar inclusions—45 percent
Honeygrove soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Shivigny—convex areas of backslopes; Honeygrove—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or igneous rock
Elevation: 1,000 to 3,000 feet
Native plants: Shivigny—Douglas fir, tanoak, salal, baldhip rose, western hazel, cascade Oregongrape; Honeygrove—Douglas fir, sugar pine, tanoak, salal, cascade Oregongrape, baldhip rose
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Shivigny Soil

Typical profile

0 to 13 inches—dark brown very gravelly loam
13 to 41 inches—strong brown very stony clay loam
41 to 78 inches—strong brown very stony clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Honeygrove Soil

Typical profile

0 to 15 inches—dark brown gravelly clay loam
15 to 78 inches—reddish brown to yellowish red clay
78 to 99 inches—yellowish red gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 12 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Remote soils in convex areas of backslopes
- Digger soils in convex areas of backslopes and on shoulders
- Preacher and Bohannon soils on footslopes and in concave areas of backslopes
- Umpcoos soils on narrow summits, on shoulders, and in convex areas of backslopes

- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Shivigny and Honeygrove—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects

USFS Plant Association

Shivigny—LIDE3/BENE (tanoak/dwarf Oregongrape)
Honeygrove—LIDE3/GASH-BENE (tanoak/salal-dwarf Oregongrape)

235F—Sitkum-Steinmetz complex, 30 to 60 percent north slopes

Composition

Sitkum soil and similar inclusions—45 percent
Steinmetz soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Sitkum—convex areas of backslopes; Steinmetz—concave areas of backslopes
Landform: Mountains
Parent material: Granitic rock
Elevation: 2,000 to 2,500 feet
Native plants: Sitkum—Douglas fir, sugar pine, cascade Oregongrape, baldhip rose, California hazel, western rattlesnake plantain; Steinmetz—Douglas fir, sugar pine, cascade Oregongrape, baldhip rose, California hazel, broadleaf starflower
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Sitkum Soil

Typical profile

0 to 10 inches—dark brown sandy loam
10 to 34 inches—dark yellowish brown to yellowish brown sandy loam
34 inches—weathered diorite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Steinmetz Soil

Typical profile

0 to 12 inches—dark brown sandy loam
12 to 65 inches—dark yellowish brown to yellowish brown sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Sitkum and Steinmetz—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, sloughing, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer
Sitkum—soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Sitkum and Steinmetz—PSME/BENE (Douglas fir/ dwarf Oregongrape)

236F—Sitkum-Steinmetz complex, 30 to 60 percent south slopes

Composition

Sitkum soil and similar inclusions—50 percent
Steinmetz soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Sitkum—convex areas of backslopes; Steinmetz—concave areas of backslopes
Landform: Mountains
Parent material: Granitic rock
Elevation: 2,000 to 3,000 feet
Native plants: Sitkum—Douglas fir, tanoak, sugar pine, salal, baldhip rose, cascade Oregongrape; Steinmetz—Douglas fir, tanoak, sugar pine, salal, little princes pine, cascade Oregongrape
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Sitkum Soil

Typical profile

0 to 10 inches—dark brown sandy loam
10 to 34 inches—dark yellowish brown to yellowish brown sandy loam
34 inches—weathered diorite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Severe

Steinmetz Soil

Typical profile

0 to 12 inches—dark brown sandy loam
12 to 65 inches—dark yellowish brown to yellowish brown sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Sitkum and Steinmetz—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, sloughing, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Sitkum—soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Sitkum and Steinmetz—PSME-LIDE3/GASH (Douglas fir-tanoak/salal)

237E—Skookumhouse-Hazelcamp complex, cool, 0 to 30 percent slopes

Composition

Skookumhouse soil and similar inclusions—50 percent
Hazelcamp soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Skookumhouse—concave areas of summits; Hazelcamp—convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 400 to 2,500 feet
Native plants: Skookumhouse—Douglas fir, western hemlock, Pacific rhododendron, evergreen huckleberry, cascade Oregongrape; Hazelcamp—Douglas fir, western hemlock, cascade Oregongrape, salal, common beargrass
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Skookumhouse Soil

Typical profile

0 to 11 inches—dark reddish brown clay loam
11 to 25 inches—reddish brown silty clay
25 to 38 inches—red silty clay
38 to 52 inches—red silty clay loam
52 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained

Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Hazelcamp Soil

Typical profile

0 to 12 inches—dark reddish brown silty clay loam
12 to 18 inches—reddish brown silty clay loam
18 to 25 inches—reddish brown gravelly silty clay
25 to 36 inches—red gravelly silty clay
36 inches—weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Contrasting Inclusions

- Averlande soil on shoulders and knobs and in convex areas of summits
- Digger and Umpcoos soils on shoulders and knobs and in convex areas of summits
- Remote soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Skookumhouse and Hazelcamp—slope, susceptibility of the surface layer to compaction when wet, clayey textures, slope stability, high shrink-swell potential, slow permeability
Hazelcamp—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Skookumhouse—TSHE/RHMA (western hemlock/ Pacific rhododendron)
Hazelcamp—TSHE/GASH (western hemlock/salal)

238D—Skookumhouse-Hazelcamp-Averlande complex, 0 to 15 percent slopes

Composition

Skookumhouse soil and similar inclusions—45 percent
Hazelcamp soil and similar inclusions—25 percent
Averlande soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Skookumhouse—concave areas of summits; Hazelcamp—convex areas of summits; Averlande—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 400 to 2,500 feet
Native plants: Skookumhouse—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, cascade Oregongrape; Hazelcamp—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern; Averlande—Douglas fir, tanoak, salal, hairy manzanita, western brackenfern, Pacific rhododendron, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Skookumhouse Soil

Typical profile

0 to 11 inches—dark reddish brown clay loam
11 to 25 inches—reddish brown silty clay
25 to 38 inches—red silty clay
38 to 52 inches—red silty clay loam
52 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Slight
Shrink-swell potential: High

Hazelcamp Soil

Typical profile

0 to 12 inches—dark reddish brown silty clay loam
12 to 18 inches—reddish brown silty clay loam
18 to 25 inches—reddish brown gravelly silty clay
25 to 36 inches—red gravelly silty clay
36 inches—weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained

Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Averlande Soil

Typical profile

0 to 3 inches—dark brown gravelly loam
3 to 7 inches—yellowish red gravelly loam
7 to 14 inches—red very gravelly clay loam
14 inches—partially weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Cassiday and Grouslous soils on shoulders and knobs and in convex areas of summits
- Colepoint and Fritsland soils in concave areas of summits
- Bravo and Crutchfield soils in convex areas of summits
- Remote soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Skookumhouse, Hazelcamp, and Averlande—susceptibility of the surface layer to compaction when wet
Skookumhouse and Hazelcamp—high shrink-swell potential, clayey textures, slow permeability
Hazelcamp and Averlande—susceptibility of the surface layer to water erosion, soil depth
Averlande—low available water capacity

USFS Plant Association

Skookumhouse—LIDE3/RHMA (tanoak/Pacific rhododendron)
Hazelcamp—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Averlande—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)

238E—Skookumhouse-Hazelcamp-Averlande complex, 15 to 30 percent slopes

Composition

Skookumhouse soil and similar inclusions—35 percent
Hazelcamp soil and similar inclusions—30 percent
Averlande soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Skookumhouse—concave areas of summits; Hazelcamp—convex areas of summits; Averlande—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 400 to 2,500 feet
Native plants: Skookumhouse—Douglas fir, tanoak, Pacific rhododendron, evergreen huckleberry, cascade Oregongrape; Hazelcamp—Douglas fir, tanoak, evergreen huckleberry, salal, western swordfern; Averlande—Douglas fir, tanoak, Pacific madrone, salal, western brackenfern, Pacific rhododendron, evergreen huckleberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—120 to 160 days

Skookumhouse Soil

Typical profile

0 to 11 inches—dark reddish brown clay loam
11 to 25 inches—reddish brown silty clay
25 to 38 inches—red silty clay
38 to 52 inches—red silty clay loam
52 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Hazelcamp Soil

Typical profile

0 to 12 inches—dark reddish brown silty clay loam
12 to 18 inches—reddish brown silty clay loam
18 to 25 inches—reddish brown gravelly silty clay

25 to 36 inches—red gravelly silty clay
36 inches—weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 6 inches
Hazard of erosion: Moderate
Shrink-swell potential: High

Averlande Soil

Typical profile

0 to 3 inches—dark brown gravelly loam
3 to 7 inches—yellowish red gravelly loam
7 to 14 inches—red very gravelly clay loam
14 inches—partially weathered metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Cassiday and Grouslous soils on shoulders and knobs and in convex areas of summits
- Colepoint and Fritsland soils in concave areas of summits
- Bravo and Crutchfield soils in convex areas of summits
- Remote soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Skookumhouse, Hazelcamp, and Averlande—slope, susceptibility of the surface layer to compaction when wet, slope stability
Skookumhouse and Hazelcamp—high shrink-swell potential, clayey textures, slow permeability
Hazelcamp and Averlande—susceptibility of the surface layer to water erosion, soil depth
Averlande—low available water capacity

USFS Plant Association

Skookumhouse—LIDE3/RHMA (tanoak/Pacific rhododendron)
Hazelcamp—LIDE3/VAOV2-GASH (tanoak/evergreen huckleberry-salal)
Averlande—LIDE3/RHMA-VAOV2 (tanoak/Pacific rhododendron-evergreen huckleberry)

239G—Skymor-Rock outcrop-Jayar complex, 60 to 90 percent south slopes

Composition

Skymor soil and similar inclusions—35 percent
Rock outcrop—30 percent
Jayar soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Skymor—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Jayar—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Skymor—Sadler oak, golden chinkapin, white fir, huckleberry oak, greenleaf manzanita; Jayar—Douglas fir, tanoak, sugar pine, cascade Oregongrape, baldhip rose, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—80 to 100 days

Skymor Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 15 inches—yellowish brown very gravelly loam
15 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Jayar Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 31 inches—dark yellowish brown very gravelly loam
31 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Bearcamp soils in concave areas of backslopes
- Althouse soils on footslopes and in concave areas of backslopes
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Skymor and Jayar—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity

USFS Plant Association

Skymor—ABCO-QUSA-CACH (white fir-Sadler oak-golden chinkapin)
Jayar—LIDE3/BENE (tanoak/dwarf Oregongrape)

240E—Snowcamp-Cedarcamp-Flycatcher complex, 0 to 30 percent slopes

Composition

Snowcamp soil and similar inclusions—35 percent
Cedarcamp soil and similar inclusions—30 percent
Flycatcher soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Snowcamp—convex areas of summits; Cedarcamp—concave areas of summits; Flycatcher—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Snowcamp—Jeffrey pine, western white pine, knobcone pine, Douglas fir, California buckthorn, greenleaf manzanita; Cedarcamp—Jeffrey pine, western white pine, knobcone pine, Douglas fir, California buckthorn, huckleberry oak, tanoak; Flycatcher—knobcone pine, Jeffrey pine, western white pine, incense cedar, California buckthorn, common juniper, huckleberry oak, tanoak
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 120 days

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very cobbly loam
4 to 10 inches—dark reddish brown very cobbly clay loam
10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very gravelly loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Flycatcher Soil

Typical profile

0 to 4 inches—dark brown very cobbly loam
4 to 9 inches—dark yellowish brown very gravelly clay loam
9 to 15 inches—dark yellowish brown very gravelly sandy clay loam

15 to 18 inches—dark yellowish brown extremely gravelly loam
18 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Soils that have less than 35 percent rock fragments and are in concave areas of summits
- Wet soils in seep areas
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Snowcamp, Cedarcamp, and Flycatcher—toxicity, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Snowcamp and Flycatcher—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Snowcamp and Cedarcamp—PIJE-PIMO (Jeffrey pine-western white pine)
Flycatcher—PIJE-QUVA (Jeffrey pine-huckleberry oak)

241E—Snowcamp-Cedarcamp-Rock outcrop complex, 0 to 30 percent slopes

Composition

Snowcamp soil and similar inclusions—35 percent
Cedarcamp soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Snowcamp—convex areas of summits; Cedarcamp—concave areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Snowcamp—Jeffrey pine, western white pine, knobcone pine, Douglas fir, Sadler oak, greenleaf manzanita, tanoak; Cedarcamp—Jeffrey pine, western white pine, knobcone pine, Douglas fir, Sadler oak, greenleaf manzanita, tanoak
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 120 days

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very bouldery loam
4 to 10 inches—dark reddish brown very cobbly clay loam
10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Cedarcamp Soil

Typical profile

0 to 6 inches—dark brown very bouldery loam
6 to 29 inches—dark yellowish brown very cobbly clay loam
29 to 39 inches—olive brown extremely cobbly loam
39 to 65 inches—dark grayish brown extremely cobbly clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Flycatcher soils on shoulders and knobs and in convex areas of summits
- Orthents adjacent to areas of Rock outcrop
- Soils that have less than 35 percent rock fragments and are in concave areas of summits
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Snowcamp and Cedarcamp—toxicity, boulders on the surface, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Snowcamp—susceptibility of the surface layer to water erosion, soil depth

USFS Plant Association

Snowcamp and Cedarcamp—PIJE-PIMO (Jeffrey pine-western white pine)

242G—Snowcamp-Flycatcher-Rock outcrop complex, 60 to 90 percent south slopes

Composition

Snowcamp soil and similar inclusions—35 percent
Flycatcher soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Snowcamp—concave areas of backslopes; Flycatcher—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Serpentinitic peridotite or meta-igneous rock
Elevation: 2,500 to 4,500 feet
Native plants: Snowcamp—knobcone pine, Jeffrey pine, western white pine, Douglas fir, squawcarpet, common beargrass, tanoak; Flycatcher—knobcone pine, Jeffrey pine, western white pine, incense cedar, squawcarpet, common beargrass, huckleberry oak, tanoak
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Snowcamp Soil

Typical profile

0 to 4 inches—dark reddish brown very bouldery loam
4 to 10 inches—dark reddish brown very cobbly clay loam
10 to 29 inches—strong brown extremely cobbly clay loam
29 inches—peridotite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Flycatcher Soil

Typical profile

0 to 4 inches—dark brown very bouldery loam
4 to 9 inches—dark yellowish brown very gravelly clay loam
9 to 15 inches—dark yellowish brown very gravelly sandy clay loam
15 to 18 inches—dark yellowish brown extremely gravelly loam
18 inches—peridotite

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Cedarcamp soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Soils that have less than 35 percent rock fragments and are in concave areas of backslopes
- Wet soils in seep areas

Major Uses

Timber production, watershed, recreation, wildlife habitat

Major Management Limitations

Snowcamp and Flycatcher—toxicity, slope, boulders on the surface, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, south aspects, low available water capacity

USFS Plant Association

Snowcamp—PIJE-PIMO (Jeffrey pine-western white pine)
Flycatcher—PIJE-QUVA (Jeffrey pine-huckleberry oak)

243F—Speaker-Josephine-Beekman complex, 30 to 60 percent south slopes

Composition

Speaker soil and similar inclusions—35 percent
Josephine soil and similar inclusions—30 percent
Beekman soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Speaker—convex areas of backslopes; Josephine—concave areas of backslopes; Beekman—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Speaker—Douglas fir, tanoak, ponderosa pine, California black oak, poison oak, California honeysuckle; Josephine—Douglas fir, tanoak, ponderosa pine, incense cedar, canyon live oak, poison oak, California honeysuckle; Beekman—Douglas fir, tanoak, Pacific madrone, canyon live oak, poison oak, western swordfern
Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Speaker Soil

Typical profile

0 to 13 inches—dark brown gravelly loam
13 to 35 inches—yellowish red gravelly clay loam
35 inches—weathered mudstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Severe

Josephine Soil

Typical profile

0 to 15 inches—dark grayish brown to dark brown gravelly loam
15 to 58 inches—reddish brown to yellowish red gravelly clay loam
58 inches—weathered mudstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 8 inches
Hazard of erosion: Moderate or severe

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Pollard soil on footslopes and in concave areas of backslopes
- Vermisa soil adjacent to areas of Rock outcrop and in convex areas of backslopes
- Shastacosta soils on stable benches
- Colestine soils on shoulders and knobs and in convex areas of backslopes
- Rock outcrop and Orthents on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Speaker, Josephine, and Beekman—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Speaker and Josephine—clayey textures
Speaker and Beekman—soil depth, low available water capacity

USFS Plant Association

Speaker and Josephine—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)
Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)

244G—Stackyards-Rilea-Euchrand complex, cool, 60 to 90 percent north slopes

Composition

Stackyards soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Euchrand soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—convex areas of backslopes; Euchrand—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,000 to 3,000 feet
Native plants: Stackyards—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, red huckleberry; Rilea—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Euchrand—tanoak, Douglas fir, western hemlock, salal, cascade Oregongrape
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Yorel soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards, Rilea, and Euchrand—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea and Euchrand—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards—TSHE/RHMA (western hemlock/Pacific rhododendron)

Rilea—TSHE/GASH (western hemlock/salal)
Euchrand—LIDE3-TSHE (tanoak-western hemlock)

245G—Stackyards-Rilea-Euchrand complex, 60 to 90 percent north slopes

Composition

Stackyards soil and similar inclusions—35 percent
Rilea soil and similar inclusions—30 percent
Euchrand soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—footslopes, concave areas of backslopes; Rilea—convex areas of backslopes; Euchrand—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Stackyards—Douglas fir, tanoak, salal, Pacific rhododendron, cascade Oregongrape; Rilea—Douglas fir, tanoak, Pacific rhododendron, western swordfern, salal; Euchrand—Douglas fir, tanoak, canyon live oak, salal, common beargrass
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown very gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Euchrand Soil

Typical profile

0 to 3 inches—dark brown very gravelly loam
3 to 15 inches—dark yellowish brown extremely gravelly loam
15 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Yorel soils in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards, Rilea, and Euchrand—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea and Euchrand—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards and Rilea—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Euchrand—LIDE3/GASH (tanoak/salal)

246F—Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, cool, 30 to 60 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Stackyards—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, red huckleberry; Rilea—Douglas fir, western hemlock, tanoak, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 44 inches—dark yellowish brown extremely gravelly loam
44 inches—conglomerate

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards and Rilea—slope, susceptibility of the surface layer to water erosion, sloughing, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, droughtiness in summer, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea—LIDE3-TSHE (tanoak-western hemlock)

246G—Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, cool, 60 to 90 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—concave areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet

Native plants: Stackyards—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, red huckleberry; Rilea—Douglas fir, western hemlock, tanoak, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 44 inches—dark yellowish brown extremely gravelly loam
44 inches—conglomerate

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards and Rilea—slope, susceptibility of the surface layer to water erosion, sloughing, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, droughtiness in summer, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea—LIDE3-TSHE (tanoak-western hemlock)

247F—Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, 30 to 60 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Stackyards—Douglas fir, tanoak, cascade Oregongrape, salal, Sadler oak, Pacific rhododendron; Rilea—Douglas fir, tanoak, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 44 inches—dark yellowish brown extremely gravelly loam
44 inches—conglomerate

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained

Permeability: Moderate
Available water capacity: About 2 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards and Rilea—slope, susceptibility of the surface layer to water erosion, sloughing, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, droughtiness in summer, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards and Rilea—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)

247G—Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, 60 to 90 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Stackyards—Douglas fir, tanoak, cascade Oregongrape, western prince's pine, Sadler oak, Pacific rhododendron; Rilea—Douglas fir, tanoak, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 44 inches—dark yellowish brown extremely gravelly loam
44 inches—conglomerate

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Rilea Soil

Typical profile

0 to 4 inches—dark brown very gravelly loam
4 to 22 inches—brown very gravelly loam
22 to 31 inches—light brown extremely gravelly sandy loam
31 inches—conglomerate

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards and Rilea—slope, susceptibility of the surface layer to water erosion, sloughing, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, droughtiness in summer, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards and Rilea—LIDE3/GASH-RHMA (tanoak/salal-Pacific rhododendron)

248F—Stackyards-Rilea-Rock outcrop complex, cool, 30 to 60 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,000 to 3,000 feet
Native plants: Stackyards—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, red huckleberry; Rilea—Douglas fir, western hemlock, cascade Oregongrape, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards and Rilea—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea—TSHE/GASH (western hemlock/salal)

249F—Stackyards-Rilea-Rock outcrop complex, 30 to 60 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Rock outcrop—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Stackyards—Douglas fir, tanoak, salal, golden chinkapin, cascade Oregongrape, Pacific rhododendron; Rilea—Douglas fir, tanoak, Pacific rhododendron, western swordfern, salal
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Yorel soils on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards and Rilea—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards and Rilea—LIDE3/RHMA-GASH (tanoak/ Pacific rhododendron-salal)

250F—Stackyards-Rilea-Yorel complex, cool, 30 to 60 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Yorel soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—convex areas of backslopes; Yorel—footslopes, concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,000 to 3,000 feet
Native plants: Stackyards—Douglas fir, western hemlock, Pacific rhododendron, cascade Oregongrape, red huckleberry; Rilea—Douglas fir,

western hemlock, cascade Oregongrape, salal, Pacific rhododendron; Yorel—Douglas fir, western hemlock, cascade Oregongrape, Pacific rhododendron, coast fairybells
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Yorel Soil

Typical profile

0 to 6 inches—dark brown gravelly loam
6 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Timber production

Major Management Limitations

Stackyards, Rilea, and Yorel—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea and Yorel—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards and Yorel—TSHE/RHMA (western hemlock/Pacific rhododendron)
Rilea—TSHE/GASH (western hemlock/salal)

251F—Stackyards-Rilea-Yorel complex, 30 to 60 percent north slopes

Composition

Stackyards soil and similar inclusions—40 percent
Rilea soil and similar inclusions—30 percent
Yorel soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Stackyards—concave areas of backslopes; Rilea—narrow summits, shoulders, convex areas of backslopes; Yorel—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Stackyards—Douglas fir, tanoak, salal, Pacific rhododendron, cascade Oregongrape; Rilea—Douglas fir, tanoak, Pacific rhododendron, western swordfern,

salal; Yorel—Douglas fir, tanoak, Pacific rhododendron, western swordfern, coast fairybells

Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Stackyards Soil

Typical profile

0 to 10 inches—very dark grayish brown extremely gravelly loam
10 to 15 inches—dark brown extremely cobbly clay loam
15 to 23 inches—dark yellowish brown extremely cobbly loam
23 to 44 inches—dark yellowish brown extremely cobbly clay loam
44 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Rilea Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 28 inches—brown very gravelly loam
28 to 38 inches—brown very gravelly clay loam
38 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Yorel Soil

Typical profile

0 to 6 inches—dark brown gravelly loam
6 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Euchrand soils on narrow summits, on shoulders, and in convex areas of backslopes
- Zalea and Pyrady soils on stable benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Stackyards, Rilea, and Yorel—slope, susceptibility of the surface layer to water erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Rilea and Yorel—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Stackyards and Rilea—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Yorel—LIDE3/RHMA (tanoak/Pacific rhododendron)

252G—Steinmetz-Sitkum complex, 60 to 90 percent north slopes

Composition

Steinmetz soil and similar inclusions—55 percent
Sitkum soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Steinmetz—concave areas of backslopes; Sitkum—convex areas of backslopes
Landform: Mountains
Parent material: Granitic rock
Elevation: 2,000 to 2,500 feet
Native plants: Steinmetz—Douglas fir, sugar pine, cascade Oregongrape, baldhip rose, California hazel, broadleaf starflower; Sitkum—Douglas fir, sugar pine, cascade Oregongrape, baldhip rose, California hazel, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—100 to 120 days

Steinmetz Soil

Typical profile

0 to 12 inches—dark brown sandy loam
12 to 65 inches—dark yellowish brown to yellowish brown sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of erosion: Very severe

Sitkum Soil

Typical profile

0 to 10 inches—dark brown sandy loam
10 to 34 inches—dark yellowish brown to yellowish brown sandy loam
34 inches—weathered diorite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Soils that are less than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Steinmetz and Sitkum—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, sloughing, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer
Sitkum—soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Steinmetz and Sitkum—PSME/BENE (Douglas fir/ dwarf Oregongrape)

253G—Steinmetz-Sitkum complex, 60 to 90 percent south slopes

Composition

Steinmetz soil and similar inclusions—50 percent
Sitkum soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Steinmetz—concave areas of backslopes; Sitkum—convex areas of backslopes
Landform: Mountains
Parent material: Granitic rock
Elevation: 2,000 to 3,000 feet
Native plants: Steinmetz—Douglas fir, sugar pine, tanoak, salal, little prince's pine, cascade Oregongrape; Sitkum—Douglas fir, sugar pine, tanoak, salal, baldhip rose, cascade Oregongrape
Climatic factors:
Mean annual precipitation—95 inches
Mean annual air temperature—50 degrees F
Frost-free period—120 to 150 days

Steinmetz Soil

Typical profile

0 to 12 inches—dark brown sandy loam
12 to 65 inches—dark yellowish brown to yellowish brown sandy loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 8 inches
Hazard of erosion: Very severe

Sitkum Soil

Typical profile

0 to 10 inches—dark brown sandy loam
10 to 34 inches—dark yellowish brown to yellowish brown sandy loam
34 inches—weathered diorite

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Soils that are than 20 inches deep to bedrock and are on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Steinmetz and Sitkum—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, sloughing, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer

Sitkum—soil depth, poor anchoring medium, low available water capacity

USFS Plant Association

Steinmetz and Sitkum—PSME-LIDE3/GASH (Douglas fir-tanoak/salal)

254D—Svensen-Reedsport complex, 0 to 15 percent slopes

Composition

Svensen soil and similar inclusions—55 percent
Reedsport soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Svensen—concave areas of summits; Reedsport—convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Svensen—Douglas fir, grand fir, Sitka spruce, Pacific rhododendron, evergreen huckleberry; Reedsport—Douglas fir, grand fir, Sitka spruce, western hemlock, red huckleberry, salmonberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Svensen Soil

Typical profile

0 to 13 inches—dark brown loam
13 to 48 inches—dark brown clay loam
48 to 54 inches—variegated brown and strong brown loam
54 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 10 inches
Hazard of erosion: Slight

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Slight or moderate

Contrasting Inclusions

- Millicoma soils on shoulders and knobs and in convex areas of summits
- Whaleshead soils in convex areas of summits
- Bullgulch and Hunterscove soils on stable benches
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Svensen and Reedsport—susceptibility of the surface layer to compaction when wet, droughtiness in summer, salt spray

Reedsport—soil depth, low available water capacity

USFS Plant Association

Svensen and Reedsport—TSHE/RHMA (western hemlock/Pacific rhododendron)

254E—Svensen-Reedsport complex, 15 to 30 percent slopes

Composition

Svensen soil and similar inclusions—50 percent
Reedsport soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Svensen—concave areas of summits; Reedsport—convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Svensen—Douglas fir, grand fir, Sitka spruce, evergreen huckleberry, Pacific rhododendron; Reedsport—Douglas fir, grand fir, Sitka spruce, western hemlock, western swordfern, salmonberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Svensen Soil

Typical profile

0 to 13 inches—dark brown loam
13 to 48 inches—dark brown clay loam
48 to 54 inches—variegated brown and strong brown loam
54 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 10 inches
Hazard of erosion: Slight or moderate

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Millicoma soils on shoulders and knobs and in convex areas of summits
- Whaleshead soils in convex areas of summits
- Bullgulch and Hunterscove soils on stable benches
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Svensen and Reedsport—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer, salt spray
Reedsport—soil depth, low available water capacity

USFS Plant Association

Svensen and Reedsport—TSHE/RHMA (western hemlock/Pacific rhododendron)

255E—Swedeheaven-Quailprairie-Sankey complex, 0 to 30 percent slopes

Composition

Swedeheaven soil and similar inclusions—35 percent
Quailprairie soil and similar inclusions—30 percent
Sankey soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Swedeheaven, Quailprairie, and Sankey—open areas of grassland within forests (fig. 9); Swedeheaven—convex areas of summits; Quailprairie—concave areas of summits; Sankey—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 800 to 2,600 feet
Native plants: Swedeheaven—hedgehog dogtail, brome, California oatgrass, bentgrass, western

Figure 9.—Open areas of grassland within the forest in an area of Swedeheaven-Quailprairie-Sankey complex, 0 to 30 percent slopes, in Adams Prairie.

brackenfern; Quailprairie—hedgehog dogtail, brome, California oatgrass, bluegrass, western brackenfern; Sankey—brome, bentgrass, dock, woodrush, western brackenfern

Climatic factors:
- Mean annual precipitation—110 inches
- Mean annual air temperature—49 degrees F
- Frost-free period—160 to 210 days

Swedeheaven Soil

Typical profile

0 to 13 inches—very dark grayish brown to dark brown gravelly loam
13 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 27 inches—yellowish brown extremely gravelly clay loam
27 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Quailprairie Soil

Typical profile

0 to 11 inches—very dark brown gravelly loam
11 to 23 inches—very dark grayish brown gravelly loam
23 to 37 inches—very dark grayish brown gravelly clay loam
37 to 53 inches—dark grayish brown very gravelly clay loam
53 to 67 inches—mottled, dark grayish brown very gravelly silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Depth to water table: 4.0 to 4.5 feet below the surface in October through June
Hazard of erosion: Moderate
Shrink-swell potential: High

Sankey Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly sandy clay loam
4 to 13 inches—very dark grayish brown very cobbly sandy clay loam
13 to 17 inches—dark yellowish brown extremely cobbly clay loam
17 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Averlande soils that are on shoulders and knobs and in convex areas of summits and are under a forest canopy
- Colepoint and Skookumhouse soils that are in concave areas of summits and are under a forest canopy
- Crutchfield and Hazelcamp soils that are in convex areas of summits and are under a forest canopy
- Greggo and Mislatnah soils that are on shoulders and knobs and in convex areas of summits, are under a forest canopy, and are near fault zones
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Watershed, recreation, wildlife habitat, limited livestock grazing

Major Management Limitations

Swedeheaven, Quailprairie, and Sankey—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer
Swedeheaven and Sankey—low available water capacity
Sankey—soil depth

256F—Swedeheaven-Quailprairie-Sankey complex, 30 to 60 percent south slopes

Composition

Swedeheaven soil and similar inclusions—40 percent
Quailprairie soil and similar inclusions—30 percent
Sankey soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Swedeheaven, Quailprairie, and Sankey—open areas of grassland within forests; Swedeheaven—convex areas of backslopes; Quailprairie—concave areas of backslopes; Sankey—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 300 to 3,000 feet
Native plants: Swedeheaven—hedgehog dogtail, brome, California oatgrass, bentgrass, western brackenfern; Quailprairie—hedgehog dogtail, brome, California oatgrass, bluegrass, western brackenfern; Sankey—brome, bentgrass, dock, woodrush, western brackenfern
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—49 degrees F
Frost-free period—160 to 210 days

Swedeheaven Soil

Typical profile

0 to 13 inches—very dark grayish brown to dark brown gravelly loam
13 to 20 inches—dark yellowish brown very gravelly clay loam
20 to 27 inches—yellowish brown extremely gravelly clay loam
27 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Quailprairie Soil

Typical profile

0 to 11 inches—very dark brown gravelly loam
11 to 23 inches—very dark grayish brown gravelly loam
23 to 37 inches—very dark grayish brown gravelly clay loam
37 to 53 inches—dark grayish brown very gravelly clay loam
53 to 67 inches—mottled, dark grayish brown very gravelly silty clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 8 inches
Depth to water table: 4.0 to 4.5 feet below the surface in October through June
Hazard of erosion: Moderate or severe
Shrink-swell potential: High

Sankey Soil

Typical profile

0 to 4 inches—very dark grayish brown very gravelly sandy clay loam
4 to 13 inches—very dark grayish brown very cobbly sandy clay loam
13 to 17 inches—dark yellowish brown extremely cobbly clay loam
17 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Bravo and Crutchfield soils that are in convex areas of backslopes and are under a forest canopy
- Cassiday soils that are on narrow summits, on shoulders, and in convex areas of backslopes and are under a forest canopy
- Colepoint and Fritsland soils that are in concave areas of backslopes and are under a forest canopy
- Digger soils that are in convex areas of backslopes and are under a forest canopy
- Remote soils that are on footslopes and in concave areas of backslopes and are under a forest canopy
- Greggo and Mislatnah soils that are on shoulders and knobs and in convex areas of backslopes, are under a forest canopy, and are near fault zones
- Rock outcrop on ridge crests and shoulders

Major Uses

Watershed, recreation, wildlife habitat, limited livestock grazing

Major Management Limitations

Swedeheaven, Quailprairie, and Sankey—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, droughtiness in summer
Swedeheaven and Sankey—low available water capacity
Sankey—soil depth

257A—Takilma cobbly loam, 0 to 3 percent slopes

Composition

Takilma soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas
Landform: Low stream terraces
Parent material: Alluvium
Elevation: 200 to 300 feet
Native plants: Oregon white oak, tanoak, western brackenfern, California laurel, trailing blackberry
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—55 degrees F
Frost-free period—185 to 210 days

Typical profile

0 to 5 inches—very dark grayish brown cobbly loam
5 to 16 inches—dark brown very cobbly loam
16 to 72 inches—dark yellowish brown extremely cobbly sandy loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid over rapid
Available water capacity: About 4 inches
Hazard of erosion: Slight

Contrasting Inclusions

- Abegg soils on adjacent high stream terraces
- Clawson soils in depressions and drainageways on low stream terraces
- Cove soils in concave areas of low stream terraces
- Foehlin soils in nearly level areas of low stream terraces
- Soils on relict gravel bars on flood plains
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

Susceptibility of the surface layer to compaction when wet, droughtiness in summer, low available water capacity, cobbles on the surface

258E—Templeton silt loam, 0 to 30 percent slopes

Composition

Templeton soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Convex areas of summits
Landform: Coastal hills and mountains
Parent material: Sedimentary rock
Elevation: 200 to 1,300 feet
Native plants: Douglas fir, Sitka spruce, western hemlock, red huckleberry, salmonberry, western swordfern, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Typical profile

0 to 17 inches—very dark brown to very dark grayish brown silt loam
17 to 47 inches—dark yellowish brown to yellowish brown silty clay loam
47 inches—weathered sandstone

Soil Properties and Qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 13 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Millicoma soils on shoulders and knobs and in convex areas of summits
- Whaleshead soils in concave areas of summits
- Grassyknob, Hooskanaden, Loneranch, and Reinhart soils in open areas of grassland on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Wet soils in depressions and drainageways

Major Uses

Timber production, homesite development, livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer

USFS Plant Association

TSHE/RHMA (western hemlock/Pacific rhododendron)

259F—Templeton silt loam, 30 to 60 percent north slopes

Composition

Templeton soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Concave areas of backslopes
Landform: Coastal hills and mountains
Parent material: Sedimentary rock
Elevation: 200 to 1,300 feet
Native plants: Douglas fir, Sitka spruce, western hemlock, red huckleberry, salmonberry, western swordfern, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Typical profile

0 to 17 inches—very dark brown to very dark grayish brown silt loam
17 to 47 inches—dark yellowish brown to yellowish brown silty clay loam
47 inches—weathered sandstone

Soil Properties and Qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 13 inches
Hazard of erosion: Moderate or severe

Contrasting Inclusions

- Millicoma soils in convex areas of backslopes
- Whaleshead soils in concave areas of backslopes
- Grassyknob, Hooskanaden, Loneranch, and Reinhart soils in open areas of grassland in convex and concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Uses

Timber production, livestock grazing

Major Management Limitations

Slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, droughtiness in summer

USFS Plant Association

TSHE/RHMA (western hemlock/Pacific rhododendron)

260F—Threetrees-Saddlepeak-Scalerock complex, cool, 30 to 60 percent south slopes

Composition

Threetrees soil and similar inclusions—35 percent
Saddlepeak soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Saddlepeak—concave areas of backslopes; Threetrees—convex areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,300 to 3,000 feet
Native plants: Threetrees—Douglas fir, western hemlock, tanoak, cascade Oregongrape, Pacific rhododendron, common beargrass, salal; Saddlepeak—Douglas fir, western hemlock, red huckleberry, Pacific rhododendron, western swordfern; Scalerock—Douglas fir, western hemlock, tanoak, salal, western swordfern
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Rock outcrop on ridge crests and shoulders
- Soils that have less than 35 percent rock fragments and are on slump benches
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Threetrees, Saddlepeak, and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, south aspects, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Threetrees—TSHE/GASH (western hemlock/salal)

Saddlepeak—TSHE/RHMA (western hemlock/Pacific rhododendron)
Scalerock—LIDE3-TSHE (tanoak-western hemlock)

261G—Threetrees-Saddlepeak-Scalerock complex, cool, 60 to 90 percent north slopes

Composition

Threetrees soil and similar inclusions—40 percent
Saddlepeak soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Threetrees—convex areas of backslopes; Saddlepeak—concave areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,300 to 3,000 feet
Native plants: Threetrees—Douglas fir, western hemlock, tanoak, cascade Oregongrape, Pacific rhododendron, common beargrass, salal; Saddlepeak—Douglas fir, western hemlock, red huckleberry, Pacific rhododendron, western swordfern; Scalerock—Douglas fir, western hemlock, tanoak, salal, western swordfern
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Soils that have less than 35 percent rock fragments and are on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Threetrees, Saddlepeak, and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Threetrees—TSHE/GASH (western hemlock/salal)
Saddlepeak—TSHE/RHMA (western hemlock/Pacific rhododendron)
Scalerock—LIDE3-TSHE (tanoak-western hemlock)

262F—Threetrees-Saddlepeak-Scalerock complex, 30 to 60 percent south slopes

Composition

Threetrees soil and similar inclusions—35 percent
Saddlepeak soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Threetrees—convex areas of backslopes; Saddlepeak—concave areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Threetrees—Douglas fir, tanoak, canyon live oak, salal, western swordfern, western brackenfern; Saddlepeak—Douglas fir, tanoak, canyon live oak, salal, western swordfern, cascade Oregongrape; Scalerock—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, baldhip rose
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Agness soils in open areas of grassland in concave areas of backslopes
- Sixes soils in open areas of grassland in convex areas of backslopes
- Goldbeach soils in open areas of grassland on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that have less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Threetrees, Saddlepeak, and Scalerock—slope, susceptibility of the surface layer to water erosion,

susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, south aspects, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Threetrees and Saddlepeak—LIDE3/GASH (tanoak/salal)
Scalerock—LIDE3/BENE (tanoak/dwarf Oregongrape)

262G—Threetrees-Saddlepeak-Scalerock complex, 60 to 90 percent south slopes

Composition

Threetrees soil and similar inclusions—35 percent
Saddlepeak soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Threetrees—convex areas of backslopes; Saddlepeak—concave areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Threetrees—Douglas fir, tanoak, canyon live oak, salal, western swordfern, western brackenfern; Saddlepeak—Douglas fir, tanoak, canyon live oak, salal, western swordfern, cascade Oregongrape; Scalerock—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, baldhip rose
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Agness soils in open areas of grassland in concave areas of backslopes
- Sixes soils in open areas of grassland in convex areas of backslopes
- Goldbeach soils in open areas of grassland on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that have less than 35 percent rock fragments and are on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Threetrees, Saddlepeak, and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, south aspects, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Threetrees and Saddlepeak—LIDE3/GASH (tanoak/salal)
Scalerock—LIDE3/BENE (tanoak/dwarf Oregongrape)

263G—Threetrees-Saddlepeak-Scalerock complex, 60 to 90 percent north slopes

Composition

Threetrees soil and similar inclusions—40 percent
Saddlepeak soil and similar inclusions—30 percent
Scalerock soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Threetrees—convex areas of backslopes; Saddlepeak—concave areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Threetrees—Douglas fir, tanoak, Pacific rhododendron, salal, common beargrass; Saddlepeak—Douglas fir, tanoak, Pacific rhododendron, salal, cascade Oregongrape; Scalerock—Douglas fir, tanoak, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Saddlepeak Soil

Typical profile

0 to 8 inches—dark yellowish brown very channery loam
8 to 43 inches—dark yellowish brown to light yellowish brown very channery clay loam
43 to 68 inches—light yellowish brown extremely channery clay loam

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Contrasting Inclusions

- Soils that have less than 35 percent rock fragments and are on slump benches
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Saddlepeak, Threetrees, and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, poor anchoring medium, low available water capacity
Threetrees and Scalerock—soil depth

USFS Plant Association

Threetrees and Saddlepeak—LIDE3/GASH (tanoak/salal)
Scalerock—LIDE3/BENE (tanoak/dwarf Oregongrape)

264F—Threetrees-Scalerock-Rock outcrop complex, 30 to 60 percent south slopes

Composition

Threetrees soil and similar inclusions—35 percent
Scalerock soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Threetrees—convex areas of backslopes; Scalerock—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Schist or phyllite
Elevation: 2,500 to 4,500 feet
Native plants: Threetrees—Douglas fir, tanoak, salal, western swordfern, western brackenfern; Scalerock—Douglas fir, tanoak, canyon live oak, cascade Oregongrape, baldhip rose
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—90 to 120 days

Threetrees Soil

Typical profile

0 to 13 inches—strong brown very channery loam
13 to 22 inches—dark yellowish brown very channery clay loam
22 to 37 inches—yellowish brown to brownish yellow very flaggy clay loam
37 inches—schist

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 3 inches
Hazard of erosion: Severe

Scalerock Soil

Typical profile

0 to 4 inches—dark yellowish brown very channery loam
4 to 13 inches—dark yellowish brown very flaggy clay loam
13 inches—schist

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 1 inch
Hazard of erosion: Severe

Contrasting Inclusions

- Saddlepeak soils in concave areas of backslopes
- Agness soils in open areas of grassland in concave areas of backslopes
- Sixes soils in open areas of grassland in convex areas of backslopes
- Goldbeach soils in open areas of grassland on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that have less than 35 percent rock fragments and are on footslopes and in concave areas of backslopes
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Threetrees and Scalerock—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, poor anchoring medium, south aspects, low available water capacity

USFS Plant Association

Threetrees—LIDE3/GASH (tanoak/salal)
Scalerock—LIDE3/BENE (tanoak/dwarf Oregongrape)

265F—Tolfork-Tincup complex, 30 to 60 percent north slopes

Composition

Tolfork soil and similar inclusions—55 percent
Tincup soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Tolfork—concave areas of backslopes; Tincup—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,800 to 5,500 feet
Native plants: Tolfork—white fir, Douglas fir, Shasta red fir, golden chinkapin, baldhip rose, Sadler oak, deerfoot vanillaleaf; Tincup—Douglas fir, white fir, Shasta red fir, Sadler oak, golden chinkapin, baldhip rose
Climatic factors:
Mean annual precipitation—140 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Tolfork Soil

Typical profile

0 to 9 inches—very dark brown very gravelly coarse sandy loam
9 to 36 inches—very dark grayish brown to dark grayish brown extremely gravelly sandy loam
36 to 50 inches—dark grayish brown extremely cobbly sandy loam
50 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Moderate or severe

Tincup Soil

Typical profile

0 to 7 inches—very dark grayish brown very cobbly loam
7 to 28 inches—dark yellowish brown extremely cobbly loam
28 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 2 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Skymor and Woodseye soils on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that have less than 35 percent rock fragments and are on backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Tolfork and Tincup—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Tincup—susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Tolfork—ABCO-QUSA-CACH (white fir-Sadler oak-golden chinkapin)
Tincup—ABCO-ABMAS/ROGY (white fir-Shasta red fir/baldhip rose)

265G—Tolfork-Tincup complex, 60 to 90 percent north slopes

Composition

Tolfork soil and similar inclusions—55 percent
Tincup soil and similar inclusions—30 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Tolfork—concave areas of backslopes; Tincup—convex areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,800 to 5,500 feet
Native plants: Tolfork—Douglas fir, white fir, Sadler oak, golden chinkapin, western prince's pine, creeping snowberry, evergreen violet; Tincup—Douglas fir, white fir, Shasta red fir, Sadler oak, cascade Oregongrape, baldhip rose

Climatic factors:
Mean annual precipitation—140 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Tolfork Soil

Typical profile

0 to 9 inches—very dark brown very gravelly coarse sandy loam
9 to 36 inches—very dark grayish brown to dark grayish brown extremely gravelly sandy loam
36 to 50 inches—dark grayish brown extremely cobbly sandy loam
50 inches—sandstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Tincup Soil

Typical profile

0 to 7 inches—very dark grayish brown very cobbly loam
7 to 28 inches—dark yellowish brown extremely cobbly loam
28 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 2 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Skymor and Woodseye soils on narrow summits, on shoulders, and in convex areas of backslopes
- Soils that have less than 35 percent rock fragments and are on backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Tolfork and Tincup—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, duration of snow cover, short growing season, frost heave, slope stability, low available water capacity
Tincup—susceptibility of the surface layer to compaction when wet, soil depth

USFS Plant Association

Tolfork—ABCO-QUSA-CACH (white fir-Sadler oak-golden chinkapin)
Tincup—ABCO-ABMAS/ROGY (white fir-Shasta red fir/baldhip rose)

266—Urban land

Composition

Urban land—100 percent

Setting

Landscape position: Nearly level or gently sloping areas
Landform: Marine terraces or stream terraces
Elevation: 20 to 300 feet
Climatic factors:
Mean annual precipitation—70 to 90 inches
Mean annual air temperature—50 to 57 degrees F
Frost-free period—210 to 330 days

Major Uses

Industrial and residential development in and around the cities of Brookings, Gold Beach, and Port Orford

267F—Vermisa-Beekman-Colestine complex, 30 to 60 percent south slopes

Composition

Vermisa soil and similar inclusions—40 percent
Beekman soil and similar inclusions—30 percent
Colestine soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Vermisa—narrow summits, shoulders, convex areas of backslopes; Beekman—convex areas of backslopes; Colestine—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary rock
Elevation: 200 to 2,300 feet
Native plants: Vermisa—tanoak, poison oak, bearded fescue, California fescue, white hawkweed,

California honeysuckle, whipplevine; Beekman—Douglas fir, tanoak, California hazel, canyon live oak, poison oak, baldhip rose, trailing blackberry; Colestine—Douglas fir, tanoak, bearded fescue, whitevein shinleaf, whipplevine, white hawkweed

Climatic factors:
Mean annual precipitation—90 inches
Mean annual air temperature—52 degrees F
Frost-free period—170 to 200 days

Vermisa Soil

Typical profile

0 to 3 inches—very dark grayish brown very gravelly loam
3 to 12 inches—dark yellowish brown to yellowish brown extremely gravelly loam
12 inches—sandstone

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: About 1 inch
Hazard of erosion: Severe

Beekman Soil

Typical profile

0 to 5 inches—very dark grayish brown gravelly loam
5 to 25 inches—dark brown to brown very gravelly loam
25 to 34 inches—light olive brown very gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Colestine Soil

Typical profile

0 to 5 inches—dark brown gravelly loam
5 to 19 inches—light olive brown gravelly loam
19 to 34 inches—light olive brown gravelly clay loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 4 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Shastacosta soils in concave areas of backslopes
- Speaker soils in convex areas of backslopes
- Josephine soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Watershed, recreation, wildlife habitat, limited timber production

Major Management Limitations

Vermisa, Beekman, and Colestine—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, soil depth, south aspects, droughtiness in summer, low available water capacity

USFS Plant Association

Vermisa—LIDE3/RHDI-LOHI (tanoak/poison oak-hairy honeysuckle)
Beekman—PSME-LIDE3-QUCH (Douglas fir-tanoak-canyon live oak)
Colestine—PSME-LIDE3 (Douglas fir-tanoak)

268D—Waldport-Dune land complex, 12 to 30 percent slopes

Composition

Waldport soil and similar inclusions—50 percent
Dune land—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Waldport—side slopes and summits of stabilized sand dunes; Dune land—active sand dunes
Landform: Sand dunes
Parent material: Mixed eolian sand
Elevation: 0 to 100 feet
Native plants: Waldport—European beachgrass, American dunegrass, mountain brome, coyotebrush, lupine
Climatic factors:
Mean annual precipitation—80 inches

Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Waldport Soil

Typical profile

0 to 2 inches—very dark grayish brown fine sand
2 to 60 inches—light yellowish brown fine sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: About 3 inches
Hazard of wind erosion: Very severe

Contrasting Inclusions

- Heceta soils in interdunal depressions on deflation plains
- Yaquina soils in convex interdunal areas of deflation plains
- Bullards soils on side slopes of relict sand dunes
- Chetco and Langlois soils on flood plains adjacent to stabilized sand dunes
- Brenner soils in backswamp areas of flood plains

Major Uses

Waldport—livestock grazing, homesite development
Dune land—recreation, wildlife habitat

Major Management Limitations

Waldport—susceptibility of the soil to wind erosion, droughtiness in summer, low available water capacity, very rapid permeability, slope stability, sloughing

269D—Waldport-Dune land-Heceta complex, 0 to 30 percent slopes

Composition

Waldport soil and similar inclusions—40 percent
Dune land—30 percent
Heceta soil and similar inclusions—20 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Waldport—side slopes and summits of stabilized sand dunes; Dune land—active sand dunes; Heceta—interdunal depressions of deflation plains
Landform: Sand dunes
Parent material: Mixed eolian sand
Elevation: 0 to 100 feet
Native plants: Waldport—European beachgrass, American dunegrass, mountain brome, coyotebrush, lupine; Heceta—rushes, sedges, Pacific gentian, salal, willow
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Waldport Soil

Typical profile

0 to 2 inches—very dark grayish brown fine sand
2 to 60 inches—light yellowish brown fine sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: About 3 inches
Hazard of wind erosion: Very severe

Heceta Soil

Typical profile

0 to 6 inches—very dark grayish brown fine sand
6 to 29 inches—mottled, grayish brown fine sand
29 to 60 inches—mottled, gray sand

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Poorly drained
Permeability: Rapid
Available water capacity: About 4 inches
Depth to water table: 1 foot above the surface to a depth of 2 feet below the surface in October through May
Hazard of erosion: Slight

Contrasting Inclusions

- Yaquina soils in convex interdunal areas of deflation plains
- Bullards soils on side slopes of relict sand dunes
- Chetco and Langlois soils on flood plains adjacent to stabilized sand dunes
- Brenner soils in backswamp areas of flood plains

Major Uses

Waldport and Heceta—livestock grazing
Waldport—homesite development

Major Management Limitations

Waldport and Heceta—low available water capacity, droughtiness in summer, very rapid or rapid permeability

Waldport—slope, susceptibility of the soil to wind erosion, slope stability, sloughing
Heceta—high water table

270E—Wedderburn-Zwagg complex, 0 to 30 percent slopes

Composition

Wedderburn soil and similar inclusions—50 percent
Zwagg soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Wedderburn—concave areas of summits under a forest canopy; Zwagg—open areas of grassland within forests in convex areas of summits
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Wedderburn—Douglas fir, redwood, tanoak, California laurel, evergreen huckleberry, western swordfern; Zwagg—crinkleawn fescue, bentgrass, velvetgrass, western brackenfern, salmonberry
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—240 to 270 days

Wedderburn Soil

Typical profile

0 to 9 inches—very dark brown gravelly loam
9 to 26 inches—very dark grayish brown gravelly loam
26 to 38 inches—dark brown gravelly clay loam
38 to 46 inches—olive brown gravelly clay loam
46 inches—siltstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 7 inches
Hazard of erosion: Moderate

Zwagg Soil

Typical profile

0 to 8 inches—black loam
8 to 21 inches—very dark brown loam
21 to 25 inches—dark grayish brown very gravelly loam
25 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Loeb and Macklyn soils on stable benches
- Vondergreen soils in depressions and drainageways
- Dulandy soils in convex areas of summits
- Guerin soils on shoulders and knobs and in convex areas of summits
- Floras soils in concave areas of summits

Major Uses

Wedderburn and Zwagg—homesite development
Wedderburn—timber production
Zwagg—livestock grazing

Major Management Limitations

Wedderburn and Zwagg—slope, susceptibility of the surface layer to compaction when wet, slope stability, salt spray
Zwagg—susceptibility of the surface layer to water erosion, soil depth, low available water capacity

USFS Plant Association

Wedderburn—LIDE3-SESE3 (tanoak-coast redwood)

271F—Wedderburn-Zwagg complex, 30 to 60 percent south slopes

Composition

Wedderburn soil and similar inclusions—45 percent
Zwagg soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Wedderburn—concave areas of backslopes under a forest canopy; Zwagg—open areas of grassland within forests in convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet

Native plants: Wedderburn—Douglas fir, tanoak, redwood, salal, western swordfern; Zwagg—bentgrass, crinkleawn fescue, velvetgrass, western brackenfern, western azalea
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 300 days

Wedderburn Soil

Typical profile

0 to 9 inches—very dark brown gravelly loam
9 to 26 inches—very dark grayish brown gravelly loam
26 to 38 inches—dark brown gravelly clay loam
38 to 46 inches—olive brown gravelly clay loam
46 inches—siltstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 7 inches
Hazard of erosion: Moderate or severe

Zwagg Soil

Typical profile

0 to 8 inches—black loam
8 to 21 inches—very dark brown loam
21 to 25 inches—dark grayish brown very gravelly loam
25 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Dulandy soils in convex areas of backslopes
- Guerin soils on narrow summits, on shoulders, and in convex areas of backslopes
- Floras soils in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Wet soils in seep areas

Major Uses

Wedderburn—timber production
Zwagg—livestock grazing

Major Management Limitations

Wedderburn and Zwagg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, salt spray
Zwagg—soil depth, low available water capacity

USFS Plant Association

Wedderburn—LIDE3-SESE3 (tanoak-coast redwood)

271G—Wedderburn-Zwagg complex, 60 to 90 percent south slopes

Composition

Wedderburn soil and similar inclusions—45 percent
Zwagg soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Wedderburn—concave areas of backslopes under a forest canopy; Zwagg—open areas of grassland within forests in convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 200 to 1,300 feet
Native plants: Wedderburn—Douglas fir, tanoak, redwood, salal, common beargrass; Zwagg—bentgrass, crinkleawn fescue, velvetgrass, western brackenfern, western azalea
Climatic factors:
Mean annual precipitation—110 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 300 days

Wedderburn Soil

Typical profile

0 to 9 inches—very dark brown gravelly loam
9 to 26 inches—very dark grayish brown gravelly loam
26 to 38 inches—dark brown gravelly clay loam
38 to 46 inches—olive brown gravelly clay loam
46 inches—siltstone

Properties and qualities

Depth to bedrock: 40 to 60 inches
Drainage class: Well drained
Permeability: Moderate

Available water capacity: About 7 inches
Hazard of erosion: Very severe

Zwagg Soil

Typical profile

0 to 8 inches—black loam
8 to 21 inches—very dark brown loam
21 to 25 inches—dark grayish brown very gravelly loam
25 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Dulandy soils on shoulders and knobs and in convex areas of backslopes
- Floras soils in convex areas of backslopes
- Guerin soils on narrow summits, on shoulders, and in convex areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Uses

Wedderburn—timber production
Zwagg—livestock grazing

Major Management Limitations

Wedderburn and Zwagg—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, south aspects, salt spray
Zwagg—soil depth, low available water capacity

USFS Plant Association

Wedderburn—LIDE3-SESE3 (tanoak-coast redwood)

272F—Whaleshead-Reedsport complex, 30 to 60 percent north slopes

Composition

Whaleshead soil and similar inclusions—50 percent
Reedsport soil and similar inclusions—35 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Whaleshead—concave areas of backslopes; Reedsport—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Whaleshead—Douglas fir, grand fir, western hemlock, Sitka spruce, western swordfern, evergreen huckleberry, salal; Reedsport—Douglas fir, grand fir, western hemlock, evergreen huckleberry, western swordfern, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Millicoma soils on narrow summits, on shoulders, and in convex areas of backslopes

- Svensen soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Whaleshead and Reedsport—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, salt spray, low available water capacity
Reedsport—soil depth

USFS Plant Association

Whaleshead—TSHE/GASH (western hemlock/salal)
Reedsport—TSHE/RHMA (western hemlock/Pacific rhododendron)

272G—Whaleshead-Reedsport complex, 60 to 90 percent north slopes

Composition

Whaleshead soil and similar inclusions—45 percent
Reedsport soil and similar inclusions—40 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Whaleshead—concave areas of backslopes; Reedsport—convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Whaleshead—Douglas fir, western hemlock, Sitka spruce, western swordfern, evergreen huckleberry, sweetscented bedstraw, salal; Reedsport—Douglas fir, grand fir, salmonberry, western swordfern, salal, Pacific rhododendron
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Millicoma soils on narrow summits, on shoulders, and in convex areas of backslopes
- Svensen soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Whaleshead and Reedsport—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, salt spray, low available water capacity
Reedsport—soil depth

USFS Plant Association

Whaleshead—TSHE/GASH (western hemlock/salal)
Reedsport—TSHE/RHMA (western hemlock/Pacific rhododendron)

273F—Whaleshead-Reedsport-Millicoma complex, 30 to 60 percent north slopes

Composition

Whaleshead soil and similar inclusions—35 percent
Reedsport soil and similar inclusions—30 percent
Millicoma soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Whaleshead—concave areas of backslopes; Reedsport—convex areas of backslopes; Millicoma—narrow summits, shoulders, convex areas of backslopes
Landform: Coastal hills and mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 50 to 1,000 feet
Native plants: Whaleshead—Douglas fir, grand fir, western hemlock, Sitka spruce, western swordfern, evergreen huckleberry, salal; Reedsport—Douglas fir, grand fir, western hemlock, red alder, cascade Oregongrape, evergreen huckleberry, Pacific rhododendron; Millicoma—Douglas fir, grand fir, western hemlock, creambush oceanspray, western swordfern, salal
Climatic factors:
Mean annual precipitation—85 inches
Mean annual air temperature—51 degrees F
Frost-free period—200 to 240 days

Whaleshead Soil

Typical profile

0 to 3 inches—very dark gray very gravelly loam
3 to 33 inches—very dark gray to very dark grayish brown very gravelly clay loam
33 to 60 inches—very dark brown to brown extremely gravelly clay loam

Properties and qualities

Depth to bedrock: 40 to 60 inches or more
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate or severe

Reedsport Soil

Typical profile

0 to 8 inches—very dark gray to very dark grayish brown gravelly loam
8 to 37 inches—dark brown gravelly loam
37 inches—weathered sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 5 inches
Hazard of erosion: Severe

Millicoma Soil

Typical profile

0 to 19 inches—very dark grayish brown to dark brown gravelly loam
19 to 31 inches—dark yellowish brown very gravelly loam
31 to 41 inches—weathered bedrock
41 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Severe

Contrasting Inclusions

- Svensen soils on footslopes and in concave areas of backslopes
- Rock outcrop on ridge crests and shoulders
- Soils that have bedrock at a depth of 10 to 20 inches and are adjacent to areas of Rock outcrop
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Whaleshead, Reedsport, and Millicoma—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, slope stability, salt spray, low available water capacity
Reedsport and Millicoma—soil depth

USFS Plant Association

Whaleshead and Millicoma—TSHE/GASH (western hemlock/salal)
Reedsport—TSHE/RHMA (western hemlock/Pacific rhododendron)

274A—Winchuck silt loam, 0 to 3 percent slopes

Composition

Winchuck soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 100 to 400 feet
Native plants: Redwood, Douglas fir, tanoak, California laurel, salmonberry, western swordfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 8 inches—dark brown silt loam
8 to 18 inches—dark brown silty clay loam
18 to 34 inches—dark reddish brown silty clay
34 to 46 inches—dark brown silty clay loam
46 to 60 inches—strong brown gravelly sandy clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 10 inches
Hazard of erosion: Slight
Shrink-swell potential: High

Contrasting Inclusions

- Bagness and Pistolriver soils on flood plains
- Ettersburg soils in nearly level areas of adjacent low stream terraces
- Huffling soils in depressions and drainageways of adjacent marine terraces
- Crofland soils in concave areas of adjacent marine terraces
- Bosland and Dulandy soils in convex areas of adjacent toeslopes of mountains

Major Uses

Homesite development, livestock grazing, cropland, timber production

Major Management Limitations

Susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, high shrink-swell potential, slow permeability, high humidity

USFS Plant Association

LIDE3-SESE3 (tanoak-coast redwood)

274D—Winchuck silt loam, 3 to 15 percent slopes

Composition

Winchuck soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Strongly sloping areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 100 to 400 feet
Native plants: Redwood, Douglas fir, tanoak, California laurel, salmonberry, western swordfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 8 inches—dark brown silt loam
8 to 18 inches—dark brown silty clay loam
18 to 34 inches—dark reddish brown silty clay
34 to 46 inches—dark brown silty clay loam
46 to 60 inches—strong brown gravelly sandy clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 10 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Contrasting Inclusions

- Ettersburg soils in nearly level areas of adjacent low stream terraces

- Huffling soils in depressions and drainageways on adjacent marine terraces
- Crofland soils in concave areas of adjacent marine terraces
- Bosland and Dulandy soils in convex areas of adjacent toeslopes of mountains

Major Uses

Homesite development, livestock grazing, cropland, timber production

Major Management Limitations

Slope, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, high shrink-swell potential, slow permeability, high humidity

USFS Plant Association

LIDE3-SESE3 (tanoak-coast redwood)

274E—Winchuck silt loam, 15 to 30 percent slopes

Composition

Winchuck soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Moderately steep areas
Landform: High stream terraces
Parent material: Alluvium
Elevation: 100 to 400 feet
Native plants: Redwood, Douglas fir, tanoak, California laurel, salmonberry, western swordfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—54 degrees F
Frost-free period—270 to 330 days

Typical profile

0 to 8 inches—dark brown silt loam
8 to 18 inches—dark brown silty clay loam
18 to 34 inches—dark reddish brown silty clay
34 to 46 inches—dark brown silty clay loam
46 to 60 inches—strong brown gravelly sandy clay loam

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Slow
Available water capacity: About 10 inches
Hazard of erosion: Slight or moderate
Shrink-swell potential: High

Contrasting Inclusions

- Vondergreen soils in depressions and drainageways of adjacent toeslopes of mountains
- Guerin soils in convex areas of adjacent footslopes of mountains
- Bosland and Dulandy soils in convex areas of adjacent footslopes of mountains
- Wet soils in seep areas

Major Uses

Livestock grazing, timber production, homesite development

Major Management Limitations

Slope, susceptibility of the surface layer to compaction when wet, susceptibility of the surface layer to displacement and accelerated erosion, clayey textures, slope stability, high shrink-swell potential, slow permeability

USFS Plant Association

LIDE3-SESE3 (tanoak-coast redwood)

275G—Woodseye-Rock outcrop-Brandypeak complex, 60 to 90 percent north slopes

Composition

Woodseye soil and similar inclusions—35 percent
Rock outcrop—30 percent
Brandypeak soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Woodseye—narrow summits, shoulders, convex areas of backslopes; Rock outcrop—ridge crests, shoulders; Brandypeak—concave areas of backslopes
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 3,000 to 5,500 feet
Native plants: Woodseye—Douglas fir, tanoak, white fir, salal, greenleaf manzanita, common beargrass; Brandypeak—Douglas fir, tanoak, sugar pine, salal, western swordfern, cascade Oregongrape
Climatic factors:
Mean annual precipitation—105 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 80 days

Woodseye Soil

Typical profile

0 to 12 inches—very dark brown to very dark grayish brown very gravelly loam
12 to 16 inches—dark grayish brown extremely gravelly loam
16 inches—metavolcanic rock

Properties and qualities

Depth to bedrock: 10 to 20 inches
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderate
Available water capacity: About 1 inch
Hazard of erosion: Very severe

Brandypeak Soil

Typical profile

0 to 10 inches—dark brown very cobbly loam
10 to 22 inches—dark brown very cobbly loam
22 to 34 inches—dark yellowish brown extremely cobbly loam
34 inches—metasedimentary rock

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderate
Available water capacity: About 3 inches
Hazard of erosion: Very severe

Contrasting Inclusions

- Bearcamp soils on footslopes and in concave areas of backslopes
- Althouse soils on backslopes and stable benches
- Orthents on narrow summits, on shoulders, and in convex areas of backslopes
- Wet soils in seep areas

Major Use

Timber production

Major Management Limitations

Woodseye and Brandypeak—slope, susceptibility of the surface layer to water erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, droughtiness in summer, low available water capacity

USFS Plant Association

Woodseye and Brandypeak—LIDE3/GASH (tanoak/salal)

276A—Yachats fine sandy loam, 0 to 3 percent slopes

Composition

Yachats soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level areas
Landform: Flood plains
Parent material: Alluvium
Elevation: 10 to 100 feet
Native plants: Red alder, willow, salmonberry, western swordfern, grasses
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 15 inches—very dark grayish brown to dark brown very fine sandy loam
15 to 42 inches—brown to dark yellowish brown fine sandy loam
42 to 60 inches—yellowish brown loamy fine sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: About 7 inches
Frequency of flooding: Frequent in November through April
Depth to water table: 4 to 6 feet below the surface in November through April
Hazard of erosion: Slight, except during periods of flooding

Contrasting Inclusions

- Willanch soils in depressions and drainageways of flood plains
- Brenner soils in backswamp areas of flood plains
- Nehalem soils in convex areas of flood plains
- Nestucca soils in concave areas of flood plains
- Gauldy soils on relict gravel bars of flood plains
- Riverwash

Major Use

Livestock grazing

Major Management Limitations

Flooding, susceptibility of the surface layer to compaction when wet, droughtiness in summer, high humidity, moderately rapid permeability

277A—Yaquina loamy fine sand, 0 to 3 percent slopes

Composition

Yaquina soil and similar inclusions—85 percent
Contrasting inclusions—15 percent

Setting

Landscape position: Nearly level to convex interdunal areas
Landform: Deflation plains
Parent material: Mixed eolian sand
Elevation: 10 to 100 feet
Native plants: Sedge, salal, western azalea, evergreen huckleberry, deerfern
Climatic factors:
Mean annual precipitation—80 inches
Mean annual air temperature—51 degrees F
Frost-free period—210 to 300 days

Typical profile

0 to 4 inches—dark gray loamy fine sand
4 to 11 inches—brown fine sand
11 to 26 inches—mottled, brown fine sand
26 to 60 inches—brown sand

Soil Properties and Qualities

Depth to bedrock: 60 inches or more
Drainage class: Somewhat poorly drained
Permeability: Moderately rapid
Available water capacity: About 4 inches
Depth to water table: 0.5 foot above the surface to a depth of 2 feet below the surface in November through April
Hazard of erosion: Slight

Contrasting Inclusions

- Chetco and Langlois soils on flood plains adjacent to deflation plains
- Brenner soils in backswamp areas of flood plains
- Heceta soils in interdunal depressions of deflation plains
- Frankport and Waldport soils on side slopes of recently stabilized sand dunes
- Bullards soils on side slopes of relict sand dunes
- Dune land

Major Uses

Livestock grazing, wildlife habitat

Major Management Limitations

High water table, susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the soil to wind erosion, low available water capacity, droughtiness in summer

278E—Zalea-Pyrady-Yorel complex, 15 to 30 percent slopes

Composition

Zalea soil and similar inclusions—35 percent
Pyrady soil and similar inclusions—30 percent
Yorel soil and similar inclusions—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Zalea—convex areas of summits; Pyrady—concave areas of summits; Yorel—shoulders, knobs, convex areas of summits
Landform: Mountains
Parent material: Zalea and Yorel—metasedimentary or metavolcanic rock; Pyrady—mudstone
Elevation: 2,500 to 3,500 feet
Native plants: Zalea—Douglas fir, tanoak, Pacific rhododendron, red huckleberry, salal; Pyrady—Douglas fir, tanoak, Port Orford cedar, salal, cascade Oregongrape; Yorel—Douglas fir, tanoak, Pacific rhododendron, western rattlesnake plantain, salal
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Zalea Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 16 inches—dark yellowish brown gravelly clay loam
16 to 34 inches—light olive brown gravelly clay loam
34 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Pyrady Soil

Typical profile

0 to 6 inches—dark brown clay loam
6 to 21 inches—dark brown to olive brown gravelly clay loam
21 to 34 inches—mottled, olive gravelly silty clay

34 to 43 inches—gleyed and mottled, dark gray gravelly silty clay
43 to 66 inches—mottled, olive gray gravelly clay

Properties and qualities

Depth to bedrock: 60 inches or more
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: About 9 inches
Depth to water table: 2.0 to 2.5 feet below the surface in October through June
Hazard of erosion: Moderate
Shrink-swell potential: High

Yorel Soil

Typical profile

0 to 6 inches—dark brown gravelly loam
6 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Bobsgarden soils in convex areas of summits
- Euchrand soils on shoulders and knobs and in convex areas of summits
- Rock outcrop on ridge crests and shoulders
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Zalea, Pyrady, and Yorel—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability
Zalea and Yorel—susceptibility of the surface layer to water erosion, soil depth, low available water capacity
Pyrady—clayey textures

USFS Plant Association

Zalea and Yorel—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)
Pyrady—LIDE3-CHLA (tanoak-Port Orford cedar)

279E—Zalea-Yorel-Rock outcrop complex, 0 to 30 percent slopes

Composition

Zalea soil and similar inclusions—35 percent
Yorel soil and similar inclusions—30 percent
Rock outcrop—25 percent
Contrasting inclusions—10 percent

Setting

Landscape position: Zalea—concave areas of summits; Yorel—convex areas of summits; Rock outcrop—ridge crests, shoulders
Landform: Mountains
Parent material: Metasedimentary or metavolcanic rock
Elevation: 2,500 to 3,800 feet
Native plants: Zalea—Douglas fir, tanoak, golden chinkapin, Pacific rhododendron, red huckleberry, salal; Yorel—Douglas fir, tanoak, Pacific madrone, salal, western rattlesnake plantain
Climatic factors:
Mean annual precipitation—145 inches
Mean annual air temperature—43 degrees F
Frost-free period—60 to 90 days

Zalea Soil

Typical profile

0 to 8 inches—dark brown gravelly loam
8 to 16 inches—dark yellowish brown gravelly clay loam
16 to 34 inches—light olive brown gravelly clay loam
34 inches—siltstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: About 5 inches
Hazard of erosion: Moderate

Yorel Soil

Typical profile

0 to 6 inches—dark brown gravelly loam
6 to 12 inches—dark brown gravelly loam
12 to 31 inches—strong brown gravelly clay loam
31 inches—sandstone

Properties and qualities

Depth to bedrock: 20 to 40 inches
Drainage class: Well drained
Permeability: Moderately slow

Available water capacity: About 4 inches
Hazard of erosion: Moderate

Contrasting Inclusions

- Bobsgarden soils in convex areas of summits
- Stackyards soils on footslopes and in concave areas of summits
- Euchrand and Rilea soils on shoulders and knobs and in convex areas of summits
- Orthents adjacent to areas of Rock outcrop
- Wet soils in depressions and drainageways

Major Use

Timber production

Major Management Limitations

Zalea and Yorel—susceptibility of the surface layer to displacement and accelerated erosion, susceptibility of the surface layer to compaction when wet, duration of snow cover, short growing season, frost heave, slope stability, soil depth, low available water capacity

Yorel—susceptibility of the surface layer to water erosion

USFS Plant Association

Zalea and Yorel—LIDE3/RHMA-GASH (tanoak/Pacific rhododendron-salal)

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Edward A. Petersen, district conservationist, Natural Resources Conservation Service; Arthur P. Poole, horticulture extension agent, Oregon State University Extension Service; and Lee Riddle, research station manager, Easter Lily Research Foundation, helped to write this section.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed for each soil, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

The soils in this survey area have many characteristics that affect their behavior and the types of resource management systems needed for various uses. The productivity of each kind of soil under specific management conditions can be maintained or improved only if the unique characteristics of the soils are understood and the best resource management practices are applied. One such characteristic is the susceptibility of the soils to compaction if farm machinery or other vehicles are used or if livestock is allowed on the soils at improper times. Soil compaction results in reduced permeability, a lower water intake rate, restricted root development, poor tilth, and increased runoff and erosion, all of which adversely affect both the productivity of the soils and the conservation of soil and water.

Several practices can be used to prevent or minimize soil compaction. Using different types of tillage equipment and periodically adjusting the operating depth of the equipment help to minimize compaction. Restricting tillage, equipment use, and livestock traffic when the soils are wet can minimize the risk of compaction. Heavy, season-long grazing in riparian areas may decrease the abundance of plants that help to stabilize streambanks and moderate water temperatures. Low-pressure floatation equipment can be used to minimize compaction on soils such as those of the Brenner, Chetco, Hebo, Huffling, Langlois, Pyburn, Quosatana, Willanch, and Zyzzug series, which are wet for extended periods because of a high water table, and on soils such as those of the Cashner, Depoe, and Joeney series, which are wet for extended periods because subsurface water is perched on a restrictive cemented iron pan in the soils.

The hazard of erosion is of great concern, especially on those soils that are subject to flooding and those that have steeper slopes. Soils that are subject to flooding are those of the Bagness, Bayside, Bigriver, Brenner, Chetco, Evans, Gauldy, Heceta, Kirkendall, Langlois, Nehalem, Nestucca, Pistolriver, Quosatana, Willanch, Yachats, and Yaquina series.

Generally, the greater the slope of a soil the greater the risk of erosion because of the increased velocity of the water. The length of the slope can compound the problem by allowing greater concentrations of water from runoff. Soils on the foothills, such as those of the Barkshanty, Burnthill, Carpenterville, Edson, Etelka, Grassyknob, Hazelcamp, Hooskanaden, Houstenader, Loneranch, McDuff, Orford, Reedsport, Skookumhouse, Svensen, Templeton, Wedderburn, Whobrey, and Zwagg series, must be carefully managed because of the slope and the subsequent need for erosion-control practices. Conservation tillage and contour plowing help to minimize erosion.

Barren soils are subject to detachment of individual soil particles by rainfall and by irrigation water from sprinklers. Once detached, the particles can be transported by surface runoff. Soil erosion as a result of runoff reduces the productivity of the soil unless conservation practices are applied. Use of plant cover or crop residue provides protection from the impact of raindrops and irrigation water from sprinkler systems and prevents the loss of both soil and water from runoff.

The effects of erosion can be very dramatic or very subtle. Losses can be incurred at the source of the erosion, over the area where the material is transported, or at the area where the material is deposited. Erosion results in loss of organic matter, a breakdown of the natural soil structure, and alteration of the soil texture through the loss of silt and clay, all of which lead to degradation of the soil tilth and workability.

Loss of plant nutrients and soil particles impairs the productivity of soil. The severity of the erosion determines how much productivity is lost and for how long. The soil resource cannot be renewed through natural processes in a short period of time. Many years to hundreds of years may be required to replace a part of the eroded surface layer, although cultural practices and additions of soil amendments such as manure may hasten the renewal of the soil. Soil particles, nutrients, and chemicals carried by water into streams and ponds may result in excessive plant and animal growth, and the demand for oxygen may be too high for some organisms to survive. The turbidity of rivers and streams may be increased by erosion, and domestic water supplies may be contaminated or degraded as a result. Deposition of soil material may destroy the spawning beds of anadromous fish. Removal of sediment from irrigation ditches, drainage ditches, and ponds is costly.

For each kind of soil and each kind of crop grown, specific practices need to be applied to keep the soil loss at an acceptable level. Soil drainage is a concern for both fine textured and coarse textured soils. A seasonal high water table can restrict the choice of crops and the selection of management practices. The soils in this survey area that have a seasonal high water table include those of the Brenner, Carpenterville, Chismore, Chitwood, Clawson, Crofland, Euchre, Gleneden, Grindbrook, Heceta, Loneranch, McCurdy, Nestucca, Quosatana, Selmac, Wadecreek, Yaquina, and Zyzzug series. Restricted drainage is primarily a result of the topography and the internal characteristics of the soil. Drainage problems may be compounded by inefficient irrigation systems. The shape of the natural landscape affects the flow of water. The water concentrates in certain areas, causing saturation of the soils for varying lengths of time. Unless the soils are artificially drained, the root zone may become waterlogged for long periods and the roots of crops may not get enough oxygen. Soil characteristics such as a dense clay layer or cemented iron pan restrict the movement of water. This results in a seasonal high water table and limited rooting depth. The Cashner, Chetco, Cove, Depoe, Hebo, Hooskanaden, Houstenader, Huffling, Etelka, Joeney, Langlois, Nelscott, Pyburn, and Whobrey soils exhibit these characteristics.

Drainage can be improved in most areas by installing surface or subsurface drainage systems. Surface systems include use of diversions, open drainage ditches, grassed waterways, and impoundments and use of land shaping to eliminate depressional areas. Subsurface systems include use of plastic corrugated pipe or clay drainage tiles.

The survey area is not well suited to the production of most row crops. In most areas, the soils warm up slowly in spring and early in summer because of wetness, prevailing northwesterly winds, and frequent cloud cover. Fog and high humidity in coastal areas prevent the accumulation of sufficient growing degree days to allow for maturity of most row crops and small grain used as forage. Some interior valleys receive enough sunlight and have temperatures high enough for corn to mature for use as silage; however, the areas are of very limited extent and yields are limited. The climate of the inland valleys is suitable for cool-season crops; however, lack of suitable markets makes production of such crops uneconomical.

According to the 1992 Census of Agriculture (USDC 1993), Curry County had a total of 50,913 acres of pastureland. Of this, about 11,200 acres were on flood plains, 12,805 acres were on terraces, and 26,908 acres were on hillsides. In 1992, 410 acres of cranberries were harvested and about 497 acres were used for horticultural and floricultural crops. About 2,711 acres of agricultural land were under irrigation. A total of 7,136 acres were used as cropland that year, of which 1,807 acres were used for crops such as hay and small grain for silage or forage and for horticultural and floricultural crops, 4,877 acres were used only for pasture and grazing, and 452 acres were used for vegetables and orchards. Curry County ranked first in Oregon in the production of lily bulbs and second in the production of cranberries (USDC 1993).

The soils and climate of the survey area are excellent for forage production. The growing season is long, and the soils receive sufficient moisture except during July and August when rainfall seldom exceeds 0.5 inch per month. Irrigation is needed during this period for maximum production.

Hayland and pastureland in the survey area can be divided into three types—poorly drained and very poorly drained soils on flood plains and lowlands, well drained to poorly drained soils on flood plains and terraces, and well drained and moderately well drained soils on hillsides.

The poorly drained and very poorly drained areas consist of soils such as those of the Brenner, Chetco, Langlois, and Willanch series. These soils make up about 3,800 acres of pastureland and hayland, or about 7.5 percent of the total in the survey area. These soils are mainly in a coastal strip between Port Orford and the Coos County line, west of U.S. Highway 101. Frequent, prolonged periods of flooding in winter restrict the choice of pasture grasses to those that can withstand inundation. Use of open ditches is the most effective method of removing standing water from these areas. Tidegates are needed in some areas to prevent the inundation of saltwater during high tides.

These soils generally are too wet to allow for more than one cutting of hay. The quality of the hay generally is very poor because the high soil moisture and high humidity prevent rapid drying of the hay. The soils do not dry out enough to permit cutting until after the grass has reached maturity. The quality of the hay can be improved by grazing the hayfields until early in June to delay cutting until the weather conditions are more favorable.

The soils on flood plains and terraces are suited to grass-legume pasture. These soils are mainly along the major rivers and streams, such as the Chetco and Winchuck Rivers in the southern part of the survey area, the Pistol and Rogue Rivers in the central part, and the Elk and Sixes Rivers and Floras Creek in the northern part. The Bagness, Chetco, Kirkendall, Nehalem, Nestucca, and Yachats soils are on flood plains and are subject to frequent, long periods of flooding in winter. As a result, use of the pastureland is limited to brief periods. Maintaining a plant cover on these soils in winter helps to reduce soil loss as a result of flooding. These soils make up about 7,400 acres of pastureland and hayland, or about 14.5 percent of the total in the survey area. The Bullards, Eilertsen, Ettersburg, Logsden, McCurdy, Meda, Quillamook, and Zyzzug soils are on terraces. These soils make up about 12,805 acres of pastureland and hayland, or about 25 percent of the total in the survey area. Open ditches are needed on the Zyzzug soils because of the clayey subsoil.

Most of the hay harvested in the survey area is grown on the soils on flood plains and terraces. The well drained Bagness, Bullards, Ettersburg, Kirkendall, Logsden, Meda, Nehalem, and Quillamook soils dry out early enough to permit harvesting of hay at the optimum stage of growth; however, the quality of the hay generally is poor because of the heavy dew, fog, and frequent rainshowers.

Irrigation is needed on most of the hayland in the survey area because of the lack of adequate rainfall during the growing season. In summer, droughtiness limits the choice and production of forage plants. When determining the most suitable irrigation method, important factors to consider are the available water capacity and water intake rate of the soils, the needs of the crop grown, the natural subirrigation of soils that have a high water table, and the availability of water for irrigation.

The available water capacity is the amount of water a soil can store for use by plants. Factors that affect the ability of a soil to store water are depth, soil texture, content of rock fragments, and content of organic matter.

The water intake rate is determined by the soil texture and structure and the content of organic matter. Sandy soils absorb water rapidly and have a low available water capacity while clayey soils absorb water slowly and have a relatively high available water capacity. Water moves through soils that have good structure at a more desirable rate than it does through soils that have poor structure.

Crops need water at critical periods for maximum quality and production. To maintain desirable growth rates, adequate moisture must be available to crops. The number of acres irrigated depends on the amount of water stored in the soils and the streamflow, which generally are at minimum levels in summer.

The availability of water is dependent on the competitive demands of agriculture, industry, recreation, wildlife, and local communities. Irrigation systems need to be designed so that all of the water applied is used efficiently. Runoff or drainage water can be filtered, collected, and reused.

Sprinkler systems are an efficient method of applying water. They are the most common irrigation method used in the survey area. These systems should be designed to meet the needs of the specific crop grown and the soil. Sprinkler systems can be adapted to the slope, water intake rate, and crop grown; therefore, water is applied more evenly and precisely with these systems than with other irrigation systems. The amount of water applied should be adjusted to the water intake rate to prevent excessive runoff and leaching of plant nutrients. Because soils such as those of the Bigriver, Bullards, Gauldy, and Yachats series are droughty as a result of the sandy texture, applications of irrigation water on these soils should be light and frequent. In some areas of the Meda and Orford soils, irrigation may be impractical because of the steepness of slope and lack of an adequate water supply.

The soils on hillsides are suited to grass-legume pasture. These soils make up about 26,908 acres of pastureland, or about 53 percent of the total acreage used as pastureland and hayland in the survey area. These soils are mainly in two areas within the survey area. The Burnthill, Grassyknob, Hooskanaden, Loneranch, Reedsport, Reinhart, Svensen, Templeton, Wedderburn, and Zwagg soils are on the coastal hills, and the Barkshanty, Carpenterville, Edson, Etelka, Hazelcamp, Houstenader, McDuff, Orford, Remote, Skookumhouse, and Whobrey soils are on the interior hills. To provide forage for use in winter, all of these soils commonly are seeded to pasture mixtures of subterranean clover, New Zealand white clover, and improved grasses such as perennial ryegrass and orchardgrass. Forage production is low in summer because of droughtiness. Irrigation generally is not practical because of the steepness of slope and lack of an adequate water supply.

Using a good fertilization program that is based on soil tests and includes applications of nitrogen, phosphorous, potassium, sulfur, and molybdenum fertilizers increases the production of forage plants. Fertilizer is needed to ensure optimum growth of grasses and legumes and to replace or supplement the elements in the soil that are required for plant nutrition. Generally, when fertilizer is added to soil it is used by the crop grown, becomes part of the soil, is leached downward by drainage water, is washed away by erosion, or volatilizes and escapes as a gas, as in the case of nitrogen and sulfur. To a significant extent, nitrogen is the only element in fertilizer that is affected by all of these processes. All forms of nitrogen can be converted to nitrate nitrogen, which is used by plants. In this form it moves freely in water and is held weakly, or not at all, by soil particles. Nitrogen should be applied in amounts adequate for plant growth but not in amounts that can cause excessive growth.

The effect of phosphorus on a soil sharply contrasts that of nitrogen. When phosphates are applied, they react rapidly to form many new compounds. Phosphates generally are immobile in the soil; therefore, they stay where placed unless they are washed away by erosion.

When sulfur is applied to well drained soils, it can be absorbed by the soils, leached by drainage water, or used by plants. When it is added to poorly drained soils, it can be converted to a gas and lost to the atmosphere.

Molybdenum is a necessary micronutrient in soils that is relatively unavailable to plants, although its availability is known to increase as soil reaction (pH) increases. Because movement of molybdenum is limited, it should be applied so that it has widespread contact with the soil. There is a very narrow range between deficiency and toxicity of molybdenum.

Most of the soils used for hay and pasture are strongly acid or very strongly acid unless lime is applied. Some of the poorly drained soils on flood plains are slightly acid or moderately acid. Application of ground limestone is desirable in some areas to raise the reaction (pH) of the soils and thus improve the availability of certain nutrients, but it may not be economically feasible.

The level of available phosphorus and molybdenum is low in the upland soils. Pasture grasses and legumes on the soils on flood plains and terraces respond to phosphorus and sulfur. Pasture grasses respond to nitrogen.

A cover of permanent pasture and proper grazing management practices help to maintain a high content of organic matter in the soils. Use of organic material such as animal manure, plant refuse, and compost is beneficial in maintaining and improving soil productivity and promoting more rapid drainage and warming of the soil. Adding organic matter to coarse textured soils helps to retain moisture and plant nutrients. Adding organic matter to fine textured soils improves the workability, water intake rate, structure, and aeration of the soils. Supplies of organic matter commonly are adequate for home or specialty gardens, but they are limited for large-scale commercial production.

Management of livestock use on pastures is very important for maintaining the long-term productivity of the soils. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pastures in good condition and protect the soils from compaction and erosion. Rotational grazing increases the production of forage and helps to control weeds and brush.

The major horticultural crops grown in the survey area are Easter lily bulbs, cranberries, and hydrangeas. Small amounts of blueberries and flowers for cutting are also produced.

According to the 1992 Census of Agriculture, cranberries from the survey area accounted for 27 percent of the total production in Oregon. About 410 acres were harvested in 1992 with a yield of 189 barrels per acre. The cranberry beds are dominantly between Port Orford and Langlois, in the northern part of the area.

Level areas for construction of beds, a source of sand for the beds, a source of water for irrigating and harvesting, and water conservation systems are needed for cranberry production. Irrigation and drainage are needed if the soils are intensively managed for cranberries. Soils used for cranberries include those of the Bandon, Bullards, Depoe, and Nelscott series.

Cranberry beds are prepared by temporarily removing the soil material above the restrictive cemented iron pan. The subsurface area is then leveled to remove woody material such as tree stumps and brush. The surface soil, which contains higher amounts of organic matter, is backfilled over the subgrade. Generally, about 4 to 6 inches of soil material containing organic matter is needed to seal the subgrade. A least 2 inches of sand is then applied over the base grade, and it commonly is crowned slightly in the center of the bed to facilitate surface drainage. The top of the cemented layer should be graded toward the edge of the bed to provide for good surface drainage. Cranberries are shallow-rooted, and they do not tolerate wet conditions during the growing season. Open ditches and dikes are needed around the edges of bed to provide drainage and to control the water level at harvest time.

Sprinkler irrigation is an efficient method of applying water during the dry period in summer (fig. 10). Sprinklers can also be used to control the temperature in summer and to protect the buds and blooms from frost damage in spring.

Figure 10.—Sprinkler irrigation of cranberry beds in an area of Nelscott-Depoe-Bullards complex, 0 to 8 percent slopes.

The very slow permeability of the cemented layer facilitates water management by preventing excessive seepage and minimizes loss of fertilizer and soil amendments. Excessive seepage may occur, however, in the sandy substratum of the soils.

The soils and climate in the Brookings-Harbor Bench area are suitable for lily bulb production (fig. 11). In 1993, about 500 acres were planted to lily bulbs. Lilies are grown mainly on Harbor Bench, but minor amounts are grown along the stream terraces of the Winchuck River. The Crofland, Ettersburg, Huffling, Klooqueh, and Winchuck soils are suited to growing lilies. The survey area supplies 100 percent of the lily bulbs used in the United States and Canada for Easter. Depending on the level of management, commercial yields range from about 52,000 to 78,000 bulbs per acre.

Irrigation and drainage are needed if the soils are intensively managed for production of lily bulbs. Irrigation is needed in summer on all of the soils. Sprinkler irrigation is an efficient method of applying water. Application rates should be adjusted to the permeability or water intake rate of the soils to avoid excessive runoff and leaching of plant nutrients. Drainage is needed for maximum production on the Crofland and Huffling soils.

Lily bulbs have a 2- to 3-year production cycle. Pieces of bulbs, or scales, are planted in August,

Figure 11.—Lily bulb production in the Harbor Bench area, south of Brookings. Klooqueh silty clay loam, 3 to 8 percent slopes, is in foreground, and Crofland silty clay loam, 0 to 3 percent slopes, is in center.

dug up the following fall (mid-August to early in November), and replanted as bulblets in another field. The bulblets are left to grow during the second year and then are dug up as yearlings the following fall. They are then planted in another field that has been used to grow perennial cover crops for 3 or 4 years. The bulbs grow to commercial size by fall of the third year. They are then graded, or sized, and the merchantable ones are packed in boxes with peat moss and shipped to commercial greenhouses. There they are potted, and by controlling the temperature, they are forced to bloom by Easter.

Field operations for bulb production include plowing and discing several times to prepare the planting beds. Weeds are controlled through a combination of mechanical and chemical operations. Lily fields are rotated to perennial pasture for 3 or 4 years after a single year of bulb production. The fields are planted to a variety of improved grasses, such as perennial ryegrass, to control soil erosion, maintain organic matter content, and maintain aeration by improving soil structure and tilth.

The major concern in producing lily bulbs is control of undesirable fungi, viruses, and nematodes. Fungi and viruses reduce the quality and marketability of the bulbs, and nematodes destroy the plant roots by turning them yellow, then brown, and finally black and hollow. Growers use a 2-step chemical process to achieve acceptable control of nematodes. First, fumigants are applied to the soil in summer before the bulbs are planted in fall, and then insecticides are applied in the furrow when the bulbs are planted. For environmental reasons, growers currently are testing several different alternatives to chemical fumigation and a few options appear to have good potential for use in the future.

On all of the soils in the survey area, additions of lime, fertilizer, or other amendments should be based on the results of soil tests, on the needs of the crop grown, and on the expected yields. The Cooperative Extension Service can help in determining the kinds and amount of fertilizer, lime, and other soil amendments to apply. The latest information on adapted varieties and seeding recommendations can be obtained from the local office of the Cooperative Extension Service and the Natural Resources Conservation Service.

The management systems needed to achieve high yields and top-quality crops vary depending on the kind of soil and the kind of crop grown. Applying management practices designed for specific crops and soils is essential for obtaining sustained high yields. Information on resource management systems and practices and on design of irrigation systems is available at the local office of the Natural Resources Conservation Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961). Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of the map units in this survey area is given in table 5.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

Only 1,064 acres in the survey area, or about 0.1 percent of the total acreage, meets the soil requirements for prime farmland. The scattered areas are on stream terraces along the Rogue and Illinois Rivers, in the central interior of the survey area. These areas are in general soil map unit 16, which is described under the heading “General Soil Map Units.”

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Forestland Management and Productivity

By Craig M. Ziegler, forester, Natural Resources Conservation Service.

Curry County is one of the primary producers of timber in southwestern Oregon. The best timber-growing sites are in areas of soils that are derived from late Jurassic sedimentary and volcanic rock of the Dothan Formation, are at middle and lower elevations, and support the Sitka spruce cover type and in areas of deep sedimentary soils that support the Pacific Douglas fir and Douglas fir/Tanoak/Pacific madrone cover types. The higher elevations are too cold to produce large quantities of timber. About 90 percent of the county is classified as commercial forestland. Of this, about 20 percent is owned by the forest industry, 4 percent is owned by small woodland operators, and 66 percent is publicly owned and is managed by the Forest Service and Bureau of Land Management.

The towns of Brookings and Gold Beach are recognized as the centers of the forest products industry in the survey area. The Forest Service, Oregon State Department of Forestry (Coos Forest Protection Association), and local fire districts provide protection from fire.

The principal forest cover type is the Douglas fir/Tanoak/Pacific madrone type (Eyre 1980). This cover type is in an area about 2 miles east of the Pacific Ocean and is outside the influence of the coastal fogbelt. The dominance of either Douglas fir or tanoak in the overstory depends on past disturbances and the presence or absence of a seed source for Douglas fir. Tanoak is a unique tree species because it can resprout and grow vigorously after fire or logging and can grow in shade under a canopy of Douglas fir. Unless mature Douglas fir trees are nearby to provide a seed source, tanoak will become dominant after a disturbance.

Within the Douglas fir/Tanoak/Pacific madrone cover type are areas of the Jeffrey pine cover type (Eyre 1980). This type is mainly associated with serpentine-influenced soils. These soils have a calcium/magnesium imbalance and are high in content of toxic heavy metals, such as nickel and chromium, which limit productivity. Generally, these soils support dominantly Jeffrey pine but Douglas fir, Port Orford cedar, western white pine, and incense cedar can also be present. This cover type has the most diverse composition of shrubs, forbs, and grasses in the survey area.

The Sitka spruce cover type covers an area about 1 to 2 miles wide along the coastal zone (Eyre 1980). Sitka spruce is dominant in this area, but occasional western hemlock, Douglas fir, grand fir, and shore pine trees are present. Repeated fires in this area resulted in the establishment of open areas of grassland within the forests. Many of these areas are converting back to the Sitka spruce cover type as a result of about 50 years of fire-control activities. Red alder is the major seral tree species in this area. Because it is very competitive, it will take over disturbed areas unless they are planted to spruce or Douglas fir.

South of the Chetco River is the northernmost extension of the Redwood cover type (Eyre 1980). Redwood is a major component of the overstory; however, large amounts of Douglas fir and tanoak are also present. North of Sisters Rock is a climatic change to more moist marine air and cooler temperatures. Western hemlock and Port Orford cedar start to occur within the Sitka spruce cover type in this area and in the Pacific Douglas fir cover type in inland areas.

North of Sisters Rock is the western hemlock cover type (Eyre 1980). Western hemlock generally is the dominant tree in older, undisturbed stands. In disturbed stands, Douglas fir can be mixed with western hemlock or it can be dominant. Other tree species in this cover type are grand fir, Port Orford cedar, tanoak, red alder, and in very moist areas, western redcedar.

The White fir and Red fir cover types are in inland areas at the highest elevations (Eyre 1980). In the White fir cover type, white fir and Douglas fir are dominant. Shasta red fir is also present, and it increases in abundance as elevation increases. The Red fir cover type is comprised of a mixture of Shasta red fir, white fir, and Douglas fir. Depending on past disturbances, any one of these species can be dominant.

The major forest management concerns in the survey area are brush competition, seedling mortality, soil erosion, equipment limitations, windblast, and soil compaction. The two major hardwood species, red alder and tanoak, are severe competitors to the establishment of Douglas fir. Thorough site preparation followed by prompt reforestation is essential for Douglas fir seedlings to become established. Mechanical or chemical treatment also may be necessary to control competition from hardwood species.

Even though the survey area receives 90 to 160 inches of precipitation annually, seedling mortality can be severe in areas of the Douglas fir/Tanoak/Pacific madrone cover type on the hot, dry, south-facing slopes. The success of the reforestation can be enhanced by planting early in winter, planting high-quality nursery stock adapted to the climatic zone, and using shade devices to reduce heat and moisture stress in the seedlings.

Windblast can greatly reduce the productivity of Sitka spruce and Douglas fir stands growing on the side slopes of coastal terraces and uplands that are exposed to ocean winds. Intermediate harvest cuttings are not recommended because of the increased potential for windthrow.

Most of the forested areas in the survey area have slopes of more than 40 percent. Exposing the soil during forest management activities greatly increases the risk of erosion. Proper harvesting techniques adapted to the specific soil conditions are essential. Properly designing and locating roads; revegetating landings, skid trails, and spur roads; and maintaining stream buffer strips are essential to minimize erosion and sedimentation of streams. Seeding of cuts and fills and proper placement of culverts, road drains, and water bars are also essential.

Soil compaction can reduce timber production by limiting the movement of air and water in the soil, thus restricting the growth of roots. To minimize soil compaction and displacement, avoid the use of equipment when the soils are wet and use harvesting systems that fully or partially suspend logs above the soil surface. When using ground-based equipment, a well-planned system of skid trails can minimize the amount of soil subject to compaction and displacement.

The majority of the forestland in the survey area provides forage for wildlife. The amount of forage available under many timber stands is low, however, and the palatability of the plants ranges from low to high.

The forested areas in the survey area are affected by many diseases and insects that may present problems in individual stands of trees. Damage can vary from year to year.

The principal insect that attacks Douglas fir is the Douglas fir beetle (*dendroctonus pseudotsugae*). Laminated root rot (*phylinius weiril*) is a fungus that easily kills Douglas fir by attacking the root system. Black stain root disease (*ceratocystis wageneri*) is increasing in occurrence, particularly in Douglas fir plantations. The Sitka spruce weevil (*dissodes sitchensis*) kills the terminal shoots of spruce and along with the spruce aphid (*aphis abientina*) causes the most damage to Sitka spruce. Port Orford cedar is readily attacked by cedar root rot (*phytophthora lateralis*), endangering the species. White pine blister rust (*cronartium ribicola*), a disease that attacks and kills five-needle pines, can infect western white pine and sugar pine if the alternate host species is present.

Soil surveys are important to forestland managers as they seek ways to maximize the use of forestland. Certain soils respond better to fertilization, some are susceptible to landslides and erosion after roadbuilding and harvesting, and others require special practices to harvest and reforest.

In the section “Detailed Soil Map Units,” information about productivity and management is given for each map unit in the survey area that is suitable for producing timber. In table 7, the soils are rated for a number of factors considered in forestland management. “Slight, moderate,” and “severe” indicate the degree of the major soil limitation considered in management.

Sheet and rill erosion hazard refers to the probability of excessive erosion occurring as a result of operations that expose the soil. Forested areas that have been affected by fire or overgrazing are also subject to erosion. A rating of *slight* indicates that no particular erosion-control measures are needed under ordinary conditions, *moderate* indicates that some erosion-control measures are needed, and *severe* indicates that extra precautions are needed to control erosion during most silvicultural activities.

Erosion hazard ratings are determined by considering the topography, the erodibility of a soil, and the local climate. A rating of moderate or severe may indicate the need for modified road construction, special harvesting systems, and alternative site preparation techniques.

Cut and fill slope erosion hazard refers to the probability that damage may occur as a result of erosion from road cuts and fills. Seeding of cut and fill slopes is always recommended. A rating of *slight* indicates that no other preventative measures are needed under ordinary conditions, *moderate* indicates that additional erosion-control measures such as mulching and using sediment traps are needed under certain conditions, and *severe* indicates that additional erosion-control practices are needed under most conditions.

The texture of the surface and subsurface layers and the angle and length of the slope contribute to the risk of cut and fill slope erosion. The risk of erosion becomes higher as the length of the cut and fill slope increases and as the erodibility of the soil increases.

Equipment limitation describes the restrictions on the use of equipment as a result of soil characteristics.

A rating of *slight* indicates that equipment use normally is not restricted because of soil factors, *moderate* indicates a short seasonal limitation because of soil wetness, a fluctuating water table, or some other factor, and *severe* indicates a seasonal limitation, a need for special equipment, or a hazard in the use of equipment.

Steepness of slope, soil wetness, and the susceptibility of the soil to compaction are the main factors that result in equipment limitations. As the gradient and length of the slope increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment should be used, and on the steepest slopes, cable yarding systems should be used. Soil wetness, especially in areas where the soil material is fine textured, can severely limit the use of equipment and make harvesting practical only during the dry period in summer.

Soil compaction refers to the probability that damage to the soil structure will occur as a result of repeated equipment use during periods when the soil is wet or moist. Compaction should always be considered during silvicultural activities. A rating of *slight* indicates that no extra precautions are needed, but use of designated skid trails and protection of the duff layer is advised; *moderate* indicates a potential need for extra precautions such as use of cable yarding systems instead of ground-skidding equipment and seasonal restrictions on equipment use; and *severe* indicates the need for extreme caution and possibly some restorative measures such as ripping or discing following harvesting.

Thickness of the layer of duff, content of coarse fragments, texture, and plasticity are soil characteristics considered in the soil compaction ratings. The ratings assume that the soil is wet or moist. Soil compaction decreases air spaces in the soil; thus, the movement of air and water is reduced, restricting root growth and increasing the risk of surface erosion.

Soil displacement refers to the risk of soil being gouged, scraped, or pushed from its natural position by mechanical means. It is most often associated with mechanical slash disposal and site preparation. A rating of *slight* indicates that equipment use is not restricted and that special precautions generally are not needed; *moderate* indicates that use of specialized equipment, such as a brush rake, is recommended; and *severe* indicates that use of extreme caution is advised if mechanical methods of slash disposal and site preparation are used.

Thickness of the layer of duff, thickness of the surface layer, content of coarse fragments, and texture are soil characteristics considered in the soil displacement ratings. Removing or mixing the layer of duff and exposing the mineral soil are necessary for natural regeneration of many species; however, plant recovery rates may be impaired if excessive soil displacement has occurred. Prolonged exposure of barren soil may result in an increased risk of erosion and further deterioration of the site.

Seedling mortality refers to the probability of death of tree seedlings as a result of soil or topographic conditions. Plant competition is not considered in this rating. The ratings apply to healthy, dormant seedlings from good stock that are properly planted during a period of sufficient moisture. *Slight* indicates that mortality is not expected to be a problem under normal conditions, *moderate* indicates some mortality can be expected and that extra precautions are advisable, and *severe* indicates that mortality will be high and extra precautions are essential for successful reforestation.

Soil wetness, droughtiness, and topographic conditions affect seedling mortality. Larger than normal planting stock, special site preparation, surface drainage, or reinforcement plantings may be needed.

Windthrow hazard rates the likely development of tree roots and the ability of the soil to hold trees firmly. A rating of *slight* indicates that trees normally are not blown down by the wind, *moderate* indicates that an occasional tree may be blown down during periods when the soil is wet and winds are moderate or strong, and *severe* indicates that many trees may be blown down during periods when the soil is wet and winds are moderate or strong.

Restricted rooting depth because of a high water table, underlying bedrock, or an impervious layer and poor anchoring of roots because of loose soil material affect the risk of windthrow. A rating of moderate or severe indicates a need for care in thinning forest stands, periodic salvage of windblown trees, and an adequate system of roads and trails to allow for salvage operations.

Plant competition refers to the likelihood of the invasion of undesirable plants when openings are made in the tree canopy. A rating of *slight* indicates that unwanted plants are not likely to retard the development of natural or planted reforestation, *moderate* indicates that competition will retard natural or planted reforestation, and *severe* indicates that competition can be expected to prevent natural or planted reforestation.

Favorable climatic conditions and favorable soil characteristics contribute to plant competition problems. In many areas, the key to predicting plant competition problems is the quantity and proximity of seed sources of undesirable plants or the quantity of unwanted brush rootstock that will resprout after harvesting. A rating of moderate or severe indicates the need for careful and thorough site preparation and the potential need for mechanical or chemical treatment to retard the growth of competing vegetation.

Fire damage refers to the probability that a fire of moderate fireline intensity (116 to 520 BTUs per second per foot) will have a negative impact on the characteristics of a soil. A rating of *slight* indicates that negative impacts to soil characteristics are not expected, *moderate* indicates that negative impacts such as nonwettability or excessive erosion may occur and that extra caution is needed in planning prescribed fires, and *severe* indicates that negative impacts are likely to occur and that extreme caution is advised in planning prescribed fires.

The thickness of the layer of duff, content of organic matter, and texture are soil characteristics considered in determining the ability of soil to resist fire damage. It may be necessary to burn in winter, use alternative lighting techniques, monitor the moisture content of fuel, yard merchantable material, eliminate prescribed fires, or apply erosion-control measures following burning.

In table 8, the *potential productivity* of *common trees* is expressed as a site index and volume number. The site index is determined by measuring the height and age of selected trees within stands of a given species. The index is the average height, in feet, attained by dominant and codominant trees of a given species in a specified number of years. The procedure for calculating site index is described in the publications used for Douglas fir (King 1966, McArdle and others 1961), redwood (Lindquist and Palley 1963), western hemlock (Barnes 1962, Wiley 1970), grand fir and white fir (Schumacher 1926), Shasta red fir (Schumacher 1928), Sitka spruce (Meyer 1937), ponderosa pine and Jeffrey pine (Meyer 1938), and sugar pine (Biging and Wensel 1984). The site index applies to fully stocked, even-aged stands. The highest timber yields can be expected from the soils that have the highest site index values. Site index values can be converted into estimated yields at various ages by carefully using the appropriate yield tables. In table 8, the trees are listed in the order of their general abundance as observed on the soil.

To facilitate comparing the potential productivity of different soils, the table includes values for potential wood production expressed as *total yield (board feet per acre)* and *annual growth (cubic feet per acre).* Estimates of volume are calculated at the culmination of the mean annual increment (CMAI). The annual amount of wood fiber produced by a stand of trees changes as the stand matures. Very little wood fiber is produced when the trees are small, but the amount increases rapidly as the trees approach physiological maturity. Once trees reach maturity, the annual growth rate begins to slow. CMAI is the estimated age at which a fully stocked stand achieves its highest average annual growth rate. It is the most efficient time to harvest as far as tree growth is concerned. Other factors, such as stumpage values, cost effectiveness, and management objectives, also should be considered in determining the best time to harvest.

As an example of how the table can be used, consider the Cunniff soil in detailed soil map unit 70D. A fully stocked stand of Douglas fir on this soil has a site index of 148; that is, the average height of the dominant and codominant trees at age 100 is 148 feet. If the stand is allowed to grow for 100 years, the predicted yield will be 70,500 board feet per acre. However, the stand will attain its maximum annual production of wood fiber (156 cubic feet per acre per year) at age 60.

The species under *common trees* that are indicated by a footnote notation are recommended for planting and are most suitable for commercial wood production.

Vegetative Diversity

By Gene Hickman, range conservationist, Natural Resources Conservation Service.

Southwestern Oregon is a very diverse ecological region. Vegetative diversity is primarily the result of dramatic climatic gradients, such as the one between the moist Pacific Coast and the high, cold Cascade Mountains. Crossing this is a second regional climatic gradient resulting from latitudinal changes north to south between the mild Willamette Valley and the hot Mediterranean climate of northern California. Because of the mountainous topography, there are also numerous localized climatic transitions that make macroclimate relationships with vegetation and landscapes even more complex.

In addition, a wide variety of soils and related geologic features directly affect local plant distribution and the resulting plant communities. Rock types such as serpentinitic peridotite impact the chemical properties of soils, which significantly affect the production and composition of plants. Other characteristics of importance to plant adaptation and growth are soil depth, texture, and drainage and the content of rock fragments. Together these either restrict or facilitate vegetative development to the extent possible under the prevailing climate.

Elevation, aspect, slope, and topography are other landscape features that affect the local microclimate and consequently affect plant cover. The vegetative types in the drainageways and on the toeslopes above the drainageways are suited to more moist conditions than are those on the uplands. North-facing slopes receive less direct sunlight and support plant communities that are less tolerant of drought than do south-facing slopes. At high elevations, all aspects support species that are more tolerant of cold temperatures. The elevational changes in vegetation commonly correlate with differences in precipitation, length of the growing season, snowfall, and temperature. Latitude affects the elevation at which these changes occur. Equivalent ecological changes occur at much higher elevations moving north to south. There is a similar elevational increase when moving inland west to east, from the coastline to the Cascade Mountains.

In southwestern Oregon, broad ecological subdivisions have been recognized. These ecological subdivisions are within the regional provinces defined by Daubenmire (Daubenmire 1968) and are described locally by Franklin and Dyrness (Franklin and Dyrness 1973). Franklin and Dyrness describe four subdivisions characterized by Sitka spruce coastal forests, western hemlock forests of both the Cascade and Coast Ranges, mixed conifer-mixed evergreen forests, and the interior valleys of the Rogue and Umpqua Rivers.

The survey area spans three of these subdivisions in addition to the climatic, geologic, topographic, and edaphic features discussed previously. The landscape and climatic features combine to create a wide variety of contrasting environments with the potential to support diverse native plant communities. These communities are grouped into vegetative zones representing major macroclimatic environments.

Vegetation zones may cover large geographic areas, but they always have a single set of potential native plant communities throughout. Vegetative patterns commonly are predictable within the zones because they are related to local landscape features such as aspect, soil, and landform. The zones are useful in focusing on geographic differences in climate and vegetation and generalizing complex local vegetation patterns. They also provide a basis for broad management interpretations. The vegetation zones in the survey area are described in this section and are shown on the general vegetation map.

Coastal Fog Zone

The Coastal Fog Zone parallels the Pacific Ocean coastline in a belt ranging from 2 to 10 miles wide and extending along all of the coastal river valley corridors. The climate is very mild; it does not have the wide extremes in temperature as does that of the inland areas. The temperature is moderated by coastal fog, frequent cloudy weather, and the ocean. The average annual precipitation is about 70 to 95 inches, and the elevation ranges from sea level to about 1,300 feet. The soils have a udic moisture regime and an isomesic temperature regime. This zone correlates with general soil map units 1, 3, 4, 6, and 7.

The Coastal Fog Zone can be subdivided into two parts that are oriented west to east and are based on the prevalence of Sitka spruce. The western part of this zone is adjacent to the ocean and is more affected by marine fog and salt spray. It is comprised of beaches, dunes, marine terraces, and west-facing mountain fronts, which are those most exposed to the coastal weather. It also extends inland along coastal river valleys in areas not constrained by the mountains. It supports shore pine and Sitka spruce intermingled with Douglas fir, western hemlock, red alder, California laurel, Pacific waxmyrtle, tanoak, and cascara buckthorn. Understory species include Pacific rhododendron, evergreen huckleberry, western swordfern, salal, red elderberry, salmonberry, and western dewberry.

The eastern part of this zone is comprised of mountains and valleys farther inland that have less exposure to coastal weather. The eastern part does not support shore pine and supports fewer Sitka spruce trees. The forests consist of Douglas fir, grand fir, scattered Sitka spruce, and western hemlock with hardwoods such as tanoak, red alder, bigleaf maple, and cascara buckthorn. Port Orford cedar is in the moist areas. The understory on both the north- and south-facing slopes consists of very dense stands of swordfern and shrubs.

The Coastal Fog Zone can also be subdivided into two parts that are oriented north to south and are based on topographic differences and the occurrence of western hemlock. The northern part is north of Humbug Mountain. Western hemlock is prevalent in many stands of Sitka spruce and Douglas fir. In the southern part, western hemlock occurs only in localized areas, primarily on the eastern side. It is present in areas such as Squaw Valley; along the Rogue River, near Lobster Creek; and along the South Fork of Hunter Creek.

The production of trees is high in the Coastal Fog Zone. Dense stands of red alder regeneration occur in the moist areas following disturbances such as fire or timber harvesting. Tanoak is an aggressive hardwood in the drier areas and on south-facing slopes. Tree plantations are subject to severe plant competition from hardwood trees and from evergreen and deciduous shrubs.

Redwood Zone

The Redwood Zone in southwestern Oregon is the northernmost extent of the redwood forests on the Pacific Coast. It extends south along the California coast to beyond San Francisco, although it is of limited extent in this survey area. Similar to Sitka spruce, redwood is associated with a very mild climate with fog in summer and generally warm conditions. The average annual precipitation is about 90 to 130 inches, and the elevation ranges from 200 to 1,300 feet. The soils have a udic moisture regime and an isomesic temperature regime. This zone correlates with general soil map units 2 and 5.

In Oregon, the Redwood Zone extends inland away from the coast and north to the Chetco River, where the zone becomes quite fragmented. The fragmented redwood stands are only in very favorable locations. The entire zone appears to be a transitional area between the southern part of the Coastal Fog Zone and the Coastal Tanoak Zone.

Redwood forest communities are characteristic of this zone, and they include most of the species in the Coastal Tanoak Zone. Stands of redwood are on all aspects near the Oregon-California border, but they progressively become less abundant and are only on north aspects and in drainageways at the northernmost limits of the zone.

The productivity of the forest is high in this general vegetation zone because of the increased atmospheric moisture, low evapotranspiration rate, and long growing season. Intense competition from tanoak, blueblossom ceanothus, evergreen huckleberry, and other shrubs is a concern for regeneration.

Coastal Tanoak Zone

The Coastal Tanoak Zone is the dominant vegetative zone in the survey area. This zone is confined to the western part of the Coast Range, where marine influences have a strong effect on the climate. Cloud cover occurs often enough in summer to create a moderating effect on the temperature in summer. The average annual precipitation is about 90 to 130 inches. Elevation ranges from about 200 to 2,200 feet in the northern part of the survey area to 3,000 feet in the southern part. The soils have a udic moisture regime and a mesic temperature regime. This zone correlates with general soil map units 10, 11, and 13.

The Coastal Tanoak Zone is best characterized by mixed stands of Douglas fir and tanoak with Pacific madrone, bigleaf maple, and California laurel in the moist areas. Scattered minor areas of western hemlock, Port Orford cedar, and golden chinkapin may also be in this zone. Understory species include tanoak, salal, Pacific rhododendron, evergreen huckleberry, western dewberry, little wildrose, western swordfern, and beargrass.

The Coastal Tanoak Zone is highly productive. A major management concern is the severe competition from tanoak after disturbances such as fire or timber harvesting.

Interior Tanoak Zone

The Interior Tanoak Zone occurs only on the eastern side of the survey area. It represents the warmer and drier climatic zone of the Coast Range. The soils in this zone are dry for longer periods of time. The presence of more drought-tolerant species separate this zone from the Coastal Tanoak Zone. Together, the Interior Tanoak Zone and Coastal Tanoak Zone represent the northernmost extent of a large ecological zone that stretches south into northern California.

The Interior Tanoak Zone is comprised of coastal mountains. The average annual precipitation is 80 to 100 inches. Elevation generally is less than 3,000 feet. The soils have a mesic temperature regime and a xeric moisture regime. This zone correlates with general soil map units 16, 17, and 18.

The Interior Tanoak Zone is characterized by an abundance of tanoak trees on north aspects and tanoak shrubs on south aspects, indicating the dramatic environmental difference between the north and south aspects. Douglas fir is the primary associated tree species, and it commonly is dominant in the stand. The species composition of this zone is similar to that of the Coastal Tanoak Zone except for sporadic occurrences of Pacific rhododendron and Port Orford cedar. Also prevalent are sugar pine, ponderosa pine, incense cedar, California black oak, and canyon live oak. Grand fir, western redcedar, and red alder commonly are absent. White alder instead of red alder is present in some of the drainageways. Golden chinkapin trees are on some of the north aspects. Pacific madrone is more prevalent in this zone than in the Coastal Tanoak Zone, especially on south aspects.

The shrub cover in this zone includes fewer evergreen species and more deciduous species than in the Coastal Tanoak Zone, and it may include cascade Oregongrape, salal, prince's pine, and evergreen huckleberry. Pacific poison oak and canyon live oak trees and shrubs commonly are on the south-facing slopes.

The Interior Tanoak Zone has a lower forest productivity potential than does the Coastal Tanoak Zone. Important forest management considerations include a longer dry season, which greatly increases the length and severity of the fire season, and the competitive nature of aggressive hardwoods. Tanoak and Pacific madrone readily sprout after disturbances such as timber harvesting or fire. Canyon live oak is more abundant and can even be codominant in the forest stands in areas of soils that have a high content of rock fragments.

Western Hemlock Zone

The Western Hemlock Zone is comprised of much of the Coast Range. In this survey area, this zone occupies the northernmost part of the county, in the Floras Creek watershed, and scattered areas in the northeastern part of the county. The average annual precipitation is about 90 to 130 inches. Summer fog and cloudy weather reduce evapotranspiration in this zone. Elevation generally is less than 2,100 feet in the northernmost part, but it ranges to 3,000 feet in the northeastern part. The soils have a udic moisture regime and a mesic temperature regime. This zone correlates with general soil map unit 12 and areas of units 10 and 13 in the northernmost part of the survey area.

The Western Hemlock Zone can be subdivided into a coastal phase and an interior phase. The coastal phase is most typical of the zone, and it is west of Iron Mountain and Agness. The interior phase is of minor extent, and it is in the northeastern part of the survey area, near Bobsgarden Mountain and in the Upper Mule Creek drainageway.

The forest communities in the Western Hemlock Zone consist of western hemlock and Douglas fir and hardwoods such as bigleaf maple and cascara buckthorn. Red alder is an aggressive invader in areas that have been disturbed. Common understory species include western swordfern, Oregon oxalis, vine maple, Pacific rhododendron, salal, red huckleberry, and cascade Oregongrape.

Dense stands of red alder regeneration occur following disturbances such as fire or timber harvesting. Tree plantings are subject to severe competition from hardwood trees and from evergreen and deciduous shrubs.

Tanoak/Hemlock Zone

The Tanoak/Hemlock Zone is south of the Western Hemlock Zone and north of the Coastal Tanoak Zone. In this zone, vegetation typical of the Western Hemlock Zone is in transition with the mixed conifer and evergreen vegetation described by Franklin and Dyrness (Franklin and Dyrness 1973). In this transitional area, tanoak forests from northern California merge with western hemlock forests from Oregon and Washington. The average annual precipitation is about 90 to 130 inches. Elevation ranges from 200 to 3,000 feet. The soils have a udic moisture regime and a mesic temperature regime. This zone correlates with general soil map units 8 and 9.

The forest communities in the Tanoak/Hemlock Zone include tanoak, western hemlock, and Douglas fir. From Edson Butte south to the Sixes River, the prevalence of tanoak correlates with droughty soil conditions and south aspects. Tanoak is prevalent throughout the area south of the Sixes River. Common understory species include western swordfern, Oregon oxalis, vine maple, Pacific rhododendron, salal, cascade Oregongrape, and Pacific madrone.

The productivity of the forest in this zone is high. Severe competition from a variety of evergreen and deciduous shrubs is a concern. Red alder is particularly aggressive after disturbances such as fire or timber harvesting.

Cool Douglas Fir Zone

The Cool Douglas Fir Zone is at the higher elevations on mountainslopes and summits. It extends from the northeastern part of the survey area to the southeastern part. The average annual precipitation is about 90 to 160 inches, most of which falls as snow. The soils in this zone generally are characterized by a frigid temperature regime and a xeric moisture regime, although some soils in the central part of the survey area have a udic moisture regime. The udic area is typified by Wildhorse Ridge to the north and Green Craggies to the south. The xeric area is along the eastern boundary of the survey area and extends north to south. Elevation in this zone ranges from 2,500 to 4,500 feet in the northern part of the survey area to 3,000 to 5,500 feet in the southern part. This zone correlates with general soil map units 15, 19, and 20 and areas of unit 14 in the central part of the survey area.

The Cool Douglas Fir Zone is characterized by Douglas fir, tanoak, and white fir. Understory species include cascade Oregongrape, Sadler oak, western prince’s pine, golden chinkapin, western swordfern, and Scouler bellflower.

The colder temperatures and short growing season restrict the growth rate and regeneration of trees in this zone. Areas that have been subject to disturbances such as timber harvesting or fire develop dense fields of brush.

Cool Western Hemlock Zone

The Cool Western Hemlock Zone is at the higher elevations on mountainslopes and summits in the northern part of the survey area. It includes Mt. Butler, Iron Mountain, Panther Mountain, Saddle Peaks, and Calvert Peak. The average annual precipitation is about 130 to 160 inches, most of which falls as snow. The soils have a frigid temperature regime and a udic moisture regime. Elevation ranges from about 2,000 to 3,800 feet. Because this zone occurs as small, isolated areas on mountain peaks and summits, many areas could not be delineated on the general soil map or the general vegetation map because of the small scale used. This zone correlates with areas of general soil map unit 14.

The Cool Western Hemlock Zone is characterized by western hemlock and Douglas fir with minor occurrences of western redcedar, sugar pine, and incense cedar. Understory species include Pacific rhododendron, cascade Oregongrape, red huckleberry, salal, common beargrass, and western prince's pine.

The colder temperatures and short growing season restrict the growth rate and regeneration of trees. Areas that have been subject to disturbances such as timber harvesting or fire develop dense fields of brush.

Cold White Fir Zone

The Cold White Fir Zone is at the highest elevations in the survey area. It consists of small, isolated peaks and narrow summits along the eastern boundary of the survey area. The lowest elevations in this zone are about 3,800 to 4,000 feet. The average annual precipitation is about 100 to 160 inches, most of which falls as snow. The growing season is very short, which is in contrast to the rest of the survey area. The soils have a xeric moisture regime and a frigid temperature regime. Because this zone occurs as small, isolated areas on mountain peaks and narrow summits, many areas could not be delineated on the general soil map or the general vegetation zone map because of the small scale used. This zone correlates with areas of general soil map unit 20.

Important tree species in this zone are Douglas fir and white fir. Other less common species are Pacific yew, incense cedar, western redcedar, Brewer spruce, and western white pine. Understory shrubs include western prince's pine, Sadler oak, common snowberry, sidebells shinleaf, cascade Oregongrape, and big huckleberry. Pacific rhododendron occurs in scattered areas.

The cold temperatures and short growing season restrict the growth rate and regeneration of trees. Areas that have been subject to disturbances such as timber harvesting or fire develop dense fields of brush. Climatic limitations, including cold temperatures, a short growing season, and long periods of snowpack, restrict management of this zone.

Shasta Red Fir Zone

The Shasta Red Fir Zone is north of Brandy Peak, along the Bear Camp Ridge system. This zone is unique to the survey area. The climate in this zone is assumed to be colder than that in the adjacent Cold White Fir Zone, and this zone has higher effective precipitation, a shorter dry season in summer, and a lower evapotranspiration rate. This zone is concentrated on north-facing side slopes and in level or concave areas on summits. It correlates with the areas of general soil map unit 14 along the eastern boundary of the survey area.

The Shasta Red Fir Zone supports vegetative species similar to those of the Cold White Fir Zone, except for the presence of Shasta red fir. Shasta red fir may occur in nearly pure stands, but it more commonly occurs in mixed stands with white fir and Douglas fir.

The cold temperatures and short growing season restrict the growth rate and regeneration of trees. Areas that have been subject to disturbances such as timber harvesting or fire develop dense brush fields of Sadler oak and snowbrush ceanothus.

Windbreaks and Environmental Plantings

By Craig M. Ziegler, forester, Natural Resources Conservation Service.

Wind can be a serious environmental and economic concern. It can cause wind erosion, crop damage, safety hazards, and energy loss. Windbreaks offer landowners an effective conservation practice to minimize the problems associated with uncontrolled wind.

Field windbreaks protect crops and minimize wind erosion. They are narrow plantings made at right angles to the prevailing wind and at specific intervals across a field. Research has shown significant increases in yields of crops protected by properly designed and maintained field windbreaks. Many environmental changes occur on the leeward side of a windbreak. Windspeed is reduced, transpiration by plants is reduced, humidity is increased, evaporation is reduced, and soil moisture is increased.

Farmstead windbreaks protect livestock, buildings, and yards from wind. They also protect fruit trees and gardens and provide habitat for wildlife. Several rows of low- and high-growing shrubs and trees provide the most protection.

Environmental plantings beautify areas, provide shade, screen houses and other buildings, and help to abate noise. The plants, mostly evergreen shrubs and trees, should be closely spaced.

For a windbreak to be effective, the species of trees or shrubs selected must be adapted to the soils. Selecting the proper trees or shrubs is the first step toward a successful windbreak. Permeability, available water capacity, fertility, and depth are soil characteristics that greatly affect the growth of trees and shrubs.

Windspeed on the coast in the survey area can be very high. Barren coastal sandy soils are subject to erosion if they are exposed to windspeed of more than 15 miles per hour. As the sand particles are moved by the wind, they can greatly damage young plants or even kill them by cutting them off at ground level.

Proper site preparation prior to planting and control of competing vegetation after planting are essential when establishing a new windbreak. Replanting during the first 3 to 5 years may be necessary to ensure that the windbreak is fully stocked. Permanent irrigation with drip systems or other methods may be needed in areas where moisture is insufficient. Irrigation helps to produce healthier, denser, and faster growing windbreaks. Covering the soil with black polypropylene woven fabric after the tree or shrub seedlings are planted helps to control weeds and conserve moisture. The fabric provides effective within-row weed control for at least 5 years. It also provides a good mulch that aids in conserving moisture and minimizing extremes in soil temperature.

Each tree or shrub species has particular climatic and physiographic limits. Within these limits, a tree or shrub can be well suited or poorly suited for use as windbreaks on a particular soil. Windbreak suitability groups can be used as a guide for selecting the most suitable species for different kinds of soils and for predicting height and effectiveness of species. They can be useful in selecting plants for windbreaks, recreation and wildlife plantings, ornamental or environmental plantings, reforestation, and critical-area plantings.

Table 9 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Recreation

By Laura C. Burns, soil scientist, Natural Resources Conservation Service.

Recreation is important to the economy of the survey area. The natural resources, of which soils are an important part, are used for many types of recreational activities. Many public recreational facilities and special events are provided to encourage tourism. Besides camping areas, there are a number of motels and resorts to accommodate visitors.

The Rogue, Illinois, Elk, and Chetco Rivers and the North Fork of the Smith River are designated as “wild and scenic” rivers. Many recreational activities are centered on these rivers as well as the Winchuck and Sixes Rivers. These activities include salmon and steelhead fishing, swimming, whitewater rafting, hiking along the rivers, and boating. Jet boating is very popular on the Rogue River. Many of the creeks commonly are used for trout fishing and for swimming.

The survey area has three wilderness areas that total more than 195,000 acres. These areas are part of the public land administered by the Bureau of Land Management. The largest and best known is the Kalmiopsis Wilderness, home of the rare Kalmiopsis leachiana, a member of the Heath family. The other wilderness areas are the Wild Rogue Wilderness and the Grassy Knob Wilderness. A multitude of interesting plants and animals can be observed and enjoyed in these wilderness areas and in other parts of the survey area. Many of these plants and animals are abundant in the survey area but are rare in other areas.

A variety of wildlife species can be observed, photographed, and hunted in the survey area. Among these are black-tailed deer; Roosevelt elk; black bear; migratory waterfowl; upland game birds, including quail, grouse, and wild turkey; band-tailed pigeon; bald eagle; osprey; spotted owl; pine marten; ducks; doves; bobcat; mountain lion; beaver; muskrat; coyote; raccoon; river otter; California sea lion; Stellar sea lion; harbor seal; marbled murrelet; amphibians; and reptiles.

The survey areas provides many Federal, State, county, and private parks and campgrounds that are open to the public. It provides opportunities ranging from backpacking in the wilderness areas to camping at recreational vehicle parks with full hookups. There are many trails in the Siskiyou National Forest, including the Lower Rogue River, Rogue River, Windy Valley, Illinois River, Shrader Old Growth, Myrtle Tree, Redwood Nature, Vulcan Lake, and Bombsite Trails, in addition to trails in the wilderness areas. There are roads and other areas open to off-road vehicle use.

The coastal areas of the survey are incredibly beautiful and offer many recreational opportunities, including observing the tide pools, hiking the Oregon Coast Trail, camping, agate hunting, crabbing, surfing, sailboarding at Floras Lake and Myers Creek Beach south of Cape Sebastian, whale watching, surf fishing, clam digging, and observing the ever-changing rocky coastline and beaches. The main thoroughfare, U.S. Highway 101, is very scenic and has numerous viewpoints. Several parks are along the coast, including Harris Beach, Samuel H. Boardman, Pistol River, Cape Sebastian, Otter Point, Geisel Monument, Humbug, Cape Blanco, and Floras Lake State Parks. Three ports are available for commercial and recreational boating in Brookings, Gold Beach, and Port Orford. Deep-sea fishing and salmon fishing from these ports are popular in summer.

The soils of the survey area are rated in table 10 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In the table, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in the table can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 12 and interpretations for dwellings without basements and for local roads and streets in table 11.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

The kinds and numbers of wildlife species in the survey area generally are related to the kinds of soils. This relationship is indirect and is influenced by the climatic zones, topography, land use, and plant communities. Native plant communities consist of a variety of vegetation, most of which is valuable as habitat for wildlife. Wildlife habitat can be created or improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants.

Much of the survey area is mountainous and heavily forested, but there are also cultivated areas along the coastal margin. Such diverse environmental conditions provide many types of wildlife habitat for an abundance of wildlife species. The conditions in the survey area range from those of the warm lower elevations of the coastal plains and river valleys to those of the cold higher elevations of the forested mountains.

Water resources throughout the survey area include ponds, lakes, reservoirs, rivers, and perennial streams, all of which provide habitat for many species of anadromous fish. The Pacific Ocean is adjacent to the western margin of the survey area, and it is extremely important in providing the habitat requirements for salmonid fish populations as well as for bottom-dwelling species. The Rogue River and its tributaries are used extensively by anadromous fish such as chinook salmon and steelhead trout. The number of anadromous fish in this river and its tributaries ranks second only to that in the Columbia River. A major portion of the economy of the survey area is dependent on the fishing industry, either as a means of livelihood or as tourist activities such as sportfishing.

Representative examples of fish using the water resources in the survey area include several species of salmonids, such as chinook salmon, coho salmon, steelhead trout, rainbow trout, cutthroat trout, American shad, striped bass, and sturgeon; several species of bottom-dwelling fish, such as ling cod, flounder, sea perch, and sea bass; and several varieties of rockfish. Other vertebrates that use the marine environment include seals; sea lions; whales; otters; grebes; cormorants; mergansers; waterfowl such as ducks, geese, and swans; shore birds such as plovers, curlews, and sandpipers; sea ducks; gulls; and terns. Marine invertebrates include worms such as bloodworm, peanutworm, sandworm, and tubeworm; mollusks such as clams, limpets, mussels, oysters, scallops, and snails; and crustaceans such as barnacles, copepods, crabs, and shrimp.

It is not practical to examine the life history requirements of each of the 460 species of vertebrates and the 178 freshwater and selected marine fish species recognized to inhabit the land and water of western Oregon and Washington; therefore, Brown and others (USDA 1985) used the 16 major groupings, or life forms, of terrestrial and aquatic wildlife species as developed by Thomas and others (USDA 1979) for the Blue Mountains province of eastern Oregon and Washington. A life form is a group of wildlife species whose requirements for habitat are satisfied by similar successional stages within given ecological communities. Using the life forms concept, species can be grouped into communities or associations based on vegetation used for reproducing and feeding and as cover. Life Form 1 (species that reproduce and feed in water) has been divided into eight subgroups in order to describe more precisely the breeding and feeding adaptations of fish and invertebrates. A total of 24 different life forms, therefore, was recognized by Brown and others for use in managing wildlife and fish habitat in western Oregon and Washington.

Several plant classification systems are used in western Oregon and Washington. Of these, those developed by Franklin and Dyrness (Franklin and Dyrness 1973) and Kuchler (Kuchler 1964) have been incorporated into the system developed by Thomas and others. This system can then be used to correlate plant communities to life forms. All of the life forms were considered in the grouping of wildlife species into habitat types and correlating them to the general soil map units in this survey. Life Forms 1D, 1F, and 1H are not discussed in the following paragraphs either because they include only a minor number of species or they are almost entirely associated with the saltwater/marine environment. The life forms are as follows:

Life Form 1.—Three species that reproduce in water and feed in water. Representative species include bullfrog and sea otter.

Life Form 1A.—Twenty-six species that reproduce and feed in the water column. The eggs, larvae, and juvenile forms are planktonic, and the adult form is mobile. Representative species include striped bass, copepods, and American shad.

Life Form 1B.—Seventeen species that reproduce and feed in the water column. The adult form is sedentary. Representative species include native oysters and butter clams.

Life Form 1C.—Fifty species that reproduce in the water column and feed in or on substrate. The adult form is mobile. Representative species include starry flounder, English sole, tubeworm, and Dungeness crab.

Life Form 1D.—Seven species that reproduce in the water column and feed in or on substrate. The adult form is sedentary. Representative species include peanutworm and macoma clam.

Life Form 1E.—Ninety-one species that reproduce in or on substrate and feed in the water column. The eggs, larvae, and juvenile forms are deposited on substrate, and the adult form is mobile. Representative species include chinook salmon, Pacific lamprey, yellow perch, and smelt.

Life Form 1F.—One species that reproduces in or on substrate and feeds in the water column. The adult form is sedentary. Representative species is the sea anemone.

Life Form 1G.—Sixty-four species that reproduce and feed in or on substrate. The adult form is mobile. Representative species include white sturgeon and periwinkle snail.

Life Form 1H.—Three species that reproduce and feed in or on substrate. The adult form is sedentary. Representative species include segmented worm and lugworm.

Life Form 2.—Twelve species that reproduce in water and feed on the ground, in bushes, or in trees. Representative species include northwestern salamander, Pacific treefrog, and spotted frog.

Life Form 3.—One hundred and seven species that reproduce on the ground near water and feed on the ground, in bushes or trees, or in water. Representative species include western pond turtle, ducks, geese, snowy plover, grebes, cormorants, harbor seal, and Pacific jumping mouse.

Life Form 4.—Thirty-one species that reproduce on cliffs, in caves, or on rimrock or talus and feed on the ground or in the air. Representative species include Siskiyou Mountains salamander, bobcat, common raven, golden eagle, mountain lion, peregrine falcon, and cliff swallow.

Life Form 5.—Sixty-eight species that reproduce on the ground without specific water, cliff, rimrock, or talus association and feed on the ground. Representative species include deer, Roosevelt elk, ruffed grouse, opossum, meadowlark, western rattlesnake, and wild turkey.

Life Form 6.—Eight species that reproduce on the ground and feed in bushes or trees or in the air. Representative species include porcupine, Lincoln's sparrow, and common nighthawk.

Life Form 7.—Thirty-one species that reproduce in bushes and feed on the ground, in water, or in the air. Representative species include green-backed heron, numerous songbirds, scrub jay, common egret, red-winged blackbird, and Cooper's hawk.

Life Form 8.—Ten species that reproduce in bushes and feed in trees or bushes or in the air. Representative species include American goldfinch, dusky flycatcher, marsh wren, and yellow-breasted chat.

Life Form 9.—Four species that reproduce primarily in deciduous trees and feed in trees or bushes or in the air. Representative species include cedar waxwing and house finch.

Life Form 10.—Fifteen species that reproduce primarily in conifer trees and feed in bushes or trees or in the air. Representative species include western gray squirrel, red tree vole, and western tanager.

Life Form 11.—Thirty-four species that reproduce in coniferous or deciduous trees and feed in trees or bushes, on the ground, or in the air. Representative species include mourning dove, American robin, band-tailed pigeon, common crow, Stellar's jay, hoary bat, and rufous hummingbird.

Life Form 12.—Eight species that reproduce on very thick branches and feed on the ground or in the water. Representative species include bald eagle, osprey, marbled murrelet, great horned owl, red-tailed hawk, and great blue heron.

Life Form 13.—Fourteen species that reproduce in holes they excavate in trees and feed in trees or bushes, on the ground, or in the air. Representative species include common flicker, downy woodpecker, red-breasted nuthatch, and yellow-bellied sapsucker.

Life Form 14.—Forty-six species that reproduce in holes made by other animals or in natural holes and feed on the ground, in water, or in the air. Representative species include wood duck, hooded merganser, common merganser, American kestrel, northern spotted owl, tree swallow, marten, fisher, and raccoon.

Life Form 15.—Fifty-four species that reproduce in a burrow and feed above or under the ground. Representative species include coyote, black bear, ground squirrels, western pocket gopher, mice, voles, rabbits, hares, and skunks.

Life Form 16.—Fifteen species that reproduce in a burrow and feed in the air or in water. Representative species include beaver, river otter, and belted kingfisher.

In this survey, the concept of life forms was used as the basis for grouping wildlife species into habitat types. The general soil map units shown on the general soil map have been grouped into two physiographic settings and one geologic separation according to their potential to provide similar kinds of wildlife habitat. These three groups and the kinds of wildlife that inhabit each group are briefly described in the following paragraphs.

Map units 1, 2, 3, 8, and 16.—These general soil map units are on flood plains and stream terraces of the Sixes, Elk, Rogue, Illinois, Pistol, Chetco, and Winchuck Rivers and their tributaries and along several of the larger creeks as well as on marine terraces and established dunes adjacent to the Pacific Ocean. General soil map units 1, 2, and 3 are along the coastal margin of the survey area. They receive 70 to 90 inches of precipitation annually and have cool to warm, moist summers with fog and cool to warm, wet winters. General soil map units 8 and 16 are in the interior of the survey area. They receive 80 to 100 inches of precipitation annually and have hot, moist to dry summers and warm, wet winters.

The wildlife habitat in these map units is provided by riparian vegetation, cultivated crops, and native pasture. The vegetation in areas not cultivated includes Sitka spruce, willow, rushes and sedges in moist areas, and Douglas fir, grand fir, shore pine, tanoak, California laurel, red alder, salal, evergreen huckleberry, western swordfern, salmonberry, coyotebrush, American dunegrass, and European beachgrass in better drained areas. Redwood is in general soil map unit 2. Cultivated areas are used for grass-legume hay, irrigated and native pasture, and specialty crops such as cranberries, lily bulbs, and flowers for cutting.

Representative animals using the habitat types in these map units are primarily those of life forms 1, 1A, 1B, 1C, 1E, 1G, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16. These map units are used at various times of the year by many species of wildlife including sea otter, clams, crabs, frogs and toads, mourning dove, geese, ducks, deer, Roosevelt elk (fig. 12), coyote, rabbits, beaver, muskrat, weasel, skunks, squirrels, and many species of nongame birds such as hawks, owls, crows, ravens, jays, woodpeckers, meadowlarks, robins, herons, and numerous other songbirds that are seasonally abundant. Steelhead trout, sturgeon, and several species of salmon are in the rivers and streams. Waterfowl are seasonally abundant in areas near rivers or in areas of wetland.

Map units 4, 5, 6, 7, 9, 10, 12, 13, 14, 15, 17, 18, and 20.—These general soil map units are on nearly level to very steep hills and mountains along the coastal margin of the survey area and throughout the interior. Map units 4 and 6 are on broad summits and side slopes of coastal hills and mountains, such as Humbug Mountain, south of Port Orford; Vondergreen Hill, east of Nesika Beach; and Cape Sebastian, south of Gold Beach. These areas receive 75 to 95 inches of precipitation annually and have cool, moist summers with fog and cool, wet winters. Map unit 7 is in open

Figure 12.—Forested uplands and the associated bottom land provide excellent habitat for Roosevelt elk.

areas of grassland on broad to narrow summits and side slopes of coastal hills and mountains, such as Langlois Mountain, in the northern part of the survey area, and near Carpenterville, between Hooskanaden Creek and Whaleshead Creek. These areas receive 75 to 95 inches of precipitation annually and have cool, moist summers with fog and cool, wet winters. Map unit 5 is on broad summits and side slopes of coastal hills and mountains, such as Peavine Ridge, east of Brookings. These areas receive 90 to 130 inches of precipitation annually and have warm, moist summers with fog and warm, wet winters.

The native overstory vegetation in map units 4, 5, and 6 includes Douglas fir, grand fir, tanoak, Sitka spruce, and Pacific madrone with minor amounts of western hemlock. Map unit 5 also supports redwood. The understory vegetation includes salmonberry, salal, evergreen huckleberry, cascade Oregongrape, western swordfern, California laurel, and Pacific rhododendron with minor amounts of common beargrass, baldhip rose, and vine maple. The native vegetation in map unit 7 typically is bentgrass, velvetgrass, crinkleawn fescue, sedges, rushes, western brackenfern, red alder, and western hazel with minor amounts of Pacific poison oak.

Map units 9, 10, 12, and 13 are on broad summits and side slopes of interior mountains, such as Watches Butte, in the northern part of the survey area; Fall Mountain, at the upper end of the Lobster Creek drainageway; Skookumhouse Butte, immediately south of the Rogue River, about 15 miles east of Gold Beach; and the Gardner Ridge/Palmer Butte area, east of Brookings. These areas receive 90 to 130 inches of precipitation annually and have hot, moist summers and warm, wet winters. The native overstory vegetation includes Douglas fir, tanoak, western hemlock, Pacific madrone, and canyon live oak with minor amounts of western redcedar, Port Orford cedar, and Oregon white oak. The understory vegetation includes cascade Oregongrape, salal, evergreen huckleberry, western swordfern, Pacific rhododendron, and common beargrass with minor amounts of red huckleberry, creambush oceanspray, western rattlesnake plantain, California laurel, western prince's pine, common snowberry, vine maple, Oregon oxalis, trailing blackberry, white hawkweed, and bearded fescue.

Map units 14 and 15 are on broad summits, slump benches, and side slopes of interior mountains, such as Edson Butte, southeast of Langlois; Sawtooth Rock, east of Ophir; Bobs Garden Mountain, east of Illahe; Game Lake Peak, south of Agness; Bosley Butte, east of Carpenterville; and Quail Prairie Mountain, near the Kalmiopsis Wilderness. These areas receive 130 to 160 inches of precipitation annually and have warm, moist summers and cool, wet winters. The native overstory vegetation in these higher elevation areas includes Douglas fir, tanoak, and Pacific madrone with minor amounts of western hemlock, white fir, Shasta red fir, golden chinkapin, and Port Orford cedar. The understory vegetation includes cascade Oregongrape, salal, red huckleberry, western swordfern, Pacific rhododendron, common beargrass, western rattlesnake plantain, western prince's pine, baldhip rose, and Sadler oak with minor amounts of whitevein shinleaf, creeping snowberry, western brackenfern, and coast fairybells.

Significant open areas of grassland are within the forests in map units 10, 13, and 15. These include areas such as Skookumhouse Prairie; First and Second Prairie Mountains, in the Lobster Creek drainageway; and Wildhorse Prairie, south of the Rogue River, about 18 miles east of Gold Beach. The native vegetation of these grassland areas includes hedgehog dogtail, brome, California oatgrass, bentgrass, bluegrass, western brackenfern, dock, and woodrush. These open areas and areas on south-facing slopes provide range for deer and elk in winter; however, use of these areas is limited by the low production of forage and the poor-quality of the browse.

Map units 17 and 18 are on broad summits, side slopes, and canyon walls of interior mountains, such as Raspberry Mountain, east of Agness; Devils Backbone and Inspiration Point, in the Wild Rogue Wilderness, near Paradise and Blossom Bars; and Mule Mountain and Big Meadows, north of Marial. These areas receive 80 to 100 inches of precipitation annually and have hot, dry summers and warm, wet winters. The native overstory vegetation includes Douglas fir, tanoak, Pacific madrone, and canyon live oak with minor amounts of ponderosa pine, California black oak, sugar pine, and incense cedar. The understory vegetation includes cascade Oregongrape, common beargrass, western rattlesnake plantain, baldhip rose, western brackenfern, deerfoot vanillaleaf, Pacific poison oak, broadleaf starflower, California honeysuckle, and whipplevine with minor amounts of whitevein shinleaf, creeping snowberry, California hazel, white hawkweed, trailing blackberry, bearded fescue, and California fescue. The major difference between map units 17 and 18 is the slightly higher mean annual precipitation of map unit 18, which corresponds with a subtle change in the understory vegetation. In unit 18, salal, western swordfern, and evergreen huckleberry are in the understory and are dominant in some areas.

Map unit 20 is on broad summits and side slopes of interior mountains, such as Bear Camp Mountain, Burnt Ridge, Fish Hook Peak, and Brandy Peak, east of Agness, and Mount Billingslea, on the Curry-Josephine county line, in the center of the Kalmiopsis Wilderness. These areas receive 90 to 120 inches of precipitation annually and have hot, dry summers and cool, wet winters. The native overstory vegetation in these high-elevation areas includes Douglas fir and white fir with minor amounts of western redcedar, Brewer's spruce, western white pine, and Shasta red fir. The understory vegetation includes cascade Oregongrape, salal, common beargrass, western swordfern, Sadler oak, western rattlesnake plantain, baldhip rose, and deerfoot vanillaleaf with minor amounts of greenleaf manzanita, huckleberry oak, Pacific rhododendron, and western prince's pine.

Representative animals using the habitat types in these map units are primarily those of life forms 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, and 15. The wildlife species include salamanders; deer; Roosevelt elk; bobcat; mountain lion; coyote; black bear; marten; weasels; raccoon; several species of rodents; marbled murrelet; porcupine; northern spotted owl; upland game birds, such as wild turkey, ruffed grouse, California quail, mountain quail, mourning dove, and band-tailed pigeon; and numerous songbirds and nongame birds, such as hawks, owls, eagles, turkey vultures, crows, ravens, meadowlarks, woodpeckers, and robins. Rivers, streams, and other bodies of water in these areas provide habitat for river otter, beaver, and many game fish, including several species of salmon and steelhead trout.

As the abundance of shrubs increases in the steeper areas of these map units, the abundance and degree of use by wildlife species tends toward those animals best adapted to use of shrubs. The diverse structure of shrubs provides habitat niches that can be used by a variety of species.

In the very steep areas of general soil map units 9, 10, 13, 14, 15, 17, 18, and 20, the vegetation is dominantly tanoak, canyon live oak, Pacific madrone, baldhip rose, several species of manzanita, common beargrass, snowberry, whitevein shinleaf, and a variety of fescues. These areas are more droughty and generally are associated with cliffs or other rock outcroppings, such as rimrock or talus. Wildlife species adapted to the habitat in these areas include chukar; several species of birds of prey, including rough-legged hawk, golden eagle (winter only), falcons, American kestrel, barn owl, screech owl, great-horned owl, and turkey vulture; a variety of rodents, such as pocket gopher, ground squirrel, chipmunks, rabbits, and several species of mice; numerous nongame birds, such as crows, ravens, and wrens; and bats.

Map units 11 and 19.—These general soil map units formed in ultramafic parent material such as serpentine and peridotite. Most woodland areas in these map units are considered to be impractical to manage because of the low productivity and sparse stands, which are caused by the inherent lack of fertility and nutrient imbalance as a result of the parent material. The soils in these map units are botanically unique; they are the most floristically diverse units in the survey area. Because of the plant diversity, there is a wide range in the vertical structure and horizontal patterns of habitat types that can be used by birds and mammals. This diversity is greatest in areas where these units interface with units that support more typical forest plant communities. The open canopy allows for considerable warming of the soil surface during clear days in winter; thus, deer use the shrubs for cover as they rest in these warm areas. Many open areas and southerly aspects have patches of highly palatable shrubs that can be used for browse by deer and elk in winter. Areas of Rock outcrop generally are associated with the steeper areas of these units.

Map unit 11 is on broad summits and side slopes of interior mountains, such as Red Flat and Snow Camp Mountains, east of Gold Beach, and Iron Mountain, north of Agness. These areas receive 90 to 160 inches of precipitation annually and have warm to hot, moist summers and warm to cool, wet winters. The native overstory vegetation includes Jeffrey pine, western white pine, tanoak, knobcone pine, lodgepole pine, and Port Orford cedar with minor amounts of Douglas fir scattered throughout. The understory vegetation includes California buckthorn, Sadler oak, huckleberry oak, boxleaf silktassel, squawcarpet, pinemat manzanita, greenleaf manzanita, and common beargrass with minor amounts of incense cedar, evergreen huckleberry, western swordfern, red huckleberry, California laurel, whiteleaf manzanita, and juniper.

Map unit 19 is on summits and side slopes of interior mountains, such as the area immediately south of the Rogue River, at Copper Canyon, about 2 to 3 miles west of Agness, and Chetco and Vulcan Peaks, in the Kalmiopsis Wilderness. These areas receive 80 to 120 inches of precipitation annually and have hot, dry summers and warm to cool, wet winters. The native overstory vegetation includes Jeffrey pine, sugar pine, tanoak, incense cedar, knobcone pine, lodgepole pine, and Port Orford cedar with minor amounts of Douglas fir scattered throughout. The understory vegetation includes California buckthorn, huckleberry oak, boxleaf silktassel, squawcarpet, pinemat manzanita, whiteleaf manzanita, common beargrass, whiteleaf ceanothus, bearded fescue, red fescue, and poison oak with minor amounts of western swordfern, salal, red huckleberry, cascade Oregongrape, California laurel, Lemmon needlegrass, Sandberg bluegrass, and blue wildrye.

Representative animals that use the habitat in these map units primarily are life forms 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, and 15. The wildlife species include salamanders; deer; Roosevelt elk; bobcat; mountain lion; coyote; black bear; porcupine; weasels; raccoon; several species of rodents; upland game birds, such as wild turkey, ruffed grouse, California quail, mountain quail, mourning dove, and band-tailed pigeon; and numerous songbirds and nongame birds, such as finches, cedar waxwing, goldfinches, wrens, hawks, owls, eagles, turkey vulture, crows, ravens, meadowlarks, woodpeckers, and robins. Rivers, streams, and other bodies of water in these units provide habitat for many game fish, including chinook salmon and steelhead, rainbow, and cutthroat trout, as well as for river otter and beaver.

As the abundance of shrubs increases in the steeper areas of map units 11 and 19, the abundance and degree of use by wildlife species tends toward those animals best adapted to use of shrubs. The diverse structure of shrubs provides habitat niches that can be used by a variety of species.

In the very steep areas of these units, the vegetation is dominantly Jeffrey pine, knobcone pine, tanoak, incense cedar, several species of manzanita, boxleaf silktassel, squawcarpet, California buckthorn, whitevein shinleaf, and a variety of fescues, needlegrasses, and bluegrasses. These areas are more droughty and generally are associated with cliffs or other rock outcroppings, such as rimrock or talus. The wildlife species adapted to this habitat include chukar; several species of birds of prey, including rough-legged hawk, golden eagle (winter only), falcons, American kestrel, barn owl, screech owl, great-horned owl, and turkey vulture; a variety of rodents, such as pocket gopher, ground squirrel, chipmunks, rabbits, and several species of mice; numerous nongame birds, such as crows, ravens, and wrens; and bats.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the “Soil Properties” section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 11 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 12 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 13 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and embankments, dikes, and levees.

The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Slope Stability

By Paul F. Pedone, geologist, and Gerald J. Weinheimer, Jr., soil scientist, Natural Resources Conservation Service; and Cindy Ricks, resource geologist, Siskiyou National Forest.

This section provides information on the stability of the soils in the survey area, which is a major concern in planning land uses.

The mountains of the survey area generally are characterized by steep slopes, relief of as much as 5,000 feet, and moderate dissection by streams and rivers. Steep slopes, incompetent geologic units, and unstable soil units result in numerous and varied slope failures. Mass movement of soil material and rock is a normal geologic process; however, roadbuilding and timber harvesting can accelerate the rate of movement. The negative impact from these activities can be minimized if the factors affecting slope stability are carefully considered.

The four major factors affecting slope stability in the survey area are discussed in this section. The factors include ground water, the angle of the slope, the characteristics of the soils, and the characteristics of the bedrock.

Ground water.—Saturation by ground water is a major cause of slope failure. In areas of all types of rock and soil and on a wide range of slope angles, the potential for slope failure is significantly increased if the material is saturated.

Slope angle.—The general relationship between the angle and stability of the slopes in the survey area is shown below. The slope limits can vary somewhat depending on the type and structure of the rock, the characteristics and aspect of the soil, and the influence of the ground water.

0 to 40 percent .... stable when dry or saturated except in areas of very poorly drained soils where earthflows can develop

40 to 55 percent .... stable when dry; marginally stable when saturated

55 to 75 percent .... stable to marginally stable when dry; unstable when saturated

More than 75 percent .... subject to ravel when dry; very unstable when saturated

Soil characteristics.—Different soil types have varying stability characteristics. Generally, coarse textured and less cohesive soils (sand and gravel) are more likely to ravel or form dry flows on steep, dry slopes. On wet slopes, finer textured or poorly drained soils (silt and clay) are more cohesive and tend to slide at lower slope angles than do coarse textured, well drained soils.

Bedrock characteristics.—Different types of rock have varying characteristics. Soil characteristics are partially defined by local bedrock. Clayey soils are derived from shale, mudstone, schist, and other rock that is composed of minerals that weather to clay. Sandy soils are derived from sandstone, conglomerate, diorite, and gabbro that generally are more resistant to weathering. Rocks that have weak internal structure, such as sheared serpentinite, can be very unstable on steep slopes, especially if it is saturated. Bedrock features such as bedding planes, fractures and faults, or fold structures can affect slope stability by weakening the rock, increasing the depth of weathering, and influencing the movement of ground water. Where the layers of rock are parallel to the slope, such as in areas of the Colebrooke Schist Formation, cut slopes are subject to slumping or sliding at the soil/bedrock contact. In fault shear zones, increased slide activity and large landslide complexes may occur on moderate to steep slopes. Shear zones vary in width from tens to hundreds of feet. Soils that formed in the shear zones tend to be very deep to bedrock and wet because of the influence of the ground-water flow (Ferrero 1991). The largest areas that exhibit the influence of shear zones on slope stability are the Hooskanaden Slide, between the community of Carpenterville and U.S. Highway 101, and the area south of Humbug Mountain.

Rotational slides, earthflows, and translational slides are the most common types of landslides in the survey area. Debris avalanches and rock slides also occur, but they are significantly less common (Henkle and others 1991).

Although rotational slides (fig. 13) occur in areas of soils derived from all types of parent material, they most commonly occur in areas of clayey soils that formed in mudstone and shale of the Dothan and Otter Point Formations. These soils have a high percentage of silt and clay, tend to be poorly drained, and can form a hummocky slump complex on moderate to steep slopes, especially if they are saturated by springs and runoff. Notable examples are the Etelka and Whobrey soils in the Eckley area, in the northern part of the survey area. Areas underlain by Tertiary shale are prone to rotational sliding because they are less indurated and therefore more susceptible to deep weathering. In areas where mudstone and sandstone are interbedded, the ridgetops, shoulders, knobs, and other convex areas generally are in the areas of sandstone and the backslopes, more gently sloping areas, footslopes, toeslopes, and other concave areas generally are in the areas of mudstone.

Earthflows (fig. 14) are common in areas of waterladen soil, rock, and organic material in steep stream channels (Busby and Bestland 1992). Earthflows can occur in areas of soils derived from any type of parent material, especially where man-made disturbances have occurred, but they are most common in areas of soils derived from serpentinitic rock. Saturation of serpentinitic soils from springs or runoff results in earthflow complexes. All serpentinitic soils are potentially active because sheared serpentinite has little internal strength; however, most of the slides and earthflows occur at or near the thrust-fault contact of serpentinitic rock with other underlying formations. The thrust plate acts as a watercourse, which increases the pore pressure within the rock mass and further weakens the strength of the rock (Henkle and others 1991). Because of the volume

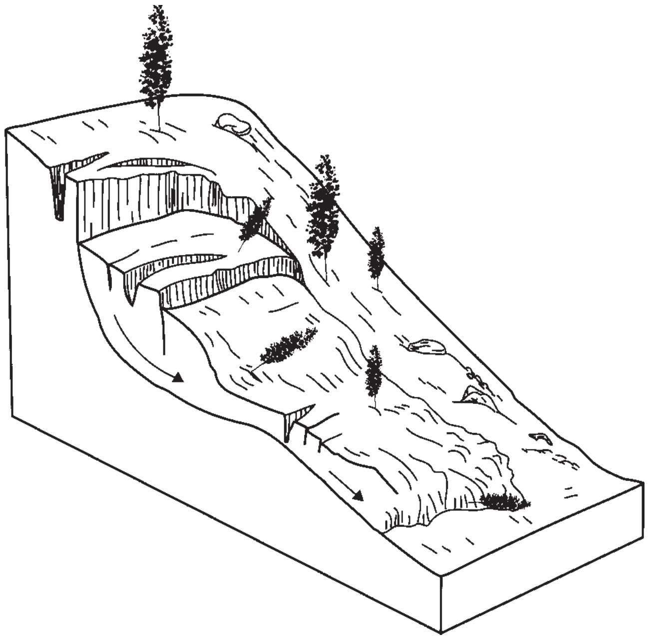

Figure 13.—Rotational slide.

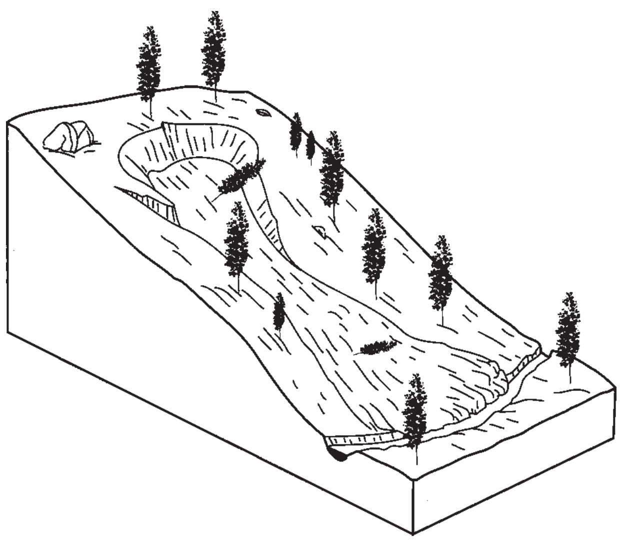

Figure 14.—Earthflow.

of material moved by earthflows, stream channels commonly are blocked by slide debris (Ferrero 1991).

Translational slides (fig. 15) generally are surficial soil movements that occur on steep slopes, commonly slopes of 65 percent or more. These slides occur as shallow sliding or raveling of soil and rock material at the soil/bedrock contact. A low content of clay and a high content of rock fragments increase the

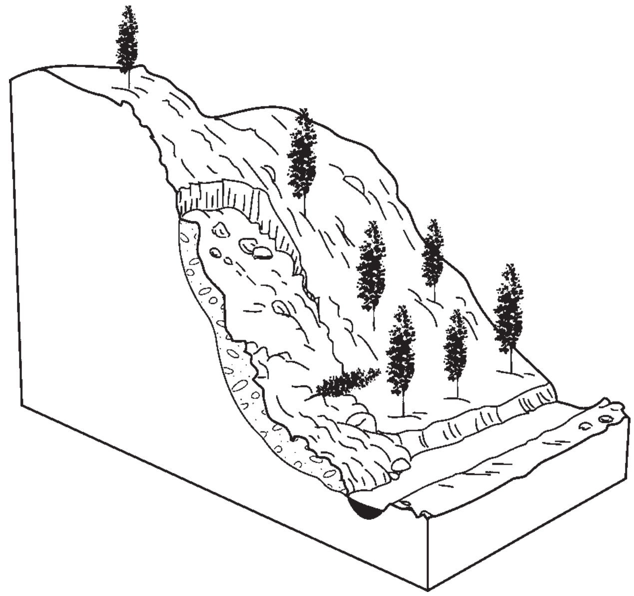

Figure 15.—Translational slide.

susceptibility of soils to translational slides, which occur most often along inner gorges (fig. 16) in areas immediately adjacent to streams and above the channel in the area below the first break in the slope (Busby and Bestland 1992). Inner gorge slides are common in areas of all types of parent material, but areas underlain by serpentinitic rock are especially active.

Debris avalanches (fig. 17) are slope failures that involve rapid movement of large volumes of material. These failures generally are triggered by debris slides on adjacent hillslopes or by the movement of debris in a channel as a result of water saturation (Busby and Bestland 1992). Debris avalanches are fairly rare and occur mainly in areas of serpentinitic rock.

Rock slides are common near outcroppings of gabbro and diorite, well-cemented areas of the Dothan Formation, Tertiary conglomerate, and the Humbug Formation (Ferrero 1991).

An attempt to measure the frequency of all types of landslides on differing types of parent material was made by Henkle and others (Henkle and others 1991). Their findings indicate that soils underlain by serpentinitic rock have a landslide density nearly twice that of soils underlain by the Dothan Formation. In areas of the Colebrooke Schist Formation, the landslide density is about 1.3 times that of areas underlain by the Dothan Formation. The landslide density of gabbro is about 1.2 times that of areas underlain by the Dothan Formation.

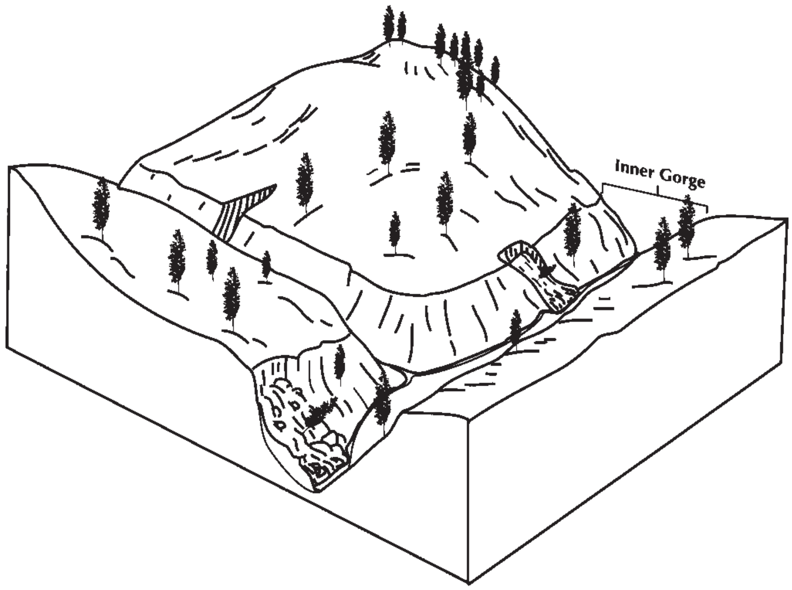

Figure 16.—Inner gorge translational slide.

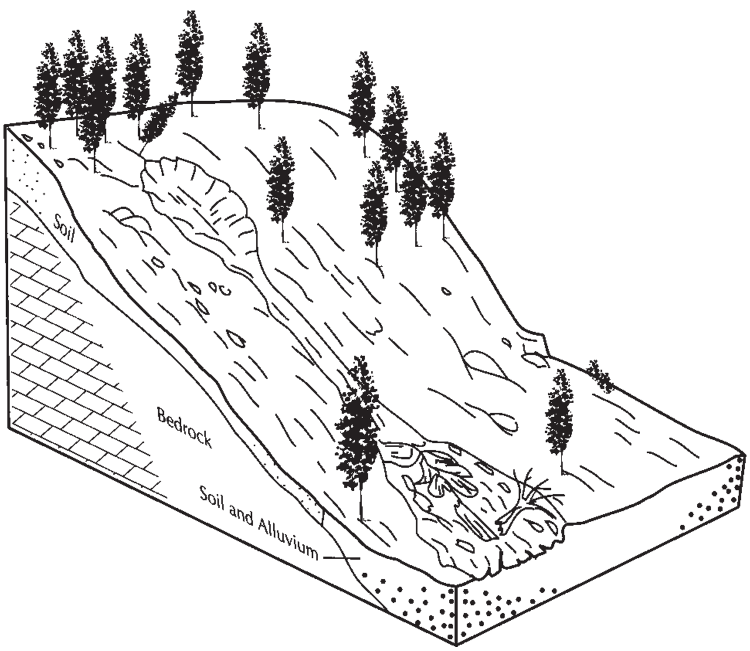

Figure 17.—Debris avalanche.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 15 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM 1993, Portland Cement Association 1973) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO 1986, Portland Cement Association 1973).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 16 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on the basis of measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, 6 to 9 percent; and *very high*, greater than 9 percent.

Erosion factor Kw indicates the susceptibility of a soil to sheet and rill erosion by water. Factor Kw is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of Kw range from 0.02 to 0.64. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 17 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to two hydrologic groups in the table, the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

The table gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of flooding is more than 50 percent in any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on observations of the water table at selected sites and on the evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Indicated in the table are the depth to the seasonal high water table; the kind of water table—that is, perched, apparent, or artesian; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in the table.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone. An *artesian* water table is under hydrostatic head, generally below an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Table 18 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

A *cemented pan* is a cemented or indurated subsurface layer within a depth of 5 feet. Such a pan causes difficulty in excavation. Pans are classified as thin or thick. A thin pan is less than 3 inches thick if continuously indurated or less than 18 inches thick if discontinuous or fractured. Excavations can be made by trenching machines, backhoes, or small rippers. A thick pan is more than 3 inches thick if continuously indurated or more than 18 inches thick if discontinuous or fractured. Such a pan is so thick or massive that blasting or special equipment is needed in excavation.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA 1975, USDA 1994). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 19 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Inceptisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Umbrept (*Umbr*, meaning shade and thus dark, plus *ept*, from Inceptisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplumbrepts (*Hapl*, meaning minimal horizonation, plus *umbrept*, the suborder of the Inceptisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haplumbrepts.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, mesic Typic Haplumbrepts.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (USDA 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (USDA 1975) and in "Keys to Soil Taxonomy" (USDA 1994). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Abegg Series

The Abegg series consists of very deep, well drained soils on high stream terraces and alluvial fans. These soils formed in alluvium and colluvium derived from metasedimentary and metavolcanic rock. Slopes are 2 to 20 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Abegg gravelly loam, 2 to 7 percent slopes, in an area of woodland; about 2,310 feet north and 990 feet west of the southeast corner of sec. 18, T. 34 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; very dark grayish brown (10YR 3/2) gravelly loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine tubular pores; 30 percent gravel and 3 percent cobbles; slightly acid (pH 6.2); abrupt smooth boundary.

A2—4 to 11 inches; dark yellowish brown (10YR 3/4) gravelly loam, dark yellowish brown (10YR 4/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 30 percent gravel and 3 percent cobbles; moderately acid (pH 6.0); clear smooth boundary.

BA—11 to 18 inches; dark yellowish brown (10YR 4/4) very gravelly loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots and common medium and coarse roots; many fine tubular pores; 30 percent gravel and 15 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

Bt—18 to 29 inches; dark yellowish brown (10YR 4/4) extremely cobbly clay loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots and common medium and coarse roots; common fine tubular pores; few distinct brown (7.5YR 4/4) clay films on faces of peds and in pores; 25 percent gravel, 35 percent cobbles, and 5 percent stones; moderately acid (pH 5.6); gradual smooth boundary.

BCt—29 to 46 inches; dark yellowish brown (10YR 4/4) extremely cobbly clay loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine roots and common medium and coarse roots; common fine tubular pores; few faint brown (7.5YR 4/4) clay films on faces of peds and in pores; 30 percent gravel, 35 percent cobbles, and 5 percent stones; strongly acid (pH 5.4); gradual wavy boundary.

C—46 to 60 inches; dark yellowish brown (10YR 4/4) extremely gravelly loamy sand, light yellowish brown (10YR 6/4) dry; massive; loose, nonsticky and nonplastic; few medium and coarse roots; few fine irregular pores; 50 percent gravel, 25 percent cobbles, and 5 percent stones; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The solum dominantly is 40 to 60 inches thick, but it may be as little as 32 inches thick. The profile is slightly acid to strongly acid throughout. It has hue of 10YR to 7.5YR.

The A horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 to 4 moist or dry. It is gravelly loam and averages 15 to 20 percent clay. It is 15 to 30 percent gravel and 0 to 5 percent cobbles.

The Bt horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is very gravelly loam, extremely gravelly loam, or extremely cobbly clay loam and averages 25 to 35 percent clay. It is 20 to 30 percent gravel, 15 to 30 percent cobbles, and 0 to 10 percent stones.

The C horizon has value of 4 to 6 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is extremely gravelly loamy sand, very gravelly sandy loam, or extremely cobbly sandy loam and averages 10 to 18 percent clay. It is 40 to 50 percent gravel, 15 to 30 percent cobbles, and 0 to 5 percent stones.

Acker Series

The Acker series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Acker gravelly loam in an area of Dumont-Acker-Kanid complex, 0 to 30 percent slopes; in an area of woodland; about 350 feet south and 2,640 feet west of the northeast corner of sec. 26, T. 32 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 30 percent gravel; moderately acid (pH 5.8); clear smooth boundary.

BAt—4 to 9 inches; dark yellowish brown (10YR 4/4) gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; few faint clay films on faces of peds and in pores; 25 percent gravel; moderately acid (pH 5.6); clear smooth boundary.

Bt1—9 to 16 inches; strong brown (7.5YR 4/6) gravelly clay loam, light brown (7.5YR 6/4) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; few faint clay films on faces of peds and common faint clay films in pores; 25 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

Bt2—16 to 36 inches; strong brown (7.5YR 4/6) gravelly clay loam, light brown (7.5YR 6/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel; strongly acid (pH 5.4); gradual smooth boundary.

Bt3—36 to 47 inches; strong brown (7.5YR 4/6) gravelly clay loam, reddish yellow (7.5YR 6/6) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 5 percent cobbles; strongly acid (pH 5.2); gradual smooth boundary.

BCt—47 to 68 inches; strong brown (7.5YR 5/6) gravelly clay loam, reddish yellow (7.5YR 6/6) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 25 percent gravel and 5 percent cobbles; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches.

The A horizon has hue of 10YR or 7.5YR, value of 2 to 4 moist and 4 to 7 dry, and chroma of 2 to 4 moist or dry. It is gravelly loam and averages 15 to 25 percent clay. It is 15 to 30 percent gravel. The horizon is slightly acid or moderately acid.

The BAt horizon has hue of 10YR or 7.5YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 3 to 6 moist or dry. It is gravelly loam or loam and averages 20 to 25 percent clay. It is 10 to 25 percent gravel and 0 to 5 percent cobbles. The horizon is slightly acid to strongly acid.

The Bt horizon has hue of 10YR, 7.5YR, or 5YR, value of 3 to 5 moist and 5 to 7 dry, and chroma of 3 to 8 moist or dry. It is gravelly clay loam or clay loam and averages 30 to 40 percent clay. It is 10 to 30 percent gravel and 0 to 3 percent cobbles. The horizon is slightly acid to strongly acid.

The BCt horizon and the C horizon, where present, have hue of 10YR, 7.5YR, or 5YR, value of 4 to 7 moist and 5 to 8 dry, and chroma of 3 to 6 moist or dry. They are gravelly clay loam, gravelly loam, or very gravelly clay loam and average 25 to 35 percent clay. They are 15 to 30 percent gravel and 0 to 5 percent cobbles. The horizons are moderately acid to very strongly acid.

Agness Series

The Agness series consists of very deep, well drained soils that are in open grassland areas on summits and south-facing side slopes of mountains (fig. 18). These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Agness channery silt loam in an area of Agness-Sixes-Goldbeach complex, 30 to 60 percent south slopes; in an area of grassland; about 1,320 feet south and 990 feet east of the northwest corner of sec. 25, T. 35 S., R. 13 W.

A1—0 to 6 inches; very dark grayish brown (10YR 3/2) channery silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; 25 percent channers; very strongly acid (pH 4.8); clear smooth boundary.

A2—6 to 14 inches; very dark grayish brown (10YR 3/2) channery silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and fine tubular pores; 20 percent channers; very strongly acid (pH 4.8); gradual smooth boundary.

AB—14 to 30 inches; very dark grayish brown (10YR 3/2) channery silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many fine and medium tubular pores; 15 percent channers and 5 percent flagstones; very strongly acid (pH 4.6); gradual smooth boundary.

Bw1—30 to 43 inches; dark grayish brown (10YR 4/2) channery silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and few medium roots; many fine and medium tubular pores; 20 percent channers and 5 percent flagstones; very strongly acid (pH 4.6); gradual smooth boundary.

Bw2—43 to 54 inches; dark grayish brown (10YR 4/2) channery silt loam, light brownish gray (10YR 6/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; 20 percent channers and 5 percent flagstones; very strongly acid (pH 4.6); clear smooth boundary.

Bw3—54 to 62 inches; dark grayish brown (10YR 4/2) channery silt loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; 20 percent channers and 10 percent flagstones; very strongly acid (pH 4.6); clear wavy boundary.

2C—62 to 72 inches; light olive brown (2.5Y 5/3) very flaggy silty clay loam, pale yellow (2.5Y 7/3) dry; massive; slightly hard, firm, slightly sticky and slightly plastic; few medium tubular pores; 20 percent channers and 15 percent flagstones; very strongly acid (pH 4.6).

Depth to bedrock is more than 60 inches. The umbric epipedon is 20 to 30 inches thick, and it may include the upper part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 or 2 moist or dry. It is channery silt loam and averages 15 to 25 percent clay. It is 15 to 30 percent channers.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 or 3 moist or dry. It is channery silt loam or channery loam and averages 18 to 25 percent clay. It is 15 to 20 percent channers and 0 to 10 percent flagstones.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 2 or 3 moist or dry. It is very flaggy silty clay loam, very channery silty clay loam, or very flaggy clay loam and averages 27 to 35 percent clay. It is 20 to 30 percent channers, 15 to 20 percent flagstones, and 0 to 5 percent stones.

Althouse Series

The Althouse series consists of deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Althouse very gravelly loam in an area of Althouse-Jayar-Skymor complex, 30 to 60 percent south slopes; in an area of woodland; about 2,600 feet north and 100 feet east of the southwest corner of sec. 32, T. 34 S., R. 10 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 5/3) dry; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine irregular pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

Bw1—3 to 11 inches; dark brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; common fine tubular pores; 40 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); clear wavy boundary.

Bw2—11 to 20 inches; dark yellowish brown (10YR 4/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common fine tubular pores; 45 percent gravel and 10 percent cobbles; slightly acid (pH 6.2); gradual wavy boundary.

Bw3—20 to 32 inches; yellowish brown (10YR 5/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine, medium, and coarse roots; few medium tubular pores; 45 percent gravel and 10 percent cobbles; slightly acid (pH 6.2); gradual wavy boundary.

C—32 to 53 inches; light olive brown (2.5Y 5/3) very gravelly loam, pale yellow (2.5Y 7/3) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine, medium, and coarse roots; few medium tubular pores; 50 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); clear wavy boundary.

Cr—53 inches; partially weathered metasedimentary rock.

Depth to bedrock is 40 to 60 inches. The solum is 30 to 40 inches thick. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam and averages 10 to 18 percent clay. It is 35 to 45 percent gravel and 0 to 5 percent cobbles. The horizon is slightly acid or moderately acid.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly loam or extremely gravelly loam and averages 10 to 18 percent clay. It is 35 to 45 percent gravel and 5 to 20 percent cobbles.

The C horizon has hue of 2.5Y or 10YR, value of 5 to 7 moist and 6 to 8 dry, and chroma of 3 or 4 moist or dry. It is very gravelly loam or extremely gravelly loam and averages 10 to 18 percent clay. It is 50 to 60 percent gravel and 5 to 20 percent cobbles.

Aquic Haplohumults

Aquic Haplohumults consists of moderately deep to very deep, moderately well drained to somewhat poorly drained soils that are on footslopes and slump benches adjacent to meadows and drainage basins on mountains. These soils formed in medium textured to fine textured colluvium derived from mixed sources. Slopes are 3 to 15 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Aquic Haplohumults clay loam in an area of Aquic Haplohumults-Cryaquepts complex, 0 to 15 percent slopes; in a meadow; about 1,650 feet north and 1,650 feet east of the southwest corner of sec. 24, T. 37 S., R. 12½ W.

A—0 to 12 inches; very dark brown (10YR 2/2) clay loam, very dark grayish brown (10YR 3/2) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and fine roots; few fine tubular pores; slightly acid (pH 6.4); clear smooth boundary.

Bt—12 to 18 inches; dark brown (10YR 3/3) silty clay, brown (10YR 4/3) dry; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; many very fine and fine roots; common very fine and few fine tubular pores; common distinct clay films on faces of peds and in pores; many fine distinct brown (7.5YR 4/4) masses of iron accumulation; slightly acid (pH 6.4); clear smooth boundary.

BCt1—18 to 34 inches; dark yellowish brown (10YR 3/4) silty clay, dark yellowish brown (10YR 4/4) dry; moderate medium subangular blocky structure; very hard, firm, very sticky and plastic; common fine roots; few fine tubular pores; 10 percent iron-manganese concretions 2 to 5 millimeters in diameter; many fine distinct strong brown (7.5YR 4/6) and reddish yellow (7.5YR 6/8) masses of iron accumulation; common distinct clay films on faces of peds and in pores; slightly acid (pH 6.4); gradual smooth boundary.

BC2—34 to 42 inches; dark yellowish brown (10YR 3/4) silty clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; very hard, firm, sticky and plastic; common fine roots; few very fine tubular pores; 5 percent iron-manganese concretions 2 to 5 millimeters in diameter; many medium prominent strong brown (7.5YR 5/8) and pink (7.5YR 7/4) masses of iron accumulation; neutral (pH 6.6); gradual smooth boundary.

C1—42 to 52 inches; dark yellowish brown (10YR 3/4) silty clay, brownish yellow (10YR 6/6) dry; massive; very hard, firm, sticky and slightly plastic; many coarse prominent strong brown (7.5YR 5/8) and pink (7.5YR 7/4) masses of iron accumulation; 5 percent gravel; neutral (pH 6.6); gradual smooth boundary.

2C2—52 to 72 inches; dark yellowish brown (10YR 4/6) silt loam, brownish yellow (10YR 6/6) dry; massive; hard, firm, sticky and slightly plastic; many coarse prominent strong brown (7.5YR 5/8) and pink (7.5YR 7/4) masses of iron accumulation; neutral (pH 6.6).

Depth to bedrock is 20 to 80 inches. The horizon is moderately acid to neutral throughout. The umbric epipedon is 10 to 20 inches thick. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist or dry. It is clay loam and averages 27 to 35 percent clay.

The Bt horizon has value of 3 moist and 3 to 5 dry, and it has chroma of 3 moist and 3 or 4 dry. The horizon has common or many, distinct redoximorphic concentrations that have value of 4 or more moist and chroma of 3 or more. The horizon is clay loam, silty clay loam, or silty clay and averages 35 to 55 percent clay. It is 0 to 50 percent gravel, 0 to 30 percent cobbles, and 0 to 15 percent distinct to prominent iron-manganese concretions 2 to 5 millimeters in diameter.

The BC and C horizons have value of 3 to 5 moist and 4 to 6 dry, and they have chroma of 4 to 6 moist or dry. The horizons have many, medium or coarse, prominent redoximorphic concentrations that have value of 4 or more moist and chroma of 3 or more. The horizons are clay loam, silty clay, or clay and average 35 to 65 percent clay. They are 0 to 35 percent gravel more than 5 millimeters in diameter, 0 to 30 percent cobbles, and 0 to 15 percent distinct or prominent iron-manganese concretions 2 to 5 millimeters in diameter.

The 2C horizon has value of 4 to 6 moist or dry, and it has chroma of 6 to 8 moist or dry. The horizon has many, medium or coarse, prominent redoximorphic concentrations that have value of 4 or more moist and chroma of 3 or more. It is silt loam, loam, or sandy loam and averages 15 to 25 percent clay. It is 0 to 35 percent gravel more than 5 millimeters in diameter, 0 to 30 percent cobbles, and 0 to 30 percent distinct or prominent iron-manganese concretions 2 to 5 millimeters in diameter.

Atring Series

The Atring series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary rock. Slopes are 12 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Atring very gravelly loam in an area of Atring-Kanid-Vermisa complex, 60 to 90 percent south slopes; in an area of woodland; about 850 feet south and 400 feet east of the northwest corner of sec. 31, T. 35 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark brown (10YR 3/3) very gravelly loam, light yellowish brown (10YR 6/4) dry; moderate very fine and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine and fine irregular pores; 45 percent gravel; slightly acid (pH 6.2); clear smooth boundary.

AB—3 to 7 inches; dark brown (10YR 4/3) very gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine tubular pores; 45 percent gravel; slightly acid (pH 6.1); clear wavy boundary.

Bw1—7 to 14 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common fine tubular pores; 45 percent gravel; moderately acid (pH 5.8); clear wavy boundary.

Bw2—14 to 20 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; common fine tubular pores; 40 percent gravel and 15 percent cobbles; moderately acid (pH 5.8); gradual wavy boundary.

BC—20 to 37 inches; dark yellowish brown (10YR 4/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and coarse roots; common fine tubular pores; 40 percent gravel and 15 percent cobbles; moderately acid (pH 5.6); abrupt wavy boundary.

Cr—37 inches; weathered sandstone.

Depth to bedrock is 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 to 5 moist and 6 or 7 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam and averages 15 to 25 percent clay. It is 35 to 50 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 3 to 6 moist or dry. It is very gravelly clay loam or very gravelly loam and averages 15 to 30 percent clay. It is 35 to 40 percent gravel and 10 to 15 percent cobbles. The horizon is moderately acid or strongly acid.

Averlande Series

The Averlande series consists of shallow, well drained soils on broad summits and stable benches of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Averlande gravelly loam in an area of Hazelcamp-Averlande-Rock outcrop complex, 0 to 30 percent slopes; in an area of woodland; about 2,250 feet north and 1,600 feet west of the southeast corner of sec. 10, T. 40 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark brown (7.5YR 4/4) gravelly loam, light brown (7.5YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; many fine irregular pores; 25 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

BAt—3 to 7 inches; yellowish red (5YR 5/6) gravelly loam, reddish yellow (7.5YR 6/6) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many very fine and fine roots; many very fine continuous tubular pores; few faint clay films on faces of peds and in pores; 25 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bt—7 to 14 inches; red (2.5YR 5/6) very gravelly clay loam, reddish yellow (5YR 6/6) dry; moderate very fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; many very fine continuous tubular pores; common distinct clay films on faces of peds and in pores; 50 percent gravel and 10 percent cobbles; very strongly acid (pH 4.6); gradual wavy boundary.

R—14 inches; partially weathered metavolcanic rock.

Depth to bedrock and thickness of the solum are 10 to 20 inches.

The A and BAt horizons have hue of 7.5YR or 5YR, value of 4 to 6 moist or dry, and chroma of 4 to 6 moist or dry. They are gravelly loam and average 15 to 25 percent clay. They are 15 to 25 percent gravel and 0 to 10 percent cobbles.

The Bt horizon has hue of 5YR or 2.5YR, value of 5 or 6 moist or dry, and chroma of 4 to 6 moist or dry. It is extremely gravelly clay loam, very gravelly clay loam, or very gravelly silty clay loam and averages 27 to 35 percent clay. It is 35 to 70 percent gravel and 0 to 15 percent cobbles.

Bagness Series

The Bagness series consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Bagness silt loam in an area of Bagness-Pistolriver complex, 0 to 3 percent slopes; in an area of seeded pasture; about 990 feet south and 2,310 feet west of the northeast corner of sec. 25, T. 41 S., R. 13 W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many fine irregular pores; very strongly acid (pH 5.0); clear smooth boundary.

BA—8 to 24 inches; very dark grayish brown (10YR 3/2) clay loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many fine continuous tubular pores; very strongly acid (pH 5.0); gradual wavy boundary.

Bw—24 to 48 inches; dark grayish brown (10YR 4/2) clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many fine continuous tubular pores; moderately acid (pH 5.8); gradual wavy boundary.

C—48 to 60 inches; dark grayish brown (10YR 4/2) clay loam, light brownish gray (10YR 6/2) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine discontinuous tubular pores; 10 percent gravel; moderately acid (pH 6.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 20 to 30 inches thick. Strata of loamy fine sand to silt loam are below a depth of 40 inches in some pedons.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 or 2 moist or dry. It is silt loam or very fine sandy loam and averages 5 to 15 percent clay. It is 0 to 10 percent gravel. The organic matter content is 6 to 10 percent.

The BA horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is clay loam or loam and averages 20 to 30 percent clay. It is 0 to 10 percent gravel. The horizon is strongly acid or very strongly acid. The organic matter content is 4 to 8 percent.

The Bw horizon has value of 4 or 5 dry and chroma of 2 or 3 moist or dry. It is clay loam, silty clay loam, or loam and averages 25 to 35 percent clay. It is 0 to 15 percent gravel. The horizon is moderately acid or strongly acid.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 2 to 4 moist or dry. It is silty clay loam, clay loam, or loam and averages 20 to 30 percent clay. It is 0 to 15 percent gravel. The horizon is moderately acid or strongly acid.

Bandon Series

The Bandon series consists of soils that are moderately deep to an ortstein layer and are well drained. These soils are on dissected marine terraces. They formed in sandy marine and eolian material over old sand dune deposits. Slopes are 0 to 20 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Bandon sandy loam in an area of Bullards-Bandon-Wadecreek complex, 0 to 8 percent slopes; in an area of woodland; about 2,310 feet south and 2,200 feet west of the northeast corner of sec. 26, T. 30 S., R. 15 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

E—0 to 6 inches; very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; weak very fine granular structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine irregular pores; very strongly acid (pH 4.8); abrupt smooth boundary.

Bs1—6 to 15 inches; dark brown (7.5YR 3/4) sandy loam, brown (7.5YR 4/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; strongly acid (pH 5.2); clear smooth boundary.

Bs2—15 to 23 inches; dark reddish brown (5YR 3/4) sandy loam, reddish brown (5YR 4/4) dry; strong fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 20 percent iron-cemented nodules 5 to 10 millimeters in diameter; strongly acid (pH 5.2); clear smooth boundary.

Bs3—23 to 34 inches; dark reddish brown (5YR 3/4) sandy loam, reddish brown (5YR 4/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine and medium roots; many very fine and fine tubular pores; 20 percent iron-cemented nodules 5 to 10 millimeters in diameter; strongly acid (pH 5.4); gradual smooth boundary.

Bsm—34 to 48 inches; yellowish red (5YR 5/6) strongly cemented loamy fine sand, reddish yellow (5YR 6/6) dry; massive; extremely hard, extremely firm, nonsticky and nonplastic; few very fine tubular pores; strongly acid (pH 5.5); abrupt wavy boundary.

C—48 to 60 inches; yellowish brown (10YR 5/6) fine sand, yellow (10YR 7/6) dry; massive; slightly hard, friable, nonsticky and nonplastic; many very fine tubular pores; moderately acid (pH 5.6).

Depth to bedrock is more than 60 inches. Depth to the cemented layer is 20 to 36 inches.

The E horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 moist or dry. It is sandy loam and averages 5 to 12 percent clay. The horizon is strongly acid or very strongly acid.

The Bs horizon has hue of 5YR or 7.5YR, value of 3 or 4 moist or dry, and chroma of 4 to 6 moist or dry. It is sandy loam or loam and averages 5 to 12 percent clay. It is 10 to 30 percent iron-cemented nodules 5 to 10 millimeters in diameter. The horizon is moderately acid or strongly acid.

The Bsm horizon has hue of 5YR or 7.5YR, value of 5 or 6 moist or dry, and chroma of 6 to 8 moist or dry. It is strongly cemented throughout.

The C horizon has hue of 10YR or 7.5YR, value of 5 or 6 moist and 6 to 8 dry, and chroma of 4 to 6 moist or dry. It commonly is massive and compacted, but it ranges to single grain and loose. Some pedons have thin (5 to 15 millimeters thick), weakly cemented, wavy horizontal layers that are strong brown, brown, or light yellowish brown.

Barkshanty Series

The Barkshanty series consists of very deep, well drained soils on broad summits and stable benches of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 40 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Barkshanty channery loam in an area of Deadline-Barkshanty-Nailkeg complex, 30 to 60 percent south slopes; in an area of woodland; about 2,100 feet south and 1,950 feet west of the northeast corner of sec. 2, T. 35 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (7.5YR 4/3) channery loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; many very fine and fine tubular pores; 25 percent channers and 5 percent flagstones; strongly acid (pH 5.2); clear smooth boundary.

BA—5 to 13 inches; dark brown (7.5YR 4/4) channery clay loam, reddish yellow (7.5YR 6/6) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; many very fine and fine tubular pores; 20 percent channers and 5 percent flagstones; strongly acid (pH 5.2); clear smooth boundary.

Bt1—13 to 20 inches; strong brown (7.5YR 4/6) very channery clay loam, reddish yellow (7.5YR 6/6) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common fine, medium, and coarse roots; common fine tubular pores; common faint clay films on faces of peds and common distinct clay films in pores; 25 percent channers and 10 percent flagstones; strongly acid (pH 5.4); clear smooth boundary.

Bt2—20 to 39 inches; strong brown (7.5YR 4/6) very flaggy clay loam, reddish yellow (7.5YR 6/6) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 25 percent channers and 20 percent flagstones; strongly acid (pH 5.4); clear smooth boundary.

Bt3—39 to 66 inches; strong brown (7.5YR 5/6) extremely flaggy clay loam, reddish yellow (7.5YR 7/6) dry; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 30 percent channers, 25 percent flagstones, and 5 percent stones; strongly acid (pH 5.4).

Depth to bedrock and thickness of the solum are more than 60 inches. The solum is strongly acid or very strongly acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 3 or 4 moist or dry. It is channery loam and averages 20 to 25 percent clay. It is 15 to 25 percent channers and 0 to 5 percent flagstones.

The BA horizon has hue of 5YR or 7.5YR, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. It is channery loam, channery clay loam, or very channery clay loam and averages 20 to 30 percent clay. It is 15 to 35 percent channers and 0 to 10 percent flagstones.

The Bt horizon has hue of 5YR or 7.5YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is very flaggy clay loam, very channery clay loam, or extremely flaggy clay loam and averages 30 to 35 percent clay. It is 25 to 35 percent channers, 10 to 30 percent flagstones, and 0 to 5 percent stones.

Bayside Series

The Bayside series consists of very deep, poorly drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Bayside silty clay loam, 0 to 3 percent slopes, in an area of native vegetation; about 330 feet south and 990 feet east of the northwest corner of sec. 25, T. 41 S., R. 13. W.

A1—0 to 10 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine continuous tubular pores; 5 percent gravel; moderately acid (pH 5.8); clear smooth boundary.

A2—10 to 28 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (2.5Y 5/2) dry; weak coarse subangular blocky structure; hard, firm, sticky and plastic; many fine and few very fine roots; many very fine and fine continuous tubular pores; common fine distinct dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) iron depletions; 5 percent gravel; moderately acid (pH 5.6); abrupt smooth boundary.

2C—28 to 50 inches; dark grayish brown (2.5Y 4/2) silty clay, light brownish gray (2.5Y 6/2) dry; massive; hard, firm, very sticky and very plastic; few fine roots; common medium and fine discontinuous tubular pores; common fine distinct dark yellowish brown (10YR 4/4) and light olive brown (2.5Y 5/4) masses of iron accumulation; 5 percent gravel; strongly acid (pH 5.5); gradual smooth boundary.

3Cg—50 to 60 inches; dark gray (5Y 5/1) sandy clay loam, gray (5Y 6/1) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; common medium discontinuous tubular pores; few medium faint yellowish brown (10YR 5/4) masses of iron accumulation and common fine distinct olive brown (2.5Y 4/4) and light olive brown (2.5Y 5/4) masses of iron accumulation; 10 percent gravel; moderately acid (pH 5.7).

Depth to bedrock is more than 60 inches. Depth to the contrasting 3Cg horizon is 40 to 60 inches. The umbric epipedon is 15 to 30 inches thick or more.

The A1 horizon has hue of 10YR or 2.5Y, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 moist or dry. It is silty clay loam and averages 27 to 30 percent clay. It is 0 to 10 percent gravel.

The A2 horizon has hue of 2.5Y or 10YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 2 moist or dry. It is silty clay loam and averages 30 to 35 percent clay. It is 0 to 10 percent gravel. Common, fine or medium, distinct or prominent redoximorphic depletions are throughout the horizon.

The 2C horizon has hue of 2.5Y or 5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 2 moist or dry. It is silty clay and averages 40 to 50 percent clay. It is 0 to 10 percent gravel. Common, fine or medium, distinct or prominent redoximorphic concentrations are throughout the horizon.

The 3Cg horizon has hue of 2.5Y or 5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 1 or 2 moist or dry. It is sandy clay loam and averages 20 to 30 percent clay. It is 0 to 10 percent gravel. Few or many, fine or medium, faint to prominent redoximorphic concentrations are throughout the horizon.

Bearcamp Series

The Bearcamp series consists of deep, well drained soils on broad summits and north-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Bearcamp very gravelly loam in an area of Brandypeak-Bearcamp-Woodseye complex, 60 to 90 percent north slopes; in an area of woodland; about 600 feet north and 2,000 feet east of the southwest corner of sec. 31, T. 34 S., R. 10 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly loam, grayish brown (10YR 5/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 35 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

A2—4 to 12 inches; very dark grayish brown (10YR 3/2) very gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; common fine tubular pores; 35 percent gravel and 5 percent cobbles; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—12 to 21 inches; dark grayish brown (10YR 4/2) very gravelly loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 40 percent gravel and 5 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

Bw2—21 to 39 inches; brown (10YR 4/3) extremely gravelly loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common medium tubular pores; 55 percent gravel and 10 percent cobbles; strongly acid (pH 5.2); gradual wavy boundary.

C—39 to 47 inches; olive brown (2.5Y 4/3) extremely gravelly loam, light yellowish brown (2.5Y 6/3) dry; massive; soft, very friable, nonsticky and nonplastic; few medium tubular pores; 60 percent gravel and 10 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

R—47 inches; highly fractured, partially weathered metasedimentary rock.

Depth to bedrock is 40 to 60 inches. The solum is 30 to 40 inches thick. The umbric epipedon is 10 to 14 inches thick, and it may include the upper part of the Bw horizon. The solum has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam and averages 18 to 25 percent clay. It is 35 to 50 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 3 to 5 moist and 5 to 7 dry, and it has chroma of 2 to 4 moist and 3 to 6 dry. It is extremely gravelly loam, very gravelly loam, or very cobbly clay loam and averages 20 to 30 percent clay. It is 30 to 55 percent gravel, 5 to 20 percent cobbles, and 0 to 5 percent stones. The horizon is strongly acid or very strongly acid.

The C horizon has hue of 2.5Y or 10YR, value of 4 to 6 moist and 5 to 7 dry, and chroma of 3 or 4 moist or dry. It is very gravelly loam, extremely gravelly loam, or extremely cobbly sandy loam and averages 15 to 25 percent clay. It is 40 to 60 percent gravel, 10 to 30 percent cobbles, and 0 to 5 percent stones. The horizon is moderately acid or strongly acid.

Beekman Series

The Beekman series consists of moderately deep, well drained soils on south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Beekman gravelly loam in an area of Shastacosta-Pollard-Beekman complex, 30 to 60 percent south slopes; in an area of woodland; about 1,980 feet south and 1,980 feet east of the northwest corner of sec. 21, T. 35 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; weak very fine and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 30 percent gravel; moderately acid (pH 5.6); clear smooth boundary.

BA—5 to 13 inches; dark brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); gradual smooth boundary.

Bw1—13 to 25 inches; brown (10YR 5/3) very gravelly loam, pale brown (10YR 6/3) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 45 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); gradual wavy boundary.

Bw2—25 to 34 inches; light olive brown (2.5Y 5/4) very gravelly clay loam, light yellowish brown (2.5Y 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 50 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); abrupt wavy boundary.

R—34 inches; highly fractured, slightly weathered metasedimentary rock.

Depth to bedrock is 20 to 40 inches. The horizon is slightly acid or moderately acid throughout.

The A horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 4 to 6 dry, and chroma of 2 to 4 moist and 3 or 4 dry. It is gravelly loam and averages 15 to 25 percent clay. It is 15 to 30 percent gravel.

The Bw horizon has hue of 2.5Y, 10YR, or 7.5YR, value of 4 or 5 moist and 5 to 7 dry, and chroma of 3 or 4 moist or dry. It is very gravelly clay loam, very gravelly loam, or extremely gravelly loam and averages 18 to 30 percent clay. It is 35 to 60 percent gravel and 0 to 5 percent cobbles.

Bigriver Series

The Bigriver series consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Bigriver sandy loam, 0 to 3 percent slopes, in an area of pasture; about 990 feet south and 330 feet west of the northeast corner of sec. 35, T. 40 S., R. 13 W.

Ap—0 to 8 inches; dark brown (10YR 3/3) sandy loam, brown (10YR 5/3) dry; weak coarse subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; many fine irregular pores; moderately acid (pH 6.0); clear smooth boundary.

AC—8 to 12 inches; dark brown (10YR 3/3) sandy loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots; many fine irregular pores; slightly acid (pH 6.4); clear smooth boundary.

C1—12 to 17 inches; dark brown (10YR 4/3) sandy loam, pale brown (10YR 6/3) dry; massive; loose, nonsticky and nonplastic; common very fine and fine roots; many fine irregular pores; slightly acid (pH 6.2); abrupt wavy boundary.

C2—17 to 60 inches; brown (10YR 5/3) loamy fine sand, pale brown (10YR 6/3) dry; massive; loose, very friable, nonsticky and nonplastic; many fine irregular pores; 10 percent gravel and 3 percent cobbles; moderately acid (pH 6.0).

Depth to bedrock is more than 60 inches. The solum is slightly acid or moderately acid throughout.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 moist or dry. It is sandy loam and averages 5 to 15 percent clay. It is 0 to 10 percent gravel.

The C horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is stratified loamy sand to silt loam and averages 5 to 18 percent clay. It is 0 to 15 percent gravel.

Blachly Series

The Blachly series consists of very deep, well drained soils on broad summits and stable benches of mountains. These soils formed in colluvium derived dominantly from sandstone or other sedimentary rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Blachly silty clay loam in an area of Preacher-Blachly complex, warm, 0 to 30 percent slopes; in an area of woodland; about 1,400 feet south and 2,200 feet west of the northeast corner of sec. 5, T. 34 S., R. 11 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 7 inches; dark brown (7.5YR 3/2) silty clay loam, dark brown (7.5YR 4/3) dry; moderate very fine and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine irregular pores; 5 percent gravel; moderately acid (pH 5.8); clear wavy boundary.

BA—7 to 12 inches; reddish brown (5YR 4/4) silty clay, reddish brown (5YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine tubular pores; 5 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bw1—12 to 26 inches; reddish brown (5YR 4/4) silty clay, reddish brown (5YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine, medium, and coarse roots; common fine tubular pores; 5 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bw2—26 to 38 inches; reddish brown (5YR 4/4) silty clay, reddish brown (5YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common medium roots; few fine tubular pores; 5 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

BC—38 to 67 inches; reddish brown (5YR 4/4) silty clay loam, reddish brown (5YR 5/4) dry; weak medium subangular blocky structure; hard, firm, sticky and plastic; few medium roots; few fine tubular pores; 5 percent gravel; strongly acid (pH 5.4).

Depth to bedrock and thickness of the solum are more than 60 inches. The profile is moderately acid to very strongly acid throughout.

The A horizon has hue of 5YR or 7.5YR, value of 2 or 3 moist and 3 or 4 dry, and chroma of 2 to 4 moist or dry. It is silty clay loam and averages 27 to 40 percent clay. It is 0 to 10 percent gravel.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is silty clay or clay and averages 40 to 50 percent clay. It is 0 to 10 percent gravel.

The BC horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 8 moist or dry. It is silty clay loam, silty clay, or clay and averages 35 to 45 percent clay. It is 0 to 10 percent gravel.

Bobsgarden Series

The Bobsgarden series consists of very deep, well drained soils on broad summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Bobsgarden gravelly loam in an area of Bobsgarden-Rilea-Euchrand complex, 30 to 60 percent south slopes; in an area of woodland; about 330 feet south and 2,310 feet east of the northwest corner of sec. 13, T. 37 S., R. 13 W.

Oi—3 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 4/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and common very fine and coarse roots; many very fine tubular pores; 30 percent gravel; strongly acid (pH 5.3); clear smooth boundary.

Bw1—8 to 17 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine and fine tubular pores; 35 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); clear smooth boundary.

Bw2—17 to 25 inches; dark yellowish brown (10YR 4/6) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few very fine, fine, medium, and coarse roots; many fine tubular pores; 40 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); gradual smooth boundary.

C1—25 to 46 inches; yellowish brown (10YR 5/6) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; many fine tubular pores; 50 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); gradual smooth boundary.

C2—46 to 68 inches; yellowish brown (10YR 5/6) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; many fine tubular pores; 35 percent gravel and 10 percent cobbles; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The solum is 25 to 40 inches thick. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 30 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is very gravelly clay loam or extremely gravelly clay loam and averages 27 to 35 percent clay. It is 35 to 50 percent gravel and 5 to 15 percent cobbles.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is very gravelly clay loam, extremely gravelly clay loam, or extremely gravelly loam and averages 20 to 35 percent clay. It is 35 to 60 percent gravel and 0 to 20 percent cobbles.

Bohannon Series

The Bohannon series consists of moderately deep, well drained soils on side slopes of mountains. These soils formed in colluvium derived dominantly from sedimentary rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Bohannon gravelly loam in an area of Digger-Preacher-Bohannon complex, warm, 30 to 60 percent south slopes; in an area of woodland; about 2,900 feet north and 1,500 feet east of the southwest corner of sec. 32, T. 33 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate medium granular structure; slightly hard, very friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots; many very fine and fine irregular pores; 15 percent gravel, 5 percent cobbles, and 2 percent stones; moderately acid (pH 6.0); clear wavy boundary.

AB—6 to 14 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots; common very fine and fine tubular pores; 15 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear wavy boundary.

Bw1—14 to 26 inches; dark yellowish brown (10YR 4/4) gravelly loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few coarse roots; few medium tubular pores; 15 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear wavy boundary.

Bw2—26 to 34 inches; dark yellowish brown (10YR 4/4) gravelly loam, light yellowish brown (10YR 6/4) dry; moderate medium and coarse subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few coarse roots; few medium tubular pores; 20 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

Cr—34 inches; weathered sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 7 to 18 inches thick. The profile is moderately acid to very strongly acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam and averages 15 to 25 percent clay. It is 15 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist or dry. It is gravelly loam, cobbly loam, or cobbly clay loam and averages 18 to 30 percent clay. It is 15 to 25 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones.

Bosland Series

The Bosland series consists of moderately deep, well drained soils on broad summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Bosland silt loam in an area of Dulandy-Bosland-Floras complex, 60 to 90 percent south slopes; in an area of woodland; about 530 feet north and 1,700 feet west of the southeast corner of sec. 4, T. 41 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, twigs, and woody material.

A1—0 to 4 inches; dark brown (7.5YR 3/2) silt loam, brown (7.5YR 5/2) dry; strong fine granular structure; slightly hard, friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine and fine irregular pores; 5 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

A2—4 to 11 inches; dark brown (7.5YR 3/3) silt loam, brown (7.5YR 5/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 5 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—11 to 19 inches; reddish brown (5YR 4/3) silty clay loam, light reddish brown (5YR 6/4) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; few thin organic coatings in pores; 5 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw2—19 to 26 inches; reddish brown (5YR 4/6) silty clay loam, reddish yellow (5YR 6/6) dry; weak very fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; few thin organic coatings in pores; 5 percent gravel; very strongly acid (pH 4.8); clear wavy boundary.

C—26 to 39 inches; brown (7.5YR 5/4) gravelly silty clay loam, light brown (7.5YR 6/4) dry; massive; hard, firm, sticky and plastic; few fine roots; many very fine and fine continuous tubular pores; 20 percent gravel; very strongly acid (pH 4.6); abrupt wavy boundary.

R—39 inches; sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist and 3 or 4 dry. It is silt loam and averages 15 to 25 percent clay. It is 5 to 15 percent gravel.

The Bw horizon has hue of 5YR or 7.5YR, value of 3 to 6 moist and 4 to 6 dry, and chroma of 3 to 6 moist or dry. It is silty clay loam, gravelly silty clay loam, or clay loam and averages 27 to 35 percent clay. It is 5 to 25 percent gravel and 0 to 5 percent cobbles.

The C horizon has hue of 5YR or 7.5YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is gravelly clay loam or gravelly silty clay loam and averages 27 to 35 percent clay. It is 20 to 35 percent gravel and 0 to 10 percent cobbles.

Brandypeak Series

The Brandypeak series consists of moderately deep, well drained soils on broad summits and north-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Brandypeak very cobbly loam in an area of Bearcamp-Brandypeak-Woodseye complex, 30 to 60 percent north slopes; in an area of woodland; about 100 feet north and 600 feet west of the southeast corner of sec. 18, T. 35 S., R. 10$^1/_2$ W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 10 inches; dark brown (10YR 3/3) very cobbly loam, brown (10YR 5/3) dry; weak very fine and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine irregular pores; 30 percent gravel, 20 percent cobbles, and 5 percent stones; very strongly acid (pH 4.8); clear wavy boundary.

Bw1—10 to 22 inches; dark brown (10YR 4/3) very cobbly loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 25 percent gravel and 30 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw2—22 to 34 inches; dark yellowish brown (10YR 4/4) extremely cobbly loam, yellowish brown (10YR 5/4) dry; weak fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few fine and medium roots; common fine tubular pores; 35 percent gravel and

30 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.
R—34 inches; highly fractured, partially weathered metasedimentary rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 10 to 14 inches thick, and it may include the upper part of the Bw horizon. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is very cobbly loam and averages 18 to 25 percent clay. It is 20 to 30 percent gravel, 15 to 20 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 3 to 5 moist and 5 to 7 dry, and it has chroma of 3 to 6 moist or dry. It is very cobbly loam, extremely cobbly loam, or extremely gravelly clay loam and averages 20 to 30 percent clay. It is 25 to 50 percent gravel, 15 to 30 percent cobbles, and 0 to 5 percent stones. The horizon is strongly acid or very strongly acid.

Bravo Series

The Bravo series consists of moderately deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Bravo loam in an area of Fritsland-Bravo-Cassiday complex, 30 to 60 percent south slopes; in an area of woodland; about 1,050 feet south and 1,100 feet east of the northwest corner of sec. 17, T. 39 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.
A1—0 to 3 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine irregular pores; 10 percent gravel; very strongly acid (pH 5.0); abrupt smooth boundary.
A2—3 to 9 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 10 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.
Bw1—9 to 21 inches; dark brown (10YR 4/3) clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 10 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.
Bw2—21 to 31 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, light brown (7.5YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; 20 percent gravel and 5 percent cobbles; very strongly acid (pH 4.6); clear smooth boundary.
C—31 to 36 inches; brown (7.5YR 5/4) gravelly clay loam, light brown (7.5YR 6/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine continuous tubular pores; 25 percent gravel and 5 percent cobbles; very strongly acid (pH 4.6); abrupt wavy boundary.
R—36 inches; metasedimentary rock.

Depth to bedrock is 20 to 40 inches. The solum is 20 to 30 inches thick. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is loam and averages 15 to 25 percent clay. It is 0 to 15 percent gravel.

The Bw horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 3 or 4 moist or dry. It is clay loam, loam, or gravelly clay loam and averages 20 to 35 percent clay. It is 5 to 20 percent gravel and 0 to 10 percent cobbles.

The C horizon has value of 5 to 7 moist or dry, and it has chroma of 3 or 4 moist or dry. It is gravelly loam or gravelly clay loam and averages 25 to 35 percent clay. It is 15 to 30 percent gravel and 0 to 5 percent cobbles.

Brenner Series

The Brenner series consists of very deep, poorly drained soils in depressions and backswamps on flood plains. These soils formed in silty alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Brenner silt loam, 0 to 3 percent slopes, in an area of native pasture; about 2,640 feet south and 2,310 feet west of northeast corner of sec. 8, T. 35 S., R. 14 W.

A—0 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; few fine distinct strong brown (7.5YR 4/6) masses of iron accumulation and common fine distinct gray (10YR 5/1) iron depletions; strongly acid (pH 5.4); clear smooth boundary.

Bg1—12 to 19 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; many medium distinct strong brown (7.5YR 4/6) masses of iron accumulation and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 4.8); clear smooth boundary.

Bg2—19 to 34 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many medium distinct strong brown (7.5YR 4/6) masses of iron accumulation and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 4.8); gradual smooth boundary.

Cg—34 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam, light brownish gray (2.5Y 6/2) dry; massive; hard, firm, sticky and plastic; few fine tubular pores; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 14 inches thick. The solum is strongly acid or very strongly acid.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 or 2 moist or dry. Faint to prominent redoximorphic features are throughout the horizon. The A horizon is silt loam and averages 20 to 27 percent clay.

The Bg horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 1 or 2 moist or dry. Chroma of 1 moist is below a depth of 30 inches. Distinct or prominent redoximorphic features are throughout the horizon. The Bg horizon is silt loam or silty clay loam and averages 18 to 30 percent clay.

The Cg horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 0 to 2. It is silty clay loam or silty clay and averages 27 to 50 percent clay. Thin lenses of sandier material are below a depth of 40 inches in some pedons. The horizon is very strongly acid or extremely acid.

Bullards Series

The Bullards series consists of very deep, well drained soils on dissected marine terraces (fig. 19. These soils formed in sandy marine and eolian material over old sand dune deposits. Slopes are 0 to 40 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Bullards sandy loam in an area of Bullards-Ferrelo-Hebo complex, 0 to 20 percent slopes; in an area of woodland; about 2,100 feet south and 700 feet west of the northeast corner of sec. 1, T. 36 S., R. 15 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine irregular pores; 10 percent iron and manganese concretions 2 to 5 millimeters in diameter; very strongly acid (pH 4.8); clear smooth boundary.

Bs1—8 to 15 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam, yellowish brown (10YR 5/4) dry; weak fine subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine irregular pores; 20 percent iron-cemented nodules 2 to 10 millimeters in diameter; very strongly acid (pH 5.0); clear wavy boundary.

Bs2—15 to 33 inches; yellowish brown (10YR 5/4) gravelly sandy loam, very pale brown (10YR 7/4) dry; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 20 percent iron-cemented nodules 2 to 10 millimeters in diameter; strongly acid (pH 5.2); gradual wavy boundary.

Bs3—33 to 47 inches; yellowish brown (10YR 5/4) gravelly sandy loam, very pale brown (10YR 7/4) dry; weak medium and coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few medium roots; many fine tubular pores; 30 percent iron-cemented nodules 2 to 10 millimeters in diameter; strongly acid (pH 5.4); abrupt wavy boundary.

C—47 to 60 inches; brownish yellow (10YR 6/6) sand, yellow (10YR 7/6) dry; massive; loose, nonsticky and nonplastic; few very fine irregular pores; moderately acid (pH 5.6).

Depth to bedrock is more than 60 inches.

The A horizon has hue of 10YR or 7.5YR, value of 3 to 5 moist and 5 or 6 dry, and chroma of 2 or 3 moist or dry. It is sandy loam and averages 8 to 18 percent clay. The horizon is strongly acid or very strongly acid.

The Bs horizon has hue of 5YR, 7.5YR, or 10YR, value of 4 or 5 moist and 5 to 7 dry, and chroma of 4 to 6 moist or dry. It is gravelly sandy loam or gravelly loam and averages 8 to 18 percent clay. It is 15 to 30 percent iron-cemented nodules 2 to 20 millimeters in diameter. The horizon is moderately acid to very strongly acid.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 6 moist and 6 or 7 dry, and chroma of 4 to 8 moist or dry. It is loamy fine sand or sand with a thin, weakly cemented lens in some pedons.

Bullgulch Series

The Bullgulch series consists of very deep, well drained soils on broad summits, stable benches, and side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from arkosic sandstone and siltstone. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Bullgulch silty clay loam in an area of Bullgulch-Hunterscove complex, 30 to 60 percent south slopes; in an area of woodland; about 300 feet north and 2,310 feet west of the southeast corner of sec. 31, T. 37 S., R. 14 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 14 inches; very dark brown (10YR 2/2) silty clay loam, dark grayish brown (10YR 4/2) dry; strong very fine and medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine irregular pores; strongly acid (pH 5.1); gradual wavy boundary.

A2—14 to 22 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate medium and fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many fine and medium roots; many very fine and fine tubular pores; strongly acid (pH 5.2); gradual wavy boundary.

Bt1—22 to 33 inches; dark brown (10YR 3/3) silty clay, dark brown (10YR 4/3) dry; moderate fine subangular blocky structure; hard, friable, sticky and very plastic; many fine roots; many very fine and fine tubular pores; few faint clay films on faces of peds and in pores; strongly acid (pH 5.5); gradual wavy boundary.

Bt2—33 to 48 inches; dark yellowish brown (10YR 4/4) silty clay, very pale brown (10YR 7/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; many very fine tubular pores; common faint clay films on faces of peds and in pores; strongly acid (pH 5.3); clear wavy boundary.

Bt3—48 to 59 inches; yellowish brown (10YR 5/6) silty clay, very pale brown (10YR 7/4) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; many very fine and fine tubular pores; few faint clay films on faces of peds and in pores; strongly acid (pH 5.2); clear wavy boundary.

BC—59 to 64 inches; yellowish brown (10YR 5/4) and grayish brown (10YR 5/2) silty clay loam, light yellowish brown (10YR 6/4) and light gray (10YR 7/2) dry; weak medium angular blocky structure; hard, firm, sticky and plastic; few fine roots; many very fine tubular pores; 35 percent soft sandstone fragments; very strongly acid (pH 4.9); gradual irregular boundary.

C—64 to 70 inches; yellowish brown (10YR 5/4) silty clay loam, light yellowish brown (10YR 6/4) and light gray (10YR 7/2) dry; massive; hard, firm, sticky and plastic; 50 percent soft sandstone fragments.

Depth to bedrock is more than 60 inches. The solum commonly is 48 inches thick or more. The profile is strongly acid or very strongly acid throughout. It has hue of 10YR or 7.5YR. The solum is 0 to 15 percent soft rock fragments that are weathered from sandstone and can be crushed. The umbric epipedon is 20 to 35 inches thick.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. The organic matter content is 4 to 8 percent.

The Bt horizon has value of 3 to 5 moist and 3 to 7 dry, and it has chroma of 3 to 6 moist or dry. It is silty clay, clay, or silty clay loam and averages 35 to 45 percent clay. The horizon has few to common, faint to distinct clay films. The organic matter content is 2 to 4 percent.

The BC and C horizons have value of 4 to 6 moist and 6 or 7 dry, and they have chroma of 2 to 4 moist or dry. They are silty clay loam or clay loam and average 27 to 35 percent clay. The C horizon is as much as 60 percent soft rock fragments below a depth of 60 inches.

Burnthill Series

The Burnthill series consists of very deep, well drained soils on broad summits and side slopes of deeply dissected high marine terraces (fig. 20). These soils formed in marine sediment. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Burnthill loam in an area of Burnthill-Cashner complex, 0 to 15 percent slopes; in an area of woodland; about 750 feet south and 2,220 feet east of the northwest corner of sec. 31, T. 40 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) loam, dark grayish brown (10YR 4/2) dry; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine irregular pores; very strongly acid (pH 4.9); clear smooth boundary.

A2—3 to 11 inches; very dark grayish brown (10YR 3/2) loam, dark brown (10YR 4/3) dry; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine irregular pores; very strongly acid (pH 4.5); abrupt smooth boundary.

2Bt1—11 to 23 inches; dark brown (7.5YR 3/4) loam, strong brown (7.5YR 5/6) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine continuous tubular pores; few faint clay films on faces of peds and common faint clay films in pores; 10 percent manganese concretions 2 to 5 millimeters in diameter and 15 percent soft rock fragments; very strongly acid (pH 4.9); gradual smooth boundary.

2Bt2—23 to 31 inches; reddish brown (5YR 4/4) loam, strong brown (7.5YR 5/8) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common fine roots and few medium and coarse roots; common very fine continuous tubular pores; common distinct clay films on faces of peds and in pores; 10 percent manganese concretions 2 to 5 millimeters in diameter and 15 percent soft rock fragments; very strongly acid (pH 5.0); clear smooth boundary.

2Bt3—31 to 36 inches; brown (7.5YR 4/4) clay loam, strong brown (7.5YR 5/6) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common fine roots and few medium and coarse roots; many very fine continuous tubular pores; common distinct clay films on faces of peds and in pores; 10 percent manganese concretions 2 to 5 millimeters in diameter and 15 percent soft rock fragments; very strongly acid (pH 5.0); gradual smooth boundary.

2Bt4—36 to 43 inches; strong brown (7.5YR 4/6) clay loam, strong brown (7.5YR 5/8) dry; weak medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine continuous tubular pores; common distinct clay films on faces of peds and in pores; 10 percent manganese concretions 2 to 5 millimeters in diameter and 15 percent soft rock fragments; very strongly acid (pH 5.0); gradual smooth boundary.

2BC—43 to 51 inches; yellowish red (5YR 4/6) clay loam, strong brown (7.5YR 5/8) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine continuous tubular pores; 20 percent manganese concretions 2 to 5 millimeters in diameter and 25 percent soft rock fragments; very strongly acid (pH 5.0); gradual smooth boundary.

2C—51 to 60 inches; yellowish red (5YR 4/6) clay loam, reddish yellow (5YR 6/6) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine continuous tubular pores; 20 percent manganese concretions 2 to 5 millimeters in diameter and 25 percent soft rock fragments; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 3 or 4 dry, and chroma of 2 or 3 moist or dry. It is loam and averages 10 to 20 percent clay. It is 0 to 10 percent gravel. It is weakly smeary throughout.

The 2Bt horizon has hue of 7.5YR or 5YR, value of 3 or 4 moist and 4 or 5 dry, and chroma of 4 to 6 moist and 6 to 8 dry. It is loam or clay loam and averages 25 to 35 percent clay. It is 0 to 10 percent gravel that is more than 5 millimeters in diameter, 10 to 20 percent manganese concretions 2 to 5 millimeters in diameter, and 10 to 20 percent soft rock fragments.

The 2BC horizon has hue of 7.5YR or 5YR, value of 4 to 6 moist and 5 or 6 dry, and chroma of 6 to 8 moist or dry. It is loam or clay loam and averages 25 to 35 percent clay. It is 0 to 10 percent gravel that is more than 5 millimeters in diameter, 20 to 30 percent manganese concretions 2 to 5 millimeters in diameter, and 20 to 30 percent soft rock fragments.

The 2C horizon has hue of 7.5YR or 5YR, value of 4 to 6 moist and 6 to 8 dry, and chroma of 6 to 8 moist or dry. It is loam or clay loam and averages 25 to 35 percent clay. It is 0 to 10 percent gravel that is more than 5 millimeters in diameter, 30 to 40 percent manganese concretions 2 to 5 millimeters in diameter, and 20 to 40 percent soft rock fragments.

Calfranch Series

The Calfranch series consists of very deep, well drained soils on summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 90 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Calfranch very channery loam in an area of Calfranch-Capeblanco-Watches complex, 30 to 60 percent south slopes; in an area of woodland; about 2,970 feet south and 2,450 feet west of the northeast corner of sec. 33, T. 35 S., R. 13 W.

Oi—3 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; brown (10YR 4/3) very channery loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common very fine and fine tubular pores; 35 percent channers; moderately acid (pH 5.6); clear smooth boundary.

A2—4 to 12 inches; dark yellowish brown (10YR 4/4) very channery loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many fine tubular pores; 35 percent channers and 5 percent flagstones; moderately acid (pH 6.0); clear wavy boundary.

Bw1—12 to 17 inches; light olive brown (2.5Y 5/4) very channery loam, pale yellow (2.5Y 7/3) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; common fine tubular pores; 35 percent channers and 10 percent flagstones; moderately acid (pH 5.7); clear wavy boundary.

Bw2—17 to 29 inches; light yellowish brown (2.5Y 6/3) very channery sandy loam, light gray (2.5Y 7/2) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 40 percent channers and 15 percent flagstones; strongly acid (pH 5.2); clear wavy boundary.

Bw3—29 to 42 inches; light yellowish brown (2.5Y 6/3) extremely flaggy sandy loam, light gray (2.5Y 7/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 40 percent channers and 25 percent flagstones; very strongly acid (pH 4.9); gradual wavy boundary.

C1—42 to 55 inches; pale olive (5Y 6/3) extremely flaggy sandy loam, light gray (5Y 7/2) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine tubular pores; 50 percent channers and 25 percent flagstones; very strongly acid (pH 4.8); clear wavy boundary.

C2—55 to 67 inches; pale olive (5Y 6/3) extremely flaggy sandy loam, pale yellow (5Y 7/3) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine tubular pores; 50 percent channers and 25 percent flagstones; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick.

The A horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very channery loam and averages 15 to 25 percent clay. It is 35 to 50 percent channers and 0 to 5 percent flagstones. The horizon is moderately acid or strongly acid.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 2 to 4 moist or dry. It is very channery loam, very channery sandy loam, or extremely flaggy sandy loam and averages 10 to 20 percent clay. It is 35 to 50 percent channers and 10 to 30 percent flagstones. The horizon is moderately acid or strongly acid.

The C horizon has hue of 2.5Y or 5Y, value of 6 or 7 moist and 7 or 8 dry, and chroma of 2 to 4 moist or dry. It is very channery loam, extremely channery sandy loam, or extremely flaggy sandy loam and averages 10 to 20 percent clay. It is 40 to 55 percent channers and 15 to 30 percent flagstones. The horizon is strongly acid or very strongly acid.

Capeblanco Series

The Capeblanco series consists of moderately deep, well drained soils on summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 30 to 90 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Capeblanco very channery loam in an area of Calfranch-Watches-Capeblanco complex, 30 to 60 percent north slopes; in an area of woodland; about 700 feet north and 1,600 feet west of the southeast corner of sec. 31, T. 35 S., R. 13 W.

Oi—3 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; dark yellowish brown (10YR 4/4) very channery loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; common very fine and fine tubular pores; 40 percent channers and 5 percent flagstones; very strongly acid (pH 4.6); clear smooth boundary.

Bw1—8 to 19 inches; dark yellowish brown (10YR 4/4) very channery clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many fine tubular pores; 40 percent channers, 10 percent flagstones, and 2 percent stones; very strongly acid (pH 4.8); clear wavy boundary.

Bw2—19 to 35 inches; dark yellowish brown (10YR 4/4) extremely channery sandy clay loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 50 percent channers, 15 percent flagstones, and 5 percent stones; very strongly acid (pH 4.8); abrupt wavy boundary.

R—35 inches; schist.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is strongly acid or very strongly acid throughout.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5 moist and 5 or 6 dry, and chroma of 3 or 4 moist or dry. It is very channery loam and averages 15 to 25 percent clay. It is 35 to 50 percent channers and 0 to 5 percent flagstones.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 to 6 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is very channery clay loam, extremely channery sandy clay loam, or extremely flaggy loam and averages 20 to 30 percent clay. It is 35 to 50 percent channers, 10 to 30 percent flagstones, and 0 to 5 percent stones.

Carpenterville Series

The Carpenterville series consists of moderately deep, somewhat poorly drained soils in open grassland areas on broad summits and side slopes of hills and mountains. These soils formed in colluvium and residuum derived from highly sheared and deeply weathered metasedimentary rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Carpenterville gravelly silty clay loam in an area of Houstenader-Carpenterville-Huntley complex, 0 to 30 percent slopes; in an area of pasture; about 2,500 feet south and 2,500 feet east of the northwest corner of sec. 13, T. 39 S., R. 14 W.

A—0 to 6 inches; very dark gray (10YR 3/1) gravelly silty clay loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine discontinuous tubular pores; 15 percent gravel, 5 percent cobbles, and 20 percent soft rock fragments; moderately acid (pH 5.6); clear smooth boundary.

Bt1—6 to 17 inches; very dark grayish brown (10YR 3/2) very cobbly silty clay, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common medium and coarse roots; common fine and very fine discontinuous tubular pores; many distinct clay films on faces of peds and in pores; 15 percent gravel, 20 percent cobbles, and 25 percent soft rock fragments; strongly acid (pH 5.4); gradual wavy boundary.

Bt2—17 to 32 inches; dark grayish brown (10YR 4/2) very cobbly clay, grayish brown (10YR 5/2) dry; moderate medium and coarse prismatic structure; very hard, very firm, very sticky and very plastic; few fine roots; common fine and very fine discontinuous tubular pores; many prominent clay films on faces of peds and in pores; many fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation; 30 percent cobbles, 25 percent gravel, and 35 percent soft rock fragments; strongly acid (pH 5.2); abrupt wavy boundary.

R—32 inches; highly fractured, partially weathered shale.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The mollic epipedon is 10 to 20 inches thick, and it may include the upper part of the Bt horizon. The profile has hue of 10YR or 2.5Y. Depth to redoximorphic concentrations is 15 to 20 inches.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of as high as 2 moist or dry. It is gravelly silty clay loam and averages 27 to 35 percent clay. It is 10 to 20 percent gravel, 0 to 5 percent cobbles, and 15 to 25 percent soft rock fragments. It is slightly acid or moderately acid.

The Bt horizon has value of 3 to 5 moist and 4 to 6 dry, and it has chroma of as high as 2 moist or dry. Common or many, fine, distinct or prominent redoximorphic concentrations are in the lower part of the horizon. The Bt horizon is very cobbly silty clay, very cobbly clay, or extremely cobbly silty clay and averages 40 to 60 percent clay. It is 15 to 30 percent gravel, 20 to 50 percent cobbles, and 30 to 40 percent soft rock fragments. It is slightly acid to strongly acid.

Cashner Series

The Cashner series consists of soils that are moderately deep to an ortstein layer and are poorly drained. These soils are in concave areas and narrow drainageways on broad summits of deeply dissected high marine terraces (fig. 21). They formed in medium textured eolian material overlying stratified marine sediment. Slopes are 0 to 7 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Cashner loam in an area of Burnthill-Cashner complex, 0 to 15 percent slopes; in an area of woodland; about 500 feet south and 1,200 feet east of the northwest corner of sec. 25, T. 32 S., R. 15 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

E1—0 to 8 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; moderate fine subangular blocky structure; hard, friable, nonsticky and nonplastic; many very fine, fine, and medium roots and common coarse roots; many very fine and fine tubular pores; extremely acid (pH 4.2); abrupt smooth boundary.

E2—8 to 12 inches; dark gray (10YR 4/1) loam, light gray (10YR 7/1) dry; moderate medium angular blocky structure; hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; many very fine and fine tubular pores; extremely acid (pH 4.4); abrupt smooth boundary.

Bhs—12 to 21 inches; black (10YR 2/1) fine sandy loam, brown (7.5YR 5/2) dry; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine and common medium roots; many very fine and fine tubular pores; 10 percent ortstein fragments 2 to 10 millimeters in diameter; common medium distinct dark brown (7.5YR 4/4) masses of iron accumulation and gray (10YR 5/1) iron depletions; very strongly acid (pH 4.6); abrupt wavy boundary.

2Bsm1—21 to 31 inches; variegated, dark brown (7.5YR 4/4) and reddish brown (5YR 4/4) strongly cemented rinds of sandy material 5 to 15 millimeters thick with pockets of brownish yellow (10YR 6/6) sandy clay loam, strong brown (7.5YR 5/6) and yellowish red (5YR 5/6) dry; massive; very hard, very firm, slightly sticky and slightly plastic; few fine roots along fractures and on top of the cemented bands; many very fine and fine tubular pores; common medium prominent pale brown (10YR 6/3) masses of iron accumulation; very strongly acid (pH 4.6); abrupt smooth boundary.

2Bsm2—31 to 44 inches; variegated, strong brown (7.5YR 4/6) and reddish brown (5YR 4/4) strongly cemented rinds of sandy material 2 to 5 millimeters thick with pockets of sandy clay loam, reddish yellow (7.5YR 6/6) dry; massive; very hard, very firm, slightly sticky and slightly plastic; common fine tubular pores; very strongly acid (pH 4.6); abrupt smooth boundary.

2C—44 to 60 inches; variegated, strong brown (7.5YR 4/6) and brown (7.5YR 4/4) sandy loam, reddish yellow (7.5YR 6/6) dry; massive; soft, friable, nonsticky and nonplastic; few fine irregular pores; very strongly acid (pH 4.6).

Depth to the cemented 2Bsm horizon is 20 to 30 inches. The profile is very strongly acid or extremely acid throughout.

The E horizon has value of 3 to 5 moist and 5 to 7 dry, and it has chroma of 1 or 2 moist or dry. It is loam and averages 10 to 20 percent clay. It is 0 to 10 percent gravel.

The Bhs horizon has hue of 10YR or 7.5YR, value of 2 moist and 4 or 5 dry, and chroma of 1 or 2 moist or dry. Few to common, distinct or prominent redoximorphic concentrations and depletions are throughout the horizon. The horizon is loam, very fine sandy loam, or fine sandy loam and averages 5 to 15 percent clay. It is 0 to 10 percent ortstein fragments. Typically, the horizon has an accumulation of organic matter and a high content of fibrous roots.

The 2Bsm horizon has hue of 10YR or 7.5YR in the soft matrix pockets and 5YR or 7.5YR in the ortstein layer, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. Few to common, distinct or prominent redoximorphic concentrations are in the upper part of the horizon. The horizon is strongly cemented. It is sandy clay loam, loam, or sandy loam and averages 15 to 25 percent clay. It is 0 to 30 percent reddish brown iron-cemented nodules 2 to 5 millimeters in diameter.

The 2C horizon has hue of 10YR or 7.5YR, value of 4 to 7 moist and 6 to 8 dry, and chroma of 4 to 8 moist or dry. It is variegated, stratified loamy fine sand, loamy sand, or sandy loam and averages 0 to 10 percent clay. Thin, intermittent lenses that are weakly cemented with iron or aluminum are at a depth of 10 feet or more.

Cassiday Series

The Cassiday series consists of moderately deep, well drained soils on summits and side slopes of mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Cassiday very gravelly loam in an area of Fritsland-Bravo-Cassiday complex, 30 to 60 percent south slopes; in an area of woodland; about 660 feet north and 2,640 feet east of the southwest corner of sec. 13, T. 39 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 3 inches; dark brown (7.5YR 3/2) very gravelly loam, grayish brown (10YR 5/2) dry; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 50 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

A2—3 to 8 inches; dark brown (7.5YR 3/2) very gravelly loam, brown (10YR 5/3) dry; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine irregular pores; 35 percent gravel and 5 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

Bw1—8 to 17 inches; dark brown (7.5YR 4/2) very gravelly clay loam, pale brown (10YR 6/3) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 40 percent gravel and 10 percent cobbles; very strongly acid (pH 4.6); clear wavy boundary.

Bw2—17 to 26 inches; brown (7.5YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; 45 percent gravel and 5 percent cobbles; very strongly acid (pH 4.6); clear wavy boundary.

BC—26 to 37 inches; brown (7.5YR 4/4) extremely gravelly clay loam, light yellowish brown (10YR 6/4) dry; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; 45 percent gravel and 15 percent cobbles; very strongly acid (pH 4.6); gradual wavy boundary.

R—37 inches; metasedimentary rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam, gravelly loam, or very stony loam and averages 15 to 25 percent clay. It is 15 to 45 percent gravel, 0 to 10 percent cobbles, and 0 to 20 percent stones.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam, very gravelly clay loam, or extremely gravelly clay loam and averages 18 to 35 percent clay. It is 30 to 55 percent gravel and 5 to 15 percent cobbles.

The BC horizon has value and chroma similar to those of the Bw horizon. The BC horizon is extremely gravelly loam or extremely gravelly clay loam and averages 18 to 35 percent clay. It is 40 to 60 percent gravel and 5 to 20 percent cobbles.

Cedarcamp Series

The Cedarcamp series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or serpentinitic meta-igneous rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 145

inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Cedarcamp very gravelly loam in an area of Cedarcamp-Snowcamp-Flycatcher complex, 30 to 60 percent south slopes; in an area of woodland; about 330 feet north and 330 feet east of the southwest corner of sec. 28, T. 37$^1/_2$ S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; few fine tubular pores; 30 percent gravel and 10 percent cobbles; slightly acid (pH 6.5); clear smooth boundary.

BA—6 to 18 inches; dark yellowish brown (10YR 4/4) very cobbly clay loam, pale brown (10YR 6/3) dry; weak very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; few fine tubular pores; 20 percent gravel, 20 percent cobbles, and 5 percent stones; slightly acid (pH 6.5); clear wavy boundary.

Bw—18 to 29 inches; dark yellowish brown (10YR 4/4) very cobbly clay loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; few fine tubular pores; 20 percent gravel, 20 percent cobbles, and 10 percent stones; neutral (pH 6.7); clear wavy boundary.

BC—29 to 39 inches; olive brown (2.5Y 4/4) extremely cobbly loam, light yellowish brown (2.5Y 6/4) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and few medium and coarse roots; few fine tubular pores; 25 percent gravel, 30 percent cobbles, and 10 percent stones; neutral (pH 6.7); clear wavy boundary.

C1—39 to 50 inches; dark grayish brown (2.5Y 4/2) extremely cobbly clay loam, light brownish gray (2.5Y 6/2) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and few medium and coarse roots; few fine tubular pores; 30 percent gravel, 30 percent cobbles, and 10 percent stones; neutral (pH 6.7); gradual wavy boundary.

C2—50 to 65 inches; dark grayish brown (2.5Y 4/2) extremely cobbly clay loam, light gray (2.5Y 7/2) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few fine tubular pores; 35 percent gravel, 30 percent cobbles, and 10 percent stones; neutral (pH 6.8).

Depth to bedrock is more than 60 inches. The horizon is slightly acid or neutral throughout.

The A horizon has hue of 5YR, 7.5YR, or 10YR, value of 4 or 5 moist and 5 or 6 dry, and chroma of 3 or 4 moist or dry. The fine-earth fraction is loam and averages 15 to 25 percent clay. The horizon is 0 to 20 percent boulders, 0 to 15 percent stones, 5 to 15 percent cobbles, and 10 to 40 percent gravel.

The Bw horizon has hue of 5YR, 7.5YR, or 10YR, value of 4 or 5 moist and 5 or 6 dry, and chroma of 3 to 6 moist or dry. The fine-earth fraction is clay loam or loam and averages 20 to 35 percent clay. The horizon is 0 to 15 percent boulders, 0 to 25 percent stones,
10 to 30 percent cobbles, and 5 to 30 percent gravel.

The BC horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. The fine-earth fraction is clay loam or loam and averages 20 to 35 percent clay. The horizon is 0 to 15 percent boulders, 0 to 25 percent stones, 10 to 35 percent cobbles, and 5 to 25 percent gravel.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 2 to 6 moist or dry. The fine-earth fraction is clay loam or loam and averages 20 to 35 percent clay. The horizon is 0 to 25 percent boulders, 0 to 25 percent stones, 10 to 30 percent cobbles, and 10 to 40 percent gravel.

Central Point Series

The Central Point series consists of very deep, well drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Central Point sandy loam, 0 to 3 percent slopes, in an area of pasture; about 450 feet south and 1,300 feet east of the northwest corner of sec. 18, T. 35 S., R. 11 W.

A1—0 to 8 inches; very dark brown (10YR 2/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; hard, friable, nonsticky and slightly plastic; many very fine and fine roots and common medium roots; common very fine and fine tubular pores; 5 percent gravel; moderately acid (pH 5.8); clear smooth boundary.

A2—8 to 21 inches; very dark grayish brown (10YR 3/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; hard, friable, nonsticky and slightly plastic; many very fine and fine roots and common medium roots; common very fine and fine tubular pores; 5 percent gravel; moderately acid (pH 6.0); clear smooth boundary.

Bw1—21 to 34 inches; dark brown (10YR 3/3) sandy loam, brown (10YR 4/3) dry; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; common very fine and fine tubular pores; 5 percent gravel; slightly acid (pH 6.2); gradual wavy boundary.

Bw2—34 to 43 inches; dark brown (10YR 3/3) sandy loam, brown (10YR 4/3) dry; weak medium and coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine and fine tubular pores; 5 percent gravel; slightly acid (pH 6.4); gradual wavy boundary.

C1—43 to 55 inches; dark brown (10YR 3/3) gravelly sandy loam, brown (10YR 5/3) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few fine tubular pores; 20 percent gravel; neutral (pH 6.6); gradual smooth boundary.

C2—55 to 72 inches; dark brown (10YR 4/3) gravelly sandy loam, pale brown (10YR 6/3) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 30 percent gravel; neutral (pH 6.6).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick. It is slightly acid or moderately acid. The mollic epipedon is more than 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 to 3 moist or dry. It is sandy loam and averages 12 to 18 percent clay. It is 0 to 10 percent gravel.

The Bw horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is sandy loam and averages 12 to 18 percent clay. It is 0 to 10 percent gravel.

The C horizon has value of 3 to 5 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist or dry. It is gravelly sandy loam or gravelly loamy sand and averages 8 to 13 percent clay. It is 15 to 30 percent gravel.

Chetco Series

The Chetco series consists of very deep, very poorly drained soils on flood plains. These soils formed in silty alluvium over marine clay. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Chetco silt loam, 0 to 3 percent slopes, in an area of grass-legume pasture; about 2,100 feet north and 2,600 feet west of southeast corner of sec. 34, T. 30 S., R. 15 W.

Ap—0 to 8 inches; black (10YR 2/1) silt loam, gray (10YR 5/1) dry; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine irregular pores; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid (pH 5.4); abrupt smooth boundary.

BA—8 to 12 inches; black (10YR 2/1) and dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) and gray (10YR 5/1) dry; few fine and medium black stains; moderate medium prismatic structure; hard, friable, sticky and plastic; many very fine roots; many very fine tubular pores; common fine distinct masses of iron accumulation; strongly acid (pH 5.5); clear smooth boundary.

Bw1—12 to 22 inches; very dark gray (5Y 3/1) silty clay, gray (5Y 6/1 and 5/1) dry; strong coarse prismatic structure; very hard, firm, very sticky and very plastic; many fine roots along prism faces; many fine tubular pores; few faint clay films in pores; few fine black manganese concretions 2 to 5 millimeters in diameter; many fine and medium distinct masses of iron accumulation; moderately acid (pH 6.0); clear smooth boundary.

Bw2—22 to 31 inches; dark gray (5Y 4/1) silty clay loam, gray (5Y 6/1) dry; moderate very coarse prismatic structure; very hard, firm, sticky and plastic; many fine roots along prism faces; many very fine tubular pores; few fine black manganese concretions 2 to 5 millimeters in diameter; many fine and medium distinct masses of iron accumulation; slightly acid (pH 6.3); clear smooth boundary.

C1—31 to 54 inches; gray (5Y 5/1) sandy clay, gray (5Y 6/1) dry; massive; hard, firm, sticky and very plastic; few fine roots; many very fine tubular pores; many fine and medium distinct masses of iron accumulation; slightly acid (pH 6.4); clear wavy boundary.

2C2—54 to 60 inches; olive gray (5Y 5/2) clay, light olive gray (5Y 6/2) dry; massive; hard, firm, very sticky and very plastic; many very fine tubular pores; many fine, medium, and coarse distinct masses of iron accumulation; slightly acid (pH 6.4).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 24 inches thick. The A and Bw horizons have few to many, faint to prominent redoximorphic features. The C horizon does not have redoximorphic features, or it has few or many, faint or distinct redoximorphic features.

The Ap horizon and the A horizon, where present, have hue of 10YR or 2.5Y, value of 2 or 3 moist and 4 or 5 dry, and chroma of 1 or 2 moist or dry. They are silt loam and average 20 to 27 percent clay. They are slightly acid to strongly acid.

The Bw horizon has hue of 10YR to 5Y, value of 2 to 4 moist and 5 or 6 dry, and chroma of 1 or less moist or dry. The upper part is silty clay loam, and the lower part is silty clay or silty clay loam. The horizon averages 27 to 50 percent clay. It is slightly acid or moderately acid.

The C and 2C horizons have hue of 10YR to 5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 1 or 2 moist or dry. They are clay loam, sandy clay, or clay and average 35 to 50 percent clay. Thin lenses of sandier material are below a depth of 40 inches in some pedons.

Chismore Series

The Chismore series consists of very deep, moderately well drained soils on high stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 12 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Chismore silt loam in an area of Chismore-Pyburn complex, 3 to 12 percent slopes; in an area of woodland pasture; about 950 feet south and 1,700 feet east of the northwest corner of sec. 11, T. 32 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many fine tubular pores; strongly acid (pH 5.4); clear smooth boundary.

BA—9 to 15 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many fine tubular pores; very strongly acid (pH 5.0); clear wavy boundary.

Bt1—15 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and few medium roots; common fine tubular pores; common fine faint dark yellowish brown (10YR 4/6) masses of iron accumulation; common distinct clay films on faces of peds and in pores; very strongly acid (pH 4.8); gradual smooth boundary.

Bt2—23 to 31 inches; yellowish brown (10YR 5/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common fine and few medium roots; common fine tubular pores; common fine distinct grayish brown (10YR 5/2) iron depletions and many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common distinct clay films on faces of peds and in pores; very strongly acid (pH 4.6); clear smooth boundary.

BC—31 to 47 inches; yellowish brown (10YR 5/4) silty clay loam, brownish yellow (10YR 6/6) dry; weak coarse subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation and many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid (pH 4.6); gradual wavy boundary.

C—47 to 60 inches; yellowish brown (10YR 5/4) silty clay loam, brownish yellow (10YR 6/6) dry; massive; hard, firm, sticky and plastic; many coarse distinct brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid (pH 4.6).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches. The profile is strongly acid or very strongly acid throughout.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 18 to 25 percent clay.

The Bt horizon has value of 3 to 5 moist and 4 to 6 dry, and it has chroma of 3 to 6 moist or dry. The upper 10 inches of the argillic horizon has redoximorphic depletions that have value of 4 or more moist and chroma of 2 or less, has redoximorphic concentrations, and is aquic for a period of time in most years. The Bt horizon is silty clay loam or silty clay and averages 35 to 45 percent clay.

The BC and C horizons have color similar to that of the Bt horizon. The BC and C horizons are silty clay loam or silty clay and average 35 to 45 percent clay.

Chitwood Series

The Chitwood series consists of very deep, somewhat poorly drained soils on terraces. These soils formed in clayey alluvial deposits derived from mixed sources. Slopes are 0 to 7 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Chitwood silt loam, 0 to 7 percent slopes, in an area of pasture; about 2,500 feet north and 2,500 feet east of southwest corner of sec. 24, T. 36 S., R. 15 W.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and fine tubular pores; strongly acid (pH 5.2); clear smooth boundary.

BA—8 to 15 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and fine tubular pores; very strongly acid (pH 5.0); clear smooth boundary.

Bw1—15 to 24 inches; yellowish brown (10YR 5/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common very fine tubular pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation; very strongly acid (pH 5.0); clear smooth boundary.

Bw2—24 to 35 inches; light yellowish brown (10YR 6/4) silty clay, very pale brown (10YR 7/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common very fine tubular pores; many fine distinct yellowish brown (10YR 5/8) masses of iron accumulation, few fine distinct strong brown (7.5YR 5/8) masses of iron accumulation, and common fine distinct dark grayish brown (10YR 4/2) iron depletions; very strongly acid (pH 5.0); gradual smooth boundary.

BC—35 to 60 inches; light yellowish brown (10YR 6/4) silty clay, very pale brown (10YR 7/4) dry; weak medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common very fine tubular pores; common coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation and many medium distinct dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/8) masses of iron accumulation; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. Redoximorphic depletions that have chroma of 2 or less are within 30 inches of the surface. The profile is strongly acid or very strongly acid throughout.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 20 to 27 percent clay.

The Bw horizon has value of 5 or 6 moist and 6 or 7 dry, and it has chroma of 4 moist or dry. It is silty clay loam or silty clay and averages 35 to 45 percent clay. It has redoximorphic features that have value of 4 or 5 moist and chroma of 2 to 8 moist.

The BC horizon has color, texture, and redoximorphic features similar to those of the Bw horizon.

Clawson Series

The Clawson series consists of very deep, poorly drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Clawson sandy loam, 0 to 3 percent slopes, in an area of pasture; about 3,700 feet north and 450 feet west of the southeast corner of sec. 18, T. 34 S., R. 11 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine tubular pores; common fine faint dark brown (10YR 4/4) masses of iron accumulation; slightly acid (pH 6.2); clear smooth boundary.

BA—5 to 14 inches; dark grayish brown (10YR 4/2) sandy loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine tubular pores; common fine faint dark brown (10YR 4/4) masses of iron accumulation; 5 percent gravel; slightly acid (pH 6.2); clear smooth boundary.

Bw—14 to 24 inches; grayish brown (10YR 5/2) sandy loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure;

slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; common medium distinct dark brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation; 5 percent gravel; slightly acid (pH 6.4); abrupt wavy boundary.

C1—24 to 49 inches; brown (10YR 5/3) coarse sandy loam, light yellowish brown (10YR 6/4) dry; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; 5 percent gravel; neutral (pH 6.6); gradual wavy boundary.

C2—49 to 64 inches; light yellowish brown (10YR 6/4) coarse sandy loam, very pale brown (10YR 7/4) dry; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; common medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation; 5 percent gravel; neutral (pH 6.6).

Depth to bedrock is more than 60 inches. The profile is slightly acid or neutral throughout. It has hue of 10YR or 2.5Y.

The A horizon has value of 2 to 4 moist and 5 or 6 dry, and it has chroma of as high as 2 moist or dry. It is sandy loam and averages 8 to 18 percent clay.

The BA horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of as high as 2 moist and 2 to 4 dry. Faint to distinct masses of iron accumulation are throughout the horizon. The horizon is sandy loam and averages 8 to 18 percent clay. It is 0 to 5 percent gravel.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of as high as 2 moist and 2 to 4 dry. Distinct or prominent masses of iron accumulation are throughout the horizon. The horizon is sandy loam or coarse sandy loam and averages 8 to 18 percent clay. It is 0 to 5 percent gravel.

The C horizon has value of 5 or 6 moist and 6 to 8 dry, and it has chroma of 2 to 4 moist or dry. Faint to prominent masses of iron accumulation are throughout the horizon. The upper part of the horizon is coarse sandy loam or sandy loam that is similar to that of the Bw horizon. The lower part is stratified coarse sandy loam, loamy coarse sand, or loam and averages 8 to 18 percent clay. The C horizon is 0 to 5 percent gravel.

Colepoint Series

The Colepoint series consists of deep, well drained soils on broad summits, benches, and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Colepoint loam in an area of Crutchfield-Colepoint complex, 30 to 60 percent north slopes; in an area of woodland; about 175 feet north and 200 feet west of the southeast corner of sec. 13, T. 39 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 6 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine irregular pores; 10 percent gravel; very strongly acid (pH 4.8); abrupt smooth boundary.

A2—6 to 12 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; 15 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

A3—12 to 18 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; 15 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

Bw1—18 to 26 inches; dark yellowish brown (10YR 3/4) gravelly loam, light brown (7.5YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; 20 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

Bw2—26 to 37 inches; dark yellowish brown (10YR 3/4) gravelly clay loam, light brown (7.5YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, firm, sticky and plastic; common very fine and fine roots; many very fine and fine tubular pores; 20 percent gravel; strongly acid (pH 5.3); clear smooth boundary.

Bw3—37 to 47 inches; dark yellowish brown (10YR 3/4) gravelly clay loam, light brown (7.5YR 6/4) dry; weak very fine subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; many very fine and fine tubular pores; 30 percent gravel; strongly acid (pH 5.3); abrupt wavy boundary.

R—47 inches; metasedimentary rock.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The profile is strongly acid or very strongly acid throughout. The umbric epipedon is 14 to 20 inches thick, and it may include the upper part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. The A1 horizon is loam and averages 15 to 20 percent clay. It is 0 to 10 percent gravel. The A2 and A3 horizons are gravelly loam and average 15 to 25 percent clay. They are 15 to 25 percent gravel.

The Bw horizon has hue of 10YR, 7.5YR, or 2.5Y, value of 3 or 4 moist and 5 to 7 dry, and chroma of 3 or 4 moist or dry. It is gravelly loam or gravelly clay loam and averages 25 to 35 percent clay. It is 20 to 35 percent gravel.

Colestine Series

The Colestine series consists of moderately deep, well drained soils on south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Colestine gravelly loam in an area of Beekman-Colestine-Orthents complex, 30 to 60 percent south slopes; in an area of woodland; about 800 feet north and 2,400 feet east of the southwest corner of sec. 7, T. 33 S., R. 9 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine tubular pores; 30 percent gravel; moderately acid (pH 5.6); abrupt smooth boundary.

Bw1—5 to 19 inches; light olive brown (2.5Y 5/3) gravelly loam, light yellowish brown (2.5Y 6/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; common fine tubular pores; 25 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); gradual wavy boundary.

Bw2—19 to 34 inches; light olive brown (2.5Y 5/3) gravelly clay loam, pale yellow (2.5Y 7/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 20 percent coatings of clean sand and silt on faces of peds; 25 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); abrupt wavy boundary.

R—34 inches; highly fractured metasedimentary rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is moderately acid to neutral.

The A horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 to 4 moist and 3 or 4 dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 30 percent gravel.

The Bw horizon has hue of 2.5Y, 10YR, or 7.5YR, value of 4 or 5 moist and 5 to 7 dry, and chroma of 3 to 6 moist or dry. It is gravelly clay loam or gravelly loam and averages 22 to 30 percent clay with more than 15 percent material that is coarser than very fine sand. The Bw horizon is 15 to 30 percent gravel and 0 to 5 percent cobbles. In most pedons, the lower part of the horizon has few to common coatings of clean sand and silt on faces of peds.

Cornutt Series

The Cornutt series consists of deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 20 to 60 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Cornutt cobbly clay loam in an area of Dubakella-Cornutt-Pearsoll complex, 20 to 60 percent south slopes; in an area of woodland; about 500 feet south and 1,700 feet west of the northeast corner of sec. 29, T. 35 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark brown (7.5YR 3/3) cobbly clay loam, brown (7.5YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 10 percent gravel and 15 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

BA—4 to 11 inches; dark reddish brown (5YR 3/4) cobbly clay loam, light reddish brown (5YR 6/4) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 15 percent gravel and 10 percent cobbles; slightly acid (pH 6.2); abrupt smooth boundary.

2Bt1—11 to 16 inches; reddish brown (5YR 4/4) gravelly clay, light reddish brown (5YR 6/4) dry; moderate fine and medium subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine and medium roots and few coarse roots; common fine tubular pores; few distinct clay films on faces of peds and common distinct clay films in pores; 20 percent gravel and 10 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

2Bt2—16 to 27 inches; yellowish red (5YR 4/6) gravelly clay, reddish yellow (5YR 6/6) dry; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine and medium roots and few coarse roots; common fine tubular pores; common distinct clay films on faces of peds and many distinct clay films in pores; 20 percent gravel and 10 percent cobbles; slightly acid (pH 6.4); gradual wavy boundary.

2Bt3—27 to 52 inches; yellowish red (5YR 4/6) cobbly clay, reddish yellow (5YR 6/6) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; 10 percent gravel and 15 percent cobbles; slightly acid (pH 6.4); abrupt smooth boundary.

2Cr—52 inches; weathered, partially serpentinized metasedimentary rock.

Depth to bedrock and thickness of the solum are 40 to 60 inches.

The A horizon has hue of 5YR or 7.5YR, value of 2 or 3 moist and 4 to 6 dry, and chroma of 3 or 4 moist and 4 to 6 dry. It is cobbly clay loam and averages 27 to 35 percent clay. It is 5 to 10 percent gravel and 10 to 20 percent cobbles. The horizon is slightly acid or moderately acid.

The 2Bt horizon has hue of 5YR or 2.5YR, value of 3 or 4 moist and 4 to 6 dry, and chroma of 4 to 6 moist or dry. It is gravelly clay, cobbly clay, or clay and averages 40 to 55 percent clay. It is 10 to 20 percent gravel and 0 to 15 percent cobbles.

Cove Series

The Cove series consists of very deep, poorly drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Cove silty clay loam in an area of Foehlin-Cove complex, 0 to 3 percent slopes; in an area of pasture; about 330 feet south and 660 feet east of the northwest corner of sec. 29, T. 35 S., R. 11 W.

A—0 to 8 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and fine roots; many very fine and fine tubular pores; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation; moderately acid (pH 5.8); abrupt smooth boundary.

Bg1—8 to 18 inches; very dark gray (2.5Y 3/1) silty clay, dark gray (N 4/0) dry; moderate medium prismatic structure; hard, firm, sticky and plastic; common very fine and fine roots; many very fine and fine tubular pores; many fine distinct yellowish brown (10YR 5/4) masses of iron accumulation; slightly acid (pH 6.2); gradual smooth boundary.

Bg2—18 to 44 inches; very dark gray (N 3/0) silty clay, dark gray (N 4/0) dry; moderate medium and coarse prismatic structure; very hard, very firm, very sticky and very plastic; few fine roots; common very fine tubular pores; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; few prominent nonintersecting slickensides; slightly acid (pH 6.4); gradual wavy boundary.

Cg—44 to 60 inches; dark grayish brown (2.5Y 4/2) silty clay, gray (N 5/0) dry; massive; very hard, extremely firm, very sticky and very plastic; common very fine tubular pores; many medium and coarse distinct yellowish brown (10YR 5/4) masses of iron accumulation and many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid (pH 6.4).

Depth to bedrock is more than 60 inches. The solum is 30 to 45 inches thick. Distinct or prominent masses of iron accumulation are throughout the profile. In summer the soil cracks at a depth of less than 20 inches, typically between depths of 7 and 20 inches, which is below the A horizon.

The A horizon has hue of 10YR or 2.5Y, value of 2 or 3 moist and 3 to 5 dry, and chroma of 1 or less moist or dry. It is silty clay loam and averages 30 to 40 percent clay. The horizon is slightly acid or moderately acid.

The Bg horizon has hue of 2.5Y or 5Y, value of 2 to 4 moist and 4 or 5 dry, and chroma of as high as 2 moist or dry. It is silty clay or clay and averages

50 to 60 percent clay. The horizon has few to common slickensides. It is slightly acid or neutral.

The Cg horizon, where present, has color and texture similar to those of the Bg horizon.

Crofland Series

The Crofland series consists of very deep, somewhat poorly drained soils on marine terraces. These soils formed in marine sediment. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Crofland silty clay loam, 0 to 3 percent slopes, in an area of cropland; about 1,200 feet south and 530 feet west of the northeast corner of sec. 16, T. 41 S., R. 13 W.

Ap—0 to 6 inches; silty clay loam that is very dark gray (10YR 3/1) crushed, dark grayish brown (10YR 4/2) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many fine tubular pores; black (10YR 2/1) organic coatings on faces of peds; very strongly acid (pH 4.8); clear smooth boundary.

A—6 to 14 inches; silty clay loam that is very dark grayish brown (10YR 3/2) crushed, grayish brown (10YR 4/2) dry; moderate fine prismatic structure parting to moderate medium subangular blocky; very hard, firm, sticky and plastic; common fine roots; many fine continuous tubular pores; few very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; very strongly acid (pH 4.8); clear wavy boundary.

Bt1—14 to 22 inches; dark grayish brown (10YR 4/2) silty clay, grayish brown (10YR 5/2) dry; moderate fine prismatic structure parting to moderate fine and medium subangular blocky; very hard, firm, sticky and plastic; few fine roots; many fine continuous tubular pores; few distinct clay films on faces of peds and in pores; very strongly acid (pH 4.6); gradual wavy boundary.

Bt2—22 to 32 inches; dark grayish brown (10YR 4/2) silty clay, light brownish gray (10YR 6/2) dry; moderate medium prismatic structure parting to moderate fine subangular blocky; very hard, firm, sticky and plastic; few fine roots; many fine continuous tubular pores; few distinct clay films on faces of peds and in pores; many fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid (pH 4.6); gradual wavy boundary.

Bt3—32 to 46 inches; dark grayish brown (2.5Y 4/2) silty clay, light gray (10YR 7/2) dry; weak fine subangular blocky structure; very hard, firm, sticky and plastic; many fine continuous tubular pores; common distinct clay films on faces of peds and in pores; many fine prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4) masses of iron accumulation; 5 percent gravel; very strongly acid (pH 4.6); gradual wavy boundary.

2C—46 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam, light gray (10YR 7/2) dry; massive; very hard, firm, sticky and plastic; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; 10 percent gravel; strongly acid (pH 5.2).

Depth to the 2C horizon is 35 to 60 inches or more. Redoximorphic depletions that have chroma of 2 or less and redoximorphic concentrations that are distinct or prominent are within a depth of 20 to 30 inches and within the upper 10 inches of the argillic horizon. The umbric epipedon is 10 to 18 inches thick.

The Ap and A horizons have value of 2 or 3 moist and 4 or 5 dry, and they have chroma of 1 or 2 moist or dry. They are silty clay loam and average 27 to 35 percent clay.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 2 or 3 moist or dry. It is silty clay loam or silty clay and averages 35 to 50 percent clay. It is 0 to 15 percent gravel.

The 2C horizon has hue of 10YR or 2.5Y. It is massive to strongly consolidated in places. The horizon is silty clay loam or gravelly silty clay loam and averages 30 to 35 percent clay. It is 10 to 35 percent gravel. It is strongly acid or very strongly acid.

Crutchfield Series

The Crutchfield series consists of moderately deep, well drained soils on broad summits, benches, and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Crutchfield loam in an area of Crutchfield-Colepoint complex, 15 to 30 percent slopes; in an area of woodland; about 1,800 feet south and 1,650 feet west of the northeast corner of sec. 23, T. 39 S., R. 14 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 10 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

A2—5 to 10 inches; very dark grayish brown (10YR 3/2) clay loam, dark grayish brown (10YR 4/2) dry; strong medium granular structure; hard, firm, sticky and plastic; many very fine and fine roots; many very fine irregular pores; 10 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

A3—10 to 16 inches; dark brown (10YR 3/3) clay loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many very fine tubular pores; 10 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

Bw1—16 to 23 inches; brown (10YR 4/3) gravelly clay loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots; many fine tubular pores; 15 percent gravel; strongly acid (pH 5.5); clear smooth boundary.

Bw2—23 to 33 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots; many very fine tubular pores; 20 percent gravel and 5 percent cobbles; strongly acid (pH 5.3); clear smooth boundary.

Bw3—33 to 38 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, light yellowish brown (10YR 6/4) dry; weak very fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; many very fine tubular pores; 20 percent gravel and 10 percent cobbles; strongly acid (pH 5.3); clear smooth boundary.

R—38 inches; metasedimentary rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is strongly acid or very strongly acid throughout. The umbric epipedon is 10 to 20 inches thick, and it may include the upper part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. The A1 horizon is loam and averages 15 to 20 percent clay. It is 0 to 10 percent gravel. The A2 and A3 horizons are loam, clay loam, or gravelly loam and average 20 to 30 percent clay. They are 10 to 25 percent gravel.

The Bw horizon has hue of 10YR, 7.5YR, or 2.5Y, value of 3 or 4 moist and 5 to 7 dry, and chroma of 3 or 4 moist or dry. It is gravelly clay loam or gravelly loam and averages 25 to 35 percent clay. It is 15 to 25 percent gravel and 0 to 10 percent cobbles.

Cryaquepts

Cryaquepts consists of moderately deep to very deep, very poorly drained or poorly drained soils that are in meadow areas and drainage basins associated with slump benches on mountains. These soils formed in alluvium or medium textured or fine textured colluvium derived from glacial drift, glacial till, or mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Cryaquepts silty clay loam in an area of Aquic Haplohumults-Cryaquepts complex, 0 to 15 percent slopes; in a meadow; about 330 feet north and 990 feet west of the southeast corner of sec. 24, T. 37 S., R. 12$^1/_2$ W.

A—0 to 11 inches; black (10YR 2/1) silty clay loam, very dark gray (10YR 3/1) dry; strong medium and coarse subangular blocky structure; hard, friable, slightly sticky and plastic; many very fine and fine roots and few medium roots; few fine tubular pores; common medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; strongly acid (pH 5.2); clear smooth boundary.

C1—11 to 23 inches; black (10YR 2/1) silty clay, very dark gray (10YR 3/1) dry; massive; very hard, very firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; many medium prominent strong brown (7.5YR 4/6) masses of iron accumulation and black (10YR 2/1) iron depletions; slightly acid (pH 6.2); gradual smooth boundary.

C2—23 to 39 inches; very dark brown (10YR 2/2) silty clay, very dark grayish brown (10YR 3/2) dry; massive; very hard, very firm, very sticky and very plastic; few fine and medium roots; few very fine tubular pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and dark gray (10YR 4/1) iron depletions; moderately acid (pH 6.0); gradual wavy boundary.

Cg—39 to 72 inches; black (5Y 2.5/1) silty clay, gray (5Y 5/1) dry; massive; very hard, very firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; common medium prominent very dark grayish brown (10YR 3/2) iron depletions; strongly acid (pH 5.2).

Depth to bedrock is 20 to 80 inches. The profile is slightly acid to strongly acid throughout. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of as high as 2 moist or dry. Common or many, distinct masses of iron accumulation are throughout the horizon. The horizon is silty clay loam and averages 27 to 35 percent clay.

The C horizon has hue of 10YR to 5Y, value of 2 or 3 moist and 3 to 6 dry, and chroma of as high as 2 moist or dry. Many prominent redoximorphic concentrations are throughout the horizon. The horizon is silt loam or loam to silty clay or clay and is 10 to 60 percent clay. It is 0 to 40 percent gravel and 0 to 10 percent cobbles. The lower part of the horizon is gleyed.

Cunniff Series

The Cunniff series consists of very deep, well drained soils on broad summits and side slopes of dissected high marine terraces and remnant high stream terraces. These soils formed in marine sediment or alluvium derived from mixed sources. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Cunniff silty clay loam, 15 to 30 percent slopes, in an area of woodland; about 2,950 feet south and 1,000 feet east of the northwest corner of sec. 33, T. 35 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 6 inches; dark brown (7.5YR 3/2) silty clay loam, brown (10YR 5/2) dry; moderate fine and very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

A2—6 to 12 inches; dark brown (7.5YR 3/3) silty clay loam, brown (7.5YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.2); gradual smooth boundary.

Bt1—12 to 43 inches; dark reddish brown (5YR 3/4) silty clay, reddish yellow (7.5YR 6/6) dry; moderate fine and medium subangular blocky structure; hard, very firm, sticky and plastic; few very fine and fine roots; many very fine tubular pores; common distinct clay films on faces of peds and many distinct clay films in pores; 5 percent gravel; strongly acid (pH 5.1); clear smooth boundary.

Bt2—43 to 65 inches; dark reddish brown (5YR 3/4) silty clay, reddish yellow (7.5YR 6/6) dry; moderate medium subangular blocky structure; hard, very firm, sticky and plastic; few very fine and fine roots; many very fine tubular pores; many distinct clay films on faces of peds and in pores; 5 percent gravel; strongly acid (pH 5.1); gradual smooth boundary.

C—65 to 72 inches; brown (7.5YR 5/4) silty clay loam, reddish yellow (7.5YR 7/6) dry; massive; slightly hard, firm, slightly sticky and slightly plastic; common very fine tubular pores; 5 percent gravel; very strongly acid (pH 4.9).

Depth to bedrock is more than 60 inches. The profile is strongly acid or very strongly acid throughout. The umbric epipedon is 10 to 16 inches thick.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist and 2 to 4 dry. It is silty clay loam and is 27 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 10 percent soft rock fragments. The organic matter content is 5 to 8 percent.

The Bt horizon has hue of 5YR or 7.5YR, value of 3 to 6 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. It is silty clay loam, clay loam, or silty clay and is 35 to 45 percent clay. It is 0 to 10 percent gravel and 0 to 30 percent soft rock fragments. The organic matter content is 2 to 5 percent.

The C horizon has hue of 5YR or 7.5YR, value of 5 or 6 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is gravelly silty clay loam, silty clay loam, or clay loam and is 30 to 40 percent clay. It is 0 to 20 percent gravel and 0 to 30 percent soft rock fragments.

Deadline Series

The Deadline series consists of deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Deadline very channery loam in an area of Deadline-Barkshanty-Nailkeg complex, 30 to 60 percent south slopes; in an area of woodland; about 1,300 feet south and 2,600 feet west of the northeast corner of sec. 24, T. 35 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) very channery loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; common very fine and fine tubular pores; 35 percent channers; very strongly acid (pH 5.0); clear smooth boundary.

Bw1—8 to 19 inches; brown (10YR 4/3) very channery loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; many fine tubular pores; 35 percent channers and 5 percent flagstones; strongly acid (pH 5.2); clear smooth boundary.

Bw2—19 to 33 inches; dark yellowish brown (10YR 4/4) very channery clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common fine tubular pores; 35 percent channers and 5 percent flagstones; strongly acid (pH 5.4); clear smooth boundary.

Bw3—33 to 48 inches; light olive brown (2.5Y 5/4) very channery clay loam, pale yellow (2.5Y 7/4) dry; moderate medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; few fine and medium roots; few fine tubular pores; 40 percent channers and 10 percent flagstones; strongly acid (pH 5.4); clear smooth boundary.

Bw4—48 to 57 inches; light olive brown (2.5Y 5/4) extremely channery loam, pale yellow (2.5Y 7/3) dry; moderate medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; few medium roots; few fine tubular pores; 50 percent channers and 15 percent flagstones; strongly acid (pH 5.5); abrupt wavy boundary.

R—57 inches; schist.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The profile is strongly acid or very strongly acid throughout.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist or dry. It is very channery loam and averages 10 to 25 percent clay. It is 35 to 45 percent channers and 0 to 10 percent flagstones.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 3 to 6 moist or dry. It is very channery loam, extremely channery loam, or very channery clay loam and averages 20 to 30 percent clay. It is 35 to 60 percent channers and 0 to 15 percent flagstones.

Depoe Series

The Depoe series consists of soils that are shallow to an ortstein layer and are poorly drained. These soils are in nearly level or slightly depressional areas on marine terraces. They formed in medium textured eolian material overlying stratified marine sediment. Slopes are 0 to 8 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Depoe loam in an area of Nelscott-Depoe-Bullards complex, 0 to 8 percent slopes; in an area of woodland; about 150 feet north and 1,400 feet west of the southeast corner of sec. 31, T. 31 S., R. 15 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark gray (10YR 4/1) loam, gray (10YR 6/1) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine and medium roots, and few coarse roots; common fine tubular pores; very strongly acid (pH 4.6); clear smooth boundary.

E—3 to 12 inches; grayish brown (10YR 5/2) loam, white (10YR 8/1) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine and medium roots, and few coarse roots; common fine tubular pores; common medium distinct light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) masses of iron accumulation; very strongly acid (pH 4.6); abrupt smooth boundary.

2Bsm1—12 to 15 inches; yellowish red (5YR 5/6) and reddish yellow (5YR 6/8), strongly cemented fine sand with dark red (2.5YR 3/6) and red (2.5YR 4/6) bands, strong brown (7.5YR 5/6 and 5/8) dry; massive; extremely hard, extremely firm, nonsticky and nonplastic; few very fine tubular pores; strongly acid (pH 5.2); abrupt wavy boundary.

2Bsm2—15 to 20 inches; strong brown (7.5YR 5/6 and 5/8), strongly cemented fine sand with dark red (2.5YR 3/6) and red (2.5YR 4/6) bands, brownish yellow (10YR 6/6 and 6/8) dry; massive; extremely hard, extremely firm, nonsticky and nonplastic; few very fine tubular pores; strongly acid (pH 5.2); abrupt wavy boundary.

2BCsm—20 to 44 inches; brownish yellow (10YR 6/6 and 6/8) moderately cemented fine sand with yellowish red (5YR 4/6) irregular bands, very pale brown (10YR 7/4) and yellow (10YR 7/6) dry; massive; hard, firm, nonsticky and nonplastic; few very fine tubular pores; strongly acid (pH 5.4); gradual wavy boundary.

2C—44 to 60 inches; light gray (10YR 7/2) sand with thin strong brown (7.5YR 5/8) bands, white (10YR 8/1) dry; massive; slightly hard, friable, nonsticky and nonplastic; few very fine irregular pores; moderately acid (pH 5.6).

Depth to bedrock is more than 60 inches. Depth to the 2Bsm horizon is 12 to 20 inches.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 1 or 2 moist or dry. It is loam and averages 15 to 25 percent clay. It is strongly acid or very strongly acid.

The E horizon has value of 4 or 5 moist and 6 to 8 dry, and it has chroma of 1 or 2 moist or dry. It is loam, sandy loam, or silt loam and averages 15 to 25 percent clay. It is strongly acid or very strongly acid.

The 2Bsm and 2BCsm horizons are variegated in color. They have hue of 10YR to 2.5YR, value of 5 or 6 moist and 6 or 7 dry, and chroma of 6 to 8 moist or dry. These horizons are loamy sand, fine sand, or sand with moderate or strong cementation. The redder bands are strongly cemented with iron or aluminum.

The 2C horizon is variegated in color. It has hue of 10YR or 2.5Y, value of 6 or 7 moist and 7 or 8 dry, and chroma of 1 or 2 moist or dry. The horizon is loamy fine sand, fine sand, or sand. It is weakly cemented and has intermittent lenses that are cemented with iron or aluminum. The horizon is moderately acid or strongly acid.

Desons Series

The Desons series consists of very deep, well drained soils on broad summits and stable benches of coastal hills and mountains. These soils formed in residuum and colluvium derived from schist or phyllite. Slopes are 0 to 30 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Desons channery clay loam in an area of Desons-Watches-Calfranch complex, 0 to 30 percent slopes; in an area of woodland; about 2,500 feet north and 1,500 feet west of the southeast corner of sec. 35, T. 34 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; reddish brown (5YR 4/4) channery clay loam, yellowish red (5YR 5/6) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine tubular pores; 20 percent channers; strongly acid (pH 5.2); clear smooth boundary.

Bt1—8 to 20 inches; reddish brown (5YR 4/4) channery silty clay, yellowish red (5YR 5/6) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; few faint clay films on faces of peds and common distinct clay films in pores; 20 percent channers; very strongly acid (pH 5.0); diffuse smooth boundary.

Bt2—20 to 36 inches; reddish brown (5YR 4/4) channery silty clay, yellowish red (5YR 5/6) dry; moderate medium subangular blocky structure; hard, firm, sticky and very plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and many prominent clay films in pores; 25 percent channers; strongly acid (pH 5.1); diffuse smooth boundary.

Bt3—36 to 46 inches; reddish brown (5YR 4/4) channery silty clay, yellowish red (5YR 5/6) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and very plastic; many very fine and fine roots and few medium roots; few very fine pores and common fine and medium pores; many distinct clay films on faces of peds and many prominent clay films in pores; 25 percent channers; strongly acid (pH 5.1); diffuse smooth boundary.

Bt4—46 to 60 inches; yellowish red (5YR 4/6) channery silty clay loam, yellowish red (5YR 5/6) dry; weak medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; few very fine, fine, and medium tubular pores; common distinct clay films on faces of peds and in pores; 25 percent channers; strongly acid (pH 5.1); clear irregular boundary.

C—60 to 72 inches; yellowish brown (10YR 5/6) channery silty clay loam, yellow (10YR 7/6) dry; massive; hard, firm, sticky and plastic; few medium roots; few very fine, fine, and medium tubular pores; 30 percent channers; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick. The horizon is strongly acid or very strongly acid throughout.

The A horizon has hue of 5YR or 7.5YR, value of

3 or 4 moist and 4 or 5 dry, and chroma of 4 to 6 moist or dry. It is channery clay loam and averages 27 to 35 percent clay. It is 15 to 25 percent channers and 0 to 5 percent flagstones.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist and 6 to 8 dry. It is channery silty clay, channery clay, or channery silty clay loam and averages 35 to 50 percent clay. It is 15 to 25 percent channers and 0 to 5 percent flagstones.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 6 to 8 moist or dry. It is channery silty clay loam or channery silty clay and averages 35 to 45 percent clay. It is 20 to 30 percent channers and 0 to 10 percent flagstones.

Digger Series

The Digger series consists of moderately deep, well drained soils on summits, benches, and side slopes of mountains. These soils formed in colluvium and residuum derived from sedimentary, metasedimentary, or metavolcanic rock. Slopes are 3 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Digger very gravelly loam in an area of Digger-Umpcoos-Rock outcrop complex, warm, 60 to 90 percent south slopes; in an area of woodland; about 1,400 feet south and 1,000 feet west of the northeast corner of sec. 36, T. 33 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common fine and medium roots; many very fine and fine tubular pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 6.0); clear wavy boundary.

BA—3 to 16 inches; dark brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common very fine and fine tubular pores; 35 percent gravel and 10 percent cobbles; moderately acid (pH 5.8); clear wavy boundary.

Bw1—16 to 23 inches; dark yellowish brown (10YR 4/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine, medium, and coarse roots; few medium tubular pores; 40 percent gravel and 10 percent cobbles; moderately acid (pH 5.8); clear wavy boundary.

Bw2—23 to 31 inches; dark yellowish brown (10YR 4/4) very cobbly loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few medium tubular pores; 30 percent gravel and 20 percent cobbles; moderately acid (pH 5.8); abrupt wavy boundary.

Cr—31 inches; weathered sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 5 or 6 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam, very gravelly loam, or stony loam and averages 15 to 25 percent clay. It is 15 to 40 percent gravel, 0 to 10 percent cobbles, and 10 to 15 percent stones. The horizon is moderately acid or strongly acid.

The BA horizon has hue similar to that of the A horizon, but it has value of 3 or 4 moist and at least 6 dry and chroma of 3 or 4 moist or dry. It is very gravelly loam or gravelly loam and averages 15 to 25 percent clay. It is 30 to 40 percent gravel and 0 to 15 percent cobbles. The horizon is moderately acid or strongly acid.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly loam, very cobbly loam, or very gravelly silt loam and averages 15 to 25 percent clay with more than 15 percent material that is coarser than very fine sand. It is 30 to 40 percent gravel and 5 to 20 percent cobbles. The horizon is moderately acid to very strongly acid.

Dubakella Series

The Dubakella series consists of moderately deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 20 to 60 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Dubakella very cobbly clay loam in an area of Dubakella-Cornutt-Pearsoll complex, 20 to 60 percent south slopes; in an area of woodland;

about 660 feet south and 2,400 feet west of the northeast corner of sec. 29, T. 35 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; dark reddish brown (5YR 3/3) very cobbly clay loam, reddish brown (5YR 4/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 20 percent gravel, 25 percent cobbles, and 5 percent stones; neutral (pH 6.8); clear smooth boundary.

A2—4 to 13 inches; reddish brown (5YR 4/4) very cobbly clay loam, reddish brown (5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 20 percent gravel, 25 percent cobbles, and 5 percent stones; neutral (pH 6.8); clear wavy boundary.

Bt1—13 to 22 inches; reddish brown (5YR 4/4) very cobbly clay, reddish brown (5YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, very sticky and very plastic; common fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and many distinct clay films in pores; 20 percent gravel, 30 percent cobbles, and 5 percent stones; neutral (pH 7.0); gradual wavy boundary.

Bt2—22 to 28 inches; reddish brown (5YR 4/4) very cobbly clay, reddish brown (5YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, very sticky and very plastic; few fine roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel, 25 percent cobbles, and 5 percent stones; neutral (pH 7.2); abrupt wavy boundary.

R—28 inches; fractured serpentinite.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is slightly acid or neutral throughout. It has hue of 5YR or 7.5YR.

The A horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 3 or 4 moist or dry. Value and chroma of 3 moist are only in the upper part of the horizon. The A horizon is very cobbly clay loam and averages 27 to 35 percent clay. It is 15 to 20 percent gravel, 20 to 30 percent cobbles, and 0 to 5 percent stones.

The Bt horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist and 4 to 6 dry. It is very cobbly clay, very gravelly clay loam, or very gravelly clay and averages 35 to 50 percent clay. It is 25 to 30 percent gravel, 10 to 20 percent cobbles, and 0 to 5 percent stones.

Dulandy Series

The Dulandy series consists of moderately deep, well drained soils on summits, benches, and side slopes of coastal hills and mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Dulandy loam in an area of Floras-Bosland-Dulandy complex, 30 to 60 percent south slopes; in an area of woodland; about 330 feet north and 2,310 feet east of the southwest corner of sec. 17, T. 41 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark brown (7.5YR 3/2) loam, dark yellowish brown (10YR 4/4) dry; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine irregular pores; 5 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

AB—3 to 11 inches; dark brown (7.5YR 3/4) loam, yellowish brown (10YR 5/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many fine continuous tubular pores; 10 percent gravel; strongly acid (pH 5.4); gradual wavy boundary.

Bw1—11 to 28 inches; brown (7.5YR 4/4) gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium roots; many fine continuous tubular pores; 25 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); gradual wavy boundary.

Bw2—28 to 37 inches; strong brown (7.5YR 5/6) very gravelly clay loam, reddish yellow (7.5YR 6/6) dry; weak very fine subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium roots; few fine continuous tubular pores; 45 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); gradual wavy boundary.

R—37 inches; sandstone.

Depth to bedrock is 20 to 40 inches. The solum is strongly acid or very strongly acid throughout. The profile has hue of 7.5YR or 10YR.

The A horizon has value of 3 or 4 moist or dry and chroma of 2 or 3 moist and 3 or 4 dry. It is loam or silt loam and averages 15 to 25 percent clay. It is 5 to 15 percent gravel.

The AB horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 4 moist or dry. It is loam or silt loam and averages 15 to 25 percent clay. It is 5 to 15 percent gravel.

The Bw horizon has value of 4 or 5 moist and 6 dry, and it has chroma of 4 to 6 moist or dry. It is gravelly clay loam in the upper part and very gravelly clay loam or very gravelly silty clay loam in the lower part. It averages 27 to 35 percent clay. The Bw horizon is 25 to 50 percent gravel and 5 to 20 percent cobbles.

Dumont Series

The Dumont series consists of very deep, well drained soils on benches, broad summits, and toeslopes of mountains. These soils formed in colluvium and residuum derived from mudstone and metasedimentary rock. Slopes are 15 to 30 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Dumont gravelly loam in an area of Dumont-Acker-Kanid complex, 0 to 30 percent slopes; in an area of woodland; about 1,950 feet south and 1,000 feet east of the northwest corner of sec. 13, T. 35 S., R. 11 W.

A—0 to 5 inches; dark brown (7.5YR 3/4) gravelly loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 30 percent gravel; moderately acid (pH 5.8); clear smooth boundary.

Bt1—5 to 12 inches; brown (7.5YR 4/4) silty clay, light brown (7.5YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; common faint clay films on faces of peds and in pores; 10 percent gravel; moderately acid (pH 5.8); clear smooth boundary.

Bt2—12 to 26 inches; yellowish red (5YR 4/6) silty clay, yellowish red (5YR 5/6) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and common prominent clay films in pores; 10 percent gravel; strongly acid (pH 5.4); gradual smooth boundary.

Bt3—26 to 42 inches; yellowish red (5YR 4/6) silty clay, yellowish red (5YR 5/6) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine, medium, and coarse roots; many fine tubular pores; many distinct clay films on faces of peds and in pores; 5 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

Bt4—42 to 61 inches; yellowish red (5YR 4/6) silty clay, yellowish red (5YR 5/8) dry; weak medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few medium and coarse roots; common fine tubular pores; few prominent clay films on faces of peds and some fracture faces; 5 percent gravel; strongly acid (pH 5.2); gradual smooth boundary.

BCt—61 to 99 inches; yellowish red (5YR 4/6) clay loam, yellowish red (5YR 5/8) dry; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; common fine tubular pores; few prominent clay films on faces of peds and some fracture faces; 5 percent gravel; strongly acid (pH 5.2).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick or more.

The A horizon has hue of 7.5YR, 5YR, or 2.5YR. The upper part has value of 2 or 3 moist and 3 to 5 dry, and the lower part has value of 5 or 6 dry. The horizon has chroma of 2 to 4 moist or dry. It is gravelly loam and averages 20 to 25 percent clay. It is 15 to 30 percent gravel.

The Bt horizon has hue of 2.5YR, 5YR, or 7.5YR, value of 3 or 4 moist and 3 to 6 dry, and chroma of 4 to 6 moist and 4 to 7 dry. It is clay or silty clay and averages 40 to 50 percent clay. It is 0 to 10 percent gravel.

The BCt horizon and the C horizon, where present, have variegated color. They are loam or clay loam and average 20 to 35 percent clay. They are 0 to 10 percent gravel.

Dystrochrepts

Dystrochrepts are moderately deep to very deep, well drained to excessively drained soils on side slopes of mountains. These soils formed in colluvium derived from intrusive igneous, sedimentary, metasedimentary, or metavolcanic rock. Slopes are

30 to 100 percent. The mean annual precipitation is 90 to 160 inches, and the mean annual air temperature is 40 to 49 degrees F.

Typical pedon of Dystrochrepts extremely stony loam in an area of Dystrochrepts-Rock outcrop-Rubble land complex, 60 to 100 percent south slopes; in an area of woodland; about 750 feet south and 250 feet west of the northeast corner of sec. 20, T. 37 S., R. 12 W.

Oi—1 inch to 0; slightly decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; dark yellowish brown (10YR 4/4) extremely stony loam, yellowish brown (10YR 5/4) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common fine and medium irregular pores and few coarse irregular pores; 30 percent gravel, 10 percent cobbles, and 30 percent stones; moderately acid (pH 5.6); clear wavy boundary.

Bw1—8 to 12 inches; dark yellowish brown (10YR 4/4) extremely stony loam, light yellowish brown (10YR 6/4) dry; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; common medium and coarse tubular pores; 30 percent gravel, 5 percent cobbles, and 30 percent stones; moderately acid (pH 5.8); clear wavy boundary.

Bw2—12 to 20 inches; dark yellowish brown (10YR 4/6) extremely stony clay loam, brownish yellow (10YR 6/6) dry; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine and medium tubular pores; 25 percent gravel, 10 percent cobbles, and 30 percent stones; moderately acid (pH 6.0); abrupt wavy boundary.

Bw3—20 to 24 inches; dark yellowish brown (10YR 4/4) extremely stony loam, light yellowish brown (10YR 6/4) dry; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; common fine and medium tubular pores; 40 percent gravel, 5 percent cobbles, and 20 percent stones; moderately acid (pH 6.0); abrupt wavy boundary.

R—24 inches; diorite.

Depth to bedrock and thickness of the solum are 20 to 80 inches. The profile is slightly acid to strongly acid throughout. It has hue of 7.5YR, 10YR, or 2.5Y.

The A horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 3 to 6 moist or dry. It is extremely stony loam or extremely gravelly loam to very gravelly sandy loam and averages 15 to 25 percent clay. It is 15 to 50 percent gravel, 0 to 25 percent cobbles, and 0 to 35 percent stones.

The Bw horizon has value of 4 to 6 moist and 6 or 7 dry, and it has chroma of 4 to 6 moist or dry. It is extremely stony clay loam to extremely gravelly sandy loam and averages 10 to 30 percent clay. It is 15 to 50 percent gravel, 0 to 25 percent cobbles, and 10 to 35 percent stones.

The C horizon, where present, has value of 6 or 7 moist and 7 or 8 dry, and it has chroma of 2 to 8 moist or dry. It is extremely gravelly clay loam to extremely cobbly sandy loam and averages 10 to 20 percent clay. It is 40 to 60 percent gravel, 10 to 25 percent cobbles, and 0 to 10 percent stones.

Edson Series

The Edson series consists of very deep, well drained soils on broad summits and stable benches of mountains. These soils formed in residuum and colluvium derived from schist or phyllite. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Edson channery clay loam in an area of Edson-Barkshanty complex, 15 to 30 percent slopes; in an area of woodland; about 1,600 feet south and 1,100 feet west of the northeast corner of sec. 23, T. 35 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 6 inches; reddish brown (5YR 4/4) channery clay loam, yellowish red (5YR 5/6) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; 15 percent channers; very strongly acid (pH 4.8); clear smooth boundary.

A2—6 to 13 inches; reddish brown (5YR 4/4) channery clay loam, yellowish red (5YR 5/6) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; 15 percent channers; very strongly acid (pH 4.8); clear smooth boundary.

Bt1—13 to 21 inches; reddish brown (5YR 4/4) channery silty clay, yellowish red (5YR 5/6) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; few faint clay films on faces of peds and common distinct clay films in pores; 15 percent channers; very strongly acid (pH 5.0); abrupt wavy boundary.

Bt2—21 to 41 inches; yellowish red (5YR 4/6) channery silty clay, yellowish red (5YR 5/8) dry; moderate medium subangular blocky structure parting to strong fine subangular blocky; hard, firm, sticky and plastic; few fine, medium, and coarse roots; common fine tubular pores; common distinct clay films on faces of peds and many prominent clay films in pores; 15 percent channers and 5 percent flagstones; very strongly acid (pH 5.0); gradual wavy boundary.

Bt3—41 to 72 inches; yellowish red (5YR 4/6) channery silty clay, yellowish red (5YR 5/8) dry; moderate medium subangular blocky structure parting to strong fine subangular blocky; hard, firm, sticky and plastic; few fine, medium, and coarse roots; common fine tubular pores; many prominent clay films on faces of peds and in pores; 15 percent channers and 5 percent flagstones; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The profile is strongly acid or very strongly acid throughout. The solum has hue of 5YR or 7.5YR.

The A horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is channery clay loam and averages 27 to 35 percent clay. It is 15 to 25 percent channers and 0 to 5 percent flagstones.

The Bt horizon has value of 4 or 5 moist and 4 to 6 dry, and it has chroma of 4 to 6 moist and 6 to 8 dry. It is channery silty clay loam, channery silty clay, or channery clay and averages 35 to 50 percent clay. It is 15 to 25 percent channers and 0 to 10 percent flagstones.

The C horizon, where present, has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 4 to 8 moist or dry. It is channery silty clay, channery clay, or flaggy silty clay and averages 40 to 50 percent clay. It is 10 to 20 percent channers and 5 to 15 percent flagstones.

Eightlar Series

The Eightlar series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 3 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Eightlar very stony clay loam in an area of Eightlar-Gravecreek-Pearsoll complex, 3 to 30 percent slopes; in an area of woodland; about 1,100 feet north and 2,000 feet west of the southeast corner of sec. 25, T. 35 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 6 inches; dark reddish brown (5YR 3/3) very stony clay loam, reddish brown (5YR 3/2) dry; moderate very fine and fine granular structure; slightly hard, friable, sticky and plastic; many very fine and fine roots and common medium roots; many very fine and fine irregular pores; 15 percent gravel, 20 percent cobbles, and 15 percent stones; slightly acid (pH 6.5); clear wavy boundary.

A2—6 to 13 inches; dark reddish brown (5YR 3/3) very stony clay loam, dark reddish brown (5YR 3/4) dry; moderate very fine and fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 15 percent gravel, 20 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); clear wavy boundary.

Bw1—13 to 27 inches; dark reddish brown (5YR 3/3) extremely stony clay, reddish brown (5YR 4/4) dry; moderate fine and medium subangular blocky structure; hard, firm, very sticky and very plastic; common fine roots and few medium roots; common fine tubular pores; 30 percent gravel, 20 percent cobbles, and 20 percent stones; neutral (pH 7.0); clear wavy boundary.

Bw2—27 to 33 inches; dark reddish brown (5YR 3/3) extremely stony clay, reddish brown (5YR 5/4) dry; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few medium roots; few fine tubular pores; 30 percent gravel, 20 percent cobbles, and 30 percent stones; neutral (pH 7.2); clear wavy boundary.

C—33 to 65 inches; dark reddish brown (5YR 3/4) extremely stony clay, reddish brown (5YR 4/4) dry; massive; very hard, very firm, very sticky and very plastic; few fine tubular pores; 15 percent gravel, 20 percent cobbles, 30 percent stones, and 10 percent soft rock fragments; neutral (pH 7.2).

Depth to bedrock is more than 60 inches. The solum is 30 to 46 inches thick. The profile has hue of 5YR or 7.5YR.

The A horizon has value of 3 or 4 moist or dry and chroma of 3 or 4 moist and 2 to 4 dry. It is very stony clay loam and averages 35 to 40 percent clay. It is 15 to 25 percent gravel, 10 to 25 percent cobbles, and 15 to 30 percent stones.

The Bw horizon has value of 3 or 4 moist or dry and chroma of 3 to 6 moist and 2 to 4 dry. It is very stony clay or extremely stony clay and averages 55 to 65 percent clay. It is 20 to 30 percent gravel, 5 to 20 percent cobbles, and 15 to 30 percent stones.

The C horizon has value of 3 or 4 moist and 3 to 5 dry, and it has chroma of 2 to 4 moist and 3 or 4 dry. It is very stony clay or extremely stony clay and averages 55 to 65 percent clay. It is 15 to 25 percent gravel, 10 to 25 percent cobbles, 15 to 30 percent stones, and 0 to 35 percent soft rock fragments.

Eilertsen Series

The Eilertsen series consists of very deep, well drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 7 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Eilertsen silt loam in an area of Eilertsen-Zyzzug complex, 0 to 7 percent slopes; in an area of woodland; about 1,400 feet south and 2,500 feet west of the northeast corner of sec. 11, T. 32 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; moderately acid (pH 6.0); clear smooth boundary.

A2—8 to 17 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; strongly acid (pH 5.4); clear smooth boundary.

Bt1—17 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine tubular pores; few faint clay films on faces of peds and common distinct clay films in pores; strongly acid (pH 5.2); clear smooth boundary.

Bt2—26 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots, common medium roots, and few coarse roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; strongly acid (pH 5.2); clear wavy boundary.

2C1—42 to 56 inches; brown (10YR 5/3) loam, light yellowish brown (10YR 6/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; few fine tubular pores; common fine distinct grayish brown (10YR 5/2) iron depletions and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid (pH 4.8); clear wavy boundary.

2C2—56 to 72 inches; yellowish brown (10YR 5/4) fine sandy loam, light yellowish brown (10YR 6/4) dry; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; few fine tubular pores; common fine distinct grayish brown (10YR 5/2) iron depletions and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 12 to 20 percent clay. It is very slightly acid to strongly acid.

The Bt horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 3 to 6 moist or dry. Some pedons may have distinct grayish brown or dark brown redoximorphic concentrations below a depth of 40 inches. The Bt horizon is silty clay loam, clay loam, or silt loam and averages 18 to 35 percent clay. It is strongly acid or very strongly acid.

The 2C horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It has distinct strong brown or grayish brown redoximorphic concentrations. It is loam, fine sandy loam, or silt loam and averages 10 to 25 percent clay. It is strongly acid or extremely acid.

Ekoms Series

The Ekoms series consists of very deep, well drained soils on high stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 12 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Ekoms loam, 0 to 12 percent slopes, in an area of pasture; about 900 feet south and 300 feet east of the northwest corner of sec. 35, T. 32 S., R. 15 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) loam, dark yellowish brown (10YR 3/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; many fine tubular pores; 10 percent soft rock fragments 2 to 5 millimeters in diameter and 10 percent gravel; strongly acid (pH 5.2); abrupt smooth boundary.

BA—5 to 12 inches; dark brown (10YR 3/3) clay loam, brown (10YR 4/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; many very fine and fine tubular pores; 10 percent soft rock fragments 2 to 5 millimeters in diameter and 10 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

Bt1—12 to 25 inches; dark yellowish brown (10YR 3/4) gravelly clay loam, dark yellowish brown (10YR 4/4) dry; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; common distinct clay films on faces of peds and in pores; 15 percent gravel; moderately acid (pH 5.6); clear smooth boundary.

Bt2—25 to 44 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few fine roots; common very fine tubular pores; common distinct clay films on faces of peds and in pores; 25 percent gravel; moderately acid (pH 5.6); clear wavy boundary.

C—44 to 60 inches; yellowish brown (10YR 5/6) gravelly loam, brownish yellow (10YR 6/6) dry; massive; slightly hard, firm, slightly sticky and slightly plastic; few fine tubular pores; 25 percent gravel and 5 percent cobbles; moderately acid (pH 5.8).

Depth to bedrock is more than 60 inches. The solum has hue of 10YR or 7.5YR. The umbric epipedon is 10 to 20 inches thick, and it includes the upper part of the B horizon. The profile is moderately acid or strongly acid throughout.

The A horizon has value of 2 or 3 moist and 3 dry, and it has chroma of 2 or 3 moist and 3 or 4 dry. It is loam and averages 20 to 25 percent clay. It is 0 to 20 percent soft rock fragments and 0 to 10 percent gravel. The organic matter content is 10 to 15 percent.

The BA horizon has value and chroma of 3 or 4 moist or dry. It is clay loam or gravelly loam and averages 25 to 35 percent clay. It is 0 to 20 percent soft rock fragments and 5 to 25 percent gravel. The organic matter content is 2 to 5 percent.

The Bt horizon has value of 3 to 5 moist and 4 or 5 dry, and it has chroma of 3 to 6 moist or dry. It is gravelly loam, gravelly clay loam, or clay loam and averages 25 to 35 percent clay. It is 0 to 20 percent soft rock fragments and 5 to 25 percent gravel. The organic matter content is 2 to 5 percent.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 3 to 6 moist or dry. It is stratified gravelly loam, very gravelly sandy loam, or gravelly sandy clay loam and averages 15 to 25 percent clay. It is 0 to 30 percent soft rock fragments, 20 to 40 percent gravel, and 0 to 10 percent cobbles.

Etelka Series

The Etelka series consists of very deep, moderately well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from highly sheared and deeply weathered metasedimentary rock. Slopes are 7 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Etelka silt loam in an area of Etelka-Whobrey-Remote complex, 15 to 30 percent slopes; in an area of woodland; about 50 feet south and 500 feet west of the northeast corner of sec. 32, T. 31 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 5 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

BA—8 to 20 inches; dark brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 5 percent gravel; strongly acid (pH 5.4); abrupt wavy boundary.

Bw1—20 to 30 inches; dark brown (10YR 4/3) silty clay, light yellowish brown (10YR 6/4) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine roots and few medium roots; common fine tubular pores; 7 percent gravel and 3 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bw2—30 to 41 inches; olive brown (2.5Y 4/4) silty clay, light yellowish brown (2.5Y 6/4) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; common medium distinct strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation; 10 percent gravel and 3 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

BC—41 to 60 inches; light olive brown (2.5Y 5/4) clay, light yellowish brown (2.5Y 6/4) dry; weak medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; few distinct slickensides; many medium distinct strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation; 10 percent gravel and 3 percent cobbles; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The profile has hue of 7.5YR to 2.5Y.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 20 to 25 percent clay. It is 0 to 5 percent gravel.

The BA horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. It is silty clay loam or silt loam and averages 25 to 40 percent clay. It is 0 to 10 percent gravel and 0 to 3 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. The lower part of the horizon has distinct or prominent redoximorphic concentrations. The horizon is silty clay, clay, or silty clay loam and averages 35 to 60 percent clay. It is 0 to 10 percent gravel and 0 to 3 percent cobbles.

The BC horizon has value of 5 or 6 moist and 6 or 7 dry, and it has chroma of 2 to 4 moist or dry. Throughout the horizon are distinct or prominent redoximorphic depletions and concentrations that have hue of 5YR to 5Y, value of 4 to 7 moist, and chroma of 1 to 8 moist or dry. The horizon has few to common slickensides. It is clay or silty clay and averages 50 to 60 percent clay. It is 0 to 10 percent gravel and 0 to 3 percent cobbles.

Ettersburg Series

The Ettersburg series consists of very deep, well drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Ettersburg loam, 0 to 3 percent slopes, in an area of improved pasture; about 990 feet south and 2,310 feet east of the northwest corner of sec. 25, T. 41 S., R. 13 W.

A1—0 to 9 inches; very dark grayish brown (10YR 3/2) loam, dark brown (10YR 4/3) dry; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine continuous tubular pores; 5 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

A2—9 to 17 inches; very dark brown (10YR 3/3) loam, dark brown (10YR 4/3) dry; weak medium subangular blocky structure; soft, friable, slightly sticky and nonplastic; many fine roots; common very fine and fine continuous tubular pores; 10 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

Bw1—17 to 29 inches; dark brown (10YR 4/3) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; common fine and very fine continuous tubular pores; 20 percent gravel; strongly acid (pH 5.2); gradual wavy boundary.

Bw2—29 to 43 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine continuous tubular pores; 20 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); abrupt wavy boundary.

2C—43 to 60 inches; grayish brown (2.5Y 5/2) very gravelly fine sandy loam, light gray (2.5Y 7/2) dry; massive parting to single grain; soft, very friable, nonsticky and nonplastic; many fine irregular pores; 30 percent gravel and 10 percent cobbles; moderately acid (pH 5.8).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is loam and averages 10 to 20 percent clay. It is 0 to 10 percent gravel.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is clay loam, gravelly clay loam, or gravelly loam and averages 25 to 35 percent clay. It is 10 to 20 percent gravel and 0 to 10 percent cobbles.

The 2C horizon has hue of 2.5Y or 10YR, value of 4 to 6 moist and 5 to 7 dry, and chroma of 2 to 4 moist or dry. It is stratified very gravelly or extremely gravelly fine sandy loam, loam, or loamy fine sand and averages 5 to 10 percent clay. It is 30 to 50 percent gravel and 0 to 15 percent cobbles.

Euchrand Series

The Euchrand series consists of shallow, well drained soils on side slopes and summits of mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Euchrand very gravelly loam in an area of Rilea-Euchrand-Rock outcrop complex, 60 to 90 percent south slopes; in an area of woodland; about 200 feet south and 1,650 feet west of the northeast corner of sec. 9, T. 34 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; dark brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; many fine irregular pores; 45 percent gravel and 2 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

Bw1—3 to 9 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine tubular pores; 60 percent gravel; very strongly acid (pH 4.8); clear wavy boundary.

Bw2—9 to 15 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; many fine tubular pores; 60 percent gravel and 3 percent cobbles; very strongly acid (pH 4.6); abrupt wavy boundary.

R—15 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The profile has hue of 7.5YR or 10YR.

The A horizon has value of 4 moist and 5 or 6 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam and averages 10 to 20 percent clay. It is 35 to 50 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is very gravelly loam, extremely gravelly loam, or extremely gravelly clay loam and averages 20 to 30 percent clay. It is 50 to 60 percent gravel and 0 to 10 percent cobbles.

Euchre Series

The Euchre series consists of very deep, somewhat poorly drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Euchre silt loam in an area of Logsden-Euchre complex, 0 to 3 percent slopes; in an area of pasture; about 1,300 feet south and 1,700 feet west of the northeast corner of sec. 8, T. 35 S., R. 14 W.

A1—0 to 6 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; many very fine tubular pores; extremely acid (pH 4.4); clear smooth boundary.

A2—6 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; many very fine tubular pores; extremely acid (pH 4.2); clear smooth boundary.

2Bw—18 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; many fine distinct strong brown (7.5YR 4/6) masses of iron accumulation and common fine distinct dark grayish brown (10YR 4/2) iron depletions; very strongly acid (pH 4.6); clear wavy boundary.

2C—31 to 51 inches; yellowish brown (10YR 5/4) clay loam, very pale brown (10YR 7/4) dry; massive; hard, firm, slightly sticky and slightly plastic; many very fine irregular pores; many fine distinct strong brown (7.5YR 4/6) masses of iron accumulation and many fine distinct dark grayish brown (10YR 4/2) and common medium prominent gray (10YR 5/1) iron depletions; very strongly acid (pH 4.8); gradual wavy boundary.

3C—51 to 60 inches; grayish brown (10YR 5/2) sandy loam, light gray (10YR 7/2) dry; massive; soft, very friable, nonsticky and nonplastic; many very fine irregular pores; common fine distinct dark grayish brown (10YR 4/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The umbric epipedon is 12 to 20 inches thick. Redoximorphic depletions that have chroma of 2 or less are within the upper 10 to 20 inches of the profile.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is silt loam and averages 12 to 25 percent clay. Moist bulk density is 0.75 to 0.85 gram per cubic centimeter. The organic matter content is 10 to 15 percent.

The 2Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 moist or dry. It is silty clay loam or clay loam and averages 27 to 35 percent clay. It is 0 to 5 percent gravel. Moist bulk density is 1.2 to 1.3 grams per cubic centimeter.

The 2C horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 4 to 6 moist or dry. It is clay loam or fine sandy loam and averages 10 to 35 percent clay. It is 0 to 5 percent gravel.

The 3C horizon has hue of 7.5YR or 10YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 2 to 4 moist or dry. It is sandy loam, loamy sand, or gravelly loamy sand and averages 5 to 10 percent clay. It is 0 to 30 percent gravel.

Evans Series

The Evans series consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Evans silt loam, 0 to 3 percent slopes, in an area of pasture; about 2,350 feet north and 40 feet west of the southeast corner of sec. 18, T. 34 S., R. 11 W.

A1—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; slightly acid (pH 6.2); clear smooth boundary.

A2—10 to 21 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; slightly acid (pH 6.2); gradual smooth boundary.

A3—21 to 33 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; slightly acid (pH 6.2); gradual smooth boundary.

A4—33 to 39 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine tubular pores; 5 percent gravel; slightly acid (pH 6.2); gradual smooth boundary.

C—39 to 60 inches; dark grayish brown (10YR 4/2) very fine sandy loam, grayish brown (10YR 5/2) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; 5 percent gravel; slightly acid (pH 6.4).

Depth to bedrock is more than 60 inches. Thickness of the mollic epipedon and solum is 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist and 2 to 4 dry. It is silt loam and averages 12 to 18 percent clay. It is 0 to 5 percent gravel.

The C horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 or 3 moist and 2 to 4 dry. It is silt loam, loam, or very fine sandy loam and averages 10 to 18 percent clay. It is 0 to 5 percent gravel.

Fantz Series

The Fantz series consists of moderately deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from olivine gabbro, gabbro, and metagabbro rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Fantz very gravelly loam in an area of Knapke-Fantz complex, 30 to 60 percent north slopes; in an area of woodland; about 1,450 feet north and 2,640 feet west of the southeast corner of sec. 29, T. 36 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 7 inches; very dark grayish brown (10YR 3/2) very gravelly loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine irregular pores; 50 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); clear smooth boundary.

A2—7 to 16 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 4/3) dry; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine tubular pores; 50 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); gradual wavy boundary.

C—16 to 32 inches; dark brown (10YR 3/3) very cobbly loam, brown (10YR 5/3) dry; massive; soft, very friable, slightly sticky and slightly plastic; few medium roots; many very fine tubular pores; 30 percent gravel and 25 percent cobbles; slightly acid (pH 6.4); abrupt wavy boundary.

R—32 inches; highly fractured and mostly unweathered metagabbro.

Depth to bedrock and thickness of the mollic epipedon are 20 to 40 inches.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 or 2 moist and 2 or 3 dry. It is very gravelly loam and averages 18 to 22 percent clay. It is 35 to 50 percent gravel and 0 to 10 percent cobbles.

The C horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very cobbly loam or extremely cobbly loam and averages 18 to 25 percent clay. It is 30 to 45 percent gravel and 20 to 40 percent cobbles.

Ferrelo Series

The Ferrelo series consists of very deep, well drained soils on dissected marine terraces. These soils formed in moderately coarse textured marine sediment overlying old sand dune deposits. Slopes are 0 to 40 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Ferrelo loam in an area of Bullards-Ferrelo-Hebo complex, 0 to 20 percent slopes; in a spruce forest; about 300 feet south and 500 feet east of the northwest corner of sec. 6, T. 36 S., R. 14 W.

Oi—2 inches to 0; dark reddish brown (5YR 3/2) undecomposed and partially decomposed litter, dark reddish brown (5YR 3/3) dry; very strongly acid (pH 5.0).

A—0 to 8 inches; dark reddish brown (5YR 3/2) loam, dark reddish gray (5YR 4/2) dry; moderate fine subangular blocky structure parting to moderate fine granular; soft, very friable, nonsticky and nonplastic; many fine and medium roots; common irregular pores; strongly acid (pH 5.2); clear wavy boundary.

AB—8 to 18 inches; dark reddish brown (5YR 3/2) loam, dark reddish gray (5YR 4/2) dry; moderate medium subangular blocky structure parting to moderate fine granular; soft, very friable, nonsticky and nonplastic; many fine and medium roots; many very fine to coarse tubular pores; moderately acid (pH 5.6); clear wavy boundary.

Bw1—18 to 27 inches; dark brown (7.5YR 4/4) loam, brown (7.5YR 5/4) dry; few dark brown (7.5YR 3/2) variegations; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; common very fine and fine tubular pores; common thin discontinuous dark reddish brown lenses that are very firm when moist and very hard when dry and appear to be slightly cemented when dry; common yellowish brown concretions; moderately acid (pH 5.6); clear wavy boundary.

Bw2—27 to 41 inches; dark brown (7.5YR 4/4) fine sandy loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; few very fine, fine, and medium tubular pores; few thin discontinuous reddish brown lenses that are firm when moist and very hard when dry and appear to be slightly cemented when dry; few fine reddish brown iron concretions; moderately acid (pH 5.6); clear wavy boundary.

2C1—41 to 58 inches; yellowish brown (10YR 5/6) loamy fine sand, light yellowish brown (10YR 6/4) dry; few medium distinct yellowish brown (10YR 5/4) variegations; massive; hard, firm, nonsticky and nonplastic; few fine and medium tubular pores; fine reddish brown iron concretions; moderately acid (pH 6.0); abrupt wavy boundary.

3C2—58 to 68 inches; light brownish gray (10YR 6/2) fine sandy loam, white (10YR 8/2) dry; few coarse distinct yellowish brown (10YR 5/4) variegations; massive; very firm, nonsticky and nonplastic; few fine and medium tubular pores; few distinct dark reddish brown (5YR 3/2) root channels; moderately acid (pH 6.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has hue of 5YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist or dry. It typically is loam and averages 10 to 18 percent clay, but some pedons may have a thin overlay of loamy fine sand, sandy loam, or fine sandy loam.

The Bw horizon has hue of 7.5YR or 10YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. It is fine sandy loam, silt loam, or loam and averages 10 to 18 percent clay and more than 15 percent sand that is coarser than very fine sand. This horizon typically has one or two thin discontinuous dark reddish brown lenses that are firm or very firm and weakly cemented, but they may not be present in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6 moist and 6 to 8 dry, and chroma of 2 to 6 moist or dry. It is fine sandy loam, loamy fine sand, or fine sand and averages 2 to 10 percent clay. It is very firm and may range to weakly cemented below a depth of 40 inches in some pedons.

Floras Series

The Floras series consists of deep, well drained soils on side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Floras silty clay loam in an area of Floras-Bosland-Dulandy complex, 30 to 60 percent north slopes; in an area of woodland; about 1,600 feet south and 1,575 feet west of the northeast corner of sec. 4, T. 41 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; dark reddish brown (5YR 3/2) silty clay loam, dark reddish gray (5YR 4/2) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); abrupt smooth boundary.

A2—5 to 9 inches; dark reddish brown (5YR 3/3) silty clay loam, reddish brown (5YR 4/3) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—9 to 18 inches; reddish brown (5YR 4/3) silty clay loam, reddish brown (5YR 5/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine tubular pores; 10 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 4.6); clear smooth boundary.

Bw2—18 to 27 inches; reddish brown (5YR 4/3) gravelly silty clay loam, light reddish brown (5YR 6/3) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and medium roots; many very fine and fine tubular pores; 20 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 4.6); clear wavy boundary.

Bw3—27 to 35 inches; reddish brown (5YR 4/4) gravelly silty clay loam, light reddish brown (5YR 6/4) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; many very fine and fine tubular pores; 25 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.6); clear wavy boundary.

BC—35 to 48 inches; brown (7.5YR 5/4) gravelly silty clay loam, light brown (7.5YR 6/4) dry; weak fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; many very fine and fine tubular pores; 25 percent gravel and 30 percent soft rock fragments; very strongly acid (pH 4.6); abrupt wavy boundary.

Cr—48 inches; weathered sandstone.

Depth to bedrock is 40 to 60 inches. The umbric epipedon is less than 10 inches thick. The profile has hue of 5YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 to 4 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 10 percent soft rock fragments.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist or dry. It is silty clay loam, gravelly silty clay loam, or gravelly silty clay and averages 35 to 50 percent clay. It is 5 to 25 percent gravel, 0 to 10 percent cobbles, and 5 to 45 percent soft rock fragments.

The BC horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay loam, gravelly silty clay loam, or gravelly silty clay and averages 35 to 50 percent clay. It is 5 to 25 percent gravel, 0 to 10 percent cobbles, and 5 to 45 percent soft rock fragments.

A C horizon is present in some pedons.

Flycatcher Series

The Flycatcher series consists of shallow, well drained soils on summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or serpentinitic meta-igneous rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Flycatcher very cobbly loam in an area of Cedarcamp-Snowcamp-Flycatcher complex, 30 to 60 percent south slopes; in an area of woodland; about 990 feet north and 990 feet east of the southwest corner of sec. 4, T. 37 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark brown (10YR 3/3) very cobbly loam, brown (10YR 4/3) dry; weak very fine and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; few fine tubular pores; 20 percent gravel and 30 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

Bw1—4 to 9 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; common fine and medium tubular pores; 40 percent gravel and 10 percent cobbles; neutral (pH 6.8); clear smooth boundary.

Bw2—9 to 15 inches; dark yellowish brown (10YR 4/4) very gravelly sandy clay loam, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots and few medium roots; common medium tubular pores; 45 percent gravel and 10 percent cobbles; neutral (pH 6.9); clear wavy boundary.

C—15 to 18 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, yellowish brown (10YR 5/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine and medium tubular pores; 45 percent gravel and 15 percent cobbles; neutral (pH 7.2); abrupt wavy boundary.

R—18 inches; fractured peridotite.

Depth to bedrock is 10 to 20 inches. The profile is slightly acid or neutral throughout. The solum has hue of 5YR, 7.5YR, or 10YR.

The A horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 3 or 4 moist or dry. The fine-earth fraction is loam and averages 15 to 25 percent clay. The horizon is 0 to 20 percent boulders, 0 to 15 percent stones, 5 to 30 percent cobbles, and 10 to 25 percent gravel.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. The fine-earth fraction is loam, clay loam, or sandy clay loam and averages 20 to 35 percent clay. The horizon is 0 to 25 percent boulders, 0 to 30 percent stones, 10 to 20 percent cobbles, and 5 to 50 percent gravel.

The C horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. The fine-earth fraction is loam, clay loam, or sandy clay loam and averages 20 to 35 percent clay. The horizon is 0 to 20 percent boulders, 0 to 30 percent stones, 10 to 20 percent cobbles, and 5 to 45 percent gravel.

Foehlin Series

The Foehlin series consists of very deep, well drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Foehlin gravelly loam in an area of Foehlin-Cove complex, 0 to 3 percent slopes; in an area of pasture; about 990 feet south and 400 feet east of the northwest corner of sec. 29, T. 35 S., R. 11 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; 20 percent gravel; slightly acid (pH 6.1); clear smooth boundary.
AB—5 to 13 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; 20 percent gravel; slightly acid (pH 6.2); clear smooth boundary.
Bt1—13 to 24 inches; dark brown (10YR 4/3) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; many fine tubular pores; few distinct clay films on faces of peds and common distinct clay films in pores; 20 percent gravel; slightly acid (pH 6.2); gradual smooth boundary.
Bt2—24 to 43 inches; dark brown (10YR 4/3) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common fine roots and few coarse roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 5 percent cobbles; slightly acid (pH 6.4); gradual smooth boundary.
Bt3—43 to 57 inches; dark brown (10YR 4/3) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate coarse subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 5 percent cobbles; slightly acid (pH 6.4); gradual smooth boundary.
C—57 to 65 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, yellowish brown (10YR 5/4) dry; massive; hard, firm, sticky and plastic; common fine tubular pores; 20 percent gravel and 5 percent cobbles; slightly acid (pH 6.4).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam and averages 20 to 25 percent clay. It is 15 to 30 percent gravel.

The Bt horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is clay loam or gravelly clay loam and averages 27 to 35 percent clay. It is 10 to 25 percent gravel and 0 to 5 percent cobbles.

The C horizon has color and texture similar to those of the Bt horizon.

Frankport Series

The Frankport series consists of very deep, excessively drained soils on old, stabilized coastal dunes associated with marine terraces. The soils formed in mixed eolian sand. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Frankport sand, 0 to 30 percent slopes, in an area of woodland; about 2,400 feet north and 250 feet east of the southwest corner of sec. 29, T. 38 S., R. 14 W.

Oi—2 inches to 0; undecomposed and partially decomposed needles, leaves, twigs, and woody material.
A—0 to 4 inches; very dark gray (10YR 3/1) sand, dark gray (10YR 4/1) dry; weak very fine granular structure; loose, very friable, nonsticky and nonplastic; many fine roots and common medium and coarse roots; many fine, medium, and coarse irregular pores; strongly acid (pH 5.2); clear smooth boundary.
AC—4 to 9 inches; very dark grayish brown (2.5Y 3/2) sand, light brownish gray (2.5Y 6/2) dry; single grain; loose, nonsticky and nonplastic; many fine roots and common medium and coarse roots; many fine, medium, and coarse irregular pores; strongly acid (pH 5.4); diffuse smooth boundary.
C—9 to 60 inches; dark grayish brown (2.5Y 4/2) sand, light brownish gray (2.5Y 6/2) dry; single grain; loose, nonsticky and nonplastic; few medium roots; many irregular pores; moderately acid (pH 5.6).

The solum is 5 to 20 inches thick. The profile has hue of 10YR or 2.5Y. It is strongly acid or very strongly acid. It is coarse sand or sand throughout.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 moist or dry. The organic matter content is 1 to 5 percent.

The AC horizon has value of 2 or 3 moist and 4 to 6 dry, and it has chroma of 1 or 2 moist or dry. It is sand or coarse sand.

The C horizon has hue of 10YR, 2.5Y, or 5Y, value of 3 or 4 moist and 4 to 6 dry, and chroma of 1 or 2 moist or dry. It is sand or coarse sand. It is slightly acid to strongly acid.

Fritsland Series

The Fritsland series consists of deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Fritsland loam in an area of Fritsland-Bravo-Cassiday complex, 30 to 60 percent south slopes; in an area of woodland; about 2,310 feet south and 2,310 feet east of the northwest corner of sec. 2, T. 40 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) loam, brown (10YR 5/3) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 5 percent gravel; strongly acid (pH 5.2); clear wavy boundary.

BA—8 to 13 inches; dark brown (10YR 4/3) loam, pale brown (10YR 6/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine continuous tubular pores; 5 percent gravel; very strongly acid (pH 5.0); clear wavy boundary.

Bw1—13 to 20 inches; dark brown (10YR 4/3) loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and coarse roots; many very fine and fine continuous tubular pores; 10 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

Bw2—20 to 32 inches; dark yellowish brown (10YR 4/4) clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; 10 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw3—32 to 44 inches; yellowish brown (10YR 5/4) gravelly clay loam, very pale brown (10YR 7/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; many very fine and fine continuous tubular pores; 15 percent gravel; very strongly acid (pH 4.8); gradual wavy boundary.

C—44 to 48 inches; light yellowish brown (10YR 6/4) gravelly clay loam, very pale brown (10YR 7/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; many very fine and fine continuous tubular pores; 20 percent gravel; very strongly acid (pH 4.8); gradual wavy boundary.

R—48 inches; metasedimentary rock.

Depth to bedrock is 40 to 60 inches. The solum is 30 to 50 inches thick. The profile is very strongly acid or strongly acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam or loam and averages 15 to 25 percent clay. It is 0 to 10 percent gravel.

The BA, Bw1, and Bw2 horizons have value of 4 or 5 moist and 5 to 7 dry, and they have chroma of 3 or 4 moist or dry. They are silt loam, loam, or clay loam and average 20 to 35 percent clay. They are 5 to 15 percent gravel.

The Bw3 horizon has value of 5 or 6 moist and 6 or 7 dry, and it has chroma of 3 or 4 moist or dry. It is gravelly loam, gravelly silt loam, or gravelly clay loam and averages 20 to 35 percent clay. It is 15 to 35 percent gravel.

The C horizon has value of 6 or 7 moist or dry and chroma of 3 or 4 moist or dry. It is gravelly loam, gravelly silt loam, or gravelly clay loam and averages 20 to 35 percent clay. It is 15 to 35 percent gravel.

Gamelake Series

The Gamelake series consists of very deep, well drained soils on broad summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 140 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Gamelake very gravelly loam in an area of Gamelake-Tincup complex, 30 to 60 percent south slopes; in an area of woodland; about 990 feet south and 2,310 feet west of the northeast corner of sec. 4, T. 37 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine and medium roots and few very fine and coarse roots; many very fine and fine tubular pores; 35 percent gravel and 3 percent cobbles; very strongly acid (pH 4.7); abrupt smooth boundary.

A2—4 to 13 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; many fine tubular pores; 35 percent gravel and 5 percent cobbles; very strongly acid (pH 4.9); abrupt smooth boundary.

Bw1—13 to 23 inches; dark brown (10YR 4/3) very gravelly sandy loam, pale brown (10YR 6/3) dry; weak coarse subangular blocky structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; many fine tubular pores; 40 percent gravel and 5 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

Bw2—23 to 39 inches; dark yellowish brown (10YR 4/4) extremely gravelly sandy loam, light yellowish brown (2.5Y 6/4) dry; weak medium subangular blocky structure parting to moderate fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; many fine tubular pores; 60 percent gravel and 5 percent cobbles; strongly acid (pH 5.1); gradual wavy boundary.

BC—39 to 50 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, light yellowish brown (2.5Y 6/4) dry; weak coarse subangular blocky structure parting to moderate medium subangular blocky; soft, very friable, slightly sticky and slightly plastic; few medium and coarse roots; many fine tubular pores; 50 percent gravel and 5 percent cobbles; strongly acid (pH 5.2); gradual wavy boundary.

C—50 to 72 inches; yellowish brown (10YR 5/4) very gravelly coarse sandy loam, light yellowish brown (2.5Y 6/4) dry; massive; soft, very friable, nonsticky and nonplastic; few medium and coarse roots; many fine tubular pores; 50 percent gravel and 5 percent cobbles; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick and may include the upper part of the Bw horizon. The solum is 30 to 40 inches thick. The profile is strongly acid or very strongly acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist or dry. It is very gravelly loam and averages 10 to 25 percent clay. It is 35 to 45 percent gravel and 0 to 10 percent cobbles.

The Bw horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 3 or 4 moist and 5 or 6 dry, and chroma of 2 to 4 moist or dry. It is very gravelly loam, very gravelly sandy loam, or extremely gravelly coarse sandy loam and averages 10 to 20 percent clay and more than 30 percent material that is coarser than fine sand. The horizon is 40 to 60 percent gravel and 0 to 10 percent cobbles.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6 moist and 5 to 7 dry, and chroma of 3 or 4 moist or dry. It is very gravelly sandy loam, extremely gravelly sandy loam, or very gravelly coarse sandy loam and averages 5 to 15 percent clay and more than 30 percent material that is coarser than fine sand. The horizon is 50 to 60 percent gravel and 5 to 10 percent cobbles.

Gauldy Series

The Gauldy series consists of very deep, somewhat excessively drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Gauldy loam in an area of Gauldy-Willanch complex, 0 to 3 percent slopes; in an area of pasture; about 1,700 feet south and 330 feet west of the northeast corner of sec. 19, T. 38 S., R. 14 W.

A—0 to 12 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many fine tubular pores; 10 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

Bw—12 to 28 inches; dark yellowish brown (10YR 4/4) gravelly loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many fine tubular pores; 15 percent gravel; strongly acid (pH 5.2); abrupt smooth boundary.

2C1—28 to 41 inches; dark grayish brown (10YR 4/2) extremely gravelly fine sand, grayish brown (10YR 5/2) dry; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; common fine tubular pores; 50 percent gravel and 15 percent cobbles; strongly acid (pH 5.1); gradual smooth boundary.

2C2—41 to 60 inches; dark grayish brown (10YR 4/2) extremely gravelly fine sand, light brownish gray (10YR 6/2) dry; single grain; loose, nonsticky and nonplastic; few very fine roots; 60 percent gravel and 25 percent cobbles; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. Thickness of the solum and depth to contrasting textures typically range from 20 to 30 inches, but they range to 15 inches in some pedons. The umbric epipedon is 10 to 12 inches thick.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is loam and averages 15 to 18 percent clay. It is 0 to 15 percent gravel.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is loam, gravelly loam, or very fine sandy loam and averages less than 18 percent clay and more than 15 percent material that is coarser than fine sand. The horizon is 5 to 15 percent gravel.

The C horizon has hue of 10YR or 2.5Y, value of 3 to 5 moist and 5 or 6 dry, and chroma of 2 to 4 moist or dry. It is stratified extremely gravelly fine sand or very gravelly fine sand with varying amounts of gravel, cobbles, and stones. It is strongly acid or very strongly acid.

Gearhart Series

The Gearhart series consists of very deep, somewhat excessively drained soils on marine terraces. These soils formed in eolian sand deposits. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Gearhart fine sandy loam in an area of Ferrelo-Gearhart complex, 0 to 15 percent slopes; in an area of native vegetation; 700 feet south and 500 feet west of the northeast corner of sec. 17, T. 31 S., R. 15 W.

A—0 to 12 inches; very dark gray (10YR 3/1) fine sandy loam, dark gray (10YR 4/1) dry; single grain; loose, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine irregular pores; very strongly acid (pH 4.6); abrupt smooth boundary.

Bw1—12 to 17 inches; dark brown (10YR 4/3) fine sand, yellowish brown (10YR 5/4) dry; single grain; loose, nonsticky and nonplastic; common fine and medium roots; many very fine irregular pores; very strongly acid (pH 4.6); clear irregular boundary.

Bw2—17 to 23 inches; dark yellowish brown (10YR 4/4) fine sand, yellowish brown (10YR 5/4) dry; single grain; loose, nonsticky and nonplastic; few fine and medium roots; many very fine irregular pores; very strongly acid (pH 4.6); gradual irregular boundary.

C1—23 to 51 inches; yellowish brown (10YR 5/4) sand, light yellowish brown (10YR 6/4) dry; single grain; loose, nonsticky and nonplastic; many very fine irregular pores; very strongly acid (pH 5.0); diffuse wavy boundary.

C2—51 to 60 inches; light olive brown (2.5Y 5/4) sand, pale yellow (2.5Y 7/4) dry; single grain; loose, nonsticky and nonplastic; many very fine irregular pores; strongly acid (pH 5.2).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is fine sandy loam and averages 10 to 15 percent clay. The horizon is very strongly acid or extremely acid.

The Bw horizon has hue of 7.5YR or 10YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 3 or 4 moist or dry. It is sand or fine sand and averages 3 to 5 percent clay. It is strongly acid or very strongly acid.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 3 or 4 moist or dry. It is sand or fine sand and averages 3 to 5 percent clay. The horizon is strongly acid or very strongly acid.

Gleneden Series

The Gleneden series consists of very deep, somewhat poorly drained soils on low stream terraces. These soils formed in clayey alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Gleneden silty clay loam, 0 to 3 percent slopes, in an area of native pasture; about 1,650 feet south and 1,650 feet east of northwest corner of sec. 6, T. 32 S., R. 15 W.

A1—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine granular structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and fine irregular pores; strongly acid (pH 5.2); clear smooth boundary.

A2—7 to 15 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; many very fine and common fine roots; many very fine and fine tubular pores; strongly acid (pH 5.2); clear smooth boundary.

BA—15 to 21 inches; dark brown (10YR 4/3) silty clay, brown (10YR 5/3) dry; moderate medium subangular blocky structure; hard, very firm, sticky and plastic; common very fine and few fine roots; many very fine and fine tubular pores; very strongly acid (pH 5.0); abrupt smooth boundary.

Bw—21 to 32 inches; brown (10YR 5/3) silty clay, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; many coarse prominent dark grayish brown (10YR 4/2) iron depletions and strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid (pH 5.2); gradual smooth boundary.

BCg—32 to 45 inches; grayish brown (2.5Y 5/2) clay, light brownish gray (2.5Y 6/2) dry; weak medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; many coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid (pH 5.2); gradual smooth boundary.

Cg—45 to 60 inches; light brownish gray (2.5Y 6/2) clay, light gray (2.5Y 7/2) dry; massive; very hard, very firm, very sticky and very plastic; many coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. Redoximorphic depletions that have chroma of 2 or less are within 30 inches of the surface.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silty clay loam and averages 27 to 35 percent clay.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 moist or dry. It is clay or silty clay and averages 40 to 50 percent clay.

The BCg horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 1 or 2 moist or dry. It is clay and averages 50 to 60 percent clay.

The Cg horizon has hue of 2.5Y or 5Y, value of 4 to 6 moist and 6 or 7 dry, and chroma of 1 or 2 moist or dry. It is clay and averages 50 to 60 percent clay.

Goldbeach Series

The Goldbeach series consists of shallow, well drained soils that are in open grassland areas on summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Goldbeach channery silt loam in an area of Agness-Sixes-Goldbeach complex, 0 to 30 percent slopes; in an area of grassland; about 200 feet south and 1,650 feet east of the northwest corner of sec. 25, T. 35 S., R. 13 W.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) channery silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common very fine tubular pores; 25 percent channers, 5 percent flagstones, and 2 percent stones; very strongly acid (pH 4.6); clear wavy boundary.

AB—6 to 11 inches; very dark grayish brown (10YR 3/2) very channery silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular pores; 30 percent channers and 10 percent flagstones; very strongly acid (pH 4.6); abrupt wavy boundary.

Bw—11 to 18 inches; dark grayish brown (10YR 4/2) extremely channery silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; few very fine tubular pores; 45 percent channers and 20 percent flagstones; very strongly acid (pH 4.8); abrupt wavy boundary.

R—18 inches; fractured schist.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The umbric epipedon is 10 to 20 inches thick, and it may include all or part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 or 2 moist or dry. It is channery silt loam and averages 15 to 25 percent clay. It is 15 to 25 percent channers, 0 to 5 percent flagstones, and 0 to 3 percent stones.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 or 3 moist or dry. It is very channery silt loam, extremely channery silt loam, or very channery loam and averages 18 to 25 percent clay. It is 25 to 50 percent channers, 10 to 20 percent flagstones, and 0 to 5 percent stones.

Grassyknob Series

The Grassyknob series consists of moderately deep, well drained soils in open grassland areas on broad summits, stable benches, and south-facing side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Grassyknob silt loam, 0 to 30 percent slopes, in an area of grassland; about 1,650 feet south and 1,400 feet east of the northwest corner of sec. 18, T. 36 S., R. 14 W.

A—0 to 6 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine tubular pores; 10 percent soft rock fragments; strongly acid (pH 5.2); clear smooth boundary.

AB—6 to 12 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 5 percent gravel and 10 percent soft rock fragments; strongly acid (pH 5.2); gradual smooth boundary.

Bw1—12 to 19 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 10 percent gravel and 5 percent soft rock fragments; strongly acid (pH 5.4); gradual smooth boundary.

Bw2—19 to 28 inches; dark grayish brown (10YR 4/2) silty clay loam, dark brown (10YR 4/3) dry; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots and few medium roots; common fine tubular pores; 10 percent gravel and 10 percent soft rock fragments; strongly acid (pH 5.4); clear smooth boundary.

Bw3—28 to 36 inches; brown (10YR 4/3) cobbly clay loam, brown (10YR 5/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; 10 percent cobbles, 10 percent gravel, and 15 percent soft rock fragments; strongly acid (pH 5.4); abrupt wavy boundary.

R—36 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 10 to 20 inches thick. The profile is strongly acid or very strongly acid throughout.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 3 to 5 dry, and chroma of 1 or 2 moist or dry. It is 0 to 10 percent gravel and 0 to 10 percent soft, gravel-sized rock fragments. The organic matter content is 8 to 12 percent.

The AB horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 3 to 5 dry, and chroma of 1 to 3 moist or dry. It is 20 to 25 percent clay, 0 to 10 percent gravel, and 0 to 10 percent soft, gravel-sized rock fragments.

The Bw horizon has hue of 10YR or 2.5Y, value of 3 to 5 moist and 4 to 6 dry, and chroma of 2 or 3 moist or dry. It is silty clay loam, clay loam, or cobbly clay loam and averages 27 to 35 percent clay. It is 5 to 10 percent gravel, 0 to 20 percent cobbles, and 0 to 30 percent soft, gravel-sized rock fragments.

Gravecreek Series

The Gravecreek series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 3 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Gravecreek very cobbly loam in an area of Eightlar-Gravecreek-Pearsoll complex, 3 to 30 percent slopes; in an area of woodland; about 900 feet north and 2,200 feet west of the southeast corner of sec. 25, T. 35 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark brown (7.5YR 3/2) very cobbly loam, brown (7.5YR 5/3) dry; moderate fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine and fine irregular pores; 15 percent gravel, 20 percent cobbles, and 5 percent stones; neutral (pH 6.8); clear wavy boundary.

Bw1—4 to 13 inches; dark brown (7.5YR 3/3) very gravelly clay loam, brown (7.5YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 25 percent gravel, 10 percent cobbles, and 5 percent stones; neutral (pH 6.8); clear wavy boundary.

Bw2—13 to 27 inches; dark brown (7.5YR 3/4) very gravelly clay loam, light brown (7.5YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 30 percent gravel, 15 percent cobbles, and 5 percent stones; slightly acid (pH 6.6); clear wavy boundary.

Bw3—27 to 30 inches; dark brown (7.5YR 3/4) very cobbly clay loam, light brown (7.5YR 6/3) dry; weak medium subangular blocky structure; hard, firm, sticky and plastic; few medium roots; few fine tubular pores; 30 percent gravel, 20 percent cobbles, and 5 percent stones; slightly acid (pH 6.4); abrupt wavy boundary.

R—30 inches; fractured serpentinite.

Depth to bedrock is 20 to 40 inches. The profile is slightly acid or neutral throughout.

The A horizon has hue of 10YR or 7.5YR, value of 2 to 4 moist and 4 to 6 dry, and chroma of 1 to 4 moist and 2 to 4 dry. It is very cobbly loam and averages 15 to 25 percent clay. It is 20 to 25 percent gravel, 15 to 25 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 3 to 5 moist and 5 to 7 dry, and chroma of 3 or 4 moist or dry. It is very gravelly clay loam or very cobbly clay loam and averages 27 to 35 percent clay. It is 25 to 30 percent gravel, 10 to 20 percent cobbles, and 0 to 5 percent stones.

Greggo Series

The Greggo series consists of shallow, well drained soils on broad summits and side slopes of mountains (fig. 22). These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Greggo very cobbly clay loam in an area of Mislatnah-Greggo-Redflat complex, 30 to 60 percent south slopes; in an area of woodland; about 1,700 feet north and 1,025 feet east of the southwest corner of sec. 18, T. 37 S., R. 13 W.

A—0 to 4 inches; dark reddish brown (5YR 3/3) very cobbly clay loam, brown (7.5YR 5/4) dry; moderate very fine subangular structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots; many fine tubular pores; 30 percent gravel and 20 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

Bw1—4 to 12 inches; reddish brown (5YR 4/4) extremely gravelly clay loam, brown (7.5YR 5/4) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots; many fine tubular pores; 50 percent gravel and 20 percent cobbles; slightly acid (pH 6.4); gradual wavy boundary.

Bw2—12 to 17 inches; reddish brown (5YR 4/4) extremely gravelly clay loam, light brown (7.5YR 6/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; many fine tubular pores; 55 percent gravel and 25 percent cobbles; neutral (pH 6.6); abrupt wavy boundary.

R—17 inches; fractured peridotite.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The profile is slightly acid or neutral throughout. It has hue of 5YR or 7.5YR.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very cobbly clay loam and averages 27 to 30 percent clay. It is 30 to 35 percent gravel and 20 to 25 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 4 to 6 moist or dry. It is very gravelly clay loam, extremely gravelly clay loam, or extremely cobbly clay loam and averages 30 to 35 percent clay. It is 40 to 60 percent gravel and 20 to 30 percent cobbles.

Grindbrook Series

The Grindbrook series consists of very deep, moderately well drained soils on marine terraces. These soils formed in mixed alluvium. Slopes are 0 to 8 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Grindbrook silt loam in an area of Grindbrook-Wadecreek complex, 0 to 8 percent slopes; in an area of pasture; about 750 feet south and 2,200 feet east of the northwest corner of sec. 29, T. 32 S., R. 15 W.

A1—0 to 8 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots and common fine and medium roots; many very fine irregular pores; extremely acid (pH 4.4); clear smooth boundary.

A2—8 to 26 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots and common fine and medium roots; many very fine tubular pores; extremely acid (pH 4.4); gradual smooth boundary.

Bw1—26 to 38 inches; brown (10YR 4/3) silty clay loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine tubular pores; common medium prominent strong brown (7.5YR 5/8 and 4/6) masses of iron accumulation; very strongly acid (pH 4.6); gradual smooth boundary.

Bw2—38 to 49 inches; brown (10YR 5/3) silty clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; many very fine tubular pores; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and dark grayish brown (10YR 4/2) iron depletions; very strongly acid (pH 4.6); gradual smooth boundary.

BC—49 to 60 inches; yellowish brown (10YR 5/4) silty clay loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; hard, firm, sticky and plastic; few medium roots; many very fine tubular pores; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and dark grayish brown (10YR 4/2) iron depletions; very strongly acid (pH 4.6).

Depth to bedrock is more than 60 inches. The solum is more than 40 inches thick. The umbric epipedon is 20 to 30 inches thick. Redoximorphic depletions that have chroma of 2 or less are at a depth of 30 to 40 inches.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 20 to 27 percent clay.

The Bw1 horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 3 or 4 moist or dry. It is silty clay loam and averages 30 to 35 percent clay. The horizon is strongly acid or very strongly acid.

The Bw2 horizon and the BC horizon, where present, have value of 5 or 6 moist or dry and chroma of 2 to 4 moist or dry. They are silty clay loam, silty clay, or clay and average 30 to 45 percent clay. These horizons are strongly acid or very strongly acid.

Grouslous Series

The Grouslous series consists of shallow, well drained soils on summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 60 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Grouslous very gravelly loam in an area of Cassiday-Grouslous-Bravo complex, 60 to 90 percent south slopes; in an area of woodland; about 1,850 feet south and 800 feet west of the northeast corner of sec. 16, T. 40 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly loam, grayish brown (10YR 5/2) dry; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic; many fine roots; many fine irregular pores; 40 percent gravel; very strongly acid (pH 4.8); abrupt smooth boundary.

Bw1—4 to 8 inches; brown (10YR 4/3) very gravelly clay loam, pale brown (10YR 6/3) dry; strong fine subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many fine tubular pores; 45 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw2—8 to 16 inches; brown (10YR 4/3) extremely gravelly clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots; many fine tubular pores; 65 percent gravel; very strongly acid (pH 4.8); abrupt wavy boundary.

R—16 inches; fractured metasedimentary rock.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam or very stony loam and averages 18 to 27 percent clay. It is 35 to 55 percent gravel and 0 to 20 percent stones.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly clay loam or extremely gravelly clay loam and averages 27 to 35 percent clay. It is 45 to 70 percent gravel.

Guerin Series

The Guerin series consists of shallow, well drained soils on summits and side slopes of coastal hills and mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Guerin very gravelly loam in an area of Dulandy-Guerin-Rock outcrop complex, 60 to 90 percent south slopes; in an area of woodland; about 425 feet north and 2,250 feet west of the southeast corner of sec. 4, T. 41 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly loam, brown (10YR 4/3) dry; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine irregular pores; 25 percent gravel and 15 percent cobbles; strongly acid (pH 5.4); clear smooth boundary.

Bw1—4 to 9 inches; dark brown (7.5YR 3/3) very cobbly loam, brown (7.5YR 5/4) dry; strong very fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 30 percent gravel and 20 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw2—9 to 16 inches; brown (7.5YR 4/4) extremely cobbly loam, strong brown (7.5YR 5/6) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine continuous tubular pores; 40 percent gravel and 25 percent cobbles; strongly acid (pH 5.2); gradual wavy boundary.

R—16 inches; fractured sandstone.

Depth to bedrock is 10 to 20 inches. The profile has hue of 7.5YR or 10YR.

The A horizon has value of 3 or 4 moist or dry and chroma of 2 or 3 moist and 3 or 4 dry. It is very gravelly loam and averages 10 to 20 percent clay. It is 25 to 40 percent gravel and 10 to 20 percent cobbles.

The Bw horizon has value and chroma of 3 to 6 moist or dry. It is very cobbly loam or extremely cobbly loam and averages 15 to 25 percent clay. It is 30 to 50 percent gravel and 20 to 35 percent cobbles.

Haplumbrepts

Haplumbrepts consists of moderately deep to very deep, well drained to somewhat excessively drained soils on north-facing side slopes of mountains. These soils formed in colluvium derived from intrusive igneous rock, glacial drift, or glacial till. Slopes are 0 to 100 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Haplumbrepts extremely gravelly sandy loam in an area of Haplumbrepts-Rock outcrop-Rubble land complex, 60 to 100 percent north slopes; in an area of woodland; about 2,600 feet south and 200 feet west of the northeast corner of sec. 4, T. 37 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 9 inches; very dark grayish brown (10YR 3/2) extremely gravelly sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine roots, common fine and medium roots, and few coarse roots; many fine irregular pores; 70 percent gravel, 5 percent cobbles, and 5 percent stones; strongly acid (pH 5.4); clear smooth boundary.

Bw1—9 to 17 inches; dark brown (10YR 3/3) extremely gravelly loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few fine, medium, and coarse roots; few fine tubular pores; 50 percent gravel, 5 percent cobbles, and 5 percent stones; moderately acid (pH 6.0); clear smooth boundary.

Bw2—17 to 25 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 55 percent gravel, 10 percent cobbles, and 5 percent stones; neutral (pH 6.6); abrupt wavy boundary.

R—25 inches; intrusive igneous rock.

Depth to bedrock is 20 to 80 inches. The umbric epipedon is 10 to 20 inches thick. The profile is strongly acid to neutral. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is extremely gravelly sandy loam to extremely stony clay loam and averages 15 to 35 percent clay. It is 40 to 70 percent gravel, 0 to 30 percent cobbles, and 0 to 25 percent stones.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist or dry. It is extremely gravelly sandy loam to extremely stony clay loam and averages 20 to 35 percent clay. It is 40 to 70 percent gravel, 0 to 30 percent cobbles, and 0 to 25 percent stones.

The C horizon, where present, has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 4 to 6 moist or dry. It has texture similar to that of the Bw horizon. In areas where these soils formed in glacial till, the lower part of the C horizon is unconsolidated material that has high bulk density and restricts roots.

Hazelcamp Series

The Hazelcamp series consists of moderately deep, well drained soils on broad summits and stable benches of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Hazelcamp silty clay loam in an area of Skookumhouse-Hazelcamp-Averlande complex, 15 to 30 percent slopes; in an area of woodland; about 990 feet west and 2,100 feet north of the southeast corner of sec. 15, T. 40 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; dark reddish brown (5YR 3/2) silty clay loam, dark reddish gray (5YR 4/2) dry; strong fine granular structure; hard, firm, sticky and plastic; many fine roots; many fine irregular pores; 10 percent gravel; very strongly acid (pH 5.0); abrupt smooth boundary.

A2—5 to 12 inches; dark reddish brown (5YR 3/3) silty clay loam, reddish brown (5YR 5/3) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many fine tubular pores; 5 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bt1—12 to 18 inches; reddish brown (5YR 4/3) silty clay loam, reddish brown (5YR 5/3) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many fine tubular pores; few faint clay films on faces of peds; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

Bt2—18 to 25 inches; reddish brown (2.5YR 4/4) gravelly silty clay, reddish brown (5YR 5/4) dry; moderate very fine subangular blocky structure; very hard, firm, very sticky and very plastic; common fine roots; many fine tubular pores; common distinct clay films on faces of peds; 15 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

Bt3—25 to 36 inches; red (2.5YR 4/6) gravelly silty clay, red (2.5YR 5/6) dry; weak very fine subangular blocky structure; very hard, firm, very sticky and very plastic; few fine roots; many fine tubular pores; common distinct clay films on faces of peds; 20 percent gravel and 30 percent soft rock fragments; very strongly acid (pH 4.8); abrupt smooth boundary.

Cr—36 inches; weathered metavolcanic rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 10 to 15 inches thick.

The A horizon has hue of 5YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 20 percent soft rock fragments.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5 moist and 4 to 6 dry, and chroma of 4 to 6 moist or dry. It is silty clay loam, gravelly silty clay, or gravelly clay loam and averages 35 to 45 percent clay. It is 10 to 30 percent gravel and 10 to 50 percent soft rock fragments.

Hebo Series

The Hebo series consists of very deep, poorly drained soils in depressions and drainageways on marine terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 7 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Hebo silty clay loam, 0 to 7 percent slopes, in an area of native vegetation; about 330 feet south and 2,100 feet east of northwest corner of sec. 25, T. 36 S., R. 15 W.

A—0 to 5 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine tubular pores; few fine faint dark brown (7.5YR 3/2) masses of iron accumulation; very strongly acid (pH 4.6); clear smooth boundary.

BA—5 to 14 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; common very fine tubular pores; common fine distinct dark brown (7.5YR 3/2), strong brown (7.5YR 5/6), and dark reddish brown (5YR 3/4) masses of iron accumulation; very strongly acid (pH 4.6); clear smooth boundary.

Bg1—14 to 23 inches; dark gray (N 4/0) silty clay, gray (N 5/0) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common fine tubular pores; common fine distinct strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 4.6); clear smooth boundary.

Bg2—23 to 38 inches; gray (N 5/0) clay, light gray (N 6/0) dry; moderate coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; many medium distinct strong brown (7.5YR 5/8) and reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid (pH 4.6); gradual smooth boundary.

BCg—38 to 46 inches; grayish brown (2.5Y 5/2) silty clay, light brownish gray (2.5Y 6/2) dry; weak coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; many coarse prominent strong brown (7.5YR 5/8) and reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid (pH 4.6); gradual smooth boundary.

2Cg—46 to 60 inches; light brownish gray (2.5Y 6/2) silty clay loam, light gray (2.5Y 7/2) dry; massive; hard, firm, sticky and plastic; few fine tubular pores; many coarse prominent dark reddish brown (5YR 3/4), strong brown (7.5YR 5/6), and reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The A and Bg horizons have few or many, faint or prominent redoximorphic features, and the 2Cg horizon has common or many, prominent redoximorphic features. They have hue of 7.5YR or 5YR.

The A and BA horizons have value of 2 or 3 moist and 4 or 5 dry, and they have chroma of 1 or 2 moist or dry. They are silty clay loam and average 27 to 35 percent clay.

The Bg horizon has hue of 2.5Y or 5Y, value of 4 to 6 moist and 5 or 6 dry, and chroma of 1 or less moist or dry. It is silty clay or clay and averages 40 to 60 percent clay.

The 2Cg horizon has hue of 2.5Y or 5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 1 or 2 moist or dry. It is clay loam, silty clay loam, or silty clay and averages 35 to 45 percent clay. Thin lenses of sand and gravel are below a depth of 40 inches in some pedons.

Heceta Series

The Heceta series consists of very deep, poorly drained soils in interdunal depressions on deflation plains along the Pacific Coast. These soils formed in eolian sand of mixed origin. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Heceta fine sand, 0 to 3 percent slopes, in an area of native vegetation; about 660 feet south and 1,500 feet east of the northwest corner of sec. 27, T. 30 S., R. 15 W.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) fine sand, grayish brown (10YR 5/2) dry; single grain; loose, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many fine irregular pores; moderately acid (pH 6.0); abrupt smooth boundary.

C1—6 to 29 inches; grayish brown (2.5Y 5/2) fine sand, light gray (10YR 7/2) dry; single grain; loose, nonsticky and nonplastic; common fine and medium roots; common fine irregular pores; common medium distinct brown (7.5YR 5/4) masses of iron accumulation and pale red (2.5YR 6/2) iron depletions; slightly acid (pH 6.2); gradual wavy boundary.

C2—29 to 60 inches; gray (2.5Y 5/1) sand, light gray (2.5Y 7/1) dry; single grain; loose, nonsticky and nonplastic; few fine and medium roots; few fine irregular pores; few medium distinct brown (7.5YR 5/4) masses of iron accumulation and few coarse prominent pale red (2.5YR 6/2) iron depletions; slightly acid (pH 6.2).

Depth to bedrock is more than 60 inches. Depth to redoximorphic concentrations is less than 10 inches. The profile is slightly acid or moderately acid throughout.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 1 or 2 moist or dry. It is fine sand and averages less than 10 percent clay. The organic matter content is 2 to 4 percent.

The C horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 1 to 3 moist or dry. Distinct or prominent redoximorphic concentrations are throughout the horizon. The horizon is sand, fine sand, or loamy sand and averages less than 15 percent clay.

Honeygrove Series

The Honeygrove series consists of very deep, well drained soils on broad summits, stable benches, and side slopes of mountains. These soils formed in residuum and colluvium derived from metasedimentary or igneous rock. Slopes are 3 to 60 percent. The mean annual precipitation is about 110

inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Honeygrove gravelly clay loam in an area of Shivigny-Honeygrove complex, warm, 30 to 60 percent south slopes; in an area of woodland; about 500 feet south and 2,800 feet east of the northwest corner of sec. 22, T. 34 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; dark brown (7.5YR 3/4) gravelly clay loam, brown (7.5YR 4/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine tubular pores; 20 percent gravel and 10 percent soft rock fragments; moderately acid (pH 5.8); clear wavy boundary.

AB—8 to 15 inches; dark brown (7.5YR 3/4) gravelly clay loam, brown (7.5YR 4/4) dry; strong fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine tubular pores; 15 percent gravel and 10 percent soft rock fragments; moderately acid (pH 5.8); clear wavy boundary.

Bt1—15 to 50 inches; reddish brown (5YR 4/4) clay, yellowish red (5YR 5/6) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common medium and few coarse roots; common very fine tubular pores; few faint clay films on faces of peds and common distinct clay films in pores; 10 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bt2—50 to 78 inches; yellowish red (5YR 4/6) clay, yellowish red (5YR 5/6) dry; moderate medium and coarse subangular blocky structure; very hard, firm, sticky and plastic; few coarse roots; common fine tubular pores; common prominent clay films on faces of peds and in pores; 10 percent gravel and 3 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

Bt3—78 to 99 inches; yellowish red (5YR 4/6) gravelly clay, yellowish red (5YR 5/6) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common distinct clay films on faces of peds and in pores; 15 percent gravel and 5 percent cobbles; very strongly acid (pH 4.6).

Depth to bedrock is more than 60 inches. The solum commonly is 5 feet thick or more. It is slightly acid to very strongly acid throughout.

The A horizon has hue of 5YR or 7.5YR, value of 2 or 3 moist and 3 or 4 dry, and chroma of 2 to 4 moist or dry. It is gravelly clay loam and averages 30 to 40 percent clay. It is 0 to 25 percent gravel and 0 to 15 percent soft rock fragments.

The Bt horizon has hue of 2.5YR or 5YR, value of 3 or 4 moist and 4 or 5 dry, and chroma of 4 to 6 moist or dry. It is clay, silty clay, or gravelly clay and averages 50 to 60 percent clay. It is 5 to 25 percent gravel and 0 to 5 percent cobbles. The Bt horizon is as much as 25 percent soft rock fragments.

The BCt horizon, where present, is as much as 50 percent soft rock fragments below a depth of 4 feet.

Hooskanaden Series

The Hooskanaden series consists of very deep, somewhat poorly drained soils in open grassland areas on broad summits and side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from highly sheared, deeply weathered metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Hooskanaden clay loam in an area of Hooskanaden-Loneranch-Reinhart complex, 0 to 30 percent slopes; in an area of grassland; about 990 feet north and 990 feet west of the southeast corner of sec. 34, T. 39 S., R. 14 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; very dark gray (10YR 3/1) clay loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few coarse roots; many fine tubular pores; 10 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

A2—5 to 15 inches; very dark grayish brown (10YR 3/2) clay loam, grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few coarse roots; many fine continuous tubular pores; 5 percent gravel; strongly acid (pH 5.5); abrupt smooth boundary.

2Bt1—15 to 28 inches; olive brown (2.5Y 4/4) clay, light brownish gray (2.5Y 6/3) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine and few coarse roots; many fine continuous tubular pores; common distinct clay films on faces of peds and in pores; many medium distinct dark grayish brown (2.5Y 4/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; 5 percent gravel; very strongly acid (pH 4.9); abrupt smooth boundary.

2Bt2—28 to 35 inches; dark gray (10YR 4/1) clay, gray (10YR 6/1) dry; strong medium and coarse angular blocky structure; very hard, very firm, very sticky and very plastic; common fine and few coarse roots; many fine continuous tubular pores; many distinct clay films on faces of peds and in pores; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid (pH 5.0); clear smooth boundary.

2C—35 to 60 inches; dark gray (N 4/0) clay, light brownish gray (2.5Y 6/2) dry; massive; extremely hard, extremely firm, very sticky and very plastic; few discontinuous tubular pores; many medium prominent yellowish brown (10YR 5/6) and olive brown (2.5Y 4/4) masses of iron accumulation; 10 percent gravel; moderately acid (pH 5.8).

Depth to bedrock is more than 60 inches. Depth to the 2C horizon is 30 to 50 inches. The solum is strongly acid or very strongly acid throughout. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is clay loam or gravelly clay loam and averages 27 to 35 percent clay. It is 0 to 20 percent gravel. Moist bulk density is 0.90 to 1.0 gram per cubic centimeter. The organic matter content is 8 to 12 percent.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 1 to 4 moist and 1 to 3 dry. Many, medium, distinct or prominent redoximorphic depletions that have chroma of 2 or less are throughout the horizon. The 2Bt horizon is silty clay or clay and averages 40 to 50 percent clay. It is 0 to 10 percent gravel. The organic matter content is 2 to 4 percent.

The 2C horizon has hue of 2.5Y or 5Y, value of 4 or 5 moist and 6 to 8 dry, and chroma of 0 or 2 moist and 2 to 4 dry. Many, medium or coarse, prominent redoximorphic concentrations are throughout the horizon. The 2C horizon is clay or silty clay and averages 40 to 60 percent clay. It is 0 to 10 percent gravel. It is moderately acid or strongly acid.

Horseprairie Series

The Horseprairie series consists of very deep, well drained soils on summits and side slopes of marine terraces. These soils formed in marine sediment. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Horseprairie silt loam, 0 to 15 percent slopes, in an area of woodland; about 330 feet north and 1,200 feet east of the southwest corner of sec. 27, T. 31 S., R. 15 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 9 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots and common medium roots; many very fine and fine irregular pores; 5 percent concretions 2 to 5 millimeters in diameter, 10 percent soft rock fragments, and 5 percent gravel; moderately acid (pH 5.8); clear smooth boundary.

A2—9 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, dark brown (10YR 4/3) dry; weak fine granular structure; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 5 percent concretions 2 to 5 millimeters in diameter, 10 percent soft rock fragments, and 5 percent gravel; moderately acid (pH 5.7); clear smooth boundary.

Bw1—18 to 29 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 10 percent concretions 2 to 5 millimeters in diameter and 10 percent soft rock fragments; strongly acid (pH 5.5); clear smooth boundary.

Bw2—29 to 48 inches; dark brown (10YR 4/3) silty clay loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 10 percent concretions 2 to 5 millimeters in diameter and 10 percent soft rock fragments; moderately acid (pH 5.6); gradual smooth boundary.

Bw3—48 to 61 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 10 percent concretions 2 to 5 millimeters in diameter and 10 percent soft rock fragments; moderately acid (pH 5.6); gradual smooth boundary.

C—61 to 72 inches; yellowish brown (10YR 5/4) silty clay loam, very pale brown (10YR 7/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; few fine, medium, and coarse roots; common very fine and fine tubular pores; 10 percent concretions 2 to 5 millimeters in diameter; moderately acid (pH 5.6).

Depth to bedrock is more than 60 inches. The umbric epipedon is 20 to 40 inches thick and includes part of the Bw horizon. The profile is weakly smeary throughout.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 10 to 18 percent clay. It is 0 to 5 percent concretions 2 to 5 millimeters in diameter, 0 to 15 percent soft rock fragments, and 0 to 5 percent gravel that is more than 5 millimeters in diameter. The organic matter content is 5 to 10 percent. Moist bulk density is 0.85 to 0.95 gram per cubic centimeter.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 or 3 moist and 3 or 4 dry. It is silty clay loam, loam, or clay loam and averages 18 to 35 percent clay. It is 0 to 20 percent concretions 2 to 5 millimeters in diameter, 10 to 20 percent soft rock fragments, and 0 to 10 percent gravel that is more than 5 millimeters in diameter. It is slightly acid to strongly acid throughout. The organic matter content is 2 to 5 percent.

The C horizon has value of 4 to 6 moist and 5 to 7 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay loam, loam, or clay loam and averages 18 to 35 percent clay. It is 0 to 20 percent concretions 2 to 5 millimeters in diameter, 0 to 10 percent soft rock fragments, and 0 to 10 percent gravel that is more than 5 millimeters in diameter. The horizon is slightly acid to strongly acid throughout.

Houstenader Series

The Houstenader series consists of very deep, somewhat poorly drained soils in open grassland areas on summits and side slopes of hills and mountains. These soils formed in residuum and colluvium derived from highly sheared and deeply weathered metasedimentary rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Houstenader gravelly loam in an area of Houstenader-Carpenterville-Huntley complex, 0 to 30 percent slopes; in an area of pasture; about 2,175 feet north and 2,450 feet west of the southeast corner of sec. 13, T. 39 S., R. 14 W.

A1—0 to 5 inches; very dark brown (10YR 2/2) gravelly loam, dark grayish brown (10YR 4/2) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many very fine and fine irregular pores; 10 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); abrupt smooth boundary.

A2—5 to 11 inches; very dark brown (2.5Y 3/2) gravelly loam, grayish brown (2.5Y 5/2) dry; strong medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many very fine and fine irregular pores; 10 percent gravel and 5 percent cobbles; moderately acid (pH 6.0); clear smooth boundary.

Bt1—11 to 17 inches; very dark grayish brown (2.5Y 3/2) gravelly silty clay loam, light brownish gray (2.5Y 6/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; common very fine and fine tubular pores; few fine distinct dark yellowish brown (10YR 3/4) and brown (7.5YR 4/4) masses of iron accumulation; few faint clay films on faces of peds; 15 percent gravel and 5 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

Bt2—17 to 23 inches; grayish brown (2.5Y 5/2) gravelly silty clay loam, light brownish gray (2.5Y 6/2) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common fine roots; common very fine and fine tubular pores; few fine distinct dark yellowish brown (10YR 3/4) and brown (7.5YR 4/4) masses of iron accumulation; common distinct clay films on faces of peds; 15 percent gravel and 5 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

Bt3—23 to 28 inches; very dark gray (N 3/0) gravelly silty clay loam, gray (N 5/0) dry; moderate medium prismatic structure; hard, firm, sticky and plastic; common fine roots; common very fine and fine tubular pores; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation; many prominent clay films on faces of peds and in pores; 20 percent gravel and 10 percent cobbles; neutral (pH 6.6); clear smooth boundary.

Bt4—28 to 40 inches; very dark grayish brown (2.5Y 3/2) gravelly silty clay loam, light brownish gray (2.5Y 6/2) dry; weak medium prismatic structure; hard, firm, sticky and plastic; few fine roots; common very fine and fine tubular pores; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation; common distinct clay films on faces of peds and in pores; 20 percent gravel and 10 percent cobbles; neutral (pH 6.7); clear smooth boundary.

2C—40 to 60 inches; very dark grayish brown (2.5Y 3/2) very gravelly clay, light brownish gray (2.5Y 6/2) dry; massive; very hard, very firm, very sticky and very plastic; common very fine and fine tubular pores; few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation; 30 percent gravel and 10 percent cobbles; neutral (pH 6.8).

Depth to bedrock commonly is more than 60 inches, but it ranges to 45 inches in some pedons. Thickness of the solum is 40 to 60 inches. The mollic epipedon is 10 to 15 inches thick. Depth to redoximorphic concentrations is 11 to 20 inches.

The A horizon has hue of 10YR or 2.5Y, value of 2 or 3 moist and 4 or 5 dry, and chroma of as high as 2 moist or dry. It is gravelly loam and averages 18 to 25 percent clay. It is 10 to 20 percent gravel and 0 to 5 percent cobbles. It is slightly acid or moderately acid.

The Bt horizon has hue of 10YR or 2.5Y, or it is neutral in hue. It has value of 3 to 5 moist and 4 to 6 dry and chroma of as high as 2 moist or dry. It is gravelly silty clay loam or gravelly clay loam and averages 27 to 35 percent clay. It is 15 to 20 percent gravel and 5 to 10 percent cobbles. Few, fine, distinct redoximorphic concentrations are throughout the horizon. The Bt horizon is slightly acid or neutral.

The 2C horizon has hue of 2.5Y, or it is neutral in hue. It has value of 3 or 4 moist and 6 dry and chroma of as high as 2 moist or dry. It is very gravelly clay or very gravelly silty clay and averages 40 to 60 percent clay. It is 30 to 40 percent gravel and 10 to 15 percent cobbles. Few, fine, distinct or prominent redoximorphic concentrations are throughout the horizon. The 2C horizon is slightly acid or neutral.

Huffling Series

The Huffling series consists of very deep, poorly drained soils on marine terraces. These soils formed in marine sediment. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Huffling silty clay loam, 0 to 3 percent slopes, in an area of pasture; about 100 feet north and 1,470 feet west of the southeast corner of sec. 9, T. 41 S., R. 13 W.

Ap—0 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots; many fine tubular pores; few fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation; strongly acid (pH 5.4); clear smooth boundary.

Bt1—12 to 29 inches; very dark grayish brown (2.5Y 3/2) silty clay loam, light brownish gray (2.5Y 6/2) dry; moderate coarse prismatic structure parting to moderate coarse subangular blocky; hard, firm, sticky and plastic; many very fine and fine roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid (pH 5.2); clear smooth boundary.

Bt2—29 to 41 inches; gray (5Y 5/1) silty clay loam, light gray (2.5Y 7/2) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common very fine roots; many fine tubular pores; few distinct clay films on faces of peds and in pores; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; 5 percent gravel; very strongly acid (pH 4.8); gradual wavy boundary.

Bt3—41 to 52 inches; gray (5Y 5/1) clay loam, light gray (2.5Y 7/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many fine tubular pores; few faint clay films on faces of peds and in pores; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent gravel; very strongly acid (pH 4.8); gradual wavy boundary.

2C—52 to 65 inches; grayish brown (2.5Y 5/2) loam, light gray (2.5Y 7/2) dry; massive; very hard, very firm, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; many fine prominent brown (7.5YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation; 5 percent gravel; very strongly acid (pH 4.8); gradual wavy boundary.

3Cd—65 inches; dense, consolidated gravelly material.

Depth to the consolidated layer is 40 to 70 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 or 2 moist or dry. Few to common, prominent redoximorphic concentrations that have hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 to 6 are throughout the horizon. The A horizon is silty clay loam and averages 27 to 35 percent clay. It is 0 to 15 percent gravel. It is moderately acid or strongly acid. The organic matter content is 5 to 10 percent.

The Bt horizon has hue of 2.5Y or 5Y, value of 3 to

5 moist and 6 or 7 dry, and chroma of 1 or 2 moist and 2 dry. Many prominent redoximorphic concentrations that have hue of 10YR or 7.5YR, value 5 or 6, and chroma of 4 to 6 are throughout the horizon. The Bt horizon is silty clay loam, clay loam, or clay and averages 35 to 45 percent clay. It is 0 to 15 percent gravel. It is strongly acid or very strongly acid. The organic matter content is 2 to 5 percent.

The 2C horizon has hue 2.5Y or 5Y, value of 5 to 7 moist or dry, and chroma of 1 or 2 moist or dry. Many prominent redoximorphic concentrations that have hue of 10YR or 7.5YR, value of 4 or 5 moist, and chroma of 4 to 6 are throughout the horizon. The 2C horizon is loam or clay loam and averages 25 to 35 percent clay. It is 5 to 15 percent gravel.

Hunterscove Series

The Hunterscove series consists of moderately deep, well drained soils on broad summits, stable benches, and side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from arkosic sandstone or siltstone. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Hunterscove silty clay loam in an area of Bullgulch-Hunterscove complex, 30 to 60 percent north slopes; in an area of woodland; about 2,310 feet south and 2,500 feet west of the northeast corner of sec. 7, T. 38 S., R. 14 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 8 inches; dark brown (7.5YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine irregular pores; 25 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

A2—8 to 14 inches; dark brown (7.5YR 3/3) silty clay loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 30 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

Bt1—14 to 19 inches; dark brown (7.5YR 4/3) silty clay, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; common distinct clay films in pores and many distinct clay films on faces of peds; 40 percent soft rock fragments; very strongly acid (pH 4.8); gradual wavy boundary.

Bt2—19 to 28 inches; dark brown (7.5YR 4/4) silty clay, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; many distinct clay films on faces of peds and in pores; 50 percent soft rock fragments; very strongly acid (pH 4.6); gradual wavy boundary.

Cr—28 inches; weathered siltstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is strongly acid or very strongly acid throughout. It has hue of 10YR or 7.5YR. The umbric epipedon is 10 to 20 inches thick, and it may include the upper part of the Bt horizon. The solum is 10 to 50 percent soft rock fragments that are weathered sandstone or siltstone and can be crushed.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. The organic matter content is 4 to 8 percent.

The Bt horizon has value of 3 to 5 moist and 4 to 6 dry, and it has chroma of 3 to 6 moist or dry. It is silty clay, silty clay loam, or clay loam and averages 35 to 45 percent clay. It has few to common, faint or distinct clay films. The organic matter content is 2 to 4 percent.

Huntley Series

The Huntley series consists of shallow, well drained soils in open areas of grassland on summits and side slopes of hills and mountains. These soils formed in colluvium and residuum derived from highly sheared, deeply weathered metasedimentary rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Huntley gravelly loam in an area of Houstenader-Carpenterville-Huntley complex, 0 to 30 percent slopes; in an area of pasture; about 200 feet south and 450 feet west of the northeast corner of sec. 24, T. 39 S., R. 14 W.

A—0 to 3 inches; very dark gray (10YR 3/1) gravelly loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; many fine tubular pores; 15 percent gravel and 20 percent soft rock fragments; strongly acid (pH 5.2); clear smooth boundary.

Bw1—3 to 11 inches; very dark grayish brown (10YR 3/2) gravelly clay loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; many fine tubular pores; 20 percent gravel, 5 percent cobbles, and 30 percent soft rock fragments; strongly acid (pH 5.2); gradual wavy boundary.

Bw2—11 to 17 inches; dark brown (10YR 3/3) gravelly clay loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many fine tubular pores; 20 percent gravel, 10 percent cobbles, and 35 percent soft rock fragments; strongly acid (pH 5.4); abrupt wavy boundary.

R—17 inches; partially weathered shale.

Depth to bedrock and thickness of the solum are 14 to 20 inches. The mollic epipedon is 10 to 20 inches thick and includes the upper part of the Bw horizon. The profile is slightly acid to strongly acid.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is gravelly loam and averages 18 to 25 percent clay. It is 10 to 15 percent gravel, 0 to 5 percent cobbles, and 15 to 25 percent soft rock fragments.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly clay loam or gravelly silty clay loam and averages 27 to 35 percent clay. It is 10 to 20 percent gravel, 5 to 10 percent cobbles, and 30 to 40 percent soft rock fragments.

Irma Series

The Irma series consists of very deep, well drained soils on broad summits of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Irma very channery loam in an area of Deadline-Irma-Nailkeg complex, 0 to 30 percent slopes; in an area of woodland; about 950 feet north and 650 feet west of the southeast corner of sec. 7, T. 35 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark brown (10YR 3/3) very channery loam, brown (10YR 5/3) dry; weak very fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine and fine tubular pores; 40 percent channers; very strongly acid (pH 5.0); clear smooth boundary.

BA—6 to 14 inches; brown (10YR 4/3) channery loam, pale brown (10YR 6/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium roots and common very fine and coarse roots; many very fine and fine tubular pores; 30 percent channers; strongly acid (pH 5.2); clear smooth boundary.

Bw1—14 to 28 inches; dark yellowish brown (10YR 4/4) channery clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few very fine and coarse roots; common fine tubular pores; 25 percent channers; strongly acid (pH 5.4); clear smooth boundary.

Bw2—28 to 42 inches; dark yellowish brown (10YR 4/4) channery clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine tubular pores; 25 percent channers; strongly acid (pH 5.4); clear smooth boundary.

Bw3—42 to 55 inches; yellowish brown (10YR 5/4) channery clay loam, very pale brown (10YR 7/4) dry; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine tubular pores; 25 percent channers; strongly acid (pH 5.2); clear smooth boundary.

C—55 to 72 inches; light yellowish brown (10YR 6/4) very channery clay loam, pale yellow (2.5Y 7/4) dry; massive; slightly hard, friable, slightly sticky and plastic; few fine tubular pores; 40 percent channers; strongly acid (pH 5.2).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick. It has hue of 7.5YR or 10YR. The profile is strongly acid or very strongly acid throughout.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very channery loam and averages 10 to 25 percent clay. It is 35 to 45 percent channers and 0 to 5 percent flagstones.

The BA horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is channery loam and averages 20 to 25 percent clay. It is 20 to 30 percent channers and 0 to 3 percent flagstones.

The Bw horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 4 to 6 moist or dry. It is channery loam or channery clay loam and averages 20 to 30 percent clay. It is 15 to 30 percent channers and 0 to 3 percent flagstones.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is channery loam, channery clay loam, or very channery clay loam and averages 15 to 30 percent clay. It is 25 to 50 percent channers and 0 to 5 percent flagstones.

Jayar Series

The Jayar series consists of moderately deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Jayar very gravelly loam in an area of Althouse-Jayar-Skymor complex, 30 to 60 percent south slopes; in an area of woodland; about 10 feet south and 1,320 feet east of the northwest corner of sec. 13, T. 34 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark brown (10YR 3/3) very gravelly loam, pale brown (10YR 6/3) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine and fine irregular pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear smooth boundary.

Bw1—4 to 16 inches; dark yellowish brown (10YR 3/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common fine tubular pores; 45 percent gravel and 10 percent cobbles; moderately acid (pH 5.8); clear wavy boundary.

Bw2—16 to 31 inches; dark yellowish brown (10YR 4/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine tubular pores; 40 percent gravel and 10 percent cobbles; moderately acid (pH 5.8); abrupt wavy boundary.

R—31 inches; highly fractured, slightly weathered metasedimentary rock.

Depth to bedrock is 20 to 40 inches. The profile has hue of 10YR or 7.5YR. It is slightly acid or moderately acid throughout.

The A horizon has value of 2 to 4 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam and averages 15 to 20 percent clay. It is 35 to 50 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 3 to 5 moist and 5 to 7 dry, and it has chroma of 3 to 6 moist or dry. It is very gravelly loam, extremely gravelly loam, or very cobbly loam and averages 18 to 25 percent clay. It is 35 to 50 percent gravel and 10 to 20 percent cobbles.

Joeney Series

The Joeney series consists of soils that are shallow to an ortstein layer and are poorly drained. These soils are in nearly level or slightly depressional areas on broad summits of dissected high marine terraces (fig. 23). The soils formed in medium textured eolian material overlying stratified marine sediment. Slopes are 0 to 7 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Joeney silt loam in an area of Cunniff-Joeney complex, 0 to 15 percent slopes; in an area of woodland; about 2,200 feet south and 1,200 feet east of the northwest corner of sec. 15, T. 32 S., R. 15 W.

E1—0 to 7 inches; dark gray (10YR 5/1) silt loam, gray (10YR 6/1) dry; weak thick platy structure; hard, firm, slightly sticky and slightly plastic; few medium and coarse roots; common fine tubular pores; common medium distinct gray (10YR 5/1) iron depletions; very strongly acid (pH 4.6); abrupt irregular boundary.

E2—7 to 13 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/2) dry; massive; hard, firm, slightly sticky and slightly plastic; few medium and coarse roots; common fine tubular pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid (pH 4.8); abrupt irregular boundary.

Bh—13 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; strong very fine angular blocky structure; hard, firm, slightly sticky and slightly plastic; few medium and coarse roots; common fine tubular pores; few fine distinct gray (10YR 5/1) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid (pH 4.6); abrupt broken boundary.

Bs—15 to 19 inches; dark yellowish brown (10YR 4/4) weakly cemented clay loam, brownish yellow (10YR 6/6) dry; weak medium platy structure; hard, very firm, sticky and plastic; few very fine roots; few very fine and fine tubular pores; few fine distinct gray (10YR 5/1) iron depletions and common fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation; very strongly acid (pH 5.0); abrupt wavy boundary.

Bsm—19 to 26 inches; dark yellowish brown (10YR 4/4) strongly cemented clay loam, very pale brown (10YR 7/4) dry; common medium distinct very pale brown (10YR 7/4) masses of iron accumulation; moderate fine angular blocky structure; very hard, very firm, sticky and plastic; few very fine tubular pores; very strongly acid (pH 4.8); abrupt broken boundary.

2C—26 to 60 inches; dark yellowish brown (10YR 4/4) silty clay loam, very pale brown (10YR 7/4) dry; common medium distinct very pale brown (10YR 7/4) masses of iron accumulation; massive; slightly hard, firm, sticky and plastic; few very fine tubular pores; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. Depth to the Bsm horizon is 10 to 20 inches. The profile has redoximorphic concentrations throughout.

The E horizon has value of 5 to 7 moist and 6 to 8 dry, and it has chroma of 1 or 2 moist or dry. It is silt loam and averages 15 to 25 percent clay.

The Bh horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 1 or 2 moist or dry. It is silt loam and averages 20 to 25 percent clay. Typically, this horizon has an accumulation of organic matter.

The Bs horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. It is weakly cemented.

The Bsm horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 to 8 dry, and chroma of 4 to 8 moist or dry. It is strongly cemented.

The 2C horizon has hue of 10YR or 2.5Y, value of 4 to 7 moist and 6 to 8 dry, and chroma of 4 to 8 moist or dry. It is variegated, thinly stratified to thickly stratified silty clay loam to loam derived from marine sediment.

Josephine Series

The Josephine series consists of deep, well drained soils on broad summits, benches, toeslopes, and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from mudstone and metasedimentary rock. Slopes are 2 to 60 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Josephine gravelly loam in an area of Josephine-Pollard-Speaker complex, 2 to 30 percent slopes; in an area of woodland; about 30 feet south and 1,320 feet west of the northeast corner of sec. 11, T. 33 S., R. 10 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark grayish brown (10YR 4/2) gravelly loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; 25 percent gravel and 20 percent soft rock fragments; moderately acid (pH 5.8); abrupt smooth boundary.

BA—6 to 15 inches; dark brown (7.5YR 4/4) gravelly loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 25 percent gravel and 20 percent soft rock fragments; moderately acid (pH 5.6); clear smooth boundary.

Bt1—15 to 22 inches; reddish brown (5YR 4/4) gravelly clay loam, reddish brown (5YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; common faint clay films on faces of peds and common distinct clay films in pores; 20 percent gravel and 25 percent soft rock fragments; strongly acid (pH 5.4); gradual smooth boundary.

Bt2—22 to 37 inches; reddish brown (5YR 4/4) gravelly clay loam, reddish brown (5YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 25 percent soft rock fragments; strongly acid (pH 5.4); gradual smooth boundary.

Bt3—37 to 46 inches; reddish brown (5YR 4/4) gravelly clay loam, reddish brown (5YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 30 percent soft rock fragments; strongly acid (pH 5.4); clear wavy boundary.

BCt—46 to 58 inches; yellowish red (5YR 5/6) gravelly clay loam, pink (5YR 7/4) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 25 percent gravel and 35 percent soft rock fragments; strongly acid (pH 5.2); gradual wavy boundary.

Crt—58 inches; weathered mudstone; common distinct clay films coating rock fragments and lining cracks in bedrock.

Depth to bedrock and thickness of the solum are 40 to 60 inches.

The A horizon has hue of 10YR or 7.5YR, value of 2 to 4 moist and 5 or 6 dry, and chroma of 2 to 4 moist or dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 30 percent gravel and 10 to 30 percent soft rock fragments. The horizon is slightly acid to strongly acid.

The BA horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 5 to 7 dry, and chroma of 4 to 6 moist or dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 30 percent gravel and 15 to 30 percent soft rock fragments.

The Bt and BCt horizons have hue of 5YR or 2.5YR moist and 7.5YR or 5YR dry, value of 3 to 5 moist and 4 to 8 dry, and chroma of 4 to 6 moist or dry. These horizons are gravelly clay loam or clay loam and average 27 to 35 percent clay. They are 10 to 30 percent gravel and 20 to 40 percent soft rock fragments.

Kanid Series

The Kanid series consists of deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary rock. Slopes are 12 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Kanid very gravelly loam in an area of Kanid-Acker-Atring complex, 30 to 60 percent south slopes; in an area of woodland; about 330 feet north and 200 feet east of the southwest corner of sec. 26, T. 34 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (10YR 3/3) very gravelly loam, pale brown (10YR 6/3) dry; moderate very fine and fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine irregular pores; 50 percent gravel; neutral (pH 7.0); clear wavy boundary.

BA—5 to 15 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many fine roots and common medium and coarse roots; common fine tubular pores; 45 percent gravel and 10 percent cobbles; neutral (pH 6.6); clear wavy boundary.

Bw1—15 to 34 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common medium and coarse roots; common fine tubular pores; 45 percent gravel and 10 percent cobbles; neutral (pH 6.6); clear wavy boundary.

Bw2—34 to 47 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few medium and coarse roots; few medium tubular pores; 45 percent gravel and 10 percent cobbles; slightly acid (pH 6.4); abrupt wavy boundary.

Cr—47 inches; weathered sandstone.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam and averages 18 to 25 percent clay. The horizon is 35 to 50 percent gravel and 0 to 5 percent cobbles. It is slightly acid or neutral.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 3 to 6 moist or dry. It is very gravelly clay loam, very gravelly loam, or extremely gravelly loam and averages 22 to 30 percent clay. The horizon is 35 to 55 percent gravel and 10 to 20 percent cobbles. It is moderately acid to neutral.

Kirkendall Series

The Kirkendall series consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about

90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Kirkendall silt loam in an area of Kirkendall-Quosatana complex, 0 to 3 percent slopes; in an area of woodland; about 1,450 feet south and 2,100 feet west of the northeast corner of sec. 11, T. 32 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many fine tubular pores; moderately acid (pH 5.6); abrupt smooth boundary.

Bw1—6 to 13 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many fine tubular pores; moderately acid (pH 5.6); clear smooth boundary.

Bw2—13 to 18 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; common fine tubular pores; moderately acid (pH 5.8); clear smooth boundary.

Bw3—18 to 26 inches; dark brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and few medium roots; common fine tubular pores; moderately acid (pH 5.8); clear smooth boundary.

BC—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; weak coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and few medium roots; few fine tubular pores; moderately acid (pH 6.0); gradual wavy boundary.

C1—37 to 52 inches; brown (10YR 5/3) silty clay loam, light yellowish brown (10YR 6/4) dry; massive; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; slightly acid (pH 6.2); gradual wavy boundary.

C2—52 to 60 inches; brown (10YR 5/3) silty clay loam, light yellowish brown (10YR 6/4) dry; massive; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid (pH 6.2).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. The profile has hue of 10YR or 7.5YR. Lenses of sandy material are in some pedons. The profile is slightly acid or moderately acid throughout. Faint or distinct redoximorphic concentrations are below a depth of 40 inches.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 15 to 25 percent clay.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is silt loam or silty clay loam and averages 20 to 35 percent clay.

The C horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is silt loam, loam, or silty clay loam and averages 15 to 35 percent clay.

Klooqueh Series

The Klooqueh series consists of very deep, well drained soils on marine terraces. These soils formed in marine sediment. Slopes are 0 to 8 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Klooqueh silty clay loam, 0 to 3 percent slopes, in an area of cropland; about 450 feet south and 200 feet west of the northeast corner of sec. 16, T. 41 S., R. 13 W.

Ap—0 to 11 inches; black (10YR 2/1) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate medium subangular blocky structure; very hard, firm, sticky and plastic; many fine roots; many fine continuous tubular pores; very strongly acid (pH 4.9); clear smooth boundary.

A—11 to 19 inches; black (10YR 2/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many fine continuous tubular pores; very strongly acid (pH 4.9); gradual wavy boundary.

Bt1—19 to 26 inches; dark brown (10YR 3/3) silty clay loam, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; many fine roots; many fine continuous tubular pores; few faint clay films on faces of peds and in pores; very strongly acid (pH 4.9); gradual wavy boundary.

Bt2—26 to 37 inches; brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots; many fine continuous tubular pores; few faint clay films on faces of peds and common distinct clay films in pores; 5 percent gravel; very strongly acid (pH 4.9); gradual wavy boundary.

Bt3—37 to 48 inches; brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common fine roots; many fine continuous tubular pores; few faint clay films on faces of peds and in pores; 5 percent gravel; very strongly acid (pH 4.9); gradual wavy boundary.

Bt4—48 to 60 inches; brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; many fine continuous tubular pores; few faint clay films in pores; 5 percent gravel; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The profile is strongly acid or very strongly acid throughout. The umbric epipedon is 10 to 20 inches thick.

The Ap and A horizons have value of 2 or 3 moist and 4 or 5 dry, and they have chroma of 1 to 3 moist or dry. They are silty clay loam and average 27 to 35 percent clay. The organic matter content is 5 to 10 percent.

The Bt horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist and 3 or 4 dry. It is silty clay loam, silty clay, or clay and averages 35 to 50 percent clay. It is 0 to 10 percent gravel.

Knapke Series

The Knapke series consists of very deep, well drained soils on side slopes of mountains. These soils formed in colluvium and residuum derived from olivine gabbro, gabbro, or metagabbro. Slopes are 30 to 90 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Knapke extremely gravelly loam in an area of Fantz-Knapke complex, 30 to 60 percent south slopes; in an area of woodland; about 1,980 feet north and 900 feet east of the southwest corner of sec. 29, T. 36 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; very dark grayish brown (10YR 3/2) extremely gravelly loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 55 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid (pH 6.2); clear smooth boundary.

A2—5 to 11 inches; dark brown (10YR 3/3) extremely gravelly loam, brown (10YR 4/3) dry; weak fine granular structure parting to weak very fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine irregular pores; 55 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid (pH 6.2); clear smooth boundary.

AC—11 to 17 inches; dark brown (10YR 3/3) extremely gravelly loam, brown (10YR 4/3) dry; weak very fine and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine tubular pores; 60 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid (pH 6.4); abrupt wavy boundary.

C—17 to 65 inches; brown (10YR 4/3) extremely gravelly loam, brown (10YR 5/4) dry; massive; soft, very friable, slightly sticky and slightly plastic; few medium and coarse roots; many fine tubular pores; 70 percent gravel and 10 percent cobbles; neutral (pH 6.6).

Depth to bedrock is more than 60 inches. The mollic epipedon is 10 to 19 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is extremely gravelly loam and averages 18 to 22 percent clay. It is 55 to 65 percent gravel, 5 to 15 percent cobbles, and 0 to 5 percent stones.

The C horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 4 or 5 dry, and chroma of 3 or 4 moist or dry. It is very gravelly loam or extremely gravelly loam and averages 18 to 25 percent clay. It is 55 to 70 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones.

Langlois Series

The Langlois series consists of very deep, very poorly drained soils on flood plains and tidal flats. These soils formed in silty alluvium over marine clay. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Langlois silty clay loam, 0 to 3 percent slopes, in an area of pasture; about 2,400 feet south and 1,320 feet west of the northeast corner of sec. 9, T. 31 S., R. 15 W.

Ap—0 to 10 inches; dark grayish brown (2.5Y 4/2) silty clay loam, light brownish gray (2.5Y 6/2) dry; weak medium subangular blocky structure; hard, friable, sticky and plastic; many very fine to medium roots; many very fine irregular pores; many fine and medium distinct masses of iron accumulation, most of which are along root channels; strongly acid (pH 5.5); abrupt smooth boundary.

Cg1—10 to 20 inches; dark gray (2.5Y 4/1) silty clay loam, light gray (2.5Y 6/1) dry; massive; hard, firm, sticky and plastic; common very fine and fine roots; many very fine tubular pores; many fine and medium distinct masses of iron accumulation; moderately acid (pH 5.8); gradual smooth boundary.

Cg2—20 to 28 inches; dark gray (2.5Y 4/1) silty clay loam, light gray (2.5Y 6/1) dry; massive; hard, firm, sticky and plastic; few very fine roots; common very fine tubular pores; thin, discontinuous lenses of partially decomposed woody fragments and other plant material; common fine and medium distinct masses of iron accumulation; moderately acid (pH 5.8); abrupt smooth boundary.

2Cg3—28 to 60 inches; dark gray (5Y 4/1) clay, gray (5Y 6/1) dry; massive; very hard, firm, very sticky and plastic; few fine tubular pores; few fine distinct masses of iron accumulation; moderately acid (pH 6.0).

Depth to bedrock is more than 60 inches. Value of darker than 3.5 moist and 5.5 dry does not occur below a depth of 6 inches. Depth to the 2Cg horizon is 20 to 36 inches. Distinct or prominent redoximorphic features are throughout the profile.

The A horizon has hue of 2.5Y or 10YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 1 or 2 moist or dry. It is silty clay loam and averages 27 to 40 percent clay. The horizon is moderately acid or strongly acid.

The Cg horizon has hue of 10YR to 5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 1 or less moist or dry. It is silty clay loam or silty clay and averages 35 to 45 percent clay. The horizon is moderately acid or strongly acid.

The 2Cg horizon has hue of 2.5Y or 5Y and value of 4 or 5 moist and 6 or 7 dry. Chroma is as high as 2 moist or dry, but it is dominantly 1 or less. The horizon is clay or silty clay and averages 40 to 55 percent clay. It is slightly acid or moderately acid.

Loeb Series

The Loeb series consists of deep, well drained soils on broad summits of coastal hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Loeb silt loam in an area of Loeb-Macklyn complex, 0 to 15 percent slopes; in an area of woodland; about 1,025 feet south and 1,450 feet east of the northwest corner of sec. 30, T. 40 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; dark reddish brown (5YR 3/3) silt loam, dark brown (7.5YR 4/4) dry; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many fine irregular pores; 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

A2—4 to 10 inches; dark reddish brown (5YR 3/3) silt loam, dark brown (7.5YR 4/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many fine tubular pores; 5 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); gradual wavy boundary.

Bt1—10 to 22 inches; reddish brown (5YR 4/3) silty clay loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many fine tubular pores; few distinct clay films on faces of peds and common prominent clay films in pores; 5 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 5.0); gradual wavy boundary.

Bt2—22 to 37 inches; reddish brown (5YR 4/4) silty clay, strong brown (7.5YR 5/6) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; few medium and coarse roots; many fine tubular pores; many distinct clay films on faces of peds and in pores; 5 percent gravel and 20 percent soft rock fragments; very strongly acid (pH 5.0); gradual wavy boundary.

Bt3—37 to 46 inches; reddish brown (5YR 4/4) gravelly clay, strong brown (7.5YR 5/6) dry; weak fine subangular blocky structure; slightly hard, friable, sticky and plastic; few coarse roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel, 5 percent cobbles, and 30 percent soft rock fragments; very strongly acid (pH 5.0); clear wavy boundary.

Cr—46 inches; weathered sandstone.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The profile has hue of 5YR or 7.5YR. The umbric epipedon is 10 to 20 inches thick, and it may include the upper part of the Bt horizon.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist and 3 or 4 dry. It is silt loam and averages 15 to 25 percent clay. It is 0 to 10 percent gravel and 0 to 20 percent soft, gravel-sized rock fragments.

The Bt horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist and 4 to 6 dry. It is silty clay loam, silty clay, or gravelly clay and averages 35 to 45 percent clay. It is 0 to 20 percent gravel, 0 to 5 percent cobbles, and 15 to 30 percent soft, gravel-sized rock fragments.

Logsden Series

The Logsden series consists of very deep, well drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Logsden silt loam, 0 to 3 percent slopes, in an area of pasture; about 500 feet north and 600 feet east of the southwest corner of sec. 26, T. 32 S., R. 15 W.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, dark brown (10YR 4/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; very strongly acid (pH 4.6); abrupt smooth boundary.

A—6 to 17 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; very strongly acid (pH 4.8); clear smooth boundary.

Bw—17 to 44 inches; brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; very strongly acid (pH 4.8); gradual smooth boundary.

2C—44 to 60 inches; brown (10YR 5/3) fine sandy loam, brownish yellow (10YR 6/6) dry; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine irregular pores; very strongly acid (pH 4.6).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 18 to 25 percent clay. It is 0 to 3 percent gravel. The organic matter content is 5 to 12 percent.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is silt loam or silty clay loam and averages 20 to 35 percent clay. It is 0 to 3 percent gravel.

The 2C horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. It commonly is stratified and ranges from fine sandy loam or loam to loamy sand. It averages 5 to 20 percent clay. The horizon is 0 to 3 percent gravel.

Loneranch Series

The Loneranch series consists of moderately deep, moderately well drained soils in open areas of grassland on broad summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from highly sheared, deeply weathered metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Loneranch gravelly clay loam in an area of Hooskanaden-Loneranch-Reinhart complex, 0 to 30 percent slopes; in an area of pasture; about 330 feet north and 1,200 feet west of the southeast corner of sec. 2, T. 40 S., R. 14 W.

A—0 to 3 inches; very dark gray (10YR 3/1) gravelly clay loam, dark grayish brown (10YR 4/2) dry; weak very fine subangular blocky structure parting to weak very fine granular; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine irregular pores; 15 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

BA—3 to 9 inches; very dark grayish brown (10YR 3/2) gravelly clay loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, very weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 20 percent gravel and 5 percent cobbles; strongly acid (pH 5.5); clear wavy boundary.

Bw1—9 to 17 inches; very dark grayish brown (10YR 3/2) gravelly clay loam, dark brown (10YR 4/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 25 percent gravel and 5 percent cobbles; strongly acid (pH 5.2); gradual wavy boundary.

Bw2—17 to 24 inches; very dark grayish brown (10YR 3/2) gravelly clay loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; common distinct organic coatings on faces of peds and in pores; 25 percent gravel and 5 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

Bw3—24 to 27 inches; dark brown (10YR 3/3) very gravelly clay loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; common distinct organic coatings on faces of peds and in pores; common fine distinct dark grayish brown (10YR 4/2) iron depletions and brown (10YR 4/3) masses of iron accumulation; 30 percent gravel and 10 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

R—27 inches; fractured siltstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 20 to 30 inches thick and includes the upper part of the Bw horizon. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is gravelly clay loam and averages 27 to 35 percent clay. It is 15 to 20 percent gravel and 0 to 5 percent cobbles. The organic matter content is 7 to 10 percent.

The BA horizon, where present, has color similar to that of the A horizon. The BA horizon is gravelly clay loam and averages 30 to 35 percent clay. It is 10 to 20 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 to 4 moist or dry. Common fine distinct redoximorphic depletions that have chroma of 2 or less are below a depth of 20 inches. The Bw horizon is 30 to 35 percent clay. The Bw1 and Bw2 horizons are 10 to 30 percent gravel and 0 to 5 percent cobbles. The Bw3 horizon is gravelly clay loam or very gravelly clay loam. It is 20 to 30 percent gravel and 5 to 10 percent cobbles.

Macklyn Series

The Macklyn series consists of moderately deep, well drained soils on broad summits of coastal hills and mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Macklyn silt loam in an area of Loeb-Macklyn-Vondergreen complex, 0 to 30 percent slopes; in an area of woodland; about 3,960 feet south and 3,960 feet west of the northeast corner of sec. 18, T. 41 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 6 inches; dark reddish brown (5YR 3/2) silt loam, dark brown (7.5YR 4/4) dry; strong very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many fine irregular pores; very strongly acid (pH 4.8); clear smooth boundary.

A2—6 to 12 inches; dark reddish brown (5YR 3/3) silt loam, brown (7.5YR 5/4) dry; strong very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and few medium roots; many fine irregular pores; 5 percent gravel; very strongly acid (pH 4.8); abrupt wavy boundary.

Bt1—12 to 22 inches; reddish brown (5YR 4/4) silty clay loam, light brown (7.5YR 6/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium roots; many very fine and fine continuous tubular pores; few distinct clay films on faces of peds and in pores; 5 percent gravel; very strongly acid (pH 4.6); clear wavy boundary.

Bt2—22 to 29 inches; reddish brown (5YR 4/4) silty clay, reddish yellow (5YR 6/6) dry; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few very fine and fine roots; many very fine and fine continuous tubular pores; many prominent clay films on faces of peds and in pores; 10 percent gravel and 30 percent soft rock fragments; very strongly acid (pH 4.6); clear wavy boundary.

Bt3—29 to 37 inches; reddish brown (5YR 4/4) gravelly clay, reddish yellow (5YR 6/6) dry; weak medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few very fine and fine roots; many very fine and fine continuous tubular pores; many prominent clay films on faces of peds and in pores; 20 percent gravel and 40 percent soft rock fragments; very strongly acid (pH 4.6); gradual wavy boundary.

Cr—37 inches; weathered sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 5YR or 7.5YR. The umbric epipedon is 8 to 15 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist and 3 or 4 dry. It is silt loam and averages 15 to 25 percent clay. It is 0 to 10 percent gravel and 0 to 15 percent soft, gravel-sized rock fragments. The organic matter content is 5 to 10 percent.

The Bt1 horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. It is 0 to 15 percent gravel and 0 to 20 percent soft, gravel-sized rock fragments.

The Bt2 and Bt3 horizons have value of 4 or 5 moist and 4 to 6 dry, and they have chroma of 4 to 6 moist or dry. They are gravelly silty clay loam, gravelly clay, or silty clay and average 35 to 45 percent clay. The horizons are 5 to 30 percent gravel and 20 to 40 percent soft, gravel-sized rock fragments.

McCurdy Series

The McCurdy series consists of very deep, moderately well drained soils on high stream terraces. These soils formed in alluvium derived from mixed rock sources. Slopes are 0 to 7 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of McCurdy silt loam in an area of McCurdy-Wintley complex, 0 to 7 percent slopes; in an area of woodland; about 330 feet south and 2,310 feet east of the northwest corner of sec. 6, T. 32 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many fine tubular pores; very strongly acid (pH 4.8); clear smooth boundary.

BA—6 to 10 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many fine tubular pores; very strongly acid (pH 4.8); clear smooth boundary.

Bt1—10 to 27 inches; dark yellowish brown (10YR 4/6) silty clay loam, brownish yellow (10YR 6/6) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; very strongly acid (pH 4.8); gradual wavy boundary.

Bt2—27 to 38 inches; yellowish brown (10YR 5/6) silty clay loam, brownish yellow (10YR 6/6) dry; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; common fine tubular pores; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation and light brownish gray (2.5YR 6/2) iron depletions; many distinct clay films on faces of peds and in pores; very strongly acid (pH 4.8); gradual wavy boundary.

BC—38 to 46 inches; yellowish brown (10YR 5/8) silty clay loam, yellow (10YR 7/8) dry; weak coarse subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; many medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation and light brownish gray (2.5Y 6/2) iron depletions; very strongly acid (pH 5.0); gradual wavy boundary.

C—46 to 60 inches; brownish yellow (10YR 6/8) silty clay loam, yellow (10YR 7/8) dry; massive; very hard, firm, sticky and plastic; many coarse prominent light brownish gray (2.5Y 6/2) iron depletions and light olive brown (2.5Y 5/4) masses of iron accumulation; strongly acid (pH 5.2).

Depth to bedrock is more than 60 inches. The solum 35 to 60 inches thick. It is strongly acid or very strongly acid throughout. The profile has hue of 10YR or 7.5YR. Redoximorphic depletions that have chroma of 2 or less are at a depth of 26 to 36 inches.

The A horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 2 to 4 moist or dry. It is silt loam and averages 20 to 27 percent clay.

The Bt horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 6 to 8 moist or dry. Redoximorphic concentrations in the horizon have hue of 10YR or 2.5Y. The Bt horizon is silty clay loam or silty clay and averages 35 to 50 percent clay.

The C horizon has value of 4 to 6 moist and 4 to 7 dry, and it has chroma of 4 to 8 moist or dry.

Redoximorphic concentrations in the horizon have hue of 10YR or 2.5Y. The C horizon is silty clay loam, silty clay, or clay and averages 35 to 50 percent clay.

McDuff Series

The McDuff series consists of moderately deep, well drained soils on broad summits and stable benches of mountains. These soils formed in residuum and colluvium derived from sedimentary or metasedimentary rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of McDuff silty clay loam in an area of Orford-McDuff complex, 15 to 30 percent slopes; in an area of woodland; about 500 feet north and 1,500 feet west of the southeast corner of sec. 9, T. 34 S., R. 14 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 13 inches; dark brown (7.5YR 3/2) silty clay loam, brown (7.5YR 5/3) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine irregular pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

BA—13 to 22 inches; dark brown (7.5YR 3/3) silty clay loam, brown (7.5YR 5/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.6); clear smooth boundary.

Bt—22 to 29 inches; dark brown (7.5YR 4/3) silty clay, brown (7.5YR 5/4) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 10 percent gravel and 25 percent soft rock fragments; very strongly acid (pH 4.6); gradual smooth boundary.

BCt—29 to 37 inches; dark brown (7.5YR 4/4) silty clay, brown (7.5YR 5/4) dry; weak fine subangular blocky structure; hard, firm, sticky and plastic; few medium and coarse roots; few fine tubular pores; common distinct clay films on faces of peds and in pores; 10 percent gravel and 40 percent soft rock fragments; very strongly acid (pH 4.5); abrupt smooth boundary.

Cr—37 inches; weathered siltstone.

Depth to bedrock is 20 to 40 inches. The profile has hue of 7.5YR or 10YR. The umbric epipedon is 20 to 30 inches thick. The profile is strongly acid or very strongly acid throughout.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 20 percent soft rock fragments.

The Bt horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 to 6 moist or dry. It is silty clay or clay and averages 40 to 60 percent clay. It is 0 to 10 percent gravel and 10 to 50 percent soft rock fragments.

Meda Series

The Meda series consists of very deep, well drained soils on alluvial fans. These soils formed in alluvium and colluvium derived from mixed sources. Slopes are 3 to 15 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Meda gravelly loam, 3 to 15 percent slopes, in an area of woodland; about 1,050 feet south and 2,000 feet west of the northeast corner of sec. 17, T. 33 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; very dark grayish brown (10YR 3/2) gravelly loam, dark brown (10YR 4/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 20 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bw1—8 to 14 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 15 percent gravel and 2 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bw2—14 to 21 inches; dark yellowish brown (10YR 3/4) gravelly loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many fine tubular pores; 20 percent gravel and 3 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bw3—21 to 28 inches; dark yellowish brown (10YR 4/4) gravelly loam, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many fine tubular pores; 25 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear wavy boundary.

2C1—28 to 43 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam, light yellowish brown (10YR 6/4) dry; massive; soft, very friable, nonsticky and nonplastic; many fine and medium roots and few coarse roots; many fine tubular pores; 20 percent gravel and 10 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

2C2—43 to 60 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, very pale brown (10YR 7/4) dry; massive; soft, very friable, nonsticky and nonplastic; common medium and few coarse roots; many fine tubular pores; 40 percent gravel and 15 percent cobbles; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The solum is 20 to 40 inches thick. The umbric epipedon is 10 to 20 inches thick. The profile is moderately acid or strongly acid throughout. Gravelly textured material is within the upper 40 inches.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam and averages 20 to 25 percent clay. It is 15 to 30 percent gravel.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist and 2 to 4 dry. It is gravelly loam, gravelly clay loam, or clay loam and averages 20 to 35 percent clay. It is 15 to 30 percent gravel and 0 to 5 percent cobbles.

The 2C horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 3 to 6 moist or dry. It is gravelly sandy loam, very gravelly sandy loam, or very gravelly loam and averages 3 to 15 percent clay. It is 30 to 40 percent gravel and 0 to 15 percent cobbles.

Milbury Series

The Milbury series consists of moderately deep, well drained soils on north-facing side slopes of mountains (fig. 24). These soils formed in colluvium and residuum derived from metasedimentary and metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Milbury very gravelly loam in an area of Milbury-Umpcoos-Dystrochrepts complex, 60 to 90 percent north slopes; in an area of woodland; about 1,980 feet north and 1,350 feet west of the southeast corner of sec. 25, T. 32 S., R. 13 W.

Oi—4 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 13 inches; very dark grayish brown (10YR 3/2) very gravelly loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine tubular pores; 35 percent gravel and 15 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

BA—13 to 17 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine tubular pores; 40 percent gravel and 15 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

Bw1—17 to 29 inches; brown (10YR 4/3) very gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common fine tubular pores; 40 percent gravel and 15 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

Bw2—29 to 36 inches; dark yellowish brown (10YR 4/4) very cobbly loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common medium tubular pores; 30 percent gravel and 25 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

R—36 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 10 to 20 inches thick, and it may include the upper part of the Bw horizon. The profile is strongly acid or very strongly acid throughout.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 to 3 moist or dry. It is very gravelly loam or stony loam and averages 10 to 18 percent clay. It is 20 to 50 percent gravel, 0 to 25 percent cobbles, and 0 to 15 percent stones.

The Bw horizon has value of 3 to 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly loam, very gravelly sandy loam, or very cobbly loam and averages 10 to 18 percent clay. It is 20 to 45 percent gravel and 10 to 35 percent cobbles.

Millicoma Series

The Millicoma series consists of moderately deep, well drained soils on summits and side slopes of coastal hills and mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 10 to 90 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Millicoma gravelly loam in an area of Millicoma-Whaleshead-Reedsport complex, 30 to 60 percent south slopes; in an area of woodland; about 2,000 feet south and 2,000 feet east of the northwest corner of sec. 20, T. 37 S., R. 14 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 9 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine irregular pores; 25 percent gravel and 5 percent cobbles; very strongly acid (pH 5.0); clear smooth boundary.

A2—9 to 19 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many fine tubular pores; 25 percent gravel and 5 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

Bw—19 to 31 inches; dark yellowish brown (10YR 4/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and few medium and coarse roots; common fine tubular pores; 40 percent gravel and 15 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Cr—31 to 41 inches; weathered bedrock; clear wavy boundary.

R—41 inches; sandstone.

Depth to weathered bedrock is 20 to 40 inches. Depth to unweathered bedrock is 40 to 60 inches. The profile has hue of 10YR or 7.5YR. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist and 2 to 4 dry. It is gravelly loam and averages 10 to 25 percent clay. It is 15 to 30 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 3 to 5 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam, very gravelly sandy loam, or extremely gravelly loam and averages 10 to 25 percent clay. It is 35 to 70 percent gravel and 5 to 15 percent cobbles.

Mislatnah Series

The Mislatnah series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Mislatnah cobbly clay loam in an area of Mislatnah-Redflat-Greggo complex, 30 to 60 percent north slopes; in an area of woodland; about 2,475 feet north and 250 feet west of the southeast corner of sec. 13, T. 37 S., R. 14 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 2 inches; dark reddish brown (5YR 3/3) cobbly clay loam, dark reddish brown (5YR 3/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine continuous tubular pores; 10 percent gravel and 10 percent cobbles; moderately acid (pH 6.0); clear smooth boundary.

BA—2 to 8 inches; dark reddish brown (5YR 3/4) cobbly clay loam, yellowish red (5YR 4/6) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine continuous tubular pores; 15 percent gravel, 10 percent cobbles, and 25 percent soft rock fragments; moderately acid (pH 6.0); clear smooth boundary.

Bw1—8 to 19 inches; dark reddish brown (5YR 3/4) cobbly clay loam, strong brown (7.5YR 4/6) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine continuous tubular pores; 15 percent gravel, 10 percent cobbles, and 25 percent soft rock fragments; slightly acid (pH 6.2); gradual smooth boundary.

Bw2—19 to 28 inches; reddish brown (5YR 4/3) very cobbly clay loam, strong brown (7.5YR 5/6) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine continuous tubular pores; 20 percent gravel, 25 percent cobbles, and 15 percent soft rock fragments; slightly acid (pH 6.2); abrupt wavy boundary.

Bw3—28 to 38 inches; brown (7.5YR 4/4) very cobbly clay loam, strong brown (7.5YR 5/6) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; many very fine and fine continuous tubular pores; 20 percent gravel, 30 percent cobbles, and 15 percent soft rock fragments; slightly acid (pH 6.2); abrupt wavy boundary.

R—38 inches; fractured reddish black peridotite and greenish black serpentinite.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 5YR or 7.5YR. It is neutral to moderately acid throughout.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 3 moist and 4 to 6 dry. It is cobbly clay loam and averages 27 to 30 percent clay. It is 0 to 10 percent gravel and 5 to 10 percent cobbles.

The BA horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist and 4 to 6 dry. It is cobbly clay loam or very cobbly clay loam and averages 27 to 30 percent clay. It is 5 to 35 percent gravel, 10 to 20 percent cobbles, and 10 to 30 percent soft rock fragments.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 or 4 moist and 4 to 6 dry. The upper part of the Bw horizon is cobbly clay loam, and it is 5 to 35 percent gravel and 10 to 20 percent cobbles. The lower part is very cobbly clay loam or extremely cobbly clay loam, and it is 20 to 45 percent gravel and 25 to 30 percent cobbles. The horizon is 27 to 35 percent clay and 10 to 30 percent soft rock fragments.

Nailkeg Series

The Nailkeg series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Nailkeg very channery loam in an area of Deadline-Irma-Nailkeg complex, 0 to 30 percent slopes; in an area of woodland; about 1,950 feet north and 2,480 feet west of the southeast corner of sec. 7, T. 35 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark brown (10YR 4/3) very channery loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 35 percent channers and 5 percent flagstones; strongly acid (pH 5.2); clear smooth boundary.

Bw1—6 to 15 inches; dark yellowish brown (10YR 4/4) very channery loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 30 percent channers and 10 percent flagstones; strongly acid (pH 5.4); clear smooth boundary.

Bw2—15 to 27 inches; yellowish brown (10YR 5/4) very channery clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots, common medium roots, and few coarse roots; common fine tubular pores; 40 percent channers and 15 percent flagstones; strongly acid (pH 5.4); abrupt wavy boundary.

R—27 inches; schist.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is strongly acid or very strongly acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very channery loam and averages 10 to 25 percent clay. It is 35 to 50 percent channers and 0 to 5 percent flagstones.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 4 to 6 moist or dry. It is very channery loam, very channery clay loam, or extremely channery loam and averages 20 to 30 percent clay. It is 25 to 50 percent channers and 10 to 15 percent flagstones.

Nehalem Series

The Nehalem series consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Nehalem silt loam, 0 to 3 percent slopes, in an area of pasture; about 600 feet south and 100 feet east of the northwest corner of sec. 20, T. 38 S., R. 14 W.

A1—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, dark brown (10YR 4/3) dry; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many fine tubular pores; strongly acid (pH 5.2); clear smooth boundary.

A2—7 to 18 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many fine tubular pores; strongly acid (pH 5.2); gradual smooth boundary.

Bw1—18 to 31 inches; dark brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and few medium roots; many fine tubular pores; strongly acid (pH 5.4); gradual smooth boundary.

Bw2—31 to 42 inches; dark brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; common fine and few medium roots; many fine tubular pores; strongly acid (pH 5.2); gradual smooth boundary.

C—42 to 60 inches; dark brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; massive; hard, firm, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. The profile has hue of 10YR or 7.5YR. Lenses of sandy material are in some pedons.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 15 to 25 percent clay.

The Bw horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. It is silt loam or silty clay loam and averages 20 to 35 percent clay.

The C horizon has color similar to that of the Bw horizon. The C horizon is loam, silt loam, or silty clay loam and averages 20 to 35 percent clay. It is 0 to 15 percent rock fragments.

Nelscott Series

The Nelscott series consists of soils that are moderately deep to an ortstein layer and are moderately well drained. These soils are on dissected marine terraces. They formed in medium textured eolian material overlying stratified marine sediment. Slopes are 0 to 8 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Nelscott loam in an area of Nelscott-Depoe-Bullards complex, 0 to 8 percent slopes; in an area of woodland; about 600 feet north and 800 feet west of the southeast corner of sec. 19, T. 31 S., R. 15 W.

A—0 to 10 inches; very dark brown (10YR 2/2) loam, brown (10YR 4/3) dry; moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; common fine irregular pores; strongly acid (pH 5.2); clear smooth boundary.

AB—10 to 19 inches; very dark grayish brown (10YR 3/2) loam, brown (10YR 5/3) dry; weak medium subangular blocky structure parting to weak medium granular; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots; common fine tubular pores; strongly acid (pH 5.3); clear smooth boundary.

Bw—19 to 32 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common very fine and fine roots; common very fine and few fine tubular pores; strongly acid (pH 5.4); abrupt wavy boundary.

2E—32 to 36 inches; light yellowish brown (10YR 6/4) loamy fine sand, white (10YR 8/2) dry; weak medium subangular blocky structure; slightly hard, firm, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine tubular pores; few fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid (pH 5.5); abrupt wavy boundary.

2Bsm1—36 to 43 inches; variegated, strong brown (7.5YR 4/6) and yellowish brown (10YR 5/6), strongly cemented loamy fine sand, yellowish brown (10YR 5/8) and yellowish red (5YR 4/6) dry; massive; very hard, very firm, nonsticky and nonplastic; few fine roots in channels; few fine tubular pores; strongly acid (pH 5.5); clear smooth boundary.

2Bsm2—43 to 51 inches; variegated, yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6), strongly cemented loamy fine sand, yellowish red (5YR 5/6) and yellowish brown (10YR 5/8) dry; massive; very hard, very firm, nonsticky and nonplastic; few fine roots in channels; few fine tubular pores; strongly acid (pH 5.4); clear smooth boundary.

2C—51 to 67 inches; variegated, strong brown (7.5YR 4/6) and brownish yellow (10YR 6/6) fine sand, light yellowish brown (2.5Y 6/4) and yellow (2.5Y 7/6) dry; massive; loose, nonsticky and nonplastic; common fine irregular pores; thin weakly cemented bands; strongly acid (pH 5.3); abrupt smooth boundary.

3C—67 to 72 inches; variegated, light brownish gray (2.5Y 6/2) and brownish yellow (10YR 6/6) sandy loam, white (10YR 8/1) and yellow (2.5Y 8/6) dry; massive; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine tubular pores; strongly acid (pH 5.2).

Depth to bedrock is more than 60 inches. Depth to the 2Bsm horizon is 24 to 40 inches. The profile is strongly acid or very strongly acid throughout.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 moist and 3 dry. It is loam and averages 15 to 25 percent clay.

The Bw horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 5 to 7 dry, and chroma of 3 to 6 moist or dry. It is loam, clay loam, or silty clay loam and averages 18 to 30 percent clay.

The 2E horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 to 8 dry, and chroma of 1 to 3 moist or dry. It is fine sand or loamy fine sand and averages 1 to 5 percent clay. The 2E horizon is more weakly expressed in some pedons on summits where internal drainage is better.

The 2Bsm horizon is variegated. It has hue of 10YR to 2.5YR, value of 3 to 5 moist or dry, and chroma of 2 to 8 moist or dry. It is weakly cemented to strongly cemented. Typically, the thin, nearly continuous, reddish colored bands are more strongly cemented than the intervening layers.

The 2C and 3C horizons are variegated. They have hue of 7.5YR to 2.5Y, value of 3 to 6 moist and 5 to 8 dry, and chroma of 2 to 6 moist or dry. They are stratified fine sand to silt loam and have thin, discontinuous lenses of gravel in some pedons. These horizons dominantly are massive and compact, but they have some layers that are single grain and others that are weakly cemented.

Nestucca Series

The Nestucca series consists of very deep, somewhat poorly drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Nestucca silt loam, 0 to 3 percent slopes, in an area of pasture; about 2,100 feet south and 700 feet west of the northeast corner of sec. 20, T. 38 S., R. 14 W.

A1—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; strongly acid (pH 5.2); clear smooth boundary.

A2—11 to 18 inches; dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; strongly acid (pH 5.2); clear smooth boundary.

Bg—18 to 43 inches; dark grayish brown (10YR 4/2) silty clay loam, light brownish gray (10YR 6/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many fine tubular pores; common fine distinct strong brown (7.5YR 5/6) and few coarse distinct strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 5.0); gradual smooth boundary.

C—43 to 60 inches; dark grayish brown (10YR 4/2) silty clay, light brownish gray (10YR 6/2) dry; massive; hard, firm, sticky and plastic; few fine roots; many fine tubular pores; many medium prominent strong brown (7.5YR 5/6) and common coarse distinct strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The profile is strongly acid or very strongly acid throughout. The umbric epipedon is 14 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 to 3 moist or dry. It is silt loam and averages 18 to 27 percent clay.

The Bg horizon has hue of 10YR to 5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 1 or 2 moist or dry. Distinct or prominent masses of iron accumulation are throughout the horizon. Distinct or prominent masses of iron depletion are below a depth of 40 inches in some pedons. The Bg horizon is silt loam or silty clay loam and averages 25 to 35 percent clay.

The C horizon has color similar to that of the Bg horizon. Distinct or prominent masses of iron accumulation are throughout the horizon. Distinct or prominent masses of iron depletion are in some pedons. The C horizon is silty clay, clay loam, or loam and averages 20 to 45 percent clay.

Norling Series

The Norling series consists of moderately deep, well drained soils on south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from mudstone and metasedimentary rock. Slopes are 30 to 60 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Norling very gravelly loam in an area of Acker-Norling complex, 30 to 60 percent south slopes; in an area of woodland; about 2,000 feet north and 50 feet east of the southwest corner of sec. 4, T. 33 S., R. 9 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 35 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear smooth boundary.

AB—4 to 9 inches; dark brown (10YR 4/3) gravelly loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 30 percent gravel and 3 percent cobbles; moderately acid (pH 5.6); clear smooth boundary.

Bt1—9 to 21 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; many very fine and fine tubular pores; few faint clay films on faces of peds and common distinct clay films in pores; 25 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bt2—21 to 28 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few medium and coarse roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 30 percent gravel and 5 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

Cr—28 inches; weathered mudstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 to 4 moist and 4 to 6 dry, and it has chroma of 2 to 4 moist and 3 or 4 dry. It is very gravelly loam and averages 15 to 25 percent clay. It is 35 to 40 percent gravel and 0 to 5 percent cobbles. The horizon is moderately acid or strongly acid.

The Bt horizon has value of 3 to 5 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. The upper part is gravelly clay loam, clay loam, or gravelly loam and averages 20 to 30 percent clay. The lower part is very gravelly clay loam or very cobbly clay loam and averages 27 to 35 percent clay. The Bt horizon is 15 to 35 percent gravel and 5 to 15 percent cobbles. It is moderately acid to very strongly acid.

Orford Series

The Orford series consists of very deep, well drained soils on broad summits and stable benches of mountains. These soils formed in residuum and colluvium derived from sedimentary or metasedimentary rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Orford silty clay loam in an area of Orford-McDuff complex, 15 to 30 percent slopes; in an area of woodland; about 400 feet north and 1,350 feet west of the southeast corner of sec. 9, T. 34 S., R. 14 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 11 inches; dark brown (7.5YR 3/2) silty clay loam, brown (7.5YR 5/3) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many very fine irregular pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

BA—11 to 18 inches; dark brown (7.5YR 3/3) silty clay loam, brown (7.5YR 5/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many very fine and fine tubular pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.6); clear smooth boundary.

Bt1—18 to 29 inches; dark brown (7.5YR 4/4) silty clay, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots and few medium and coarse roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and in pores; 10 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.6); clear smooth boundary.

Bt2—29 to 48 inches; dark brown (7.5YR 4/4) silty clay, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots and few medium and coarse roots; many very fine and fine tubular pores; many distinct clay films on faces of peds and in pores; 10 percent gravel and 25 percent soft rock fragments; very strongly acid (pH 4.6); gradual smooth boundary.

Bt3—48 to 67 inches; brown (7.5YR 5/4) silty clay, light brown (7.5YR 6/4) dry; weak fine subangular blocky structure; hard, firm, sticky and plastic; few medium and coarse roots; many very fine and fine tubular pores; many distinct clay films on faces of peds and in pores; 10 percent gravel and 50 percent soft rock fragments; very strongly acid (pH 4.5).

Depth to bedrock is more than 60 inches. The solum commonly is 48 inches thick or more. In some areas the lower part of the solum is as much as 60 percent soft rock fragments. The profile is strongly acid or very strongly acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 to 4 moist or dry. It is silty clay loam and averages 27 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 20 percent soft rock fragments.

The Bt horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay, clay, or silty clay loam and averages 35 to 45 percent clay. It is 0 to 15 percent gravel and 10 to 50 percent soft rock fragments. The lower part of the solum may be as much as 60 percent soft rock fragments in some pedons.

Orthents

Orthents consists of shallow to very deep, well drained to excessively drained soils on terraces, coastal hills, and mountains. These soils formed in alluvium, colluvium, or residuum derived from igneous, metamorphic, or sedimentary rock; deposits of eolian sand; unconsolidated marine sediment; or material derived from highly sheared, thrust-faulted bedrock. Slopes are 0 to 100 percent. The mean annual precipitation is 80 to 145 inches, and the mean annual air temperature is 43 to 54 degrees F.

Typical pedon of Orthents in an area of Rock outcrop-Orthents complex, 10 to 100 percent slopes; in a forested area; about 330 feet north and 700 feet east of the southwest corner of sec. 11, T. 31 S., R. 13 W.

Oi—0.5 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark yellowish brown (10YR 4/4) extremely gravelly sandy loam, yellowish brown (10YR 5/4) dry; weak very fine subangular blocky structure; loose, nonsticky and nonplastic; common fine and medium roots and few coarse roots; many irregular pores; 50 percent gravel and 20 percent cobbles; moderately acid (pH 5.6); clear wavy boundary.

C—5 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly loamy sand, light yellowish brown (2.5Y 6/4) dry; single grain; loose, nonsticky and nonplastic; few medium and coarse roots; many irregular pores; 60 percent gravel and 20 percent cobbles; moderately acid (pH 5.8).

The composition of these soils is extremely variable. Depth to bedrock ranges from less than 20 inches to 80 inches. The soils are neutral to very strongly acid throughout. They have hue of 5YR to 2.5Y.

The A horizon has value 2 to 6 moist and 3 to 7 dry, and it has chroma of 2 to 8 moist or dry. It is sandy loam to clay loam and averages 5 to 35 percent clay.

It is 40 to 60 percent gravel, 0 to 30 percent cobbles, and 0 to 10 percent stones.

The C horizon has value of 4 to 7 moist and 6 to 8 dry, and it has chroma of 4 to 8 moist or dry. It is loamy sand to clay loam and averages 3 to 35 percent clay. It is 40 to 65 percent gravel, 0 to 40 percent cobbles, and 0 to 20 percent stones.

Pearsoll Series

The Pearsoll series consists of shallow, well drained soils on summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 3 to 90 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Pearsoll very cobbly clay loam in an area of Gravecreek-Eightlar-Pearsoll complex, 30 to 60 percent south slopes; in an area of native vegetation; about 990 feet south and 2,100 feet west of the northeast corner of sec. 29, T. 35 S., R. 11 W.

A—0 to 4 inches; dark reddish brown (5YR 3/3) very cobbly clay loam, reddish brown (5YR 4/4) dry; moderate very fine and fine subangular blocky structure; hard, friable, slightly sticky and plastic; many fine, common medium, and few coarse roots; many very fine and fine tubular pores; 30 percent cobbles and 25 percent gravel; slightly acid (pH 6.4); clear wavy boundary.

Bw—4 to 16 inches; dark reddish brown (5YR 3/4) extremely cobbly clay, reddish brown (5YR 4/4) dry; weak fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; common very fine and fine tubular pores; 45 percent cobbles and 25 percent gravel; neutral (pH 6.6); abrupt wavy boundary.

R—16 inches; fractured serpentinite.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The horizon is slightly acid or neutral throughout.

The A horizon has hue of 5YR or 7.5YR, value of 3 or 4 moist or dry, and chroma of 2 or 3 moist and 3 or 4 dry. It is very cobbly clay loam and averages 30 to 40 percent clay. It is 15 to 25 percent gravel, 20 to 25 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has hue of 7.5YR, 5YR, or 2.5YR, value of 3 to 5 moist and 4 or 5 dry, and chroma of 4 to 6 moist or dry. It is very cobbly clay or extremely cobbly clay and averages 40 to 60 percent clay. It is 15 to 25 percent gravel, 20 to 55 percent cobbles, and 0 to 5 percent stones.

Perdin Series

The Perdin series consists of moderately deep, well drained soils on broad summits and metastable side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 5 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Perdin cobbly loam in an area of Perdin-Rock outcrop complex, 5 to 30 percent slopes; in an area of woodland; about 900 feet south and 750 feet west of the northeast corner of sec. 11, T. 41 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (7.5YR 3/4) cobbly loam, brown (7.5YR 5/4) dry; weak very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 15 percent gravel and 10 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

Bt1—5 to 10 inches; dark brown (7.5YR 4/4) gravelly clay loam, light brown (7.5YR 6/4) dry; weak very fine and fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots; common fine tubular pores; few faint clay films on faces of peds and in pores; 25 percent gravel; neutral (pH 6.8); clear wavy boundary.

Bt2—10 to 23 inches; dark brown (7.5YR 4/4) gravelly clay loam, light brown (7.5YR 5/6) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 7 percent cobbles; neutral (pH 6.8); clear irregular boundary.

Cr—23 inches; weathered serpentinitic peridotite.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 2.5YR, 5YR, or 7.5YR.

The A horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 4 to 6 moist or dry. It is cobbly loam and averages 20 to 25 percent clay. It is 5 to 15 percent gravel and 10 to 20 percent cobbles.

The Bt horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 4 or 5 moist and 4 to 6 dry. It is gravelly clay loam or gravelly clay and averages

35 to 45 percent clay. It is 15 to 25 percent gravel and 0 to 10 percent cobbles.

Pistolriver Series

The Pistolriver series consists of very deep, somewhat poorly drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Pistolriver very fine sandy loam in an area of Bagness-Pistolriver complex, 0 to 3 percent slopes; in an area of pasture; about 1,050 feet north and 200 feet east of the southwest corner of sec. 35, T. 40 S., R. 13. W.

A1—0 to 6 inches; very dark grayish brown (2.5Y 3/2) very fine sandy loam, grayish brown (2.5Y 5/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 5 percent gravel; moderately acid (pH 6.0); clear smooth boundary.

A2—6 to 11 inches; very dark grayish brown (2.5Y 3/2) very fine sandy loam, grayish brown (2.5Y 5/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine continuous tubular pores; 10 percent gravel; moderately acid (pH 6.0); clear smooth boundary.

Bw1—11 to 16 inches; very dark grayish brown (2.5Y 3/2) gravelly very fine sandy loam, grayish brown (2.5Y 5/2) dry; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; many fine distinct olive brown (2.5Y 4/4) masses of iron accumulation; 20 percent gravel; slightly acid (pH 6.4); clear smooth boundary.

Bw2—16 to 25 inches; dark grayish brown (2.5Y 4/2) gravelly very fine sandy loam, light brownish gray (2.5Y 6/2) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine continuous tubular pores; many fine distinct olive brown (2.5Y 4/4) masses of iron accumulation; 25 percent gravel and 5 percent cobbles; slightly acid (pH 6.2); abrupt smooth boundary.

2C1—25 to 32 inches; dark grayish brown (2.5Y 4/2) extremely gravelly coarse sand, light brownish gray (2.5Y 6/2) dry; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine discontinuous tubular pores; 60 percent gravel and 15 percent cobbles; neutral (pH 6.8); abrupt smooth boundary.

2C2—32 to 37 inches; dark grayish brown (2.5Y 4/2) very gravelly loamy sand, light brownish gray (2.5Y 6/2) dry; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine discontinuous tubular pores; 40 percent gravel and 15 percent cobbles; neutral (pH 6.8); abrupt smooth boundary.

2C3—37 to 60 inches; dark grayish brown (2.5Y 4/2) extremely gravelly coarse loamy sand, light brownish gray (2.5Y 6/2) dry; single grain; loose, nonsticky and nonplastic; many very fine and fine discontinuous tubular pores; 50 percent gravel and 20 percent cobbles; neutral (pH 6.6).

Depth to bedrock is more than 60 inches. The umbric epipedon 10 to 20 inches thick. Depth to the contrasting 2C horizon is 20 to 30 inches. The solum has hue of 2.5Y or 10YR, and it is slightly acid or moderately acid throughout.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very fine sandy loam and averages 10 to 15 percent clay. It is 0 to 10 percent gravel.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 moist or dry. Many fine or medium, distinct or prominent redoximorphic concentrations are throughout the horizon. The Bw horizon is gravelly very fine sandy loam or gravelly fine sandy loam and averages 5 to 10 percent clay. It is 20 to 30 percent gravel and 0 to 5 percent cobbles.

The 2C horizon has hue of 2.5Y or 5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 2 or 3 moist or dry. It dominantly is stratified very gravelly loamy sand to extremely gravelly coarse sand, but it has layers of very coarse sand to silt loam in some pedons. The 2C horizon averages 0 to 5 percent clay. It is 40 to 60 percent gravel and 10 to 20 percent cobbles.

Pollard Series

The Pollard series consists of very deep, well drained soils on summits, toeslopes, footslopes, and south-facing side slopes of mountains. These soils formed in colluvium derived from metasedimentary rock. Slopes are 2 to 60 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Pollard loam, 2 to 15 percent slopes, in an area of pasture; about 200 feet south and 2,640 feet east of the northwest corner of sec. 18, T. 35 S., R. 11 W.

A1—0 to 4 inches; dark brown (7.5YR 4/3) loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 5 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

A2—4 to 10 inches; dark brown (7.5YR 4/3) loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 5 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear smooth boundary.

AB—10 to 17 inches; dark brown (7.5YR 4/3) clay loam, brown (7.5YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine tubular pores; 5 percent gravel; moderately acid (pH 5.6); clear smooth boundary.

Bt1—17 to 32 inches; reddish brown (5YR 4/4) clay loam, yellowish red (5YR 5/6) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots; many fine tubular pores; common distinct clay films on faces of peds and many distinct clay films in pores; 5 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

Bt2—32 to 54 inches; reddish brown (5YR 4/4) silty clay, yellowish red (5YR 5/6) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine and medium roots; common fine tubular pores; many distinct clay films on faces of peds and in pores; 5 percent gravel; strongly acid (pH 5.4); gradual smooth boundary.

Bt3—54 to 69 inches; strong brown (7.5YR 4/6) silty clay, strong brown (7.5YR 5/6) dry; weak medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and common prominent clay films in pores; 5 percent gravel; strongly acid (pH 5.4).

Depth to bedrock and thickness of the solum are more than 60 inches.

The A horizon has hue of 7.5YR, 5YR, or 2.5YR, value of 4 moist and 4 or 5 dry, and chroma of 3 or 4 moist and 3 to 6 dry. It is loam or gravelly loam and averages 20 to 25 percent clay. It is 5 to 20 percent gravel and 0 to 10 percent cobbles.

The Bt horizon has hue of 2.5YR or 5YR. It has value of 4 moist and 4 or 5 dry in the upper part and 5 dry in the lower part. It has chroma of 4 to 6 moist and 6 or 7 dry. The horizon is clay, silty clay, or clay loam and averages 35 to 50 percent clay. It is 0 to 10 percent gravel.

The BCt horizon, where present, has color and texture similar to those of the Bt horizon. The BCt horizon is 0 to 10 percent gravel and 0 to 5 percent cobbles.

Preacher Series

The Preacher series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from sedimentary rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Preacher gravelly loam in an area of Digger-Preacher-Bohannon complex, warm, 30 to 60 percent south slopes; in an area of woodland; about 2,800 feet north and 2,700 feet west of the southeast corner of sec. 32, T. 33 S., R. 11 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) gravelly loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; loose, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine and fine irregular pores; 20 percent gravel; strongly acid (pH 5.5); clear wavy boundary.

AB—6 to 14 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; many very fine and fine tubular pores; 20 percent gravel; strongly acid (pH 5.5); clear wavy boundary.

Bw1—14 to 19 inches; dark brown (10YR 4/3) clay loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bw2—19 to 29 inches; dark yellowish brown (10YR 4/4) clay loam, yellowish brown (10YR 5/4) dry;

moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bw3—29 to 42 inches; dark yellowish brown (10YR 4/4) clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few medium roots; many very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

2C—42 to 60 inches; yellowish brown (10YR 5/4) loam, very pale brown (10YR 7/4) dry; massive; hard, firm, sticky and plastic; few medium roots; many fine tubular pores; 25 percent soft rock fragments; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The solum is 36 to 57 inches thick. The umbric epipedon is 10 to 20 inches thick, and it may include the upper part of the Bw horizon. The profile is strongly acid or very strongly acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is clay loam or gravelly loam and averages 20 to 35 percent clay. It is 0 to 20 percent gravel and 0 to 3 percent cobbles. Moist bulk density is 0.85 to 0.95 gram per cubic centimeter.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 3 to 6 moist or dry. Chroma of 4 or more is at a depth of less than 20 inches. The Bw horizon is loam or clay loam and is 25 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 3 percent cobbles.

The 2C horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 4 to 8 moist or dry. It is loam, sandy loam, or clay loam and averages 7 to 30 percent clay. It is 10 to 80 percent weathered rock fragments.

Pyburn Series

The Pyburn series consists of very deep, poorly drained soils on high stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 8 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Pyburn silty clay in an area of Chismore-Pyburn complex, 3 to 12 percent slopes; in an area of woodland pasture; about 330 feet north and 250 feet east of the southwest corner of sec. 36, T. 31 S., R. 13 W.

A—0 to 9 inches; very dark grayish brown (10YR 3/2) silty clay, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; few medium distinct very dark brown (7.5YR 2/2) iron depletions and dark brown (7.5YR 4/4) masses of iron accumulation; strongly acid (pH 5.4); clear smooth boundary.

BA—9 to 16 inches; very dark grayish brown (10YR 3/2) silty clay, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; common medium distinct dark brown (7.5 3/2) iron depletions and strong brown (7.5YR 4/6) masses of iron accumulation; strongly acid (pH 5.4); clear wavy boundary.

Btss—16 to 27 inches; dark grayish brown (10YR 4/2) clay, brown (10YR 5/3) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine and medium roots; common fine tubular pores; many medium distinct dark brown (7.5YR 3/3) and strong brown (7.5YR 4/6) masses of iron accumulation; common distinct clay films on faces of peds and many prominent clay films in pores; common slickensides; moderately acid (pH 5.6); gradual smooth boundary.

BCss—27 to 33 inches; dark brown (10YR 4/3) silty clay, brown (10YR 5/3) dry; moderate coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine and medium roots; common fine tubular pores; many medium and coarse prominent strong brown (7.5YR 4/6 and 5/6) masses of iron accumulation; few slickensides; moderately acid (pH 5.6); gradual wavy boundary.

C—33 to 60 inches; dark brown (10YR 4/3) clay loam, pale brown (10YR 6/3) dry; massive; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; many medium prominent strong brown (7.5YR 5/8) and reddish yellow (7.5YR 6/6) masses of iron accumulation; moderately acid (pH 5.6).

Depth to bedrock is more than 60 inches. Thickness of the solum is 30 to 50 inches. The profile is moderately acid to very strongly acid. The umbric epipedon is 10 to 20 inches thick. The profile has hue of 10YR to 2.5Y.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 or 2 moist and 2 or 3 dry. It is silty clay and averages 40 to 50 percent clay.

The Bt horizon has value of 3 to 5 moist or dry and chroma of 0 to 2 moist and 2 to 4 dry. It has common or many, distinct or prominent redoximorphic concentrations. It is clay or silty clay and averages 50 to 70 percent clay.

The C horizon has value of 3 to 5 moist or dry and chroma of 0 to 3 moist or dry. It is clay loam, silty clay, or clay and averages 35 to 50 percent clay.

Pyrady Series

The Pyrady series consists of very deep, moderately well drained soils on broad summits and benches of mountains. These soils formed in residuum derived from mudstone. Slopes are 0 to 30 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Pyrady clay loam in an area of Zalea-Pyrady-Yorel complex, 15 to 30 percent slopes; in an area of woodland; about 500 feet north and 330 feet east of the southwest corner of sec. 36, T. 37 S., R. 12$^1/_2$ W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark brown (10YR 3/3) clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; 10 percent gravel and 2 percent cobbles; very strongly acid (pH 4.6); clear smooth boundary.

Bt1—6 to 12 inches; dark brown (10YR 4/3) gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and in pores; 15 percent gravel and 5 percent cobbles; very strongly acid (pH 4.6); clear smooth boundary.

Bt2—12 to 21 inches; olive brown (2.5Y 4/4) gravelly clay loam, light yellowish brown (2.5Y 6/4) dry; moderate medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots and few medium roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 15 percent gravel and 5 percent cobbles; very strongly acid (pH 4.6); clear smooth boundary.

2Bt3—21 to 34 inches; olive (5Y 5/3) gravelly silty clay, pale olive (5Y 6/3) dry; strong fine and medium angular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; many distinct clay films on faces of peds and in pores; common fine distinct olive yellow (2.5Y 6/6) masses of iron accumulation; 15 percent gravel and 5 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

2Btg—34 to 43 inches; dark gray (5Y 4/1) gravelly silty clay, gray (5Y 6/1) dry; strong fine and medium angular blocky structure; hard, firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; many medium prominent olive yellow (2.5Y 6/6) masses of iron accumulation; common distinct clay films on faces of peds and in pores; 15 percent gravel and 5 percent cobbles; very strongly acid (pH 4.8); clear wavy boundary.

2C—43 to 66 inches; olive gray (5Y 5/2) gravelly clay, light gray (5Y 7/1) dry; massive; very hard, very firm, very sticky and very plastic; few fine and medium roots; few fine tubular pores; many medium prominent olive brown (2.5Y 4/4) and common coarse prominent olive yellow (2.5Y 6/6) masses of iron accumulation; 15 percent gravel, 5 percent cobbles, and 35 percent manganese concretions 2 to 5 millimeters in diameter; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The solum is 30 to 50 inches thick. Depth to the 2Bt horizon is 20 to 30 inches.

The A horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 4 or 5 dry, and chroma of 2 or 3 moist and 4 to 6 dry. It is clay loam and averages 27 to 35 percent clay. It is 5 to 10 percent gravel and 0 to 5 percent cobbles.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 3 or 4 moist and 4 to 6 dry. It is gravelly clay loam, clay loam, or gravelly clay and averages 35 to 45 percent clay. It is 10 to 20 percent gravel and 0 to 5 percent cobbles.

The 2Bt horizon has hue of 2.5Y or 5Y, value of 4 to 6 moist and 6 or 7 dry, and chroma of 1 to 4 moist or dry. Common fine distinct to many medium prominent redoximorphic concentrations are throughout the horizon. The horizon is gravelly silty clay loam, gravelly silty clay, or gravelly clay and averages 35 to 50 percent clay. It is 15 to 20 percent gravel and 0 to 5 percent cobbles. The lower part of the horizon is gleyed.

The 2C horizon has value of 5 to 7 moist and 6 or 7 dry, and it has chroma of 1 or 2 moist or dry. Common coarse prominent to many medium prominent redoximorphic concentrations are throughout the horizon. The horizon is gravelly clay or gravelly silty clay and averages 45 to 60 percent clay. It is 10 to 15 percent gravel, 0 to 10 percent cobbles, and 30 to 40 percent distinct or prominent manganese concretions 2 to 5 millimeters in diameter.

Quailprairie Series

The Quailprairie series consists of very deep, well drained soils that are in open areas of grassland on summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Quailprairie gravelly loam in an area of Swedeheaven-Quailprairie-Sankey complex, 0 to 30 percent slopes; in an area of grassland; about 330 feet north and 2,310 feet east of the southwest corner of sec. 33, T. 37 S., R. 13 W.

A1—0 to 5 inches; very dark brown (10YR 2/2) gravelly loam, grayish brown (10YR 5/2) dry; moderate very fine and fine subangular blocky structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine tubular pores; 20 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

A2—5 to 11 inches; very dark brown (10YR 2/2) gravelly loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; 20 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—11 to 23 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; strong medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many fine and medium tubular pores; 15 percent gravel and 5 percent cobbles; very strongly acid (pH 4.8); clear smooth boundary.

Bw2—23 to 37 inches; very dark grayish brown (10YR 3/2) gravelly clay loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many fine and medium tubular pores; 20 percent gravel, 5 percent cobbles, and 2 percent stones; very strongly acid (pH 4.8); clear wavy boundary.

Bw3—37 to 53 inches; dark grayish brown (10YR 4/2) gravelly clay loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium tubular pores; 25 percent gravel, 5 percent cobbles, and 3 percent stones; very strongly acid (pH 4.8); clear wavy boundary.

C—53 to 67 inches; dark grayish brown (2.5Y 4/2) very gravelly silty clay, light brownish gray (2.5Y 6/2) dry; massive; hard, firm, sticky and plastic; few fine and common medium tubular pores; many medium distinct light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) masses of iron accumulation; 35 percent gravel, 5 percent cobbles, and 5 percent stones; very strongly acid (pH 4.8).

Depth to a bedrock is more than 60 inches. The umbric epipedon is 20 to 40 inches thick, and it includes the upper part of the Bw horizon. High-chroma redoximorphic concentrations are below a depth of 50 inches.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 to 3 moist or dry. It is gravelly loam and averages 15 to 25 percent clay. It is 15 to 30 percent gravel and 0 to 3 percent cobbles.

The Bw horizon has value of 2 to 4 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam or gravelly clay loam and averages 20 to 35 percent clay. It is 15 to 25 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 2 or 3 moist or dry. Many, medium or coarse, distinct redoximorphic concentrations that have high chroma are throughout the horizon. The C horizon is very gravelly silty clay, extremely gravelly silty clay, or very gravelly clay and averages 40 to 50 percent clay. It is 30 to 40 percent gravel, 5 to 15 percent cobbles, and 0 to 5 percent stones.

Quillamook Series

The Quillamook series consists of very deep, well drained soils on high stream terraces (fig. 25). These soils formed in alluvium derived from mixed sources. Slopes are 0 to 7 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Quillamook silt loam, 0 to 7 percent slopes, in an area of pasture; about 500 feet north and 500 feet west of the southeast corner of sec. 18, T. 32 S., R. 15 W.

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; slightly hard, friable, nonsticky and nonplastic, moderately smeary; many very fine and fine roots; many very fine and fine irregular pores; very strongly acid (pH 4.8); clear smooth boundary.

A1—8 to 16 inches; very dark brown (10YR 2/2) silt loam, dark brown (10YR 4/3) dry; weak medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; moderately smeary; many fine and common very fine roots; many very fine and fine irregular pores; very strongly acid (pH 4.8); gradual smooth boundary.

A2—16 to 28 inches; very dark grayish brown (10YR 3/2) silt loam, dark brown (10YR 4/3) dry; moderate fine and medium subangular blocky structure parting to weak medium granular; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common very fine and fine roots; many very fine and fine tubular pores; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—28 to 34 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common very fine and fine roots; many very fine and fine tubular pores; very strongly acid (pH 4.9); clear smooth boundary.

Bw2—34 to 46 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; few very fine and fine roots; many very fine and fine tubular pores; very strongly acid (pH 4.9); abrupt smooth boundary.

Bw3—46 to 56 inches; yellowish brown (10YR 5/4) silt loam, brownish yellow (10YR 6/6) dry; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; few fine roots; many very fine and fine tubular pores; very strongly acid (pH 4.9); clear wavy boundary.

2C—56 to 60 inches; yellowish brown (10YR 5/6) loamy sand, brownish yellow (10YR 6/6) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and fine tubular pores; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 20 to 30 inches thick. Sandy or gravelly layers may be below a depth of 40 inches.

The A horizon has value of 2 moist and 3 to 5 dry, and it has chroma of 1 or 2 moist and 1 to 3 dry. Apparent field texture is silt loam. The horizon averages 15 to 25 percent clay and is 15 to 25 percent organic matter.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. Apparent field texture is silt loam or silty clay loam. The horizon averages 18 to 30 percent clay.

The 2C horizon has value of 3 to 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is loamy sand and averages 5 to 10 percent clay.

The Quillamook soils in this survey area are a taxadjunct to the Quillamook series because the organic carbon content in the surface layer is slightly higher than is typical for the series. This difference, however, does not significantly affect use and management.

Quosatana Series

The Quosatana series consists of very deep, poorly drained soils in depressions and drainageways on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Quosatana silt loam in an area of Kirkendall-Quosatana complex, 0 to 3 percent slopes; in an area of woodland; about 1,700 feet south and 1,700 feet west of the northeast corner of sec. 11, T. 32 S., R. 13 W.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation; moderately acid (pH 5.6); abrupt smooth boundary.

A2—3 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; common fine distinct gray (10YR 6/1) iron depletions and strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid (pH 5.6); clear wavy boundary.

Bg1—14 to 21 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots and few fine and medium roots; many very fine and fine tubular pores; many medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid (pH 5.8); clear wavy boundary.

Bg2—21 to 38 inches; grayish brown (10YR 5/2) silty clay loam, light brownish gray (10YR 6/2) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine roots and few fine and medium roots; common fine tubular pores; many coarse prominent gray (10YR 6/1) iron depletions and strong brown (10YR 5/6) masses of iron accumulation; moderately acid (pH 5.8); gradual wavy boundary.

BCg—38 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam, light brownish gray (2.5Y 6/2) dry; weak medium subangular blocky structure; slightly hard, firm, sticky and plastic; few fine roots; few fine tubular pores; many coarse prominent gray (10YR 5/1) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulation; moderately acid (pH 6.0); gradual wavy boundary.

Cg—49 to 60 inches; light brownish gray (2.5Y 6/2) loam, light gray (2.5Y 7/2) dry; massive; slightly hard, firm, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; many coarse prominent light gray (10YR 7/1) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulation; slightly acid (pH 6.2).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 24 inches thick. Redoximorphic concentrations are throughout the profile. The profile is slightly acid or moderately acid.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 to 3 moist or dry. It is silt loam and averages 20 to 25 percent clay.

The Bg horizon has hue of 10YR to 5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 1 or 2 moist or dry. It is silt loam or silty clay loam and averages 25 to 35 percent clay.

The Cg horizon has color similar to that of the Bg horizon. The Cg horizon is stratified silty clay, silty clay loam, or loam and averages 25 to 45 percent clay.

Redflat Series

The Redflat series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in residuum and colluvium derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Redflat gravelly loam in an area of Redflat-Mislatnah-Greggo complex, 0 to 30 percent slopes; in an area of woodland; about 1,650 feet north and 330 feet east of the southwest corner of sec. 18, T. 37 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 7 inches; dark reddish brown (5YR 3/2) gravelly loam, dark reddish brown (5YR 3/4) dry; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium roots; many very fine and fine irregular pores; 10 percent gravel, 5 percent cobbles, and 20 percent manganese concretions 2 to 5 millimeters in diameter; moderately acid (pH 6.0); clear smooth boundary.

Bw1—7 to 15 inches; dark reddish brown (2.5YR 3/4) gravelly clay loam, dark red (2.5YR 3/6) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common very fine and fine roots and few medium roots; many very fine and fine continuous tubular pores; 10 percent gravel, 5 percent cobbles, and 30 percent manganese concretions 2 to 5 millimeters in diameter; neutral (pH 6.6); gradual smooth boundary.

Bw2—15 to 23 inches; dark reddish brown (2.5YR 3/4) gravelly clay loam, yellowish red (5YR 4/6) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common very fine and fine roots and few medium roots; many very fine and fine continuous tubular pores; 10 percent gravel, 5 percent cobbles, and 30 percent manganese concretions 2 to 5 millimeters in diameter; neutral (pH 6.6); clear smooth boundary.

Bw3—23 to 38 inches; strong brown (7.5YR 4/6) gravelly clay loam, strong brown (7.5YR 5/6) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; many very fine and fine continuous tubular pores; 10 percent gravel, 5 percent cobbles, and 40 percent manganese concretions 2 to 5 millimeters in diameter; slightly acid (pH 6.4); gradual smooth boundary.

C—38 to 60 inches; strong brown (7.5YR 4/6) gravelly silty clay loam, strong brown (7.5YR 5/6) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; many very fine and fine continuous tubular pores; 20 percent gravel, 30 percent soft rock fragments, and

40 percent manganese concretions 2 to 5 millimeters in diameter; slightly acid (pH 6.2).

Depth to bedrock typically is more than 60 inches, but it is 40 to 60 inches in some pedons.

The A horizon has hue of 5YR or 2.5YR, value of 2 or 3 moist and 3 or 4 dry, and chroma of 2 or 3 moist and 4 to 6 dry. It is gravelly loam and averages 15 to 27 percent clay. It is 10 to 20 percent gravel, 0 to 5 percent cobbles, and 10 to 20 percent manganese concretions 2 to 5 millimeters in diameter. The horizon is neutral to moderately acid.

The Bw horizon has hue of 2.5YR to 7.5YR, value of 3 or 4 moist and 3 to 5 dry, and chroma of 4 to 6 moist or dry. It is gravelly silty clay loam, cobbly silty clay loam, or gravelly clay loam and averages 27 to 35 percent clay. The horizon is 10 to 20 percent gravel, 0 to 10 percent cobbles, and 20 to 40 percent manganese concretions 2 to 5 millimeters in diameter. It is neutral or slightly acid.

The C horizon has hue of 7.5YR or 10YR, value of 4 or 5 moist and 5 to 7 dry, and chroma of 6 to 8 moist or dry. It is gravelly silty clay loam, cobbly silty clay loam, or gravelly clay loam and averages 30 to 40 percent clay. The horizon is 10 to 20 percent gravel, 0 to 20 percent cobbles, 10 to 30 percent soft rock fragments, and 30 to 40 percent manganese concretions 2 to 5 millimeters in diameter. It is neutral or slightly acid.

Reedsport Series

The Reedsport series consists of moderately deep, well drained soils on broad summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Reedsport gravelly loam in an area of Reedsport-Whaleshead complex, 30 to 60 percent south slopes; in an area of woodland; about 2,425 feet south and 275 feet east of the northwest corner of sec. 35, T. 39 S., R. 14 W.

Oi—3 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 2 inches; very dark gray (10YR 3/1) gravelly loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; soft, very friable, nonsticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium roots; many very fine and fine irregular pores; 15 percent gravel and 20 percent soft rock fragments; moderately acid (pH 5.6); clear wavy boundary.

AB—2 to 8 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; 20 percent gravel and 20 percent soft rock fragments; moderately acid (pH 5.6); clear wavy boundary.

Bw1—8 to 17 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; common faint organic coatings on faces of peds and in pores; 20 percent gravel, 5 percent cobbles, and 25 percent soft rock fragments; strongly acid (pH 5.4); gradual wavy boundary.

Bw2—17 to 28 inches; dark brown (10YR 4/3) gravelly loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; common distinct organic coatings on faces of peds and in pores; 20 percent gravel, 5 percent cobbles, and 30 percent soft rock fragments; strongly acid (pH 5.4); gradual wavy boundary.

Bw3—28 to 37 inches; dark brown (10YR 4/3) gravelly loam, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; many very fine and fine tubular pores; common faint organic coatings in pores; 20 percent gravel, 5 percent cobbles, and 40 percent soft rock fragments; strongly acid (pH 5.4); clear smooth boundary.

Cr—37 inches; weathered sandstone.

Depth to bedrock is 20 to 40 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 to 3 moist or dry. It is gravelly loam and averages 10 to 25 percent clay. It is 15 to 25 percent gravel and 0 to 20 percent soft rock fragments.

The Bw horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 2 or 3 moist and 3 or 4 dry. It is gravelly loam, loam, or clay loam and averages 20 to 35 percent clay. It is 10 to 25 percent gravel, 0 to 5 percent cobbles, and 20 to 40 percent soft rock fragments.

Reinhart Series

The Reinhart series consists of shallow, well drained soils in open areas of grassland on narrow summits and side slopes of coastal hills and mountains. These soils formed in colluvium derived from highly sheared, deeply weathered metasedimentary and metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Reinhart gravelly clay loam in an area of Hooskanaden-Loneranch-Reinhart complex, 0 to 30 percent slopes; in an area of pasture; about 1,750 feet south and 400 feet east of the northwest corner of sec. 35, T. 39 S., R. 14 W.

A—0 to 2 inches; very dark gray (10YR 3/1) gravelly clay loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine irregular pores; 20 percent gravel and 5 percent cobbles; very strongly acid (pH 4.9); clear smooth boundary.

BA—2 to 8 inches; very dark grayish brown (10YR 3/2) very gravelly clay loam, dark brown (10YR 4/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots and few medium and coarse roots; many very fine and fine continuous tubular pores; 35 percent gravel and 5 percent cobbles; strongly acid (pH 5.3); clear wavy boundary.

Bw1—8 to 13 inches; dark brown (10YR 3/3) very gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine continuous tubular pores; 40 percent gravel and 10 percent cobbles; strongly acid (pH 5.3); abrupt wavy boundary.

Bw2—13 to 18 inches; dark brown (10YR 3/3) extremely gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; many very fine continuous tubular pores; 55 percent gravel and 15 percent cobbles; strongly acid (pH 5.1).

R—18 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The solum is strongly acid or very strongly acid throughout. The profile has hue of 10YR or 7.5YR. The umbric epipedon is 10 to 20 inches thick, and it includes all or part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is gravelly clay loam and averages 27 to 35 percent clay. It is 15 to 25 percent gravel and 0 to 5 percent cobbles. The organic matter content is 10 to 15 percent.

The BA horizon, where present, has color similar to that of the A horizon. The BA horizon is very gravelly clay loam or extremely gravelly clay loam and averages 30 to 35 percent clay. It is 35 to 45 percent gravel and 5 to 10 percent cobbles.

The Bw horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly clay loam or extremely gravelly clay loam and averages 30 to 35 percent clay. It is 35 to 60 percent gravel and 5 to 20 percent cobbles.

Remote Series

The Remote series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 3 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Remote gravelly loam in an area of Digger-Remote-Umpcoos complex, warm, 30 to 60 south slopes; in an area of woodland; about 1,000 feet north and 1,600 feet east of the southwest corner of sec. 13, T. 34 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) gravelly loam, pale brown (10YR 6/3) dry; moderate fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine and fine irregular pores; 20 percent gravel; strongly acid (pH 5.4); clear wavy boundary.

Bw1—6 to 14 inches; dark brown (7.5YR 4/3) gravelly loam, light brown (7.5YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine tubular pores; 30 percent gravel; strongly acid (pH 5.2); clear wavy boundary.

Bw2—14 to 32 inches; dark brown (7.5YR 4/3) very gravelly clay loam, light brown (7.5YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 40 percent gravel; very strongly acid (pH 5.0); clear wavy boundary.

Bw3—32 to 51 inches; dark brown (7.5YR 4/4) very gravelly clay loam, light brown (7.5YR 6/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common medium and few coarse roots; many very fine and fine tubular pores; 45 percent gravel; very strongly acid (pH 4.8); clear wavy boundary.

C—51 to 69 inches; dark brown (7.5YR 4/4) very gravelly clay loam, light brown (7.5YR 6/4) dry; massive; hard, firm, sticky and plastic; few medium and coarse roots; few fine tubular pores; 45 percent gravel and 5 percent cobbles; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The horizon is strongly acid or very strongly acid throughout.

The A horizon has value of 3 or 4 moist and 6 or 7 dry, and it has chroma of 2 to 4 moist or dry. It is gravelly loam or very gravelly loam and averages 15 to 25 percent clay. It is 15 to 50 percent gravel and 0 to 3 percent cobbles.

The Bw1 horizon has hue of 7.5YR or 10YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 3 or 4 moist and 4 to 6 dry. It is gravelly loam or gravelly clay loam and averages 22 to 33 percent clay. It is 20 to 30 percent gravel and 0 to 3 percent cobbles.

The Bw2 and Bw3 horizons have color similar that of the Bw1 horizon. The Bw2 and Bw3 horizons are very gravelly clay loam or extremely gravelly loam and average 22 to 33 percent clay. They are 35 to 60 percent gravel and 0 to 15 percent cobbles.

The C horizon has hue of 7.5YR or 10YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 4 to 6 moist or dry. It is very gravelly clay loam or extremely gravelly loam and averages 22 to 33 percent clay. It is 35 to 60 percent gravel and 0 to 15 percent cobbles.

Rilea Series

The Rilea series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Rilea very gravelly loam in an area of Bobsgarden-Rilea-Euchrand complex, 30 to 60 percent south slopes; in an area of woodland; about 1,500 feet north and 350 feet east of the southwest corner of sec. 11, T. 39 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (7.5YR 4/2) very gravelly loam, brown (7.5YR 5/2) dry; strong very fine granular structure; slightly hard, friable, nonsticky and nonplastic; many fine roots; many fine irregular pores; 40 percent gravel and 10 percent cobbles; strongly acid (pH 5.2); abrupt smooth boundary.

Bw1—5 to 11 inches; brown (7.5YR 4/4) very gravelly loam, brown (7.5YR 5/4) dry; strong very fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many fine roots; many fine tubular pores; 35 percent gravel and 5 percent cobbles; very strongly acid (pH 5.0); clear smooth boundary.

Bw2—11 to 18 inches; brown (7.5YR 4/4) very gravelly loam, light brown (7.5YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine tubular pores; 40 percent gravel and 10 percent cobbles; very strongly acid (pH 4.8); clear smooth boundary.

Bw3—18 to 28 inches; brown (7.5YR 4/4) very gravelly loam, light brown (7.5YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many fine tubular pores; 40 percent gravel and 10 percent cobbles; very strongly acid (pH 4.8); clear smooth boundary.

BC—28 to 38 inches; brown (7.5YR 4/4) very gravelly clay loam, light brown (7.5YR 6/4) dry; weak very fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; many fine tubular pores; 40 percent gravel and 15 percent cobbles; very strongly acid (pH 4.8); abrupt smooth boundary.

R—38 inches; metasedimentary rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is strongly acid or very strongly acid throughout. It has hue of 7.5YR or 10YR.

The A horizon has value of 3 to 5 moist and 5 or 6 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam or gravelly loam and averages 18 to 25 percent clay. It is 20 to 50 percent gravel and 0 to 15 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. It is very gravelly loam, extremely gravelly loam, or extremely gravelly clay loam and averages 20 to 35 percent clay. It is 30 to 50 percent gravel and 5 to 20 percent cobbles.

The BC horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is very gravelly clay loam, extremely gravelly loam, or very gravelly loam and averages 20 to 30 percent clay. It is 40 to 60 percent gravel and 10 to 20 percent cobbles.

The C horizon, where present, has color similar to that of the BC horizon. The C horizon is extremely gravelly sandy loam and averages 10 to 20 percent clay. It is 40 to 60 percent gravel and 10 to 25 percent cobbles.

Rogue Series

The Rogue series consists of deep, somewhat excessively drained soils on broad summits and side slopes of mountains. These soils formed in residuum and colluvium derived from granitic rock. Slopes are 12 to 60 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Rogue cobbly coarse sandy loam, 30 to 60 percent north slopes, in an area of woodland; about 1,320 feet north and 1,980 feet east of the southwest corner of sec. 24, T. 40 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) cobbly coarse sandy loam, grayish brown (10YR 5/2) dry; weak very fine subangular blocky structure; loose, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine and fine irregular pores; 10 percent gravel and 15 percent cobbles; neutral (pH 6.8); clear wavy boundary.

Bw1—5 to 12 inches; dark brown (10YR 4/3) cobbly coarse sandy loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many fine and medium roots and few coarse roots; common fine tubular pores; 10 percent gravel and 15 percent cobbles; neutral (pH 6.6); clear wavy boundary.

Bw2—12 to 30 inches; dark yellowish brown (10YR 4/4) cobbly coarse sandy loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common medium and coarse roots and few fine roots; common fine tubular pores; 15 percent gravel and 15 percent cobbles; slightly acid (pH 6.4); clear wavy boundary.

C—30 to 50 inches; light olive brown (2.5Y 5/4) gravelly coarse sandy loam, light yellowish brown (2.5Y 6/4) dry; massive; slightly hard, friable, nonsticky and nonplastic; few medium and coarse roots; common fine tubular pores; 20 percent gravel; moderately acid (pH 5.8); clear irregular boundary.

Cr—50 inches; highly weathered diorite.

Depth to bedrock is 40 to 60 inches. The solum is 24 to 45 inches thick. It is neutral or slightly acid.

The A horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 to 4 moist or dry. Colors that meet the criteria for a mollic epipedon are only in the upper 3 to 5 inches. The A horizon is cobbly coarse sandy loam and averages 5 to 15 percent clay. It is 5 to 10 percent gravel, 10 to 15 percent cobbles, and 0 to 3 percent stones.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 3 or 4 moist or dry. It is cobbly coarse sandy loam or gravelly coarse sandy loam and averages 10 to 15 percent clay. It is 10 to 15 percent gravel, 5 to 15 percent cobbles, and 0 to 3 percent stones.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6 moist and 5 to 8 dry, and chroma of 3 or 4 moist or dry. It is coarse sandy loam, gravelly loamy coarse sand, or gravelly coarse sandy loam and averages 5 to 10 percent clay. It is 10 to 25 percent gravel.

Ruch Series

The Ruch series consists of very deep, well drained soils on high stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 2 to 20 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Ruch loam in an area of Ruch-Selmac complex, 2 to 7 percent slopes; in an area of woodland; about 100 feet north and 1,650 feet west of the southeast corner of sec. 18, T. 34 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) loam, dark brown (10YR 4/3) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; 5 percent gravel; slightly acid (pH 6.2); clear smooth boundary.

A2—3 to 8 inches; dark yellowish brown (10YR 4/4) loam, yellowish brown (10YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; 5 percent gravel; slightly acid (pH 6.2); clear smooth boundary.

BAt—8 to 15 inches; dark brown (7.5YR 4/4) clay loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; few faint yellowish red (5YR 4/6) clay films in pores; 5 percent gravel; moderately acid (pH 6.0); clear wavy boundary.

Bt1—15 to 26 inches; dark brown (7.5YR 4/4) clay loam, strong brown (7.5YR 5/6) dry; moderate fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; common faint yellowish red (5YR 4/6) clay films on faces of peds and in pores; 5 percent gravel; moderately acid (pH 5.8); gradual wavy boundary.

Bt2—26 to 38 inches; strong brown (7.5YR 4/6) clay loam, strong brown (7.5YR 5/6) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; common distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; 10 percent gravel; moderately acid (pH 5.8); gradual wavy boundary.

Bt3—38 to 72 inches; yellowish red (5YR 4/6) clay loam, reddish yellow (5YR 6/6) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; many very fine tubular pores; many distinct red (2.5YR 4/6) clay films on faces of peds and in pores; 10 percent gravel; moderately acid (pH 5.8).

Depth to bedrock and thickness of the solum are more than 60 inches.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4 moist and 4 to 6 dry, and chroma of 2 to 4 moist or dry. It is loam and averages 12 to 20 percent clay. It is 0 to 10 percent gravel. The horizon is neutral or slightly acid.

The Bt horizon has hue of 5YR or 7.5YR, value of 4 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. It is loam or clay loam and averages 25 to 35 percent clay. It is 5 to 10 percent gravel and 0 to 5 percent cobbles. The horizon is slightly acid or moderately acid.

Rustybutte Series

The Rustybutte series consists of moderately deep, well drained soils on broad summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from serpentinitic metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Rustybutte gravelly clay loam in an area of Rustybutte-Sebastian complex, 30 to 60 percent north slopes; in an area of woodland; about 800 feet south and 1,400 feet east of the northwest corner of sec. 31, T. 36 S., R. 14 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; very dark brown (10YR 2/2) gravelly clay loam, dark brown (10YR 3/3) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots, many fine roots, and few medium and coarse roots; few fine tubular pores; 15 percent gravel, 5 percent cobbles, and 3 percent stones; neutral (pH 6.8); clear wavy boundary.

Bw1—8 to 21 inches; very dark brown (10YR 2/2) very cobbly clay loam, dark brown (10YR 3/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; few fine tubular pores; 15 percent gravel and 40 percent cobbles; neutral (pH 6.8); clear wavy boundary.

Bw2—21 to 28 inches; dark brown (10YR 3/3) extremely cobbly clay loam, brown (10YR 4/3) dry; weak fine and medium subangular blocky structure; hard, firm, slightly sticky and plastic; common fine and medium roots and few coarse roots; few medium tubular pores; 40 percent gravel and 25 percent cobbles; neutral (pH 6.8); abrupt wavy boundary.

R—28 inches; fractured serpentinitic metasedimentary rock.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The mollic epipedon is 20 to 30 inches thick, and it may include all or part of the Bw horizon.

The profile is neutral to moderately acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly clay loam and averages 27 to 30 percent clay. It is 15 to 20 percent gravel, 0 to 10 percent cobbles, and 0 to 3 percent stones.

The Bw horizon has value of 2 to 4 moist and 3 to 5 dry, and it has chroma of 2 to 4 moist or dry. It is very cobbly clay loam, very gravelly clay loam, or extremely cobbly clay loam and averages 27 to 35 percent clay. It is 15 to 40 percent gravel, 20 to 40 percent cobbles, and 0 to 5 percent stones.

Saddlepeak Series

The Saddlepeak series consists of very deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Saddlepeak very channery loam in an area of Threetrees-Saddlepeak-Scalerock complex, 30 to 60 percent south slopes; in an area of woodland; about 2,310 feet south and 1,650 feet west of the northeast corner of sec. 30, T. 37½ S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 8 inches; dark yellowish brown (10YR 4/4) very channery loam, yellowish brown (10YR 5/4) dry; weak very fine subangular blocky structure parting to weak fine granular; soft, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 40 percent channers, 10 percent flagstones, 5 percent stones, and 10 percent manganese concretions 2 to 5 millimeters in diameter; very strongly acid (pH 4.7); clear smooth boundary.

BA—8 to 19 inches; dark yellowish brown (10YR 4/4) very channery clay loam, light yellowish brown (10YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine and medium tubular pores; 40 percent channers, 10 percent flagstones, and 15 percent manganese concretions 2 to 5 millimeters in diameter; very strongly acid (pH 5.0); gradual wavy boundary.

Bw1—19 to 28 inches; yellowish brown (10YR 5/4) very channery clay loam, very pale brown (10YR 7/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine and medium tubular pores; 40 percent channers, 10 percent flagstones, and 25 percent manganese concretions 2 to 5 millimeters in diameter; strongly acid (pH 5.2); gradual wavy boundary.

Bw2—28 to 43 inches; light yellowish brown (10YR 6/4) very channery clay loam, very pale brown (10YR 7/4) dry; moderate fine subangular blocky structure; slightly hard, firm, sticky and slightly plastic; common fine and medium roots; many fine and medium tubular pores; 35 percent channers, 15 percent flagstones, and 5 percent manganese concretions 2 to 5 millimeters in diameter; strongly acid (pH 5.4); gradual wavy boundary.

Bw3—43 to 68 inches; light yellowish brown (10YR 6/4) extremely channery clay loam, very pale brown (10YR 8/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; many fine and medium tubular pores; 40 percent channers and 20 percent flagstones; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is very channery loam and averages 20 to 25 percent clay. It is 30 to 40 percent channers, 5 to 10 percent flagstones, 0 to 5 percent stones, and 10 to 25 percent manganese concretions 2 to 5 millimeters in diameter. It is extremely acid or very strongly acid.

The Bw horizon has value of 5 or 6 moist and 6 to 8 dry, and it has chroma of 4 to 8 moist or dry. It is very channery clay loam, extremely channery clay loam, or very flaggy clay loam and averages 27 to 35 percent clay. It is 35 to 50 percent channers, 5 to 25 percent flagstones, 0 to 10 percent stones, and 0 to 35 percent manganese concretions 2 to 5 millimeters in diameter. It is strongly acid or very strongly acid.

Sankey Series

The Sankey series consists of shallow, well drained soils that are in open areas of grassland on summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Sankey very gravelly sandy clay loam in an area of Swedeheaven-Quailprairie-Sankey complex, 30 to 60 percent south slopes; in an area of grassland; about 330 feet north and 1,650 feet east of the southwest corner of sec. 3, T. 38 S., R. 12 W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly sandy clay loam, grayish brown (10YR 5/2) dry; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine irregular pores; 30 percent gravel and 10 percent cobbles; very strongly acid (pH 4.8); clear smooth boundary.

AB—4 to 13 inches; dark brown (10YR 3/3) very cobbly sandy clay loam, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to weak fine granular; soft, friable, sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 25 percent gravel and 20 percent cobbles; very strongly acid (pH 5.0); clear wavy boundary.

Bw—13 to 17 inches; dark yellowish brown (10YR 4/4) extremely cobbly clay loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; 50 percent gravel and 25 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

R—17 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 14 to 20 inches. The umbric epipedon is 10 to 14 inches thick. The profile is strongly acid or very strongly acid throughout.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly sandy clay loam and averages 20 to 25 percent clay. It is 25 to 35 percent gravel, 5 to 10 percent cobbles, and 0 to 3 percent stones.

The AB horizon has color similar to that of the A horizon. The AB horizon is very cobbly sandy clay loam and averages 27 to 30 percent clay. It is 25 to 30 percent gravel, 15 to 25 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is very cobbly sandy clay loam, extremely cobbly sandy clay loam, or extremely cobbly clay loam and averages 27 to 35 percent clay. It is 25 to 50 percent gravel, 25 to 30 percent cobbles, and 0 to 5 percent stones.

Scalerock Series

The Scalerock series consists of shallow, well drained soils on side slopes of mountains. These soils formed in colluvium derived from schist or phyllite. Slopes are 30 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Scalerock very channery loam in an area of Threetrees-Saddlepeak-Scalerock complex, 30 to 60 percent south slopes; in an area of woodland; about 1,650 feet south and 2,310 feet east of the northwest corner of sec. 31, T. 37$^1/_2$ S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark yellowish brown (10YR 3/4) very channery loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many fine tubular pores; 35 percent channers, 15 percent flagstones, and 5 percent stones; extremely acid (pH 4.3); clear wavy boundary.

BA—4 to 9 inches; dark yellowish brown (10YR 4/4) very flaggy clay loam, very pale brown (10YR 7/4) dry; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many fine roots and few medium and coarse roots; many fine tubular pores; 20 percent channers and 35 percent flagstones; very strongly acid (pH 4.5); clear wavy boundary.

Bw—9 to 13 inches; dark yellowish brown (10YR 4/4) very flaggy clay loam, very pale brown (10YR 8/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few fine and medium roots; many fine tubular pores; 25 percent channers and 30 percent flagstones; very strongly acid (pH 4.7); abrupt wavy boundary.

R—13 inches; fractured schist.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The profile has hue of 7.5YR or 10YR.

The A horizon has value of 3 to 5 moist and 6 or 7 dry, and it has chroma of 4 to 6 moist or dry. It is very channery loam and averages 20 to 25 percent clay. It is 35 to 50 percent channers, 10 to 20 percent flagstones, and 0 to 10 percent stones. It is extremely acid or very strongly acid.

The Bw horizon has value of 4 to 6 moist and 6 to 8 dry, and it has chroma of 4 to 6 moist or dry. It is very flaggy clay loam or extremely flaggy clay loam and averages 27 to 35 percent clay. It is 20 to 30 percent channers, 30 to 50 percent flagstones, and 0 to 5 percent stones.

Sebastian Series

The Sebastian series consists of shallow, well drained soils on summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from serpentinitic metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Sebastian very cobbly loam in an area of Sebastian-Rustybutte-Rock outcrop complex, 0 to 30 percent slopes; in an area of native vegetation; about 200 feet north and 800 feet west of the southeast corner of sec. 12, T. 37 S., R. 15. W.

A—0 to 3 inches; dark reddish brown (5YR 3/2) very cobbly loam, dark reddish gray (5YR 4/2) dry; moderate fine and very fine subangular blocky structure parting to weak fine granular; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores and few fine and medium tubular pores; 20 percent gravel, 25 percent cobbles, and 10 percent stones; moderately acid (pH 6.0); clear wavy boundary.

Bw—3 to 14 inches; dark reddish brown (5YR 3/3) very cobbly clay loam, reddish brown (5YR 5/3) dry; moderate fine subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; many fine and medium discontinuous tubular pores; 15 percent gravel, 30 percent cobbles, and 10 percent stones; slightly acid (pH 6.5); gradual irregular boundary.

R—14 inches; fractured black and green serpentinitic metasedimentary rock; reddish brown soil material in cracks.

Depth to bedrock, thickness of the solum, and thickness of the mollic epipedon are 10 to 20 inches. The profile is neutral to moderately acid throughout. It has hue of 5YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very cobbly loam or very gravelly loam and averages 18 to 25 percent clay. It is 20 to 40 percent gravel, 10 to 30 percent cobbles, and 0 to 10 percent stones.

The Bw horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very cobbly loam, very cobbly clay loam, or extremely cobbly clay loam and averages 25 to 35 percent clay. It is 15 to 30 percent gravel, 20 to 40 percent cobbles, and 5 to 15 percent stones.

Selmac Series

The Selmac series consists of very deep, moderately well drained soils on high stream terraces. These soils formed in stratified loamy and clayey alluvium derived from mixed sources. Slopes are 2 to 20 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Selmac loam in an area of Ruch-Selmac complex, 2 to 7 percent slopes; in an area of woodland; about 1,980 feet north and 990 feet west of the southeast corner of sec. 18, T. 34 S., R. 11 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (10YR 4/3) loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; 5 percent gravel; strongly acid (pH 5.2); abrupt smooth boundary.

BA—5 to 9 inches; dark yellowish brown (10YR 4/4) clay loam, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; 10 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); clear smooth boundary.

Bt1—9 to 16 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common fine and few medium roots; many very fine and fine tubular pores; few distinct dark yellowish brown (10YR 3/4) clay films on faces of peds and in pores; 10 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); clear smooth boundary.

2C1—16 to 26 inches; olive brown (2.5Y 4/4) silty clay, light yellowish brown (2.5Y 6/4) dry; massive; hard, firm, sticky and plastic; common fine and few medium roots; common very fine tubular pores;

common fine distinct dark brown (7.5YR 4/4) masses of iron accumulation; few distinct slickensides; 5 percent gravel; moderately acid (pH 5.6); gradual smooth boundary.

2C2—26 to 50 inches; light olive brown (2.5Y 5/4) silty clay, light yellowish brown (2.5Y 6/4) dry; massive; hard, firm, sticky and plastic; few medium and coarse roots; few very fine tubular pores; common medium prominent dark brown (7.5YR 4/4) masses of iron accumulation; few distinct slickensides; 5 percent gravel; moderately acid (pH 5.6); gradual smooth boundary.

2C3—50 to 76 inches; light olive brown (2.5Y 5/4) silty clay, light yellowish brown (2.5Y 6/4) dry; massive; hard, firm, very sticky and very plastic; few medium and coarse roots; few very fine tubular pores; many coarse prominent dark brown (7.5YR 4/4) masses of iron accumulation; few distinct and prominent slickensides; 5 percent gravel; moderately acid (pH 5.8); gradual smooth boundary.

2C4—76 to 99 inches; light olive brown (2.5Y 5/4) silty clay, light yellowish brown (2.5Y 6/4) dry; massive; hard, firm, very sticky and very plastic; few very fine tubular pores; many coarse prominent dark brown (7.5YR 4/4) masses of iron accumulation; few distinct and prominent slickensides; moderately acid (pH 6.0).

Depth to bedrock is more than 60 inches. Depth to the 2C horizon is 12 to 36 inches. The solum is moderately acid or strongly acid and has hue of 7.5YR or 10YR.

The A horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 2 to 4 moist and 3 or 4 dry. It is loam and averages 22 to 25 percent clay. It is 5 to 10 percent gravel.

The Bt horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 3 or 4 moist or dry. It is clay loam or gravelly clay loam and averages 27 to 35 percent clay. It is 10 to 20 percent gravel and 0 to 10 percent cobbles.

The 2C horizon has hue of 2.5Y or 5Y, value of 4 or 5 moist and 6 or 7 dry, and chroma of 3 or 4 moist or dry. The horizon has common or many, distinct or prominent masses of iron accumulation. It is clay or silty clay and averages 55 to 70 percent clay. It is 0 to 5 percent gravel. The 2C horizon is slightly acid or moderately acid.

Serpentano Series

The Serpentano series consists of deep, well drained soils on broad summits and side slopes of mountains. These soils formed in residuum and colluvium derived from serpentinitic peridotite or other serpentinitic rock. Slopes are 3 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Serpentano very stony loam in an area of Serpentano-Mislatnah-Greggo complex, 30 to 60 percent south slopes; in an area of woodland; about 1,100 feet north and 1,200 feet east of the southwest corner of sec. 14, T. 34 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; dark brown (7.5YR 3/4) very stony loam, brown (7.5YR 5/4) dry; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine and fine irregular pores; 30 percent gravel and 15 percent stones; neutral (pH 6.8); clear wavy boundary.

Bw—6 to 26 inches; dark brown (7.5YR 4/4) very gravelly clay loam, brown (7.5YR 5/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; many very fine and fine tubular pores; 45 percent gravel and 5 percent stones; neutral (pH 7.0); clear wavy boundary.

C—26 to 53 inches; light olive brown (2.5Y 5/4) very gravelly clay loam, pale yellow (2.5Y 7/4) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few coarse roots; few fine tubular pores; 40 percent gravel, 10 percent cobbles, and 5 percent stones; neutral (pH 7.2); abrupt wavy boundary.

Cr—53 inches; partially weathered serpentinitic peridotite.

Depth to bedrock is 40 to 60 inches. The profile is neutral or slightly acid throughout. The solum has hue of 10YR to 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 to 4 moist and 3 or 4 dry. It is very stony loam and averages 22 to 27 percent clay. It is 15 to 30 percent gravel, 5 to 10 percent cobbles, and 10 to 15 percent stones.

The Bw horizon has value of 3 to 5 moist and 4 to 6 dry, and it has chroma of 4 or 6 moist or dry. It is very gravelly clay loam, very cobbly loam, or very gravelly loam and averages 22 to 32 percent clay. It is 20 to 40 percent gravel, 10 to 15 percent cobbles, and 0 to 5 percent stones.

The C horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6 moist and 5 to 7 dry, and chroma of 4 to

6 moist or dry. It is very gravelly clay loam, very cobbly loam, or extremely gravelly loam and averages 22 to 32 percent clay. It is 35 to 55 percent gravel, 10 to 20 percent cobbles, and 0 to 5 percent stones.

Shastacosta Series

The Shastacosta series consists of very deep, well drained soils on broad summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from mudstone and metasedimentary rock. Slopes are 2 to 60 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Shastacosta very gravelly loam in an area of Shastacosta-Pollard-Beekman complex, 30 to 60 percent south slopes; in an area of woodland; about 2,640 feet south and 2,080 feet west of the northeast corner of sec. 16, T. 35 S., R. 11 W.

Oi—0.5 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) very gravelly loam, dark grayish brown (10YR 4/2) dry; weak very fine and fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

BA—2 to 10 inches; brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 45 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear smooth boundary.

Bt1—10 to 22 inches; dark yellowish brown (10YR 4/4) very gravelly loam, pale brown (10YR 6/3) dry; moderate very fine and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; few faint clay films on faces of peds and in pores; 40 percent gravel and 5 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bt2—22 to 32 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 40 percent gravel and 15 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bt3—32 to 41 inches; dark yellowish brown (10YR 4/4) extremely cobbly clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on faces of peds and in pores; 40 percent gravel and 25 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

Bt4—41 to 56 inches; dark brown (10YR 4/3) very cobbly clay, brown (10YR 5/3) dry; strong fine subangular blocky structure; hard, firm, sticky and plastic; few medium and coarse roots; common fine tubular pores; many distinct clay films on faces of peds and in pores; 30 percent gravel and 20 percent cobbles; very strongly acid (pH 4.8); gradual wavy boundary.

Bt5—56 to 72 inches; dark yellowish brown (10YR 4/4) very gravelly clay, light yellowish brown (10YR 6/4) dry; strong fine subangular blocky structure; very hard, very firm, sticky and plastic; few medium and coarse roots; common fine tubular pores; many distinct clay films on faces of peds and in pores; 35 percent gravel and 10 percent cobbles; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam and averages 15 to 20 percent clay. It is 35 to 50 percent gravel and 0 to 5 percent cobbles.

The Bt horizon has value of 4 or 5 moist and 4 to 6 dry, and it has chroma of 4 to 6 moist or dry. The upper part is very gravelly loam, very gravelly clay loam, or extremely cobbly clay loam and averages 25 to 30 percent clay. It is 40 to 50 percent gravel and 5 to 25 percent cobbles. The lower part is very cobbly clay, very gravelly clay, or extremely gravelly clay and averages 45 to 55 percent clay. It is 30 to 50 percent gravel and 10 to 20 percent cobbles. The upper part of the horizon is moderately acid or strongly acid, and the lower part is strongly acid or very strongly acid.

Shivigny Series

The Shivigny series consists of very deep, well drained soils on broad summits, old slump benches, and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or igneous rock. Slopes are 3 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Shivigny very gravelly loam in an area of Honeygrove-Shivigny complex, warm, 3 to 30 percent slopes; in an area of woodland; about 1,800 feet north and 200 feet east of the southwest corner of sec. 19, T. 34 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, twigs, and woody material.

A—0 to 5 inches; dark brown (7.5YR 4/4) very gravelly loam, light brown (7.5YR 6/4) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; 30 percent gravel and 5 percent cobbles; moderately acid (pH 6.0); clear wavy boundary.

AB—5 to 13 inches; dark brown (7.5YR 4/4) very gravelly loam, light brown (7.5YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine tubular pores; 35 percent gravel and 10 percent cobbles; moderately acid (pH 6.0); clear wavy boundary.

BA—13 to 23 inches; strong brown (7.5YR 4/6) very stony clay loam, light brown (7.5YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine tubular pores; 20 percent gravel, 10 percent cobbles, and 20 percent stones; moderately acid (pH 6.0); clear wavy boundary.

Bt1—23 to 41 inches; strong brown (7.5YR 4/6) very stony clay loam, reddish yellow (7.5YR 6/6) dry; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel, 10 percent cobbles, and 20 percent stones; strongly acid (pH 5.5); clear wavy boundary.

Bt2—41 to 54 inches; strong brown (7.5YR 4/6) very stony clay, reddish yellow (7.5YR 6/6) dry; moderate medium angular blocky structure; hard, firm, sticky and plastic; few fine roots; common fine tubular pores; common prominent clay films on faces of peds and in pores; 20 percent gravel, 15 percent cobbles, and 20 percent stones; strongly acid (pH 5.5); clear wavy boundary.

Bt3—54 to 78 inches; strong brown (7.5YR 4/6) very stony clay, reddish yellow (7.5YR 6/6) dry; strong medium angular blocky structure; hard, firm, sticky and plastic; few fine tubular pores; many prominent clay films on faces of peds; 15 percent gravel, 10 percent cobbles, and 30 percent stones; strongly acid (pH 5.5).

Depth to bedrock is more than 60 inches.

The A horizon has hue of 5YR or 7.5YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 3 or 4 moist or dry. It is very gravelly loam and averages 18 to 25 percent clay. It is 25 to 60 percent gravel and 0 to 10 percent cobbles.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 6 to 8 moist and 4 to 6 dry. It is very stony clay, very stony silty clay, or very stony clay loam and averages 35 to 50 percent clay. It is 5 to 20 percent gravel, 10 to 25 percent cobbles, and 20 to 40 percent stones.

Sitkum Series

The Sitkum series consists of moderately deep, somewhat excessively drained soils on side slopes of mountains. These soils formed in residuum and colluvium derived from granitic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Sitkum sandy loam in an area of Sitkum-Steinmetz complex, 30 to 60 percent south slopes; in an area of woodland; about 1,500 feet south and 1,400 feet west of the northeast corner of sec. 23, T. 40 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; dark brown (10YR 3/3) sandy loam, brown (10YR 5/3) dry; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine and fine irregular pores; 10 percent gravel; slightly acid (pH 6.2); clear smooth boundary.

A2—4 to 10 inches; dark brown (10YR 4/3) sandy loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine tubular pores; 10 percent gravel; slightly acid (pH 6.2); clear wavy boundary.

Bw1—10 to 21 inches; dark yellowish brown (10YR 4/4) sandy loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; common fine tubular pores; 10 percent gravel; moderately acid (pH 5.8); gradual wavy boundary.
Bw2—21 to 34 inches; yellowish brown (10YR 5/6) sandy loam, yellow (10YR 7/6) dry; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine, medium, and coarse roots; common fine tubular pores; 5 percent gravel; moderately acid (pH 5.6); clear wavy boundary.
Cr—34 inches; highly weathered diorite.

Depth to bedrock is 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 to 6 moist or dry. It is sandy loam and averages 12 to 18 percent clay. It is 0 to 10 percent gravel. The horizon is neutral or slightly acid.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 4 to 6 moist or dry. It is sandy loam, loam, or gravelly sandy loam. It averages 12 to 18 percent clay and is 15 percent or more material that is coarser than very fine sand. It is 0 to 20 percent gravel. The horizon is slightly acid or moderately acid.

Sixes Series

The Sixes series consists of moderately deep, well drained soils that are in open areas of grassland on summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Sixes channery silt loam in an area of Agness-Sixes-Goldbeach complex, 0 to 30 percent slopes; in an area of grassland; about 1,000 feet south and 1,000 feet east of the northwest corner of sec. 14, T. 35 S., R. 13 W.

A1—0 to 11 inches; very dark grayish brown (10YR 3/2) channery silt loam, grayish brown (10YR 5/2) dry; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; 30 percent channers; very strongly acid (pH 4.6); clear smooth boundary.
A2—11 to 17 inches; very dark grayish brown (10YR 3/2) channery silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common fine tubular pores; 25 percent channers; very strongly acid (pH 4.6); clear smooth boundary.
Bw1—17 to 26 inches; very dark grayish brown (10YR 3/2) channery silt loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine roots; common fine tubular pores; 25 percent channers; very strongly acid (pH 4.6); clear wavy boundary.
Bw2—26 to 32 inches; very dark grayish brown (10YR 3/2) channery silt loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine roots; common very fine and fine tubular pores; 30 percent channers; very strongly acid (pH 4.6); abrupt wavy boundary.
R—32 inches; fractured schist.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 20 to 40 inches thick, and it may include all or part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 1 or 2 moist or dry. It is channery silt loam and averages 15 to 25 percent clay. It is 15 to 30 percent channers.

The Bw horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 2 or 3 moist or dry. It is channery silt loam or channery loam and averages 18 to 25 percent clay. It is 15 to 30 percent channers and 0 to 3 percent flagstones.

Skookumhouse Series

The Skookumhouse series consists of deep, well drained soils on broad summits and stable benches of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Skookumhouse clay loam in an area of Skookumhouse-Hazelcamp-Averlande complex, 15 to 30 percent slopes; in an area of woodland; about 2,310 feet north and 800 feet west of the southeast corner of sec. 8, T. 40 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.
A—0 to 11 inches; dark reddish brown (5YR 3/3) clay

loam, reddish brown (5YR 5/3) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many very fine and fine roots; many very fine and fine irregular pores; 5 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.6); abrupt smooth boundary.

Bt1—11 to 25 inches; reddish brown (2.5YR 4/4) silty clay, reddish brown (5YR 5/4) dry; strong very fine subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots; many very fine and fine tubular pores; common faint clay films on faces of peds and common distinct clay films in pores; 5 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 4.6); gradual smooth boundary.

Bt2—25 to 38 inches; red (2.5YR 4/6) silty clay, reddish brown (2.5YR 5/6) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct clay films on faces of peds and in pores; 5 percent gravel and 20 percent soft rock fragments; very strongly acid (pH 4.6); clear wavy boundary.

Bt3—38 to 52 inches; red (2.5YR 4/6) silty clay loam, reddish brown (2.5YR 5/6) dry; weak fine subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; few very fine and fine tubular pores; many distinct clay films on faces of peds and in pores; 10 percent gravel and 40 percent soft rock fragments; very strongly acid (pH 4.6); abrupt wavy boundary.

Cr—52 inches; weathered sandstone.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has hue of 5YR or 7.5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist or dry. It is clay loam and averages 27 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 20 percent soft rock fragments.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5 moist and 4 to 6 dry, and chroma of 4 to 6 moist or dry. It is silty clay loam, gravelly clay loam, or silty clay and averages 35 to 45 percent clay. It is 5 to 25 percent gravel, 0 to 10 percent cobbles, and 5 to 65 percent soft rock fragments.

Skymor Series

The Skymor series consists of shallow, well drained soils on summits and south-facing side slopes of mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Skymor very gravelly loam in an area of Skymor-Rock outcrop-Jayar complex, 60 to 90 percent south slopes; in an area of woodland; about 1,980 feet south and 20 feet east of the northwest corner of sec. 27, T. 34 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (10YR 4/3) very gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; many fine tubular pores; 50 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear wavy boundary.

Bw—5 to 15 inches; yellowish brown (10YR 5/4) very gravelly loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; many fine tubular pores; 50 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); abrupt wavy boundary.

R—15 inches; highly fractured, partially weathered metasedimentary rock.

Depth to bedrock and thickness of the solum are 12 to 20 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 to 4 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam and averages 18 to 25 percent clay. It is 35 to 50 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 3 to 5 moist and 3 to 6 dry. It is very gravelly loam, extremely gravelly loam, or very gravelly clay loam and averages 18 to 30 percent clay. It is 35 to 55 percent gravel, 5 to 15 percent cobbles, and 0 to 5 percent stones.

Snowcamp Series

The Snowcamp series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from serpentinitic peridotite or serpentinitic meta-igneous rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 145

inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Snowcamp very cobbly loam in an area of Snowcamp-Cedarcamp-Flycatcher complex, 0 to 30 percent slopes; in an area of woodland; about 2,640 feet south and 330 feet east of the northwest corner of sec. 6, T. 37 S., R. 12 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 4 inches; dark reddish brown (5YR 3/3) very cobbly loam, dark reddish brown (5YR 3/4) dry; strong fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; common very fine tubular pores; 20 percent cobbles and 25 percent gravel; slightly acid (pH 6.3); clear wavy boundary.

Bw1—4 to 10 inches; dark reddish brown (5YR 4/4) very cobbly clay loam, yellowish red (5YR 4/6) dry; strong fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; few very fine tubular pores; 20 percent cobbles and 30 percent gravel; neutral (pH 6.6); clear wavy boundary.

Bw2—10 to 17 inches; strong brown (7.5YR 4/6) extremely cobbly clay loam, brown (7.5YR 5/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; few very fine tubular pores; 35 percent cobbles and 30 percent gravel; neutral (pH 6.7); gradual wavy boundary.

Bw3—17 to 29 inches; strong brown (7.5YR 5/6) extremely cobbly clay loam, brown (7.5YR 5/4) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few fine and medium roots; few very fine tubular pores; 35 percent cobbles and 30 percent gravel; neutral (pH 6.8); abrupt wavy boundary.

R—29 inches; fractured peridotite.

Depth to bedrock is 20 to 40 inches. The profile is neutral or slightly acid throughout. The solum has hue of 5YR, 7.5YR, or 10YR.

The A horizon has value of 3 or 4 moist and 3 to 5 dry, and it has chroma of 3 or 4 moist and 4 to 6 dry. The fine earth fraction is loam, and it averages 15 to 25 percent clay. The horizon is 0 to 20 percent boulders, 0 to 15 percent stones, 5 to 30 percent cobbles, and 10 to 25 percent gravel.

The Bw horizon has value of 4 or 5 moist and 4 to 6 dry, and it has chroma of 4 to 6 moist or dry. The fine earth fraction is clay loam or loam, and it averages 20 to 35 percent clay. The horizon is 0 to 25 percent boulders, 0 to 30 percent stones, 10 to 40 percent cobbles, and 5 to 30 percent gravel.

The C horizon, where present, has hue of 7.5YR, 10YR, or 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist and 4 to 8 dry. The fine earth fraction is clay loam or loam, and it averages 20 to 35 percent clay. The horizon is 0 to 30 percent boulders, 0 to 30 percent stones, 10 to 45 percent cobbles, and 5 to 30 percent gravel.

Speaker Series

The Speaker series consists of moderately deep, well drained soils on summits, toeslopes, and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from mudstone and metasedimentary rock. Slopes are 2 to 60 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 52 degrees F.

Typical pedon of Speaker gravelly loam in an area of Josephine-Pollard-Speaker complex, 2 to 30 percent slopes; in an area of woodland; about 850 feet south and 1,000 feet east of the northwest corner of sec. 10, T. 33 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 3 inches; dark brown (10YR 4/3) gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 30 percent gravel and 25 percent soft rock fragments; moderately acid (pH 5.8); clear smooth boundary.

A2—3 to 7 inches; dark brown (7.5YR 4/3) gravelly loam, light brown (7.5YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 30 percent gravel and 25 percent soft rock fragments; moderately acid (pH 5.8); clear smooth boundary.

BA—7 to 13 inches; dark brown (7.5YR 4/4) gravelly loam, light brown (7.5YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine and fine tubular pores; 30 percent gravel and 25 percent soft rock fragments; moderately acid (pH 5.6); abrupt wavy boundary.

2Bt1—13 to 24 inches; yellowish red (5YR 4/6) gravelly clay loam, yellowish red (5YR 5/6) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine and medium roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; 30 percent gravel and 40 percent soft rock fragments; strongly acid (pH 5.4); gradual wavy boundary.

2Bt2—24 to 35 inches; yellowish red (5YR 4/6) gravelly clay loam, yellowish red (5YR 5/6) dry; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few medium roots; common fine tubular pores; common distinct clay films on faces of peds and many distinct clay films in pores; 30 percent gravel and 40 percent soft rock fragments; strongly acid (pH 5.4); abrupt wavy boundary.

2Crt—35 inches; weathered mudstone; common distinct clay films on rock fragments and lining cracks in bedrock.

Depth to bedrock and thickness of the solum are 20 to 40 inches.

The A horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 4 to 6 dry, and chroma of 2 to 6 moist or dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 30 percent gravel, 0 to 5 percent cobbles, and 10 to 30 percent soft rock fragments. The horizon is slightly acid to strongly acid. The content of organic matter is 2 to 4 percent.

The Bt horizon has hue of 7.5YR or 5YR, value of 4 or 5 moist and 4 to 7 dry, and chroma of 4 to 6 moist or dry. It is gravelly clay loam, clay loam, or gravelly loam and averages 25 to 35 percent clay. It is 10 to 30 percent gravel, 0 to 5 percent cobbles, and 20 to 40 percent soft rock fragments.

Stackyards Series

The Stackyards series consists of deep, well drained soils on north-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Stackyards extremely gravelly loam in an area of Stackyards-Rilea-Yorel complex, 30 to 60 percent north slopes; in an area of woodland; about 1,650 feet north and 1,650 feet west of the southeast corner of sec. 2, T. 37 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 10 inches; very dark grayish brown (10YR 3/2) extremely gravelly loam, grayish brown (10YR 5/2) dry; moderate very fine and fine subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium and coarse roots; common very fine irregular pores; 50 percent gravel and 15 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw1—10 to 15 inches; dark brown (10YR 3/3) extremely cobbly clay loam, pale brown (10YR 6/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine tubular pores; 40 percent gravel and 25 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw2—15 to 23 inches; dark yellowish brown (10YR 3/4) extremely cobbly loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine tubular pores; 25 percent gravel and 40 percent cobbles; moderately acid (pH 5.6); clear wavy boundary.

Bw3—23 to 44 inches; dark yellowish brown (10YR 3/4) extremely cobbly clay loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; many very fine tubular pores; 25 percent gravel and 40 percent cobbles; moderately acid (pH 5.6); abrupt wavy boundary.

R—44 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The umbric epipedon is 10 to 20 inches thick, and it may include the upper part of the Bw horizon. The profile is moderately acid or strongly acid throughout. It has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is extremely gravelly loam and averages 10 to 20 percent clay. It is 50 to 60 percent gravel and 5 to 15 percent cobbles.

The Bw horizon has value of 3 to 5 moist and 5 to 7 dry, and it has chroma of 3 or 4 moist or dry. It is extremely cobbly loam, extremely cobbly clay loam, or extremely gravelly loam and averages 15 to 35 percent clay. It is 25 to 40 percent gravel, 25 to 40 percent cobbles, and 0 to 5 percent stones.

Steinmetz Series

The Steinmetz series consists of very deep, somewhat excessively drained soils on side slopes of mountains. These soils formed in residuum and colluvium derived from granitic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Steinmetz sandy loam in an area of Sitkum-Steinmetz complex, 30 to 60 percent north slopes; in an area of woodland; about 2,450 feet south and 2,200 feet east of the northwest corner of sec. 16, T. 41 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (10YR 3/3) sandy loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine and fine irregular pores; 10 percent gravel; slightly acid (pH 6.4); clear smooth boundary.

AB—5 to 12 inches; dark brown (10YR 4/3) sandy loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine tubular pores; 10 percent gravel; moderately acid (pH 6.0); clear wavy boundary.

Bw1—12 to 24 inches; dark yellowish brown (10YR 4/4) sandy loam, light yellowish brown (10YR 6/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; common fine tubular pores; 5 percent gravel; moderately acid (pH 6.0); gradual smooth boundary.

Bw2—24 to 43 inches; yellowish brown (10YR 5/4) sandy loam, very pale brown (10YR 7/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; common fine tubular pores; 5 percent gravel; moderately acid (pH 5.8); gradual wavy boundary.

Bw3—43 to 65 inches; yellowish brown (10YR 5/4) sandy loam, very pale brown (10YR 8/4) dry; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few medium and coarse roots; common fine tubular pores; 5 percent gravel; moderately acid (pH 5.6).

Depth to bedrock is more than 60 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 to 4 moist and 4 to 6 dry, and it has chroma of 2 to 4 moist or dry. Colors that meet the criteria for a mollic epipedon are only in the upper 3 to 5 inches. The horizon is sandy loam and averages 10 to 15 percent clay. It is 0 to 10 percent gravel and 0 to 3 percent cobbles. It is slightly acid to strongly acid.

The Bw horizon has value of 4 or 5 moist and 6 to 8 dry, and it has chroma of 4 to 6 moist or dry. It is sandy loam or gravelly sandy loam and averages 12 to 18 percent clay and 15 percent or more material that is coarser than very fine sand. It is 0 to 25 percent gravel and 0 to 5 percent cobbles. The horizon is moderately acid to very strongly acid.

Svensen Series

The Svensen series consists of deep, well drained soils on broad summits and benches of coastal hills and mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Svensen loam in an area of Svensen-Reedsport complex, 15 to 30 percent slopes; in an area of woodland; about 1,320 feet north and 2,350 feet west of the southeast corner of sec. 16, T. 39 S., R. 14 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 6 inches; dark brown (7.5YR 3/2) loam, brown (10YR 4/3) dry; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.4); clear smooth boundary.

A2—6 to 13 inches; dark brown (7.5YR 3/2) loam, brown (7.5YR 5/3) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; 10 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

Bw1—13 to 23 inches; dark brown (7.5YR 4/3) clay loam, brown (7.5YR 5/4) dry; moderate medium and coarse subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 10 percent gravel; very strongly acid (pH 5.0); gradual smooth boundary.

Bw2—23 to 48 inches; dark brown (7.5YR 4/4) clay loam, light brown (7.5YR 6/4) dry; moderate medium and coarse subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common fine tubular pores; 5 percent gravel; very strongly acid (pH 5.0); gradual wavy boundary.

C—48 to 54 inches; variegated, brown (7.5YR 5/4) and strong brown (7.5YR 5/6) loam, light brown (7.5YR 6/4) and reddish yellow (7.5YR 6/6) dry; massive; slightly hard, firm, slightly sticky and slightly plastic; few medium and coarse roots; common fine tubular pores; 5 percent gravel; very strongly acid (pH 4.8); clear wavy boundary.

Cr—54 inches; weathered sandstone.

Depth to bedrock is 40 to 60 inches. The umbric epipedon is 13 to 21 inches thick. The solum has hue of 7.5YR or 10YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is loam and averages 15 to 20 percent clay. It is 0 to 10 percent gravel.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is clay loam or loam and averages 20 to 30 percent clay. It is 0 to 10 percent gravel.

The C horizon is variegated in color. It is loam, fine sandy loam, or sandy loam and averages 15 to 25 percent clay. It is 0 to 10 percent gravel.

Swedeheaven Series

The Swedeheaven series consists of moderately deep, well drained soils that are in open areas of grassland on summits and south-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Swedeheaven gravelly loam in an area of Swedeheaven-Quailprairie-Sankey complex, 0 to 30 percent slopes; in an area of grassland; about 1,650 feet south and 2,310 feet east of the northwest corner of sec. 23, T. 38 S., R. 13 W.

A1—0 to 2 inches; very dark grayish brown (10YR 3/2) gravelly loam, brown (10YR 5/3) dry; moderate fine and very fine granular structure; soft, friable, slightly sticky and slightly plastic; common very fine roots; common very fine irregular pores; 30 percent gravel; very strongly acid (pH 4.9); abrupt smooth boundary.

A2—2 to 13 inches; dark brown (10YR 3/3) gravelly loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common fine tubular pores; 25 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

Bw1—13 to 20 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common fine tubular pores; 35 percent gravel; strongly acid (pH 5.2); clear smooth boundary.

Bw2—20 to 27 inches; yellowish brown (10YR 5/4) extremely gravelly clay loam, very pale brown (10YR 7/4) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine and fine tubular pores; 60 percent gravel and 10 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

R—27 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 10 to 15 inches thick.

The A horizon has value of 2 or 3 moist and 3 to 5 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam and averages 15 to 25 percent clay. It is 15 to 30 percent gravel and 0 to 3 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 5 to 7 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly clay loam or extremely gravelly clay loam and averages 27 to 35 percent clay. It is 35 to 70 percent gravel and 0 to 15 percent cobbles. It is strongly acid or very strongly acid throughout.

Takilma Series

The Takilma series consists of very deep, well drained soils on low stream terraces. These soils formed in cobbly alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 55 degrees F.

Typical pedon of Takilma cobbly loam, 0 to 3 percent slopes, in an area of native vegetation; about 990 feet south and 500 feet west of the northeast corner of sec. 30, T. 35 S., R. 11 W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) cobbly loam, brown (10YR 5/3) dry; moderate very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine, medium, and coarse roots; many very fine and fine tubular pores; 10 percent gravel and 20 percent cobbles; slightly acid (pH 6.2); clear smooth boundary.

Bw—5 to 16 inches; dark brown (10YR 3/3) very cobbly loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine and fine tubular pores; 20 percent gravel and 30 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.

C1—16 to 43 inches; dark yellowish brown (10YR 4/4) extremely cobbly sandy loam, yellowish brown (10YR 5/4) dry; massive; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; many very fine and fine pores; 30 percent gravel and 35 percent cobbles; neutral (pH 6.6); gradual wavy boundary.

C2—43 to 72 inches; dark yellowish brown (10YR 4/4) extremely cobbly sandy loam, light yellowish brown (10YR 6/4) dry; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and fine pores; 30 percent gravel and 35 percent cobbles; neutral (pH 6.6).

Depth to bedrock is more than 60 inches. The mollic epipedon and the solum are 12 to 20 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist and 2 to 4 dry. It is cobbly loam and averages 15 to 20 percent clay. It is 10 to 15 percent gravel and 15 to 20 percent cobbles.

The Bw horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist and 3 or 4 dry. It is very cobbly loam, extremely cobbly loam, or very gravelly loam and averages 18 to 25 percent clay. It is 20 to 30 percent gravel and 15 to 30 percent cobbles.

The C horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. It is extremely cobbly sandy loam, very cobbly sandy loam, or extremely cobbly loam and averages 10 to 18 percent clay. It is 30 to 50 percent gravel and 25 to 35 percent cobbles. The horizon commonly is stratified below a depth of 40 inches.

Templeton Series

The Templeton series consists of deep, well drained soils on broad summits and north-facing side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from sedimentary rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Templeton silt loam, 0 to 30 percent slopes, in an area of woodland; about 990 feet south and 1,300 feet east of the northwest corner of sec. 25, T. 30 S., R. 15 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 8 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic, weakly smeary; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine irregular pores; 10 percent soft rock fragments; very strongly acid (pH 5.0); clear smooth boundary.

A2—8 to 17 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots, common medium roots, and few coarse roots; many very fine and fine tubular pores; 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—17 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam, yellowish brown (10YR 5/4) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine tubular pores; 10 percent soft rock fragments; very strongly acid (pH 4.8); clear wavy boundary.

Bw2—26 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many very fine tubular pores; 15 percent soft rock fragments; very strongly acid (pH 4.6); clear wavy boundary.

BC—35 to 47 inches; yellowish brown (10YR 5/6) silty clay loam, brownish yellow (10YR 6/6) dry; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few medium and coarse roots; common very fine tubular pores; 20 percent soft rock fragments; very strongly acid (pH 4.6); gradual wavy boundary.

Cr—47 inches; weathered sandstone.

Depth to bedrock is 40 to 60 inches. The umbric epipedon is 10 to 20 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is silt loam and averages 18 to 27 percent clay. It is 0 to 10 percent soft rock fragments. The organic matter content is 10 to 15 percent.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay loam or silt loam and averages 25 to 35 percent clay. It is 10 to 20 percent soft rock fragments.

Threetrees Series

The Threetrees series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 90 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Threetrees very channery loam in an area of Saddlepeak-Threetrees complex, 15 to 30 percent slopes; in an area of woodland; about 330 feet south and 2,310 feet west of the northeast corner of sec. 31, T. 37$^1/_2$ S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 7 inches; strong brown (7.5YR 4/6) very channery loam, brownish yellow (10YR 6/6) dry; moderate fine and very fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine and medium tubular pores; 35 percent channers and 5 percent flagstones; extremely acid (pH 4.4); clear smooth boundary.

AB—7 to 13 inches; strong brown (7.5YR 4/6) very channery loam, brownish yellow (10YR 6/8) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine and medium tubular pores; 35 percent channers and 10 percent flagstones; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—13 to 22 inches; dark yellowish brown (10YR 4/6) very channery clay loam, brownish yellow (10YR 6/8) dry; moderate medium subangular blocky structure; slightly hard, firm, sticky and slightly plastic; common fine and medium roots; many fine and medium tubular pores; 30 percent channers and 15 percent flagstones; strongly acid (pH 5.1); gradual smooth boundary.

Bw2—22 to 33 inches; yellowish brown (10YR 5/6) very flaggy clay loam, brownish yellow (10YR 6/8) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, sticky and slightly plastic; common fine and medium roots; many fine and medium tubular pores; 30 percent flagstones and 20 percent channers; strongly acid (pH 5.4); gradual wavy boundary.

Bw3—33 to 37 inches; brownish yellow (10YR 6/6) very flaggy clay loam, yellow (10YR 8/6) dry; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few fine and medium roots; many fine and medium tubular pores; 35 percent flagstones and 20 percent channers; strongly acid (pH 5.4); abrupt wavy boundary.

R—37 inches; fractured schist.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 4 to 6 moist and 5 to 7 dry, and it has chroma of 4 to 6 moist or dry. It is very channery loam and averages 20 to 25 percent clay. It is 30 to 40 percent channers, 5 to 10 percent flagstones, and 0 to 5 percent stones. It is very strongly acid or extremely acid.

The Bw horizon has value of 4 to 6 moist and 6 to 8 dry, and it has chroma of 6 to 8 moist or dry. It is very channery clay loam, extremely channery clay loam, or very flaggy clay loam and averages 27 to 35 percent clay. It is 20 to 40 percent channers, 15 to 40 percent flagstones, and 0 to 5 percent stones. It is strongly acid or very strongly acid.

Tincup Series

The Tincup series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 140 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Tincup very cobbly loam in an area of Gamelake-Tincup complex, 0 to 30 percent slopes; in an area of woodland; about 330 feet north and 2,310 feet east of the southwest corner of sec. 27, T. 36 S., R. 12 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 7 inches; very dark grayish brown (10YR 3/2) very cobbly loam, dark grayish brown (10YR 4/2) dry; weak very fine and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots, many fine and medium roots, and few coarse roots; many very fine and fine tubular pores; 35 percent gravel and 25 percent cobbles; strongly acid (pH 5.4); clear wavy boundary.

Bw1—7 to 17 inches; dark yellowish brown (10YR 3/4) extremely cobbly loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and many medium and coarse roots; many fine tubular pores; 30 percent gravel and 35 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw2—17 to 28 inches; dark yellowish brown (10YR 4/4) extremely cobbly loam, very pale brown (10YR 7/4) dry; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and coarse roots; many fine tubular pores; 25 percent gravel and 45 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.

R—28 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile is moderately acid or strongly acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3 moist and 3 or 4 dry, and chroma of 2 or 3 moist or dry. It is very cobbly loam and averages 10 to 20 percent clay. It is 15 to 35 percent gravel and 20 to 30 percent cobbles.

The Bw horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 3 or 4 moist and 5 to 7 dry, and chroma of 4 to 6 moist or dry. It is very cobbly loam, extremely cobbly loam, or extremely cobbly sandy loam and averages 10 to 20 percent clay. It is 20 to 30 percent gravel and 30 to 50 percent cobbles.

Tolfork Series

The Tolfork series consists of deep, well drained soils on north-facing side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 140 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Tolfork very gravelly coarse sandy loam in an area of Tolfork-Tincup complex, 30 to 60 percent north slopes; in an area of woodland; about 990 feet south and 330 feet east of the northwest corner of sec. 34, T. 36 S., R. 12 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 9 inches; very dark brown (10YR 2/2) very gravelly coarse sandy loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common very fine tubular pores; 45 percent gravel and 10 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw1—9 to 23 inches; very dark grayish brown (10YR 3/2) extremely gravelly sandy loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine tubular pores; 50 percent gravel and 15 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

Bw2—23 to 30 inches; very dark grayish brown (10YR 3/2) extremely gravelly sandy loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many very fine tubular pores; 40 percent gravel and 20 percent cobbles; strongly acid (pH 5.2); clear wavy boundary.

C1—30 to 36 inches; dark grayish brown (2.5Y 4/2) extremely gravelly sandy loam, light brownish gray (2.5Y 6/2) dry; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many fine and medium tubular pores; 45 percent gravel and 20 cobbles; strongly acid (pH 5.2); clear wavy boundary.

C2—36 to 50 inches; dark grayish brown (2.5Y 4/2) extremely cobbly sandy loam, light brownish gray (2.5Y 6/2) dry; massive; soft, very friable, nonsticky and nonplastic; common fine roots and few medium roots; many fine tubular pores; 35 percent gravel and 40 percent cobbles; strongly acid (pH 5.2); abrupt wavy boundary.
R—50 inches; fractured sandstone.

Depth to bedrock is 40 to 60 inches. The umbric epipedon is 20 to 30 inches thick, and it may include all or part of the Bw horizon. The solum is 25 to 35 inches thick. It has hue of 10YR or 7.5YR throughout.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly coarse sandy loam and averages 10 to 20 percent clay. It is 30 to 45 percent gravel and 5 to 15 percent cobbles.

The Bw horizon has value of 2 to 4 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly loam, extremely gravelly loam, or extremely gravelly sandy loam and averages 10 to 20 percent clay. It is 40 to 50 percent gravel and 10 to 25 percent cobbles.

The C horizon has value of 4 to 6 moist and 5 to 7 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly sandy loam, extremely gravelly sandy loam, or extremely cobbly sandy loam and averages 10 to 15 percent clay. It is 30 to 50 percent gravel and 20 to 40 percent cobbles.

Umpcoos Series

The Umpcoos series consists of shallow, well drained soils on summits and side slopes of mountains. These soils formed in colluvium and residuum derived from sedimentary or metasedimentary rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Umpcoos very gravelly sandy loam in an area of Digger-Remote-Umpcoos complex, warm, 30 to 60 percent south slopes; in an area of woodland; about 2,800 feet south and 1,800 feet east of the northwest corner of sec. 35, T. 33 S., R 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.
A—0 to 3 inches; brown (10YR 4/3) very gravelly sandy loam, pale brown (10YR 6/3) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; many very fine and fine irregular pores; 45 percent gravel and 10 percent cobbles; moderately acid (pH 6.0); clear wavy boundary.
Bw—3 to 13 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; 55 percent gravel and 15 percent cobbles; moderately acid (pH 6.0); abrupt wavy boundary.
R—13 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The profile is moderately acid to very strongly acid throughout. It has hue of 7.5YR to 2.5Y.

The A horizon has value of 3 to 5 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly sandy loam or stony loam and averages 2 to 20 percent clay. It is 15 to 50 percent gravel, 0 to 10 percent cobbles, and 0 to 15 percent stones.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly sandy loam, extremely gravelly loam, or very cobbly loam and averages 2 to 15 percent clay. It is 35 to 50 percent gravel and 5 to 25 percent cobbles.

Vermisa Series

The Vermisa series consists of shallow, somewhat excessively drained soils on summits and side slopes of mountains. These soils formed in colluvium and residuum derived from metasedimentary rock or conglomerate. Slopes are 12 to 90 percent. The mean annual precipitation is about 95 inches, and the mean annual air temperature is about 50 degrees F.

Typical pedon of Vermisa very gravelly loam in an area of Atring-Kanid-Vermisa complex, 30 to 60 percent south slopes; in an area of woodland; about 350 feet south and 900 feet west of the northeast corner of sec. 36, T. 35 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.
A—0 to 3 inches; very dark grayish brown (10YR 3/2) very gravelly loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many fine irregular pores; 50 percent gravel and 5 percent cobbles; neutral (pH 6.8); clear wavy boundary.
Bw1—3 to 9 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and

nonplastic; common fine roots; many fine irregular pores; 55 percent gravel and 15 percent cobbles; slightly acid (pH 6.5); clear wavy boundary.

Bw2—9 to 12 inches; yellowish brown (10YR 5/4) extremely gravelly loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many fine irregular pores; 55 percent gravel and 15 percent cobbles; slightly acid (pH 6.4); abrupt wavy boundary.

R—12 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 10 to 20 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 3 to 5 moist and 5 to 7 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam and averages 10 to 20 percent clay. It is 35 to 50 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 3 to 6 moist or dry. It is very gravelly loam or extremely gravelly loam and averages 18 to 25 percent clay. It is 35 to 55 percent gravel and 0 to 25 percent cobbles.

Vondergreen Series

The Vondergreen series consists of deep, somewhat poorly drained soils in depressions and narrow drainageways on broad summits of coastal hills and mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Vondergreen silt loam in an area of Loeb-Macklyn-Vondergreen complex, 0 to 30 percent slopes; in an area of woodland; about 2,970 feet south and 5,200 feet west of the northeast corner of sec. 18, T. 41 S., R. 12 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; dark brown (7.5YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 2 percent gravel and 5 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

A2—5 to 9 inches; brown (7.5YR 4/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine continuous tubular pores; 5 percent gravel and 5 percent soft rock fragments; very strongly acid (pH 4.8); abrupt smooth boundary.

Bt1—9 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; many very fine continuous tubular pores; few faint clay films in pores; 5 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.6); clear smooth boundary.

Bt2—16 to 24 inches; light olive brown (2.5Y 5/4) silty clay loam, very pale brown (10YR 7/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; common very fine continuous tubular pores; few distinct clay films on faces of peds and in pores; common fine prominent grayish brown (2.5Y 5/2) iron depletions and brown (2.5YR 4/6) masses of iron accumulation; 10 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 4.6); clear smooth boundary.

Bt3—24 to 38 inches; gray (N 5/0) silty clay, white (10YR 8/1) and brownish yellow (10YR 6/6) dry; weak coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine roots; few very fine continuous tubular pores; many prominent clay films on faces of peds and in pores; many fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation; few black (10YR 2/1) manganese stains; 10 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 4.6); gradual smooth boundary.

Bt4—38 to 53 inches; gray (N 5/0) gravelly silty clay, white (10YR 8/1) and brownish yellow (10YR 6/6) dry; weak coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine roots; few very fine continuous tubular pores; many fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation; many prominent clay films on faces of peds and in pores; few black (10YR 2/1) manganese stains; 30 percent gravel and 20 percent soft rock fragments; very strongly acid (pH 4.6); gradual wavy boundary.

Cr—53 inches; weathered shale.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The solum is very strongly acid or extremely acid throughout. Redoximorphic depletions that have chroma of 2 or less are at a depth of 12 to 24 inches. The solum has hue of 7.5YR or 10YR.

The A horizon has value of 2 to 4 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. Value of 2 moist is in the upper 8 inches of the horizon. The horizon is silt loam and averages 15 to 25 percent clay. It is 0 to 10 percent gravel and 0 to 15 percent soft, gravel-sized rock fragments.

The Bt1 horizon has value of 4 to 6 moist or dry, and it has chroma of 4 or 5 moist or dry. It is silt loam or silty clay loam and averages 25 to 35 percent clay. It is 0 to 10 percent gravel and 0 to 15 percent soft, gravel-sized rock fragments.

The Bt2, Bt3, and Bt4 horizons have hue of 2.5Y moist and 7.5YR or 10YR dry, value of 5 or 6 moist and 6 to 8 dry, and chroma of 0 to 4 moist and 1 to 6 dry. They are silty clay loam, silty clay, or gravelly silty clay and average 35 to 50 percent clay. They are 10 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 20 percent soft, gravel-sized rock fragments.

Wadecreek Series

The Wadecreek series consists of very deep, moderately well drained soils on marine terraces. These soils formed in fine textured alluvium. Slopes are 0 to 20 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Wadecreek silt loam in an area of Bullards-Bandon-Wadecreek complex, 0 to 8 percent slopes; in an area of woodland; about 2,500 feet north and 500 feet west of the southeast corner of sec. 33, T. 31 S., R. 15 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, dark brown (10YR 3/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; very strongly acid (pH 4.6); abrupt smooth boundary.

BA—6 to 15 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 4/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine and fine tubular pores; very strongly acid (pH 4.6); clear smooth boundary.

Bt1—15 to 34 inches; brown (10YR 4/3) silty clay loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots and few medium and coarse roots; many fine tubular pores; common faint clay films on faces of peds; very strongly acid (pH 4.8); gradual smooth boundary.

Bt2—34 to 47 inches; yellowish brown (10YR 5/4) silty clay, yellowish brown (10YR 5/6) dry; moderate medium and coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common very fine and fine roots and few medium and coarse roots; many fine tubular pores; common distinct clay films on faces of peds and in pores; many fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation and light gray (10YR 7/2) iron depletions; very strongly acid (pH 4.8); gradual smooth boundary.

BC—47 to 54 inches; yellowish brown (10YR 5/6) clay loam, reddish yellow (7.5YR 6/6) dry; weak medium and coarse subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine tubular pores; many fine distinct light yellowish brown (10YR 6/4) and yellowish red (5YR 4/6) masses of iron accumulation; very strongly acid (pH 4.6); clear smooth boundary.

2C—54 to 60 inches; yellowish brown (10YR 5/6) loam, reddish yellow (7.5YR 6/6) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine tubular pores; many medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 4/6) masses of iron accumulation; extremely acid (pH 4.4).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. The solum is 40 to 60 inches thick. The profile is very strongly acid or extremely acid throughout. It has hue of 10YR or 7.5YR.

The A and BA horizons have value of 2 or 3 moist and 3 or 4 dry, and they have chroma of 2 or 3 moist or dry. They are silt loam and average 18 to 25 percent clay. The organic matter content is 7 to 10 percent.

The Bt horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. Distinct or prominent redoximorphic features are in the lower part of the horizon. The horizon is silty clay loam or silty clay and averages 35 to 50 percent clay.

The BC and 2C horizons have value of 5 or 6 moist and 6 to 8 dry, and they have chroma of 4 to 6 moist or dry. Distinct or prominent redoximorphic features are throughout the horizon. The horizon is clay loam, silty clay loam, or loam and averages 15 to 35 percent clay.

Waldport Series

The Waldport series consists of very deep, excessively drained soils on recently stabilized coastal dunes. These soils formed in mixed eolian sand. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Waldport fine sand in an area of Waldport-Dune land-Heceta complex, 0 to 30 percent slopes; about 2,100 feet north and 1,500 feet east of the southwest corner of sec. 33, T. 30 S., R. 15 W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) fine sand, grayish brown (10YR 5/2) dry; weak very fine granular structure; loose, very friable, nonsticky and nonplastic; many fine and common medium roots; many fine irregular pores; very strongly acid (pH 4.8); diffuse smooth boundary.

C—2 to 60 inches; light yellowish brown (10YR 6/4) fine sand, very pale brown (10YR 7/4) dry; single grain; loose, nonsticky and nonplastic; few fine and medium roots; many fine irregular pores; moderately acid (pH 5.6).

Thickness of the solum is less than 10 inches. The profile is strongly acid or very strongly acid throughout. It is fine sand or loamy fine sand.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 moist or dry. The organic matter content is 1 to 5 percent.

The C horizon has hue of 10YR, 2.5Y or 5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 3 or 4 moist or dry. It is slightly acid to strongly acid.

Watches Series

The Watches series consists of very deep, well drained soils on broad summits and side slopes of coastal hills and mountains. These soils formed in colluvium and residuum derived from schist or phyllite. Slopes are 0 to 90 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Watches channery loam in an area of Desons-Watches-Calfranch complex, 0 to 30 percent slopes; in an area of woodland; about 200 feet north and 2,310 feet east of the southwest corner of sec. 35, T. 35 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 5 inches; grayish brown (10YR 5/2) channery loam, light brownish gray (10YR 6/2) dry; moderate very fine and fine granular structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine and fine irregular pores; 25 percent channers; very strongly acid (pH 4.6); clear smooth boundary.

A2—5 to 16 inches; grayish brown (10YR 5/2) channery loam, light brownish gray (10YR 6/2) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots and few fine, medium, and coarse roots; many fine tubular pores; 20 percent channers; very strongly acid (pH 4.6); clear smooth boundary.

Bw1—16 to 25 inches; light olive brown (2.5Y 5/3) channery clay loam, pale yellow (2.5Y 7/3) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common fine tubular pores; 20 percent channers and 2 percent flagstones; very strongly acid (pH 4.6); clear wavy boundary.

Bw2—25 to 38 inches; light olive brown (2.5Y 5/3) channery clay loam, pale yellow (2.5Y 7/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine roots and few medium and coarse roots; common fine tubular pores; 15 percent channers and 2 percent flagstones; very strongly acid (pH 4.8); clear wavy boundary.

Bw3—38 to 49 inches; grayish brown (2.5Y 5/2) channery clay loam, light gray (2.5Y 7/2) dry; moderate medium and coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine, medium, and coarse roots; common fine tubular pores; 15 percent channers and 3 percent flagstones; very strongly acid (pH 4.8); clear wavy boundary.

C—49 to 65 inches; grayish brown (2.5Y 5/2) very channery clay loam, light gray (2.5Y 7/2) dry; massive; hard, firm, slightly sticky and slightly plastic; few fine, medium, and coarse roots; common fine tubular pores; 35 percent channers and 3 percent flagstones; very strongly acid (pH 4.8).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick. The profile is strongly acid or very strongly acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5 moist and 6 or 7 dry, and chroma of 2 or 3 moist or dry. It is channery loam and averages 15 to 25 percent clay. It is 15 to 30 percent channers and 0 to 3 percent flagstones.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 2 to 4 moist or dry. It is channery clay loam or channery loam and averages 25 to 35 percent clay. It is 15 to 30 percent channers and 0 to 3 percent flagstones.

The C horizon has hue of 2.5Y or 5Y, value of 5 or 6 moist and 6 or 7 dry, and chroma of 2 to 4 moist or dry. It is channery clay loam, very channery clay loam, or very channery loam and averages 25 to 35 percent clay. It is 20 to 40 percent channers and 0 to 10 percent flagstones.

Wedderburn Series

The Wedderburn series consists of deep, well drained soils on broad summits and side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Wedderburn gravelly loam in an area of Wedderburn-Zwagg complex, 30 to 60 percent south slopes; in an area of woodland; about 2,250 feet south and 200 feet east of the northwest corner of sec. 10, T. 41 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 9 inches; very dark brown (10YR 2/2) gravelly loam, dark grayish brown (10YR 4/2) dry; moderate very fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine continuous tubular pores; 15 percent gravel; strongly acid (pH 5.4); gradual smooth boundary.

A2—9 to 16 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many fine continuous tubular pores; 15 percent gravel; strongly acid (pH 5.4); gradual wavy boundary.

A3—16 to 26 inches; very dark grayish brown (10YR 3/2) gravelly loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure; hard, friable, sticky and slightly plastic; many fine and medium roots; many fine continuous tubular pores; 15 percent gravel; moderately acid (pH 5.6); gradual wavy boundary.

Bw1—26 to 38 inches; dark brown (10YR 3/3) gravelly clay loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; hard, firm, sticky and plastic; many fine and medium roots; many fine continuous tubular pores; 20 percent gravel; moderately acid (pH 5.6); gradual wavy boundary.

Bw2—38 to 46 inches; olive brown (2.5Y 4/4) gravelly clay loam, pale yellow (2.5Y 7/4) dry; weak medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots; many fine continuous tubular pores; 25 percent gravel; strongly acid (pH 5.4); gradual wavy boundary.

R—46 inches; siltstone.

Depth to bedrock and thickness of the solum are 40 to 60 inches. The solum is moderately acid or strongly acid throughout. The umbric epipedon is 20 to 30 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is gravelly loam and averages 15 to 27 percent clay. It is 15 to 25 percent gravel.

The Bw horizon has hue of 10YR or 2.5Y, value of 3 or 4 moist and 6 or 7 dry, and chroma of 3 or 4 moist or dry. It is gravelly clay loam or gravelly silty clay loam and averages 27 to 35 percent clay. It is 20 to 35 percent gravel.

Whaleshead Series

The Whaleshead series consists of very deep, well drained soils on side slopes of coastal hills and mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 85 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Whaleshead very gravelly loam in an area of Whaleshead-Reedsport complex, 30 to 60 percent north slopes; in an area of woodland; about 800 feet north and 1,750 feet west of the southeast corner of sec. 27, T. 39 S., R. 14 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 3 inches; very dark gray (10YR 3/1) very gravelly loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine tubular pores; 30 percent gravel and 5 percent cobbles; moderately acid (pH 6.0); clear smooth boundary.

BA—3 to 12 inches; very dark gray (10YR 3/1) very gravelly clay loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; many very fine and fine discontinuous tubular pores; 30 percent gravel and 5 percent cobbles; moderately acid (pH 6.0); clear smooth boundary.

Bw1—12 to 21 inches; very dark grayish brown (10YR 3/2) very gravelly clay loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; many very fine and fine discontinuous tubular pores; common faint organic coatings on faces of peds and in pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear smooth boundary.

Bw2—21 to 33 inches; very dark grayish brown (10YR 3/2) very gravelly clay loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and few medium and coarse roots; many very fine and fine discontinuous tubular pores; common faint organic coatings on faces of peds and in pores; 40 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); gradual smooth boundary.

Bw3—33 to 47 inches; very dark brown (10YR 3/3) extremely gravelly clay loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and few medium and coarse roots; many very fine and fine discontinuous tubular pores; common faint organic coatings on faces of peds and in pores; 50 percent gravel and 10 percent cobbles; moderately acid (pH 5.8); gradual smooth boundary.

C—47 to 60 inches; brown (10YR 5/3) extremely gravelly clay loam, pale brown (10YR 6/3) dry; massive; hard, firm, sticky and plastic; few medium and coarse roots; many very fine and fine discontinuous tubular pores; 55 percent gravel and 10 percent cobbles; strongly acid (pH 5.4).

Depth to bedrock typically is more than 60 inches, but in some pedons it is 40 to 60 inches. The profile has hue of 10YR or 7.5YR. The umbric epipedon is 20 to 47 inches thick, and it includes the upper part of the Bw horizon.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 1 or 2 moist or dry. It is very gravelly loam and averages 18 to 27 percent clay. It is 30 to 45 percent gravel and 5 to 10 percent cobbles. The organic matter content is 5 to 10 percent.

The BA horizon has color similar to that of the A horizon. The BA horizon is very gravelly clay loam and averages 27 to 35 percent clay. It is 30 to 45 percent gravel and 5 to 10 percent cobbles. The organic matter content is 3 to 5 percent.

The Bw horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is very gravelly clay loam or extremely gravelly clay loam and averages 27 to 35 percent clay. It is 40 to 50 percent gravel and 5 to 20 percent cobbles. The organic matter content is 3 to 5 percent.

The C horizon has value of 5 or 6 moist and 6 or 7 dry, and it has chroma of 3 or 4 moist or dry. It is very gravelly clay loam or extremely gravelly clay loam and averages 30 to 40 percent clay. It is 45 to 55 percent gravel and 10 to 20 percent cobbles. The horizon is moderately acid or strongly acid.

Whobrey Series

The Whobrey series consists of very deep, somewhat poorly drained soils on broad summits and side slopes of mountains. These soils formed in colluvium and residuum derived from highly sheared, deeply weathered metasedimentary rock. Slopes are 7 to 60 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 49 degrees F.

Typical pedon of Whobrey silt loam in an area of Etelka-Whobrey-Remote complex, 15 to 30 percent slopes; in an area of native vegetation; about 2,300 feet south and 1,600 feet west of the northeast corner of sec. 31, T. 31 S., R. 13 W.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; moderately acid (pH 5.8); clear wavy boundary.

A2—3 to 12 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; strong medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; many very fine and fine tubular pores; moderately acid (pH 5.6); clear wavy boundary.

Bw—12 to 22 inches; brown (10YR 5/3) silty clay loam, pale brown (10YR 6/3) dry; strong medium subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots; many fine tubular pores; common, fine, faint or distinct dark yellowish brown (10YR 4/6) and brown (7.5YR 5/4) masses of iron accumulation; moderately acid (pH 5.6); abrupt wavy boundary.

2C1—22 to 31 inches; very dark gray (N 3/0) clay, dark gray (2.5Y 4/1) dry; moderate medium and coarse angular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; few prominent slickensides; common fine and medium distinct brown (7.5YR 5/2) redoximorphic depletions; 5 percent gravel; neutral (pH 6.6); gradual wavy boundary.

2C2—31 to 66 inches; very dark gray (N 3/0) clay, dark gray (N 4/0) dry; massive; very hard, very firm, very sticky and very plastic; 5 percent gravel; neutral (pH 7.2).

Depth to bedrock is more than 60 inches. Thickness of the solum and depth to the 2C horizon are 20 to 36 inches. The solum is moderately acid or strongly acid. It has hue of 7.5YR to 2.5Y.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist or dry. It is silt loam and averages 20 to 25 percent clay.

The Bw horizon has value of 4 or 5 moist and 6 or 7 dry, and it has chroma of 3 or 4 moist or dry. Faint to prominent redoximorphic concentrations are throughout the horizon. The horizon is silt loam or silty clay loam and averages 20 to 30 percent clay.

The 2C horizon has hue of 2.5Y or 5Y, value of 2 or 3 moist and 4 or 5 dry, and chroma of 0 to 2. Few to common slickensides are in this horizon. Distinct or prominent redoximorphic concentrations are throughout the horizon. The horizon is clay or silty clay and averages 50 to 65 percent clay. It is 0 to 5 percent gravel.

Willanch Series

The Willanch series consists of very deep, poorly drained soils in depressions and drainageways of flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Willanch fine sandy loam in an area of Gauldy-Willanch complex, 0 to 3 percent slopes; in an area of pasture; about 1,980 feet south and 180 feet west of the northeast corner of sec. 19, T. 38 S., R. 14 W.

A—0 to 7 inches; very dark brown (10YR 2/2) fine sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; hard, very friable, slightly sticky and nonplastic; common very fine and many fine roots; many very fine irregular pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; moderately acid (pH 5.8); clear smooth boundary.

AC—7 to 16 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; hard, very friable, slightly sticky and nonplastic; common very fine and many fine roots; many fine irregular pores; common fine distinct and few coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; moderately acid (pH 5.8); clear smooth boundary.

C—16 to 34 inches; dark grayish brown (2.5Y 4/2) sandy loam, grayish brown (2.5Y 5/2) dry; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many fine irregular pores; common medium distinct and few coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent gravel; moderately acid (pH 6.0); gradual smooth boundary.

Cg—34 to 60 inches; dark grayish brown (2.5Y 4/2) and dark gray (N 4/0) loamy sand, grayish brown (2.5Y 5/2) and gray (N 6/0) dry; massive; loose, very friable, nonsticky and nonplastic; common very fine irregular pores; many medium distinct and few coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent gravel; moderately acid (pH 6.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 24 inches thick. Faint or prominent redoximorphic concentrations that have hue of 10YR, value of 5 moist, and chroma of 4 to 6 are throughout the profile.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 2 or 3 moist or dry. It is fine sandy loam and averages 5 to 10 percent clay.

The C horizon has hue of 2.5Y or 10YR, value of 4 or 5 moist and 5 to 7 dry, and chroma of neutral to 2 moist or dry. Chroma of 1 moist is below a depth of 30 inches in some pedons. It is sandy loam, loamy fine sand, or loamy sand and averages 0 to 10 percent clay. It is 0 to 10 percent gravel.

Winchuck Series

The Winchuck series consists of very deep, well drained soils on high stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 30 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Winchuck silt loam, 3 to 15 percent slopes, in an area of pasture; about 1,980 feet south and 3,300 feet west of the northeast corner of sec. 6, T. 41 S., R. 12 W.

Ap—0 to 8 inches; dark brown (7.5YR 3/2) silt loam, brown (10YR 5/3) dry; moderate very fine subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky and slightly plastic; many fine roots; many very fine irregular pores; strongly acid (pH 5.2); clear wavy boundary.

BA—8 to 18 inches; dark brown (7.5YR 3/2) silty clay loam, brown (10YR 5/3) dry; strong fine subangular blocky structure; hard, friable, slightly sticky and plastic; common fine roots; many very fine continuous tubular pores; strongly acid (pH 5.2); clear wavy boundary.

Bt1—18 to 24 inches; dark reddish brown (5YR 3/3) silty clay, reddish brown (5YR 5/4) dry; moderate medium subangular blocky structure parting to strong very fine subangular blocky; hard, firm, sticky and plastic; few fine roots; many very fine tubular and irregular pores; nearly continuous distinct clay films on faces of peds and in pores; strongly acid (pH 5.2); gradual wavy boundary.

Bt2—24 to 34 inches; dark reddish brown (5YR 3/4) silty clay, reddish brown (5YR 4/3) dry; moderate coarse subangular blocky structure parting to strong very fine subangular blocky; very hard, very firm, sticky and plastic; few fine roots; many very fine tubular and irregular pores; nearly continuous distinct clay films on faces of peds and in pores; strongly acid (pH 5.2); clear wavy boundary.

BCt—34 to 46 inches; dark brown (7.5YR 4/4) silty clay loam, brown (7.5YR 5/4) dry; moderate very fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; many very fine continuous tubular pores; common distinct clay films on faces of peds and in pores; strongly acid (pH 5.2); gradual wavy boundary.

2C—46 to 60 inches; strong brown (7.5YR 5/6) gravelly sandy clay loam, reddish yellow (7.5YR 6/6) dry; massive; very hard, firm, slightly sticky and slightly plastic; many very fine irregular pores; 30 percent gravel; strongly acid (pH 5.4).

The solum is 36 to 60 inches thick, and it is less than 15 percent coarse fragments. Depth to stratified gravelly alluvial material is 40 to 60 inches or more. The profile is strongly acid or very strongly acid throughout. The umbric epipedon is 10 to 20 inches thick.

The A horizon has hue of 10YR to 5YR, value of 2 or 3 moist and 4 or 5 dry, and chroma of 2 or 3 moist and 2 to 4 dry. It is silt loam and averages 20 to 25 percent clay. The organic matter content is 4 to 8 percent.

The BA horizon has hue of 7.5YR or 5YR, value of 3 or 4 moist and 3 to 5 dry, and chroma of 3 or 4 moist or dry. It is silty clay loam and averages 35 to 40 percent clay. The organic matter content is 2 to 4 percent.

The Bt horizon has hue of 5YR or 7.5YR, value of 3 or 4 moist and 4 to 6 dry, and chroma of 3 to 6 moist or dry. It is silty clay or clay and averages 45 to 60 percent clay. The organic matter content is 2 to 4 percent.

The BCt horizon has hue of 5YR to 10YR, value of 4 or 5 moist, and chroma of 4 to 6 moist or dry. It is silty clay loam or clay loam and averages 35 to 40 percent clay.

The 2C horizon has hue of 7.5YR to 2.5Y, value of 5 to 7 moist and 6 to 8 dry, and chroma of 6 to 8 moist or dry. It typically is gravelly sandy clay loam or very gravelly sandy clay loam and averages 20 to 35 percent clay. It is 25 to 55 percent gravel. Faint redoximorphic concentrations are in some pedons.

Wintley Series

The Wintley series consists of very deep, well drained soils on high stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 7 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Wintley silt loam in an area of McCurdy-Wintley complex, 0 to 7 percent slopes; in an area of woodland; about 660 feet north and 1,650 feet east of the southwest corner of sec. 31, T. 31 S., R. 12 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A—0 to 5 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine and very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many fine tubular pores; very strongly acid (pH 4.8); clear wavy boundary.

BA—5 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine tubular pores; very strongly acid (pH 4.8); clear wavy boundary.

Bt1—13 to 25 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; common fine and medium roots and few coarse roots; many fine tubular pores; common distinct clay films in pores, many distinct clay films on faces of peds; very strongly acid (pH 4.8); clear wavy boundary.
Bt2—25 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate medium and coarse subangular blocky structure; few fine, medium, and coarse roots; many fine tubular pores; common distinct clay films in pores, many distinct clay films on faces of peds; very strongly acid (pH 4.8); gradual wavy boundary.
2C—43 to 60 inches; yellowish brown (10YR 5/4) gravelly loam, light yellowish brown (10YR 6/4) dry; massive; few fine roots; many fine tubular pores; 25 percent gravel; strongly acid (pH 5.2).

Depth to bedrock is more than 60 inches. The solum is 40 to 60 inches thick. The profile is strongly acid or very strongly acid. The profile has hue of 10YR or 7.5YR. Depth to the stratified, gravelly 2C horizon is 40 to 60 inches or more.

The A horizon has value of 3 or 4 moist and 4 or 5 dry, and it has chroma of 3 or 4 moist or dry. It is silt loam and averages 20 to 27 percent clay.

The BA horizon has value of 3 or 4 moist and 4 to 6 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay loam and averages 35 to 40 percent clay.

The Bt horizon has value of 4 or 5 moist and 4 to 6 dry, and it has chroma of 4 to 6 moist or dry. It is silty clay loam, silty clay, or clay and averages 35 to 50 percent clay.

The 2C horizon is very gravelly loam, gravelly loam, or very gravelly sandy loam and averages 10 to 20 percent clay. It is 15 to 40 percent rock fragments.

Woodseye Series

The Woodseye series consists of shallow, well drained to somewhat excessively drained soils on summits and north-facing side slopes of mountains. These soils formed in colluvium derived from metasedimentary or metavolcanic rock. Slopes are 30 to 90 percent. The mean annual precipitation is about 105 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Woodseye very gravelly loam in an area of Bearcamp-Brandypeak-Woodseye complex, 30 to 60 percent north slopes; in an area of woodland; about 2,300 feet north and 2,500 feet east of the southwest corner of sec. 31, T. 34 S., R. 10 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.
A1—0 to 5 inches; very dark brown (10YR 2/2) very gravelly loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; many fine irregular pores; 45 percent gravel and 5 percent cobbles; moderately acid (pH 5.8); clear wavy boundary.
A2—5 to 12 inches; very dark grayish brown (10YR 3/2) very gravelly loam, dark brown (10YR 4/3) dry; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; many fine irregular pores; 50 percent gravel and 5 percent cobbles; moderately acid (pH 5.6); clear wavy boundary.
Bw—12 to 16 inches; dark grayish brown (10YR 4/2) very gravelly loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; many fine irregular pores; 50 percent gravel and 10 percent cobbles; strongly acid (pH 5.4); abrupt wavy boundary.
R—16 inches; highly fractured, slightly weathered metavolcanic rock.

Depth to bedrock is 10 to 20 inches. The profile has hue of 10YR or 7.5YR.

The A horizon has value of 2 or 3 moist and 3 or 4 dry, and it has chroma of 2 or 3 moist and 3 or 4 dry. It is very gravelly loam and averages 10 to 20 percent clay. It is 35 to 50 percent gravel and 0 to 5 percent cobbles.

The Bw horizon has value of 3 to 5 moist and 4 or 5 dry, and it has chroma of 2 to 4 moist or dry. It is very gravelly loam, extremely gravelly loam, or very gravelly sandy loam and averages 12 to 25 percent clay. It is 35 to 65 percent gravel and 5 to 15 percent cobbles.

Yachats Series

The Yachats series consists of very deep, well drained soils on flood plains. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Yachats very fine sandy loam, 0 to 3 percent slopes, in an area of pasture; about 2,100 feet north and 2,200 feet west of the southeast corner of sec. 17, T. 32 S., R. 15 W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) very fine sandy loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine irregular pores; very strongly acid (pH 5.0); abrupt smooth boundary.

A—8 to 15 inches; dark brown (10YR 3/3) very fine sandy loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine irregular pores; very strongly acid (pH 5.0); clear smooth boundary.

Bw—15 to 28 inches; brown (10YR 4/3) fine sandy loam, yellowish brown (10YR 5/4) dry; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine irregular pores; very strongly acid (pH 4.8); gradual smooth boundary.

C1—28 to 42 inches; dark yellowish brown (10YR 4/4) fine sandy loam, light yellowish brown (10YR 6/4) dry; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many fine irregular pores; very strongly acid (pH 4.6); gradual smooth boundary.

C2—42 to 60 inches; yellowish brown (10YR 5/4) loamy fine sand, light yellowish brown (10YR 6/4) dry; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many fine irregular pores; very strongly acid (pH 4.6).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. The profile is very strongly acid or extremely acid throughout.

The Ap and A horizons have value of 2 or 3 moist and 4 or 5 dry, and they have chroma of 2 or 3 moist or dry. They are very fine sandy loam and average 5 to 15 percent clay. The organic matter content is 4 to 8 percent.

The Bw horizon has value of 4 or 5 moist and 5 dry, and it has chroma of 3 or 4 moist or dry. It is fine sandy loam or loam and averages 5 to 15 percent clay.

The C horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 3 or 4 moist or dry. The upper part of the horizon is fine sandy loam, and the lower part is loamy fine sand or sand. The C horizon averages 5 to 10 percent clay. Stratified sandy or gravelly layers may be in some pedons.

Yaquina Series

The Yaquina series consists of very deep, somewhat poorly drained soils in slightly convex interdunal positions on deflation plains along the Pacific Coast. These soils formed in eolian sand of mixed origin. Slopes are 0 to 3 percent. The mean annual precipitation is about 80 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Yaquina loamy fine sand, 0 to 3 percent slopes, in an area of native vegetation; about 1,500 feet south and 1,320 feet east of the northwest corner of sec. 27, T. 30 S., R. 15 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

E—0 to 4 inches; dark gray (10YR 4/1) loamy fine sand, gray (10YR 6/1) dry; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; many fine irregular pores; very strongly acid (pH 4.8); abrupt wavy boundary.

Bs1—4 to 11 inches; brown (7.5YR 5/2) fine sand, pinkish gray (7.5YR 6/2) dry; single grain; loose, nonsticky and nonplastic; common fine and medium roots and few coarse roots; many fine irregular pores; 10 percent iron-cemented nodules 5 to 20 millimeters in diameter; very strongly acid (pH 5.0); gradual wavy boundary.

Bs2—11 to 26 inches; brown (7.5YR 5/3) fine sand, light brown (7.5YR 6/3) dry; single grain; loose, nonsticky and nonplastic; few medium and coarse roots; common fine irregular pores; 20 percent iron-cemented nodules 5 to 20 millimeters in diameter; many medium distinct pale brown (10YR 6/3) and common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid (pH 5.4); gradual wavy boundary.

C—26 to 60 inches; brown (7.5YR 5/4) sand, light brown (7.5YR 6/4) dry; single grain; loose, nonsticky and nonplastic; common fine irregular pores; 20 percent iron-cemented nodules 5 to 20 millimeters in diameter; strongly acid (pH 5.4).

Depth to bedrock is more than 60 inches.

The E horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 1 or 2 moist or dry. It is loamy fine sand and averages less than 5 percent clay.

The Bs horizon has hue of 7.5YR or 10YR, value of 4 or 5 moist and 5 or 6 dry, and chroma of 2 or 3 moist or dry. Distinct redoximorphic concentrations that have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 6 moist are in the lower part of the horizon. The horizon is fine sand or sand and averages less than 2 percent clay. Firm or very firm, reddish colored, weakly cemented iron nodules and thin, very firm lenses are common throughout the horizon.

The C horizon has value of 5 or 6 moist and 6 to 8 dry, and it has chroma of 4 to 6 moist or dry. It is fine sand or sand and averages less than 2 percent clay. The horizon is moderately acid or strongly acid.

Yorel Series

The Yorel series consists of moderately deep, well drained soils on broad summits and side slopes of mountains. These soils formed in residuum and colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 60 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Yorel gravelly loam in an area of Pyrady-Zalea-Yorel complex, 0 to 15 percent slopes; in an area of woodland; about 1,900 feet south and 500 feet east of the northwest corner of sec. 11, T. 37 S., R. 13 W.

Oi—2 inches to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 3 inches; dark brown (7.5YR 3/3) gravelly loam, brown (7.5YR 5/4) dry; strong very fine granular structure; soft, friable, nonsticky and slightly plastic; many fine roots; many fine irregular pores; 15 percent gravel; very strongly acid (pH 5.0); abrupt smooth boundary.

AB—3 to 6 inches; dark brown (7.5YR 4/4) gravelly loam, brown (7.5YR 5/4) dry; strong fine granular structure; slightly hard, friable, nonsticky and slightly plastic; many fine roots; many fine irregular pores; 15 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw1—6 to 12 inches; dark brown (7.5YR 4/4) gravelly loam, light brown (7.5YR 6/4) dry; strong very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; 20 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

Bw2—12 to 23 inches; strong brown (7.5YR 4/6) gravelly clay loam, reddish yellow (7.5YR 6/6) dry; moderate fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine roots; many very fine tubular pores; 20 percent gravel and 10 percent soft rock fragments; very strongly acid (pH 4.8); clear smooth boundary.

Bw3—23 to 31 inches; strong brown (7.5YR 5/6) gravelly clay loam, reddish yellow (7.5YR 6/6) dry; weak fine subangular blocky structure; hard, firm, sticky and plastic; common fine roots; many very fine tubular pores; 30 percent gravel and 20 percent soft rock fragments; very strongly acid (pH 4.6); abrupt smooth boundary.

R—31 inches; fractured sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The profile has hue of 7.5YR or 10YR.

The A horizon has value of 3 or 4 moist and 5 or 6 dry, and it has chroma of 2 to 4 moist and 4 to 6 dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 25 percent gravel.

The Bw horizon has value of 4 or 5 moist and 5 or 6 dry, and it has chroma of 4 to 6 moist or dry. It is gravelly loam or gravelly clay loam and averages 25 to 35 percent clay. It is 15 to 35 percent gravel and 10 to 30 percent soft rock fragments.

Zalea Series

The Zalea series consists of moderately deep, well drained soils on broad summits and benches of mountains. These soils formed in colluvium and residuum derived from metasedimentary or metavolcanic rock. Slopes are 0 to 30 percent. The mean annual precipitation is about 145 inches, and the mean annual air temperature is about 43 degrees F.

Typical pedon of Zalea gravelly loam in an area of Zalea-Pyrady-Yorel complex, 15 to 30 percent slopes; in an area of woodland; about 2,200 feet south and 1,800 feet east of the northwest corner of sec. 13, T. 37 S., R. 13 W.

Oi—1 inch to 0; partially decomposed needles, leaves, twigs, and woody material.

A1—0 to 4 inches; dark brown (10YR 4/3) gravelly loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots and common medium roots; many fine tubular pores; 15 percent gravel; very strongly acid (pH 5.0); clear wavy boundary.

A2—4 to 8 inches; dark brown (10YR 4/3) gravelly loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots, common medium roots, and few coarse roots; many fine tubular pores; 15 percent gravel; very strongly acid (pH 5.0); clear wavy boundary.

Bt1—8 to 16 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, light yellowish brown (10YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many fine and medium roots and few coarse roots; many very fine tubular pores; few distinct clay films on faces of peds and in pores; 20 percent gravel and 15 percent soft rock fragments; very strongly acid (pH 5.0); clear wavy boundary.

Bt2—16 to 31 inches; light olive brown (2.5Y 5/4) gravelly clay loam, light yellowish brown (2.5Y 6/4) dry; moderate medium angular blocky structure; hard, firm, sticky and plastic; few coarse roots; many very fine tubular pores; common distinct clay films on faces of peds and in pores; 20 percent gravel and 25 percent soft rock fragments; very strongly acid (pH 4.8); clear wavy boundary.

Bt3—31 to 34 inches; light olive brown (2.5Y 5/4) gravelly clay loam, light yellowish brown (2.5Y 6/4) dry; moderate coarse angular blocky structure; hard, firm, sticky and plastic; few coarse roots; many very fine tubular pores; many distinct clay films on faces of peds and in pores; 20 percent gravel, 3 percent cobbles, and 30 percent soft rock fragments; very strongly acid (pH 4.8); abrupt wavy boundary.

R—34 inches; fractured siltstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches.

The A horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist and 5 or 6 dry, and chroma of 2 or 3 moist and 4 to 6 dry. It is gravelly loam and averages 18 to 25 percent clay. It is 15 to 30 percent gravel and 0 to 20 percent soft rock fragments.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 4 or 5 moist and 5 or 6 dry, and chroma of 4 to 6 moist or dry. It is gravelly clay loam and averages 30 to 35 percent clay. It is 15 to 30 percent gravel, 0 to 3 percent cobbles, and 0 to 35 percent soft rock fragments.

Zwagg Series

The Zwagg series consists of moderately deep, well drained soils in open areas of grassland on broad summits and side slopes of coastal hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary or metavolcanic rock. Slopes are 0 to 90 percent. The mean annual precipitation is about 110 inches, and the mean annual air temperature is about 54 degrees F.

Typical pedon of Zwagg loam in an area of Wedderburn-Zwagg complex, 0 to 30 percent slopes; in an area of pasture; about 1,100 feet south and 1,800 feet east of the northwest corner of sec. 10, T. 41 S., R. 13 W.

A1—0 to 8 inches; black (10YR 2/1) loam, dark grayish brown (10YR 4/2) dry; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots; many very fine and fine irregular pores; 10 percent gravel; very strongly acid (pH 5.0); clear smooth boundary.

A2—8 to 15 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots; many very fine and fine irregular pores; 10 percent gravel; very strongly acid (pH 4.8); clear smooth boundary.

A3—15 to 21 inches; very dark brown (10YR 2/2) loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; slightly hard, friable, nonsticky and nonplastic, weakly smeary; many very fine and fine roots; many very fine and fine irregular pores; 10 percent gravel; very strongly acid (pH 4.8); gradual smooth boundary.

Bw—21 to 25 inches; dark grayish brown (10YR 4/2) very gravelly loam, brown (10YR 5/3) dry; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; common very fine and fine roots; many very fine and fine irregular pores; 55 percent gravel; very strongly acid (pH 4.6); gradual wavy boundary.

R—25 inches; sandstone.

Depth to bedrock and thickness of the solum are 20 to 40 inches. The umbric epipedon is 15 to 25 inches thick.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 or 2 moist or dry. It is loam and averages 12 to 18 percent clay. It is 5 to 15 percent gravel. The organic matter content is 4 to 8 percent.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist or dry, and chroma of 2 or 3 moist and 3 or 4 dry. It is gravelly loam or very gravelly loam and averages 12 to 18 percent clay. It is 30 to 60 percent gravel.

Zyzzug Series

The Zyzzug series consists of very deep, poorly drained soils on low stream terraces. These soils formed in alluvium derived from mixed sources. Slopes are 0 to 3 percent. The mean annual precipitation is about 90 inches, and the mean annual air temperature is about 51 degrees F.

Typical pedon of Zyzzug silt loam in an area of Eilertsen-Zyzzug complex, 0 to 7 percent slopes; in an area of woodland; about 1,300 feet south and 2,200 feet east of the northwest corner of sec. 11, T. 32 S., R. 13 W.

A1—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; many very fine and fine tubular pores; common fine distinct dark gray (10YR 4/1) and dark grayish brown (10YR 4/2) iron depletions; strongly acid (pH 5.2); clear smooth boundary.

A2—9 to 17 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many fine tubular pores; common fine distinct dark grayish brown (10YR 4/2) iron depletions; strongly acid (pH 5.2); clear smooth boundary.

Bg—17 to 25 inches; dark grayish brown (10YR 4/2) silty clay loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; many fine tubular pores; many medium distinct grayish brown (10YR 5/2) iron depletions and brown (10YR 5/3) masses of iron accumulation; strongly acid (pH 5.2); clear wavy boundary.

Bw—25 to 42 inches; yellowish brown (10YR 5/4) silty clay loam, light yellowish brown (10YR 6/4) dry; hard, firm, slightly sticky and slightly plastic; few fine and medium roots; common fine tubular pores; many medium and coarse distinct dark yellowish brown (10YR 4/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; strongly acid (pH 5.2); gradual smooth boundary.

BC—42 to 49 inches; yellowish brown (10YR 5/4) silty clay loam, very pale brown (10YR 7/4) dry; hard, firm, slightly sticky and slightly plastic; few fine and medium roots; common fine tubular pores; many coarse distinct light brownish gray (10YR 6/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid (pH 5.2); gradual wavy boundary.

C—49 to 60 inches; yellowish brown (10YR 5/4) silty clay loam, very pale brown (10YR 7/4) dry; massive; hard, firm, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; many coarse prominent light brownish gray (10YR 6/2) iron depletions and brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid (pH 5.0).

Depth to bedrock is more than 60 inches. The umbric epipedon is 10 to 20 inches thick. The profile is moderately acid or strongly acid. Faint or distinct redoximorphic features are in the solum, and distinct or prominent redoximorphic features are in the substratum.

The A horizon has value of 2 or 3 moist and 4 or 5 dry, and it has chroma of 1 or 2 moist and 2 or 3 dry. It is silt loam and averages 20 to 25 percent clay.

The Bg horizon has hue of 10YR to 5Y, value of 3 to 5 moist and 5 to 7 dry, and chroma of 1 or 2 moist and 2 to 6 dry. It is silt loam or silty clay loam and averages 25 to 35 percent clay.

The Bw horizon has hue of 10YR to 5Y, value of 4 or 5 moist and 5 to 7 dry, and chroma of 4 to 6 moist or dry. It is silty clay loam or silty clay and averages 30 to 45 percent clay.

The C horizon has color similar to that of the Bw horizon. The C horizon is silty clay loam, silt loam, or clay loam and averages 25 to 35 percent clay.

Figure 18.—Profile of an Agness channery silt loam showing the linear, platy rock fragments throughout.

Figure 19.—Profile of a Bullards sandy loam showing the very dark grayish brown surface horizon over the dark yellowish brown and yellowish brown spodic horizon.

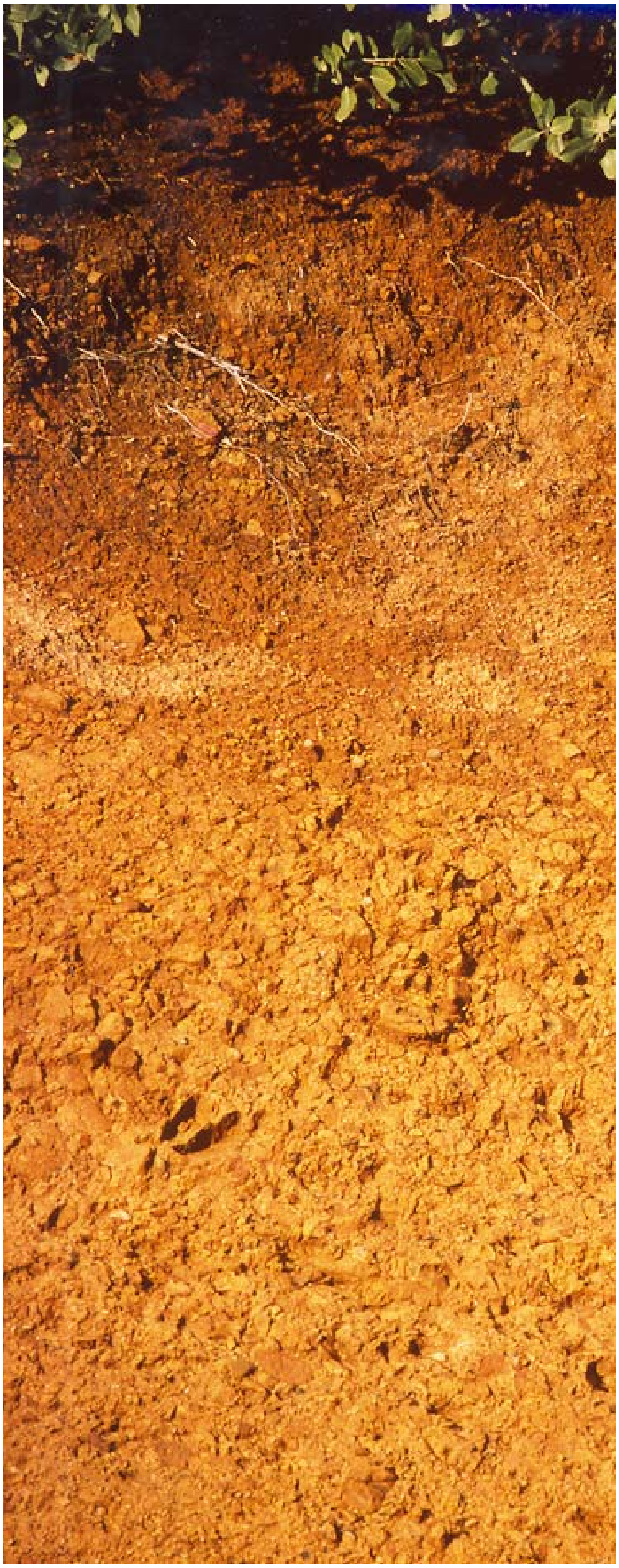

Figure 20.—Profile of a Burnthill loam showing the characteristic weathered sedimentary fragments that increase in volume in the lower part.

Figure 21.—Profile of a Cashner loam. A Bhs horizon is at a depth of 12 inches, and it is underlain by a cemented spodic horizon.

Figure 22.—Profile of a Greggo very cobbly clay loam showing the peridotite in the lower part.

Figure 23.—Profile of a Joeney silt loam showing typical Spodosol morphology with a white albic surface horizon and organic-rich B horizon over a spodic horizon.

Figure 24.—Profile of a Milbury very gravelly loam showing the lithic characteristic of the sandstone.

Figure 25.—Profile of a Quillamook silt loam showing the thick, dark-colored surface horizon.

Formation of the Soils

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Soil consists of layers of mineral or organic material on the surface of the earth. Soil is formed by the interaction of five basic factors—climate, living organisms, parent material, topography, and time. The physical and chemical processes that result from the interaction of these factors determine the characteristics and properties of a soil. The influence of any one of these factors varies from place to place, but the interaction of all the factors determines the type of soil that forms.

The soils in this survey area have been greatly influenced by climate. Moist marine air moving inland from the Pacific Ocean moderates extremes in the diurnal and annual air and soil temperature in winter and summer. The result is a long but cool growing season in the coastal areas, which make up the isomesic zone, or fogbelt. Further inland, the direct influence of marine air diminishes and the extremes in air and soil temperature increase. These inland areas have a shorter but warmer growing season.

The characteristics of the parent material greatly influence the kinds of soil that form. Soils that formed in colluvium and residuum derived from older Jurassic metasedimentary and metavolcanic rock, such as sandstone of the Dothan Formation and Colebrooke schist, have properties such as a lower liquid limit, higher plasticity and bulk density values, and a lower cation exchange capacity in the surface layer (Baldwin 1981, Beaulieu 1976, Ramp and others 1977). Soils that formed in colluvium and residuum derived from younger Tertiary marine and nonmarine sedimentary rock and marine volcanic rock, such as the Umpqua Group of the Roseburg, Flournoy, and Lookingglass Formations, have properties such as a higher liquid limit, lower plasticity and bulk density values, and a higher cation exchange capacity. Soils that formed in colluvium and residuum derived from ultramafic rock, such as serpentinite and peridotite, have less major nutrients for plant growth and thus have a lower fertility level, have an overall nutrient imbalance because of the high content of magnesium and low content of calcium and molybdenum, and have a high concentration of toxic heavy metals, such as nickel and chromium.

The topography of the survey area is dominantly steep or very steep because the area encompasses the highly faulted Klamath Mountain terranes of the Triassic and Jurassic that abut to the north with moderately high terranes of the Eocene. These terranes have been modified along the coast by wave-cut platforms, which are associated with past high sea levels, that have been uplifted by tectonic activity. Many of these platforms have also been modified by dune activity, which has resulted in additional topographic relief. The mouth of the estuaries also has been topographically modified by sand spits, beaches, and dunes.

The period of time parent material has been in place influences the kinds of soil that have formed. Soils that formed in recent alluvium on flood plains exhibit minor profile development, such as a thin mollic or umbric epipedon, a thin cambic horizon, and an irregular decrease in organic carbon as a result of frequent deposits of alluvium. Soils that formed in older alluvium on terraces exhibit greater profile development, such as a considerably thicker mollic or umbric epipedon, an argillic horizon, and a regular decrease in organic carbon. Soils on the coastal plain terraces have been strongly influenced by the sandy parent material of the old, stabilized dunes.

In this section, the factors of climate and living organisms are discussed together and the factors of time, topography, and parent material are discussed under the headings “Geomorphic Surfaces and Soil Development” and “Looney Unit and Soil Development.” At the end of this section is a table that lists the diagnostic features and horizons of the soils on each geomorphic surface and on the Looney unit.

Climate and Living Organisms

Climate strongly influences soil formation by controlling the chemical and physical reactions in soil. Temperature and moisture influence the chemical and physical nature of soil by influencing the rate of chemical reactions, the weathering of minerals and material in a soil horizon, and the transport of material from one horizon to another. The kind of vegetation that grows in an area and its rate of growth; the activity and abundance of insects, animals, soil microbes, and fungi; and the rate of accumulation and decay of organic matter are all influenced by climate.

Living organisms, especially the higher plants, are an active factor in soil formation. The changes they bring about result from the life processes peculiar to each organism. The kinds of organisms that live on and in the soil are determined by climate, topography, age of the soil, and parent material.

Plants actively influence soil formation by providing a root system and cover that hold soil particles together so that they are resistant to erosion. Decomposition of leaves, twigs, roots, and the remains of entire plants returns valuable organic matter to soil. Plant roots also widen cracks in the underlying rock, allowing water to penetrate. The uprooting of trees by wind mixes soil layers, loosens the underlying material, and moves weathered rock and mineral material to the surface.

Organisms such as insects and earthworms, fungi and other micro-organisms, and burrowing animals actively influence the formation of soils. These organisms accelerate the decomposition of organic matter by consuming and digesting the remains of plants. Bacteria, fungi, and other micro-organisms hasten the weathering of rock into mineral soil particles. Insects, micro-organisms, and earthworms feed on organic matter on the surface and in the upper few inches of the soil. They slowly, but continually, alter the physical and chemical properties of organic matter and aid in mixing it with mineral material. Small animals burrow into the soil for shelter, mixing the layers.

Three Major Land Resource Areas (MLRA) are in the survey area—Northern Pacific Coast Range, Foothills, and Valleys (MLRA 1); California Coastal Redwood Belt (MLRA 4); and Siskiyou-Trinity Area (MLRA 5) (USDA 1981). MLRA 1 has been subdivided into the cooler coastal fogbelt and the warmer interior mountain area.

Six major climate zones that greatly influence soil genesis are recognized in the survey area. The following table summarizes the climatic and topographic ranges for each of these zones.

The isomesic zone, or coastal fogbelt, represents climate zones 1 and 2. Fogbelt is a general term used for the area that is influenced by fog, low clouds, and cool, moist marine air in summer. It extends from the Pacific Ocean to about 3 to 5 miles inland, or to the

Climate Zones in Curry County, Oregon

Climate zone	Elevation	Characteristics		Number of	Temperature		Moisture	
		Winter	Summer	dry days	Regime	Range	Regime	Range
						^{o}F		*In*	*Ft*
1----------	0-1,300	Cool, wet	Cool, moist, foggy	---	Isomesic	50-53	Udic	70-95
2----------	0-1,300	Warm, wet	Warm, moist, foggy	---	Isomesic	52-57	Udic	70-130
3----------	300-2,500	Warm, wet	Hot, moist	---	Mesic	45-53	Udic	80-130
4----------	2,500-5,500	Cool, wet	Warm, moist	---	Frigid	40-45	Udic	130-160
5----------	---	Warm, wet	Hot, dry	---	Mesic	---	Xeric	---
River terraces	100-600	---	---	>90	---	54-56	---	80-90
Foothills/ mountains	200-2,300	---	---	60-90	---	49-54	---	80-100
Foothills/ mountains	400-3,000	---	---	45-60	---	47-52	---	90-100
6----------	3,000-5,500	Cool, wet	Hot, dry	45-60	Frigid	40-45	Xeric	90-120

first range of hills or mountains that tend to prevent the low clouds and fog from moving further inland. Along rivers and in low-lying areas, the fogbelt can extend as far as 15 to 20 miles inland. Elevation in this zone ranges from sea level to 1,300 feet. The soils have an isomesic temperature regime and a udic moisture regime (USDA 1975, USDA 1994).

Climate zone 1 extends from the Coos County line to the Chetco River, at Brookings. The growing season is year round. The soils in this zone are in general soil map units 1, 3, 4, 6, and 7. They are represented by the Coastal Fog vegetation zone (see “Vegetative Diversity”).

Climate zone 2 extends from the Chetco River south to the California State line. The growing season is year round. The soils in this zone are in general soil map units 2 and 5. They are represented by the Redwood vegetation zone.

The abundant moisture and modified air and soil temperature in the coastal fogbelt result in a long growing season that allows for a large accumulation of organic matter. The high rainfall in the fogbelt results in extensive leaching of bases; therefore, the soils have low base saturation. Conifers absorb bases but they do not readily return bases to the soils, which further contributes to the low base saturation of the soils. Organic matter accumulates in the soils because the cool temperatures slow down the rate of decomposition. Aeric Tropaquepts, Fluventic Humitropepts, and Typic Tropopsamments have formed on the young surfaces, such as flood plains and coastal dunes, in the fogbelt. Typic Haplohumults, Typic Haplorthods, and Typic Humitropepts have formed on the older surfaces, such as terraces and coastal hills, where soil-forming factors have been active for a much longer period of time.

In inland areas immediately adjacent to the coastal fogbelt, climate zone 3 is at the lower elevations and climate zone 4 is at the higher elevations. The soils have a udic moisture regime. The soil temperature regime is mesic at the lower elevations and frigid at the higher elevations (USDA 1975, USDA 1994).

Climate zone 3 is typified by most of the lower and middle elevation interior areas of the survey area. The growing season is somewhat shorter and warmer than that of the isomesic zone, and the soils dry out more in summer. The soils in this zone are in general soil map units 8, 9, 10, 11, 12, and 13. Progressing from north to south, the soils are represented by the Western Hemlock, Tanoak/Hemlock, and Coastal Tanoak vegetation zones.

Climate zone 4 is typified by most of the higher elevation peaks and ridges in the interior areas. The growing season is short, and the soils dry out for brief periods in summer. The soils in this zone are in general soil map units 14 and 15. The soils in the northern part are represented by the Cool Western Hemlock vegetation zone, and those in the southern part are represented by the Cool Douglas Fir zone. Tree growth in this climatic zone is slower, and damage to trees by wind, snow, and ice is common.

Precipitation in climatic zones 3 and 4 is high in winter, and it increases as elevation increases. The direct moderating effect of the cool, moist marine air on air and soil temperature diminishes in these zones. Because the high precipitation in winter results in extensive leaching of bases, the soils have low base saturation. Cold temperatures in this zone significantly restrict the activity of micro-organisms. This results in accumulations of organic matter that are thick enough to allow an umbric epipedon to form in most of the soils that are on stable or metastable landforms with nearly level to moderately steep slopes. The percentage of organic matter, however, is lower than that of the soils in the fogbelt. Soils on active landforms with steep or very steep slopes typically have an ochric epipedon. An exception is those on north aspects where enough organic matter has accumulated for an umbric epipedon to form. Typic Haplumbrepts and Pachic Haplumbrepts are examples. On young surfaces, such as flood plains and steep or very steep active mountainslopes, Fluvaquentic Humaquepts, Fluventic Haplumbrepts, Umbric Dystrochrepts, and Dystric Eutrochrepts have formed. Physical weathering of the bedrock by frost action, or the freezing and thawing of moisture, can result in soils that have a high content of rock fragments and are poorly developed. Lithic Eutrochrepts are an example. On older surfaces, such as stream terraces and moderately steep or steep metastable mountainslopes, soil-forming factors have been active for a much longer period of time. Some of the soils on these surfaces, such as Ultic Hapludalfs and Typic Haplohumults, have an argillic horizon and others, such as Typic Haplumbrepts, do not. On the oldest surfaces, such as the deeply dissected remnants of the highest marine terraces and nearly level to moderately steep stable mountainslopes, a well-developed argillic horizon has formed in soils such as Typic Haplohumults and Typic Palehumults. On the less stable slopes, soils such as Typic Haplumbrepts and Pachic Haplumbrepts have developed.

East of the Coastal Tanoak vegetation zone, climate zone 5 is at the lower elevations and climate zone 6 is at the higher elevations. The soils of these interior zones have a xeric moisture regime. The soils at the lower elevations have a mesic temperature regime, and those at the higher elevations have a frigid temperature regime (USDA 1975, USDA 1994).

Climate zone 5 is typified by the lower and middle elevation interior areas east of Agness, Illahe, and Marial, along the Rogue and Illinois Rivers. This climatic zone has been separated into three distinct climatic and vegetative areas. At the lowest elevations along the stream terraces of the inland rivers, the growing season is long and plant growth begins early in spring and continues until late in summer. The soils are dry in summer for more than 90 consecutive days following the summer solstice. In the lower elevation foothills and mountains, the growing season is slightly shorter than that of the adjacent terraces. Plant growth begins early in spring and continues until midsummer. The soils are dry in summer for 60 to 90 consecutive days following the summer solstice. In the middle-elevation foothills and mountains, the growing season is distinctly shorter than that of the low-elevation terraces. Plant growth begins late in spring and continues until midsummer. The soils are dry in summer for 45 to 60 consecutive days following the summer solstice.

The soils in climate zone 5 are in general soil map units 16, 17, and 18. They are represented by the Interior Tanoak vegetation zone. Precipitation is highest in winter, when it is sufficient to leach bases resulting in soils that have low base saturation. The direct effect of the cool, moist marine air is absent in terms of modifying the air and soil temperature. This zone generally supports fewer deciduous hardwood trees and shrubs and more conifers. The high precipitation and warmer temperature have resulted in leaching of most bases and rapid decomposition of the available organic matter. The flood plains and stream terraces along the Rogue and Illinois Rivers have more deciduous hardwood trees and shrubs in the native plant community than do other areas of this climatic zone. The deciduous vegetation contributes large amounts of organic material to the soil. The roots take up calcium and other bases and return them to the soil annually through the leaves and twigs, thus minimizing the loss of bases as a result of leaching. The annual dieback of roots returns large amounts of organic matter to the soil. These factors, along with flooding and deposition of silt and sand that are rich in organic matter, lead to the formation of Mollisols, such as those found in Jackson County (Almaraz 1993).

Cumulic Haploxerolls, Entic Ultic Haploxerolls, and Dystric Xerochrepts have formed on young surfaces such as flood plains and steep or very steep active mountainslopes. On older surfaces, such as low stream terraces and moderately steep or steep metastable mountainslopes, soil-forming factors have been active for a much longer period of time. Typic Argixerolls, Ultic Haploxeralfs, and Typic Haploxeralfs, which have an argillic horizon, formed on these surfaces. Soils such as Dystric Xerochrepts formed on the less stable slopes. On the oldest surfaces, such as high stream terraces and nearly level to moderately steep stable mountainslopes, the soils have a well-developed argillic horizon. Examples are Mollic Palexeralfs and Typic Palexerults, which commonly are in proximity with soils such as Ultic Haploxeralfs and Dystric Xerochrepts.

Climate zone 6 is typified by most of the higher elevation peaks and ridges along the eastern margin of the survey area. The growing season in this zone is short, and the soils dry out for 45 to 60 consecutive days following the summer solstice. The soils in this zone are in general soil map unit 20 and parts of unit 14. They are represented by the Cold White Fir and Shasta Red Fir vegetation zones.

High precipitation in winter results in extensive leaching of bases and low base saturation of the soils in this zone. Snow covers the area for extended periods between November and June. Accumulations of organic matter are limited, and more organic matter is lost through oxidation. Soils that are on active landforms with steep or very steep slopes, such as Dystric Xerochrepts, typically have an ochric epipedon. On north-facing slopes, however, soils such as Typic Xerumbrepts have accumulated enough organic matter to develop an umbric epipedon. The percentage of organic matter in these soils is less than that in the soils of the Cool Douglas Fir and Cool Western Hemlock vegetation zones. The soils in this climate zone have a short growing season. Tree growth is slower, and damage to trees by wind, snow, and ice is common.

Soils derived from ultramafic rock, such as peridotite and dunite (igneous forms) and serpentinite (metamorphic form), are throughout the survey area (Kruckeberg 1964). They are in climate zones 1, 3, 4, 5, and 6 and correlate to general soil map units 11 and 19. Most of these soils are sterile and unproductive as farmland or timberland; have uncommon floras, with some endemic species; and support vegetation that is in striking physiognomic contrast to nonserpentinitic terrain (Whittaker 1954). They are the most floristically diverse soils in the survey area. The plant life varies greatly with location, topography, and depth of the soil, but it commonly is sparse or stunted. Many species seem to be restricted to ultramafic soils, and many on adjacent non-ultramafic soils are absent on ultramafic soils. These characteristics commonly help to delineate the geologic discontinuities in an ultramafic area (Walker 1954).

The surface layer of the soils that formed in ultramafic rock commonly is red, brown, or gray, and the subsoil and substratum commonly are yellowish or greenish in color. Since there are wide variations in the composition of the parent rock, the content of calcium, potassium, and heavy metals also varies considerably. Ultramafic soils have reduced levels of total and adsorbed calcium, elevated levels of magnesium, and high levels of toxic heavy metals, such as nickel and chromium. Even small variations in these levels may have a marked effect on the ability of the soils to support plant growth (Walker 1954).

The native vegetation includes many of the *Pinus jeffreyi* plant associations. The soils in general soil map unit 11 support mainly Jeffrey pine, western white pine, knobcone pine, tanoak, lodgepole pine, and Port Orford cedar with minor amounts of Douglas fir scattered throughout (Atzet and Wheeler 1984). The soils in general soil map unit 19 support mainly Jeffrey pine, sugar pine, knobcone pine, tanoak, lodgepole pine, incense cedar, and Port Orford cedar with minor amounts of Douglas fir scattered throughout.

Precipitation generally is high in winter, and it increases as elevation increases. Accumulations of organic matter typically are minimal, except in areas along or near fault zones or where seeps occur, such as at the head of streams or where water drains from bedrock joints. The accumulations are minimal in most areas presumably because undesirable physical characteristics such as steepness of slope, shallowness of the soil mantle, gravelly to stony textures that are low in content of clay, and sparseness of vegetation result in continuous erosion and reduced moisture and nutrient levels. Minimal surface litter available for decomposition and continuous erosion do not allow for the buildup and incorporation of organic matter into the surface layer. The properties of serpentinitic soils are highly variable; however, these soils commonly have high base saturation, have magnesium as the dominant exchangeable cation, and have a low ratio of exchangeable calcium to magnesium. In addition, the level of available phosphorous and potassium is low and soil reaction (pH) is neutral.

Ultramafic soils generally are on active landforms because of their proximity and association with fault zones. Unaltered peridotite exposures, such as those at Iron Mountain, however, are rather stable and are not associated with fault zones. Typically, there is a strong correlation between fault zones and areas of serpentinite and other serpentinitic rock within larger exposures of peridotite. Ultramafic soils typically have an ochric epipedon with minimal soil development; however, some ultramafic soils have developed an argillic horizon and stronger soil structure. On young surfaces in the udic soil moisture regime, such as nearly level to very steep mountainslopes, Dystric Eutrochrepts and Lithic Eutrochrepts have formed in the mesic and frigid soil temperature regimes. In the isomesic soil temperature regime, where the climatic extremes involved in the weathering process are absent, Typic Hapludolls and Lithic Hapludolls have formed. Loamy-skeletal soils typically form in areas of highly fractured serpentinitic peridotite that contains many thin veins of stable serpentine minerals and weathers to loamy textures with a high content of rock fragments.

In the xeric soil moisture regime, Dystric Xerochrepts, Typic Xerochrepts, and Lithic Xerochrepts have formed on metastable or active mountainslopes. On older surfaces such as stable mountainslopes, where soil-forming factors have been active for a much longer period of time, some soils have developed an argillic horizon. Mollic Haploxeralfs and Ultic Haploxeralfs are examples. These soils are derived from the less weathered peridotite in the survey area.

Geomorphic Surfaces and Soil Development

Geomorphologists and others have identified, studied, and mapped the coastal and valley geomorphic surfaces throughout Oregon and the Pacific Northwest (Balster and Parsons 1968, Balster and Parsons 1969, Gelderman 1970, Gelderman and Parsons 1972, Glasmann and Kling 1980, Glasmann and others 1980, Goldin and Parsons 1983, Hoppe 1989, Nettleton and others 1982, Parsons and others 1970, Parsons and Herriman 1976, Parsons and others 1981, Reckendorf 1993, Reckendorf and Parsons 1966). They have also studied soil-geomorphic relationships in mountainous terrain (Balster and Parsons 1965a, Balster and Parsons 1965b, Parsons 1978, Parsons and Balster 1966, Parsons and Herriman 1975). The geomorphic surfaces along the coastal margin of Oregon and further inland along the contiguous river valleys range in geologic age from recent Holocene to early Pleistocene, and they represent a sequence of landscape development. A complete sequence of the geomorphic surfaces was recognized in the survey area. Following is a list of the geomorphic surfaces in this sequence, from youngest to oldest. In italics are the coastal marine surface names (fig. 26).

Recent to late Holocene flood plains and coastal dunes
Horseshoe and Ingram surfaces (Balster and Parsons 1968)

Late to early Holocene marine and low stream terraces
Tenmile and Winkle surfaces (Balster and Parsons 1968)

Latest Pleistocene lower marine terraces and intermediate stream terraces
Whiskey Run and Senecal surfaces (Griggs 1945, Balster and Parsons 1968)

Late Pleistocene middle marine terraces
Pioneer and Dolph surfaces (Griggs 1945, Balster and Parsons 1968)

Middle Pleistocene upper marine terraces
Seven Devils and Eola surfaces (Griggs 1945, Balster and Parsons 1968)

Early Pleistocene highest marine terraces
Griggs surface (Griggs 1945)

In this section, the geomorphic surface names developed for the Willamette Valley in Oregon are used because these surfaces were visually correlated to the survey area. The step sequence of geomorphic surfaces that occurs in the Willamette Valley is essentially the same as that of the survey area, with essentially equivalent ranges in age and degree of soil development.

Transects and traverses of these geomorphic surfaces during soil mapping revealed considerable variations in elevation and the probability that at a minimum more than one episode of terrace development has occurred on the higher terrace levels. This is evidenced by the presence of at least one terrace strandline, or past sea level. Past sea levels derived from geologic records of abandoned or relict marine shorelines, such as the Whiskey Run or Pioneer terrace, comprise a datum for measuring long-term crustal movement by bracketing the rate of uplift within generalized periods of time. Pleistocene and Holocene strandlines commonly are evidence of past seismic episodes. Evidence in the strandlines, such as buried peat layers within sandy horizons or drowned trees in lakes or bays, reveals the periodicity of earthquakes. Correctly interpreting these relict strandlines leads to a more thorough understanding of coastal tectonics and paleoseismicity in coastal regions and ultimately helps to forecast future seismic events.

Recent to late Holocene flood plains and coastal dunes (Horseshoe and Ingram surfaces)

In this survey area, the recent to late Holocene flood plains consist mainly of generally broad tidal flood plains at the mouth of major streams and narrow beaches along the Pacific Ocean. These Holocene flood plains have low relief and include the stream channel and associated features, such as point bar deposits, channel fillings, abandoned meanders, and tidal flats. Unless these areas are protected by dikes and effective tidegates, they are subject to frequent inundation during high tide. Isomesic Aeric Tropic Fluvaquents such as Bayside soils are typical of those that formed in the sediment associated with the recent to late Holocene flood plains.

The Horseshoe surface is the lower of two flood plains along the alluvial valleys. It generally is considered to be within the annual flood plain. This surface probably began to develop after the survey area had been settled, as evidenced by metal artifacts found in the alluvium associated with the surface (Balster and Parsons 1968, Parsons and others 1970, Parsons and Herriman 1976). Isomesic Aeric Tropaquepts such as Pistolriver soils and mesic Fluvaquentic Humaquepts such as Quosatana soils are typical of those that formed on these low flood plains. Miscellaneous areas, which have essentially no soil material and support little or no vegetation, also occur on the Horseshoe surface. An example is Riverwash, which is along the interior alluvial river valleys. It consists of unstabilized sandy, silty, clayey, or gravelly sediment that is flooded, washed, and reworked frequently by rivers or streams. Riverwash is the most extensive miscellaneous area recognized on the Horseshoe surface.

The Horseshoe surface is subject to frequent flooding, thus, it exhibits minimal soil development. An irregular decrease in the content of organic carbon as a result of frequent deposits of alluvium is typical of the Fluvaquentic subgroups. The Aeric subgroups either have ground water at a somewhat lower depth or have shorter intervals when the entire soil is saturated. In the xeric moisture regime within the interior of the survey area, along the flood plains of the Rogue and Illinois Rivers, only very minor areas of soils representative of this surface were observable and none were of sufficient size to be delineated at the scale used for this survey. These areas were correlated into the more extensive Ingram (Eagle Point) surface.

The Ingram surface, or higher flood plain, consists of undulating topography with bar-and-channel relief that is a result of streams overflowing their banks.

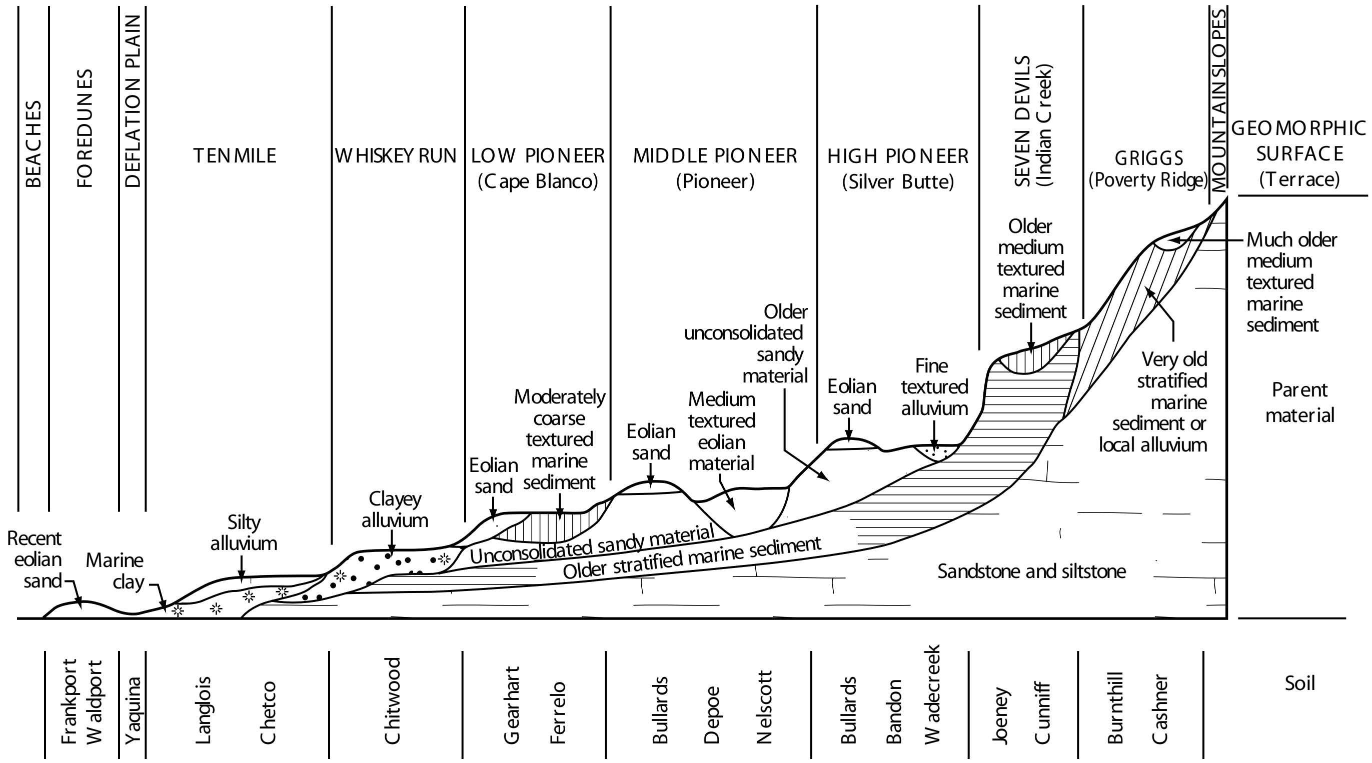

Figure 26.—Idealized relationship of geomorphic surfaces, parent material, and associated soils along the coastal margin of the survey area.

Flooding is less frequent on this surface, and the soils have had time to develop a somewhat more strongly expressed umbric epipedon and cambic horizon. Isomesic Fluventic Humitropepts such as Bagness soils and mesic Fluventic Haplumbrepts such as Kirkendall soils are typical of those that formed on this higher flood plain. An irregular decrease in the content of organic carbon is typical of the Fluventic subgroups on this surface, which indicates that most of the alluvial material recently was deposited by water. Along the interior alluvial river valleys of the Rogue and Illinois Rivers, mesic Cumulic Haploxerolls such as Evans soils formed in loamy alluvium.

The coastal dunes are represented by isomesic Typic Tropopsamments such as Frankport and Waldport soils. These soils formed in recently stabilized eolian sandy material that is associated with late Holocene dunes, and they exhibit minimal soil development. In areas where these soils are under a canopy of trees and shrubs, a transitional AC horizon has formed. The Frankport soils consist of black sand weathered from rock of the Klamath Mountains that contains an abundance of heavy minerals. These soils generally are more than 50 percent chromite, magnetite, and illmenite, and they have only minor amounts of quartz and feldspar minerals. The color of these soils, particularly that of the subsoil, exhibits a strong lithochromic influence. These soils are of some economic importance as a possible source of chromite. The Waldport soils have a high amount of quartz and feldspar minerals, are light in color and weight, and have a thin surface layer that is dark colored as a result of an accumulation of organic matter. These soils are on beaches, modern foredunes along the beaches, and modern dunes on higher coastal terraces. Generally, the Waldport soils are north of Cape Blanco and the Frankport soils are to the south. The Waldport soils do not have the erosional and depositional influence of the Rogue River and other major rivers that drain the Klamath Mountains province.

A thin-surface phase of the Frankport and Waldport soils was mapped on foredunes. The organic matter content and soil development are minimal on the foredunes as compared to the higher stabilized dunes. All of the foredunes in the survey area have formed in about the last 50 to 60 years. These areas are associated with the introduction of European beachgrass (*Ammophila arenaria*), which is vigorous enough to grow up through the sand deposited in winter to form new foredunes above the beach. The soils on the foredunes may exhibit a dark-colored subsoil, but the dark color is a result of the lithochromic influence of the black sand rather than increased soil development. There are also foredunes associated with spits near the mouth of most of the rivers in the survey area. These foredunes are not always readily observable; thus, identification of them from the adjacent geomorphic surfaces, such as the Tenmile and Winkle surfaces, is complex. The complexities of recent foredune formation being superimposed over the process of coastal terrace formation is illustrated by an area in the northern part of the survey area. The foredunes in the Floras Lake area, south of Langlois, are primarily on the shoreline edge of the identified Tenmile geomorphic surface (Nettleton and others 1982). Once a wave-cut platform with an overlay of sandy material or other beach and dune material occurs above sea level, such as the Tenmile surface, wind erosion can remove sandy sediment down to the level of the water table. Behind the foredune, wind erosion essentially scours the area down to the level of the water table in winter, creating a wet interdune area, or deflation plain. Isomesic Typic Psammaquents such as Heceta soils are in these interdunal depressions. If these wet areas are contiguous to streams, they also tend to receive deposits of finer textured material during periods of overbank flow. If these areas are at the mouth of coastal rivers and streams, they can become contiguous with tidal areas. The coastal terrace, or the Tenmile surface, frequently is modified by wind erosion, overbank deposition from streams, and tidal deposition, making it indiscernible where the terrace actually begins. During dry periods in summer, the volume and level of water in the rivers drop because of the lack of precipitation and a sand bar gradually builds up at the mouth of most of the coastal streams to a height sufficient to block off the stream channel from the ocean.

The younger stabilized dunes in the survey area are primarily on the higher Pioneer and Seven Devils coastal terraces. These types of dunes are parabolic in shape. They develop in areas where there is a considerable amount of sand, a wind source that is dominantly unidirectional, and vegetation along the sides of the dunes that concentrates the wind. Historically, in the high wind area along the southern coast, it appears that sand from the beach has blown onto the coastal terraces throughout the year. This sand typically is high in content of quartz and feldspar minerals, which are lighter in weight and more easily transported by strong winds. Since these dunes are cut off from the supply of sand from the beach, the winds take sand from the back, or older, part of the dune and move it forward to the younger tip of the dune. By this process, the dunes slowly move across these higher coastal terraces. The sandy soils of these dunes have only limited time for soil development to occur until they are disturbed again. Younger dunes, in contrast to unaltered recent dunes, are slightly weathered. They have higher base status and humus levels. Continual weathering and leaching under the cool, humid oceanic climate depletes the base status of the soils and increases acidity (Jenny and others 1969). There could be hundreds or thousands of years between disturbances, allowing some soil formation to take place. This is the process through which isomesic Typic Haplorthods such as Bullards soils have formed.

It is important to understand that the southern Oregon Coast probably is unique with regard to sand blowing from the beach onto the coastal terraces throughout the year. One study indicated that in most areas along the Oregon Coast the foredunes build to a height of about 30 feet. At about that height, the sand tends to blow parallel to the face of the foredune, causing aggradation and widening on the beach side. This cuts off the supply of sand to the landward areas. In this survey area, however, this does not hold true. It appears that the foredunes are much higher than 30 feet, and the modern sand accumulation is occurring on the coastal terraces as well as on the beach. This is attributed to the particularly high-velocity, dominantly southwesterly wind on the southern Oregon Coast in winter. The wind blows substantial quantities of sand onto the Whiskey Run, Cape Blanco, and Pioneer terraces.

Late to early Holocene marine and low stream terraces (Tenmile and Winkle surfaces)

The Tenmile geomorphic surface is in the northwestern corner of the survey area, west of Langlois (Nettleton and others 1982). This is the primary wetland area in the northern part of the survey area. Other areas of this surface occur as remnant lowlands intermingled with flood plains, from Langlois south to Pistol River. These areas are inland, immediately adjacent to foredunes and the associated deflation plain along the western margin of the survey area.

The main physiographic feature of the Tenmile surface is the bar-and-channel topography associated with an abandoned flood plain or lowland area. The early Holocene sediment associated with the Tenmile surface consists of very deep, fine textured estuarine deposits of marine clay with a mantle of silty alluvium. In the convex landscape positions (bar), the alluvium has been in place long enough for initial weathering and formation of a weakly expressed cambic B horizon. Isomesic Typic Tropaquepts such as Chetco soils have formed in the finer textured material in these positions. Isomesic Aquentic Haplorthods such as Yaquina soils are in slightly convex interdunal positions adjacent to the deflation plain. These soils have been stable long enough to form a thin albic horizon at the soil surface and a cambic horizon in the subsoil, which has weakly cemented iron nodules and very thin lenses of minimal cementation throughout. In the concave landscape positions (channel), the alluvium is recent enough that soil development is minimal and a cambic horizon has not formed. The A horizon exhibits some soil development consisting of minimal incorporation of organic matter. Isomesic Tropic Fluvaquents such as Langlois soils have formed in the channel positions on this surface. Wood fragments collected at a depth of 3 to 4 feet from the clayey substratum of Langlois soils in channel positions on the Ingram surface transitioning onto the Tenmile surface were dated at 2,275 years before present (plus or minus 50 years). This gradation at the interface of the Ingram flood plain surface onto the slightly higher Tenmile marine terrace surface correlates with an established date of 5,280 years before present (plus or minus 270 years) for the equivalent Winkle surface from the Willamette Valley of Oregon (Reckendorf and Parsons 1966). There is, however, the possibility that what is being recognized as the Ingram flood plain channel is perhaps actually its coastal terrace equivalent. In other words, west of Langlois there could be a young coastal terrace below the Tenmile surface that has been dated at 2,275 years before present (plus or minus 50 years). A relative age of the Tenmile surface has been suggested as about 5,300 to 10,800 years before present (Bockheim and others 1993), citing previous work that indicated that a spodic horizon along the Oregon Coast probably forms in 10,000 years or less (Nettleton and others 1982).

Two terrace levels were recognized and associated with the Winkle surface along the alluvial valleys of the survey area. The lower terrace level is well expressed along the Elk and Sixes Rivers. The higher level exists only as terrace remnants of a formerly more extensive surface that has been eroded away. These remnants are near the ocean and in areas upstream along these rivers for approximately 2 to 3 miles. Soils associated with andic properties, such as high water holding capacity, high content of organic carbon, high cation exchange capacity (when buffered to pH of 7 or more), low bulk density, high amounts of chemically extractable iron and aluminum, and high phosphate retention, are on both terrace levels along the coastal stream systems (Hoppe 1989). These soils are absent in the southern part of the survey area, however, presumably because of tectonic activity and coastal erosion. Quillamook soils exhibit characteristics typical of andic properties.

Alluvium associated with the lower terrace of the Winkle surface consists of deep, medium textured material. Typic Humitropepts such as Logsden soils have formed in this material at the western margin of the survey area, in the coastal fogbelt along the Elk and Sixes Rivers. The higher terrace consists of medium textured to coarse textured alluvium, possibly because of a higher energy alluvial environment at the time of initial deposition or because of a difference in mineralogy or intensity of weathering. Isomesic Alic Pachic Melanudands such as Quillamook soils formed in this material. Isomesic Typic Melanaquands such as Euchre soils have formed in the coastal zone on the higher terrace of the Winkle surface, where the depressional areas have an elevated water table. Along the Chetco and Winchuck Rivers and inland in the survey area, the Winkle surface is dominantly one terrace level that consists of deep, medium textured alluvium derived from surrounding metasedimentary mountains. In the coastal fogbelt, isomesic Typic Humitropepts such as Ettersburg soils have developed in a slightly warmer climate zone. In the udic moisture regime, mesic Ultic Hapludalfs such as Eilertsen soils have formed in convex positions along the Sixes River. Typic Humaquepts such as Zyzzug soils have formed in swales that have an elevated water table.

A zone that has a xeric moisture regime is recognized in the interior of the survey area, including part of the Rogue River and all of the Illinois River. Both of these rivers have only limited stream terraces and flood plains along their courses. The Rogue River begins in the Cascade Mountains and flows to the Pacific Ocean, grading to its base level (sea level) at Gold Beach. The Illinois River begins in the Klamath Mountains of southern Oregon and flows into the Rogue River at Agness, where it grades into a common base level. Both rivers flow through steeply dissected mountainous topography. In some places the stream channels are confined by resistant bedrock, and the waterway has a high-energy gradient. In other areas where the bedrock is less resistant and more easily eroded, the channels are unconfined and the energy gradient is much lower. In these areas the watercourse is allowed to meander and deposit its bedload, creating an alluvial valley. Where these alluvial deposits occur along the Rogue River, such as at Big Bend, near Illahe, and at Agness, the river is continuing to downcut its stream channel to its base level while flowing toward the ocean. It still has a high-energy gradient and is fast moving.

Within this xeric zone, the soils on the Winkle surface have formed in coarse textured mixed alluvium. Soil development is limited to the formation of a thick mollic epipedon and a moderately expressed to strongly expressed cambic horizon. These soils exhibit a thicker, darker-colored profile (more organic matter) than those recognized by Parsons and Herriman on about the equivalent geomorphic surface upstream along the Rogue River in Jackson County (Parsons and Herriman 1976). Well drained mesic Pachic Haploxerolls such as Central Point soils are in the bar positions, and poorly drained Typic Endoaquepts such as Clawson soils are in swales that have an elevated water table. Along the Illinois River from Agness south to Oak Flat, the river has begun to grade its base level to that of the Rogue River. In this area, the river has a lower energy gradient and is slower moving; thus, it has had more time to deposit its bedload. The soils on the Winkle surface in this area have formed in moderately fine textured and fine textured alluvium. Well drained mesic Typic Argixerolls such as Foehlin soils are in the convex positions, and poorly drained Vertic Epiaquolls such as Cove soils are in the depressional areas that have an elevated water table. The Foehlin soils in this survey area appear to occur on the same low terrace level as was recognized and mapped as the TouVelle surface in Jackson County (Parsons and Herriman 1976). The lower energy gradient along the Illinois River is conducive to the stability necessary for the incorporation of organic matter into the surface layer and the formation of an argillic horizon through weathering and translocation of clay particles into the subsoil. The Foehlin soils exhibit these characteristics. This lower energy gradient also results in a depositional environment needed for the accumulation of clayey alluvium and development of a Vertic subgroup, such as are characteristic of the Cove soils.

Latest Pleistocene lower marine terraces and intermediate stream terraces (Whiskey Run and Senecal surfaces)

The coastal Whiskey Run surface occurs in such limited extent in the survey area that it has been correlated into the lowest level of the next higher geomorphic surface, the Pioneer surface, for reasons of practicality. The coastal Whiskey Run surface was recognized in the soil mapping as a few small delineations of the Chitwood soils (isomesic Aquic Humitropepts). These soils are on marine terrace remnants in the Sixes and Elk Rivers area, in the northern part of the survey area, and along a narrow coastal terrace north of Gold Beach. Figure 27 illustrates the relationship of the Tenmile, Whiskey Run, and Pioneer surfaces. The coastal Whiskey Run surface was also mapped along coastal river valleys as the Senecal surface, consisting of deep deposits of clayey material. An umbric epipedon, elevated organic carbon levels in the surface layer, and a moderately expressed to strongly expressed cambic horizon are typical of the soils that formed along the cooler coastal valleys of the survey area. Researchers have assigned a relative age of 83,000 years before present (plus or minus 5,000 years) to the Whiskey Run surface at Coquille Point in Coos County (Muhs and others 1990), and others suggest a similar age of 80,000 years before present (plus or minus several thousand years) for the Cape Blanco terrace equivalent (Bockheim and others 1993). On the Senecal surface along the coastal river valleys, a weakly developed argillic horizon is typical of the soils that have low base saturation because of the strong leaching environment in convex areas with better internal soil drainage. Examples are isomesic Typic Haplohumults such as Ekoms and Winchuck soils. An umbric epipedon and argillic horizon are typical of soils that formed on the Senecal surface along the slightly warmer and drier inland valley of the Sixes River. In this area, mesic Aquic Haplohumults such as Chismore soils have formed in the nearly level to slightly depressional areas that have an elevated water table. Along the Rogue and Illinois Rivers, in the warmest and driest climate zone in the survey area, the soils have an argillic horizon, an ochric epipedon, and moderate base saturation. They have a xeric moisture regime. Examples are mesic Ultic Haploxeralfs such as Abegg soils.

Late Pleistocene middle marine terraces and remnant high stream terraces (Pioneer and Dolph surfaces)

As mapped by Griggs (Griggs 1945) and Beaulieu (Beaulieu 1976), the coastal Pioneer geomorphic surface in the survey area appears to have three terrace levels associated with it and a variety of landforms. Recent studies have added understanding to the genesis and morphology of soils on this surface and higher marine terraces in Coos and Curry Counties, which ultimately will assist in the correct interpretation of relative ages of these surfaces (Adams 1984, Bockheim and others 1993, Hoppe 1989, Janda 1970, Kelsey 1990, Marshall 1991, McInelly and Kelsey 1990, Muhs and others 1990, Wehmiller and others 1977).

Figure 27.—Relationship of the Tenmile surface in foreground, the Whiskey Run surface in right center, and the Pioneer surface in background.

In general terms, these studies have documented that the development of a soil profile, the content of clay, and the levels of chemically extractable iron and aluminum increase as the age of the higher surfaces increases, thus indicating progressively older landform development from the Whiskey Run surface to the Griggs surface (Hoppe 1989). Several recent studies determined that the thickness of the solum increased as the age of the geomorphic surface along the Pacific Coast increased (Aniku and Singer 1990, Hoppe 1989, Marshall 1991, Muhs 1982). Other research has shown a close relationship between the content of clay and depth to the maximum accumulations of clay and the age of the geomorphic surface (Busacca 1987, Harden and Taylor 1982, Hoppe 1989). Depth to unoxidized, unaltered beach sand increased markedly from younger to older terrace surfaces, both at Cape Arago in Coos County and at Cape Blanco in Curry County. The increase in depth to the C horizon reflects the increased time of exposure to weathering and soil formation (Marshall 1991). The depth to unoxidized parent material increased as the age of the geomorphic surface increased. Variations in particle size and possibly mineralogy on individual terraces may be a result of sorting by wave action during deposition. In addition, the particle size of the C horizon is coarser on the lowest terraces and it becomes progressively finer on the higher terraces, presumably a result of in situ weathering (Janda 1970).

The lowest level of the Pioneer surface has been recognized as the Cape Blanco terrace (Bockheim and others 1993, Kelsey 1990, Marshall 1991, Wehmiller and others 1977). Sediment associated with this surface consists of coarse textured to fine textured material, which varies in location and amount depending on the elevation of the terrace. Soils on the Cape Blanco terrace formed in Holocene to Recent dune material (fig. 28). These soils did not develop in the underlying older terrace material as evidenced by the fact that the soils and parent material are not coextensive with the underlying terrace deposits. In addition, chipping waste material stone artifacts from earlier Native American cultures that would likely date as Holocene or younger have been found in the profile of the Ferrelo soils (isomesic Typic Dystropepts) in two separate areas of the Cape Blanco terrace in the survey area. Associated with the Ferrelo soils on this terrace are the Gearhart soils (Typic Dystropepts) and the previously mentioned Frankport and Waldport soils on younger stabilized dunes, generally adjacent to the beach. Accumulation of organic matter in the surface layer, development of an umbric epipedon, and formation of a cambic horizon are the only morphological evidences of soil development on the Cape Blanco terrace. The Gearhart soils formed in eolian sand, are dominantly sandy in texture, and tend to occur closer to the younger stabilized dunes, if present, or nearer to the ocean edge. The Ferrelo soils formed in moderately coarse textured sediment underlain by unconsolidated sandy material, are loamy in texture, have a thick, dark-colored surface layer, and have a more developed cambic horizon. Transects and traverses made during mapping revealed areas where more developed soils, such as those of the Bullards and Bandon series (isomesic Typic Haplorthods), had previously occurred on this terrace level. These older soils have been truncated above the spodic horizon or the ortstein layer, which is an iron-cemented zone within the spodic horizon, and have been overlain by dark brown loamy material typical of the Ferrelo soils. Presumably, the constant strong winds of the southern Oregon coast have scoured the surface layer of these older soils down to a level of more resistant soil material. Subsequent winds have redeposited other

Figure 28.—Area of the Cape Blanco terrace dipping northward toward Floras Lake, as viewed from Blacklock Point. Note the modern dune at right on the coastal terrace.

more recent sandy eolian material on the eroded soil profile. A relative age suggested for the Cape Blanco terrace in the survey area is 80,000 to 90,000 years before present (Bockheim and others 1993).

The middle terrace level is the classic Pioneer geomorphic surface and is referred to as the Pioneer terrace. It was first recognized by Griggs (Griggs 1945) and then used for correlation purposes by others (Beaulieu 1976, Bockheim and others 1993, Hoppe 1989, Janda 1970, Kelsey 1990, Marshall 1991). A variety of landforms and elevational ranges is associated with this terrace. A basic knowledge of plate tectonic theory is helpful in understanding the elevational and landform relationships that occur on the Pioneer geomorphic surface and higher coastal terraces. According to the theory, the crust and upper mantle of the earth are subdivided into a series of semi-independent plates, each of which is moving laterally in response to deep-seated activity in the earth. Boundaries between the plates are sites of sea-floor rises in areas of divergence; trenches, or continental collisions in areas of convergence; and transform faults or transcurrent faults (large-scale strike-slip) in areas of parallel movement. In the northeastern Pacific Basin, a relatively complex border zone has developed between the Pacific Plate (floor of the Pacific Ocean) and the North American Plate (North American continent, Greenland, and the Arctic). As the Pacific Plate moves north relative to the North American Plate, movement is experienced along the various faults and rises that separate the two plates. There is pressure between the two plates when this movement is opposed by the North American Plate, and it continues to build up along the fault zones until it is relieved by an earthquake. Associated with the release of energy are displacements, called faults, along planar surfaces. When an earthquake occurs, energy is released along these fault lines through the crustal structure of the earth (Beaulieu 1976). Typically, one side of the fault zone uplifts and the other side subsides, creating a step effect where there previously was a uniform surface. In addition, subduction of the Juan de Fuca Plate beneath the North American Plate has forced the west coast upward. Cape Blanco in Curry County, which is about 35 miles from the subduction zone trench, has the fastest rate of uplift, about 1 inch every 3 years, on the Oregon Coast (Orr and others 1992). This tectonic movement and the ongoing processes of erosion and sedimentation on the coastal terraces make it difficult to understand the sequence in landscape development that would otherwise be apparent over time if only eustatic (changes in sea level) separations of coastal terraces were involved. Consequently, there are discrepancies in the relative age of these terraces in published literature. Through the techniques of aminostratigraphy and amino acid dating, a relative age of 105,000 years before present has been correlated to the Pioneer terrace at Cape Blanco (Kelsey 1990, Muhs and others 1990).

The major part of the Pioneer terrace extends from Port Orford north into Coos County. A typical area of this surface occurs from the Sixes River north to Blacklock Point and Floras Lake, encompassing Cape Blanco State Airport, east of Cape Blanco. The soils in this area formed in coarse textured to medium textured eolian material overlying stratified marine sediment of the late Pleistocene. Landforms include dunal and dissected terrace components. Isomesic Typic Haplorthods, such as Nelscott soils, have formed dominantly on broad, dissected marine terraces in areas where loamy textured, wind- or water-deposited material overlies stratified marine sediment. An iron-cemented ortstein layer has developed at a moderate depth in these soils. Typic Duraquods, such as Depoe soils, have formed in depressional areas on this surface. These soils have an ortstein layer at a shallower depth. The water table is perched above this impermeable layer and is at or near the surface. Both the Nelscott and Depoe soils have an albic horizon. Typic Haplorthods, such as Bullards soils, formed in sandy marine and eolian material and are on the older, stabilized sand dune deposits. The Bullards soils are younger than the Nelscott and Depoe soils, which have an iron-cemented layer within the spodic horizon. A longer period of time is needed for this layer to become an ortstein layer. Other soils that formed on this Pioneer terrace in the northern part of the survey area include Horseprairie soils (isomesic Andic Humitropepts), which formed in moderately fine textured material along the back margin of this surface. These soils have andic properties such as a high water-holding capacity, low bulk density, high cation-exchange capacity, a high level of phosphate retention, a high content of chemically extractable iron and aluminum, and a high content of organic carbon, particularly in the surface layer.

Soils that have a fine textured subsoil also are on the Pioneer terrace. Because of the plate tectonics of the west coast, soft claystone and siltstone have been made into wave-cut platforms, which are constantly being uplifted as coastal strath terraces (Palmer 1967). Weathering and leaching of salts occurs rapidly under the high-precipitation coastal climate. Where the strath terraces were formed from siltstone or sandstone rather than claystone, the content of clay in the soils probably is lower. Because of erosion and deposition, soils on wave-cut platforms may be younger than the platform itself (Jenny and others 1969). Some Inceptisols on this terrace formed from the weathering in place of the underlying parent material of wave-cut platforms, and they exhibit only minor relief across the landscape. Grindbrook soils (isomesic Aquic Humitropepts) formed in medium textured to moderately fine textured material in convex positions. They do not have an argillic horizon. Wadecreek soils (isomesic Typic Haplohumults) formed in fine textured alluvium in swales or other depressional areas. These soils formed on a siltstone strath terrace, and they appear to be of limited extent on the Pioneer terrace.

On Harbor Bench, south of Brookings, soils that have a thick, dark-colored surface layer and a well-developed argillic horizon are on a terrace that is similar in age to the Pioneer terrace but is at a considerably lower elevation. This area probably is a subsided remnant of the Pioneer terrace and possibly is associated with an old fault zone along the Chetco River (Beaulieu 1976, Ramp and others 1977). In this area it appears that most of clay in the soil profile is derived from the weathering of the underlying wave-cut platform, which probably formed in claystone or siltstone already high in content of clay minerals. Since coastal southwestern Oregon has such an active tectonic history, numerous episodes of transport of eroded material from clayey soils on steep side slopes in the uplands and adjacent higher coastal terrace levels have contributed significant amounts of finer textured alluvium to the soils on Harbor Bench. Ultisols in this area include the Klooqueh soils (isomesic Typic Palehumults) in nearly level to gently sloping areas, Crofland soils (isomesic Aquic Haplohumults) in nearly level areas, and Huffling soils (isomesic Typic Umbraquults) in slightly concave swales and other depressional areas and along drainageways.

The highest terrace level associated with the late Pleistocene coastal Pioneer geomorphic surface has been recognized as the Silver Butte terrace (Bockheim and others 1993, Janda 1970, Kelsey 1990, Marshall 1991). A relative age correlation of approximately 125,000 years before present is suggested by several researchers (Bockheim and others 1993, Kelsey 1990, Muhs and others 1990). Variations in the landform also occur on this terrace. Some soils have developed in coarse textured to medium textured eolian material overlying older, stratified marine sediment, and others have developed in place from the weathering of siltstone and claystone wave-cut strath terraces with deposits of more recent alluvium overlying the weathered parent material. Bandon soils (isomesic Typic Haplorthods), which have an iron-cemented layer within the spodic horizon, are in broad dissected areas on this marine terrace. These soils are in areas where medium textured to moderately coarse textured, older eolian material overlies the ortstein layer. Wadecreek soils (isomesic Typic Haplohumults) formed in fine textured alluvium and are in swales and other depressional areas. The Wadecreek soils on the Silver Butte terrace exhibit a greater degree of development in the argillic horizon than do those on the adjacent lower Pioneer terrace level. Taxonomically, the soils on both of these terrace levels are classified exactly the same, and they have similar uses. Base saturation of the Wadecreek soils is low. Bullards soils (isomesic Typic Haplorthods) formed in sandy marine and eolian material and are on older, stabilized dune deposits, which is reflected in the development of a spodic horizon in the subsoil. These soils are younger than the Bandon soils that have an iron-cemented ortstein layer and the Wadecreek soils that have a well-developed argillic horizon (fig. 29).

On the Cape Blanco, Pioneer, and Silver Butte terraces, the loamy mantle of very dark brown to yellowish brown soil material that overlies the spodic horizon, ortstein layer, or other terrace and dune material obscures the boundaries between Inceptisols, Spodosols, and Ultisols. At a scale of 1:24,000, this makes soil mapping within the same terrace level very difficult. As a result, complexes of soils that have vastly differing soil genesis and morphology were mapped. At a larger scale, these soil-landscape relationships would be more apparent and easier to depict on a map.

In inland areas, the Dolph geomorphic surface consists of dissected remnants of high terraces along several of the major stream systems in the survey area. In the coastal fogbelt, soils such as those of the Cunniff series (isomesic Typic Palehumults) have formed. Further inland along these major streams, soils such as those of the McCurdy series (mesic Typic Palehumults) have formed. These soils are typified by low base status as a result of a strong leaching environment. Cunniff soils formed in the cooler coastal valleys, and McCurdy soils formed in the warmer interior valleys of the Coast Range. In the hot and dry (xeric) interior valleys of the Klamath Mountains, on high stream terraces along the Rogue and Illinois Rivers, the soils generally are well developed. The stability and relative old age of these high terraces has allowed for pedogenesis to occur for a longer period of time. The soils have moderate to strong structure, a relatively high percentage of clay in the B horizon, or an argillic horizon, indicating a favorable weathering environment. Ruch soils (mesic

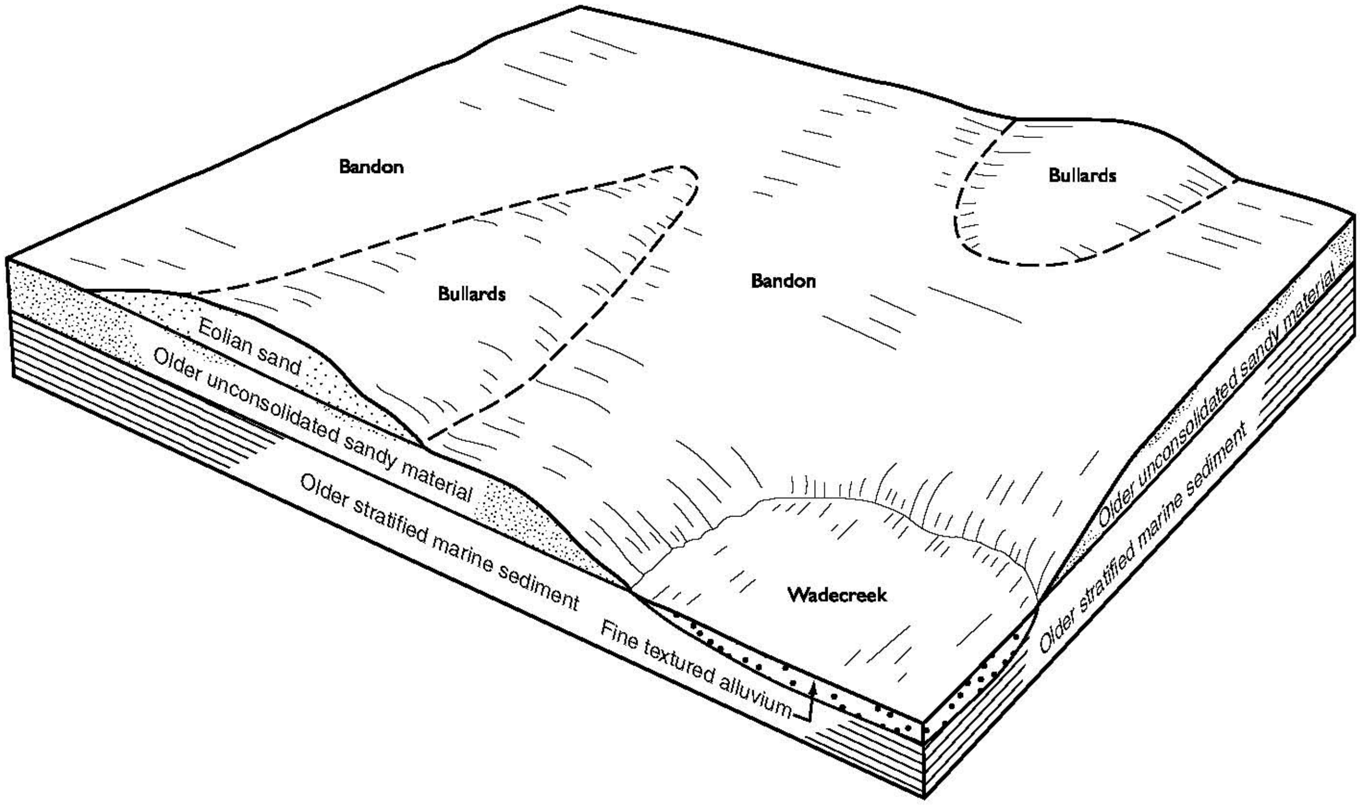

Figure 29.—Typical landscape positions and parent material of the Bandon, Bullards, and Wadecreek soils on the Silver Butte terrace.

Mollic Palexeralfs) formed on these terraces in mixed alluvium derived from metamorphic rock. Selmac soils (mesic Ultic Haploxeralfs) formed on these terraces in stratified, loamy and clayey alluvium derived from mixed sources.

Middle Pleistocene upper marine terraces and dissected remnants of high stream terraces (Seven Devils and Eola surfaces)

The coastal Seven Devils geomorphic surface, as mapped in this survey area, consists of erosional remnants of a once extensive terrace level now highly dissected and of limited extent (Griggs 1945). In the more recent published studies, this surface is recognized as the Indian Creek terrace (Bockheim and others 1993, Janda 1970, Kelsey 1990, Marshall 1991). A proposed relative age of about 200,000 years before present is suggested (Bockheim and others 1993, Kelsey 1990, McInelly and Kelsey 1990). Figure 30 illustrates the relationship of the lower Pioneer surface to the higher Seven Devils surface.

Two fault zones that bisect the Seven Devils surface, the Beaver Creek and Battle Rock faults, complicate the understanding of this terrace (Kelsey 1990). Because of the multiple landform displacements and episodes of terrace development and the many variations in soil-forming material, including extremely weathered saprolite to fine sand to consolidated sediment that can be classified as sandstone and siltstone, numerous explanations of the soil genesis on this surface may be possible.

The major landscape components recognized on the Seven Devils surface are a marine terrace that has minimal relief and on which Spodosols formed and an area of more rolling topography that has moderate relief and on which Ultisols formed. Joeney soils (isomesic Typic Duraquods) formed in the flat terrace positions in medium textured eolian material overlying older, stratified marine sediment. An iron-cemented layer in the spodic horizon is at a shallow depth in the soil profile, and the water table is perched at or near the surface above this layer. Joeney soils have an albic horizon at the surface. Cunniff soils (isomesic Typic Palehumults) formed in fine textured marine sediment in the areas of rolling topography.

Below the spodic horizon and ortstein layer in the Joeney soils on the Seven Devils surface is saprolitic material that is finer in texture than is typical beneath Spodosols on other marine terraces in the survey area. It is assumed that this saprolitic material is from

Figure 30.—View of the city of Port Orford. The city is on the Pioneer geomorphic surface and is flanked on both sides by the higher Seven Devils surface.

a wave-cut platform that formed in fine textured rock, such as mudstone and siltstone, that had been buried by beach and dune sand but upon uplift quickly weathered to saprolite or unconsolidated material. This material appears to be very similar to the fine textured material of an argillic horizon, but it does not have the clay films to reflect a genetic origin of clay. A discontinuity was recognized at the top of this finer textured layer, and the material at this level and below were considered to be evidence of a truncated erosional surface, or strandline. This material is much older, varies in thickness, and is primarily weathered from saprolite or fine textured estuarine deposits such as mudstone. The spodic horizon and ortstein layer, which are believed to have formed in beach and dune sand, vary in thickness over short distances (less than 100 feet) and are not coextensive with the wave-cut platform that formed in mudstone. The weathered sandy material also overlies weathered siltstone and sandstone, all of which are evidence of a discontinuity below the ortstein layer. This understanding and interpretation of landscape development of the marine terraces in the survey area is recognized as perhaps only one of several possibilities for consideration and acceptance. It was applied consistently throughout the survey area during soil mapping and related fieldwork, and it is consistent with fieldwork, mapping, and reconnaissance observations made by soil scientists in more recent progressive soil surveys in Lincoln and Tillamook Counties in Oregon.

Inland in the coastal fogbelt, the Eola surface consists of dissected remnants of high terraces along several of the major stream systems in the survey area. Cunniff soils (isomesic Typic Palehumults) have formed on this surface in the cooler coastal valleys. In the slightly warmer and drier inland areas to the east, mesic Typic Palehumults, such as Edson, Honeygrove, and Orford soils, are typical of soils associated with the Eola surface. These soils have a udic moisture regime. They formed in fine textured material and have low base saturation as a result of the strong leaching environment. In the hot and dry interior valleys of the Klamath Mountains, on high stream terraces along the Rogue and Illinois Rivers, mesic Typic Palexerults, such as Pollard soils, have formed in mixed alluvium derived from metamorphic rock. These soils have a xeric moisture regime. They are well developed and formed on stable surfaces, which allowed for pedogenesis to occur for a longer period of time.

Early Pleistocene highest marine terrace (Griggs surface)

The Griggs geomorphic surface consists of deeply dissected erosional remnants of the oldest and highest stable marine terrace in the survey area (Griggs 1945). Recent studies recognize this surface as the Poverty Ridge terrace (Adams 1984, Bockheim and others 1993, Hoppe 1989, Janda 1970, Kelsey 1990, Marshall 1991). No relative age correlations of this terrace have been made to date; however, speculation suggests possible ages ranging from 500,000 to 1 million years before present.

This surface exhibits considerable variations in elevation and soil-forming material. Multiple episodes of terrace development appear to have occurred on this surface, as evidenced by more than one observable terrace strandline. The soil-forming material ranges from extremely weathered gravel-cobble alluvium derived locally from the early Cretaceous Rocky Point Formation (Koch 1966) grading westward to marine sand and gravel (Kelsey 1990).

At least two landform components appear to be associated with the Griggs surface, although distinct terrace morphology is not readily apparent. The components consist of a terrace level that has minimal relief and on which Spodosols have formed and an area of more undulating topography that has moderate relief and on which Ultisols have formed. Cashner soils (isomesic Typic Duraquods) have formed in the flat terrace areas in medium textured eolian material overlying much older, stratified marine sediment. An iron-cemented layer is in the spodic horizon at a moderate depth in the soil profile, and the water table is perched above it. Cashner soils have an albic horizon at the surface. Burnthill soils (isomesic Typic Palehumults) formed in local alluvium and marine sediment in the undulating areas. These soils have an umbric epipedon, a thick argillic horizon, and low base saturation. Both the Burnthill and Cashner soils have a siliceous mineralogy classification at the soil family level. These soils are more than 90 percent, by weight, silica minerals such as quartz, chalcedony, and opal and other extremely durable minerals that are resistant to weathering and are in the 0.02- to 2.0-millimeter, or silt- and sand-sized, fraction (USDA 1975, USDA 1994). The degree of profile development, increase in content of clay, and level of extractable iron and aluminum in these soils as compared to the highly weathered Spodosols and Ultisols on the Seven Devils and Griggs terraces indicate that these soils are considerably older than those on the lower terraces (Hoppe 1989). The rock fragments in the Burnthill soils, in particular, exhibit the shape of gravel and cobbles; however, the fragments are extremely weathered and they can be crushed between the fingers or easily cut with a knife or shovel.

Because of the limited extent of the remnant Seven Devils and Griggs surfaces and the lack of a readily apparent way to recognize and separate the soils and the associated landscape components at a scale of 1:24,000, complexes of soils of highly differing soil morphological features and genesis were mapped. At a larger scale, these soil-landscape differences would be more apparent and easier to depict on a map.

Looney Unit and Soil Development

The Looney unit has no particular age connotation; therefore, is not considered to be a geomorphic surface. The terrain of the Looney unit is completely dissected and is dominantly steeply sloping. Slopes are more than 100 percent in some areas. Steep, broken topography mapped as the Looney unit may represent the steeply sloping escarpment present in some areas between two geomorphic surfaces, or it may make up large areas of mountainous terrain so thoroughly dissected that the geomorphic surfaces are not recognizable. Erosion is active on much of the unit, and some areas have been subject to mass soil movement (Parsons and Herriman 1975).

The variability in age of the Looney unit makes it useful for geomorphic mapping of mountainous terrain. This unit could be subdivided into several smaller geomorphic units if it were mapped at a larger scale. Three significant gradient breaks are apparent, and they correspond to stable, metastable, and active slopes (Parsons 1978). Small alluvial valleys also are included in this unit. Soils in the Looney unit formed in colluvium and residuum derived dominantly from metasedimentary and metavolcanic rock of the Klamath Mountains and from sedimentary and marine volcanic rock of the Coast Range, including sandstone, siltstone, mudstone, conglomerate, basalt tuff and breccia, and pillow basalt flow. The metasedimentary and metavolcanic rock is associated with the Jurassic Dothan, Otter Point, Galice, and Rogue Formations and the late Jurassic-early Cretaceous Colebrooke Schist Formation and ultramafic rock intrusions. The sedimentary and marine volcanic rock is associated with the Tertiary Umpqua assemblage of the Roseburg, Flournoy, and Lookingglass Formations and minor amounts of the Tyee Formation (Baldwin 1981, Ramp and others 1977).

In the following paragraphs, discussion of the Looney unit is based on the isomesic, mesic, and frigid soil temperature regimes recognized in the survey area.

Isomesic zone

The Looney unit occurs in the isomesic zone, or coastal fogbelt, at an elevation of 1,300 feet or less. Both the Coast Range and Klamath Mountains are in the northern part of the survey area, but only the Klamath Mountains are in the southern part.

In the Coast Range, the Looney unit is typified by Andic Humitropepts such as Templeton soils. These soils formed on stable or metastable slopes in colluvium and residuum derived from sedimentary rock of the Umpqua Group. Andic soil properties are evident in the surface layer.

In the Klamath Mountains in the northern part of the survey area are five different rock types—the Early Cretaceous Myrtle Group, including the Humbug Mountain Conglomerate and Rocky Point Formation; the Late Cretaceous Cape Sebastian sandstone and Hunters Cove Formation; the Jurassic Dothan/Otter Point Formation; the Jurassic Colebrooke Schist Formation; and Jurassic ultramafic rock. In the Cretaceous areas that have stable or metastable slopes, Typic Haplohumults such as Bullgulch soils have formed. On the Colebrooke Schist Formation, soils such as those of the Desons series (Typic Palehumults) and Watches series (Typic Humitropepts) have formed. This formation is primarily metasedimentary rock, or sedimentary rock that has undergone slight to moderate metamorphism. Sediment in the rock strata may range from mostly sand with a low content of silt or clay (sandstone) to mostly clay and silt with a low content of sand (siltstone and mudstone). Characteristic of this formation are the thin, linear and platy rock fragments that weather from the varying strata (USDA 1993). The channers correspond to gravel-sized fragments, and flagstones correspond to cobble-sized fragments. Areas where the rock strata are dominantly siltstone and mudstone generally are on the more stable landscapes, where soil development processes have been ongoing for a longer period of time. Areas of sandstone strata generally are on the metastable or active slopes that have minimal soil development. Even where the sandier strata are on stable slopes, development is limited to loamy texture, brown color, and formation of a cambic horizon, which are typical of the Watches soils. On metastable or active slopes, the colluvial material tends to be high in content of rock fragments. Skeletal soils such as those of the Calfranch and Capeblanco series (Typic Humitropepts) have formed on these slopes. This process of differential weathering, which consists of more rapid and thorough weathering of one rock stratum as compared to another adjacent stratum on the same landscape, occurs primarily in the Jurassic geologic formations. Presumably, this is because they have been subjected to the processes of metamorphism (heat and pressure), unlike the younger rock strata, and have been intensely folded, faulted, and thrust over each other to form the present-day inconformities across the landscape. On the Dothan/Otter Point Formation, Andic Humitropepts such as Grassyknob, Reedsport, and Svensen soils have formed on the stable or metastable slopes. Andic soil properties are evident in the surface layer of these soils. On metastable or active slopes, the colluvial material commonly is high in content of rock fragments. Skeletal soils such as those of the Millicoma and Whaleshead series (Andic Humitropepts) have formed on these slopes. The extent of ultramafic rock in the coastal fogbelt is limited. The ultramafic rock commonly is along faults where seepage of fluids high in elemental bases increases the base status of the soils and darkens the surface layer. Mollisols such as Rustybutte soils (Typic Hapludolls) and Sebastian soils (Lithic Hapludolls) have formed in this rock. Because of the instability of ultramafic rock, the colluvial material is high in content of rock fragments. Skeletal soils generally develop in this type of parent material. The soils have a serpentinitic mineralogy classification because of the nature of the parent material.

Only rock of the Klamath Mountains is in the coastal fogbelt in the southern part of the survey area. Soils such as those of the Loeb and Macklyn series (Typic Haplohumults) are on stable slopes. Vondergreen soils (Aquic Hapludults) are in depressional areas and drainageways. Soils such as those of the Bosland, Floras, Wedderburn, and Zwagg series (Typic Humitropepts) have formed on the metastable slopes. These soils are loamy, except the Floras soils, which are fine textured; have an increase in the content of rock fragments, although not enough to be classified as skeletal; and are brown in color. Skeletal soils such as those of the Dulandy series (Typic Humitropepts) and the Guerin series (Lithic Dystropepts) have formed on active slopes.

Mesic zone

To the east, in the Coast Range area in the northern part of the survey area, the Looney unit is at an elevation of 1,300 to 2,500 feet in the udic moisture regime and at an elevation of as high as 3,000 feet in the interior xeric moisture regime. In this area the unit is typified by Andic Haplumbrepts such as Bohannon and Preacher soils that formed on stable or metastable slopes in colluvium and residuum derived from sedimentary rock of the Umpqua Group. Andic soil properties are evident in the surface layer of these soils. These soils are loamy; have an increase in the content of rock fragments, although not enough to be classified as skeletal; and are brown in color. Skeletal soils such as those of the Digger series (Dystric

Eutrochrepts) have formed on metastable or active slopes.

In the Klamath Mountains area in the northwestern part of the survey area are five different rock types—the Early Cretaceous Myrtle Group, including the Humbug Mountain Conglomerate and the Rocky Point Formation; the Jurassic Dothan/Otter Point Formation; the Jurassic Galice Formation; the Jurassic Colebrooke Schist Formation; and Jurassic ultramafic rock. Typic Palehumults such as Orford soils have formed on stable or metastable slopes in the Cretaceous areas. Soils such as those of the Edson and Barkshanty series (Typic Palehumults) and the Irma series (Umbric Dystrochrepts) have formed on the Colebrooke Schist Formation. Areas of sandstone strata that have minimal soil development commonly are on the metastable or active slopes. Even on stable slopes in areas where the sandier strata occur, development is limited to loamy texture, brown color, and formation of a cambic horizon, which are typical of the Irma soils. Skeletal soils such as those of the Deadline series (Umbric Dystrochrepts) and the Nailkeg series (Typic Dystrochrepts) have formed on the metastable or active slopes. Soils such as those of the Skookumhouse and Hazelcamp series (Typic Haplohumults) have formed on stable slopes of the Dothan/Otter Point Formation. Typic Haplumbrepts such as Colepoint and Crutchfield soils and Umbric Dystrochrepts such as Fritsland and Bravo soils have formed on metastable slopes of this formation. These soils are loamy; have an increase in the content of rock fragments, although not enough to be classified as skeletal; and are brown in color. Skeletal soils such as those of the Cassiday series (Umbric Dystrochrepts), Grouslous series (Lithic Dystrochrepts), Remote series (Typic Dystrochrepts), and Umpcoos series (Lithic Eutrochrepts) have formed on active slopes. These soils are loamy and are brown in color. On north-facing slopes where accumulation of organic matter in the surface layer occurs more readily, soils such as those of the Milbury series (Typic Haplumbrepts) have developed an umbric epipedon. Soils such as those of the Honeygrove series (Typic Palehumults) have formed on stable slopes of the Galice Formation. Typic Palehumults such as Shivigny soils have formed on metastable slopes of this formation. On stable to active landscapes underlain by ultramafic rock, the soils typically are loamy, have an ochric epipedon and a cambic horizon, and are skeletal. Examples are the Greggo series (Lithic Eutrochrepts) and the Mislatnah and Serpentano series (Dystric Eutrochrepts). Redflat soils (Dystric Eutrochrepts) are on stable or metastable slopes in areas of ultramafic rock. The surface layer of the soils that formed in ultramafic rock typically is red in color; however, the subsoil and substratum may range from red to brown to gray, depending on how the rock weathered into soil material. Soil reaction (pH) of ultramafic soils typically is slightly acid or neutral. These soils have a serpentinitic mineralogy classification because of the nature of the parent material.

Two very distinct landscape features are in the coastal areas and the adjacent inland areas—the Carpenterville Shear Zone and the open areas of grassland within the forests.

The Carpenterville Shear Zone exhibits extensive faulting in the Dothan and Otter Point Formations. Transects and traverses made during mapping in this zone revealed extensive areas of light-colored, almost white, clayey subsoil material on stable to active slopes. Because of the formation of clayey fault gouge material, it is not uncommon to find associated with fault zones narrow bands of soils that have a light-colored subsoil that is high in content of clay. It is uncommon, however, to find a shear zone that is several miles wide, as is the Carpenterville Shear Zone. The rock units in this zone are claystone and siltstone. A large amount of darker colored clay material is also in this zone. Because of all the rough topography in the shear zone, the soils derived from fault gouge and the watershed clay weathered from the underlying rock will likely produce extensive valleyside alluvial clay material. Clayey soils that formed in the shear zone on stable to active slopes include those of the Hooskanaden series (isomesic Andic Hapludalfs) at an elevation of less than 1,300 feet (fig. 31) and those of the Houstenader series (mesic Aquic Argiudolls) at an elevation of 1,300 to 2,500 feet. These soils have a dark-colored surface layer; a light-colored, very thick, clayey subsoil with an elevated water table; and an argillic horizon. In the northern part of the survey area, strata of mudstone from the Dothan/Otter Point Formation that do not have the usual interlayered sandstone bedding have been highly sheared and deeply weathered. This formation of clayey fault gouge material is similar to that in the Carpenterville Shear Zone. Etelka soils (Oxyaquic Dystrochrepts) and Whobrey soils (Aquic Dystric Eutrochrepts) have formed in this area. They have an ochric epipedon and a very thick, fine textured cambic subsoil horizon with an elevated water table.

Open areas of grassland within the forests are throughout the mountainous areas on the Dothan/Otter Point and Colebrooke Schist Formations. Figure 9 illustrates an area of grassland in Adams Prairie. The soils in these areas

Figure 31.—Area of Hooskanaden-Loneranch-Reinhart complex, 0 to 30 percent slopes, which is an area of grassland in the Carpenterville Shear Zone. Millicoma-Whaleshead-Reedsport complex, 30 to 60 percent south slopes, is in the forested areas.

typically have an umbric epipedon and a cambic horizon, are on ridgetops and south-facing slopes, and support a grassland plant community. Agness soils (Pachic Haplumbrepts) are on the Colebrooke Schist Formation in nearly level to gently rolling areas. Quailprairie soils (Pachic Haplumbrepts) are on the Dothan Formation. On undulating to moderately steep metastable slopes, Sixes soils (Pachic Haplumbrepts) are on the Colebrooke Schist Formation and Swedeheaven soils (Typic Haplumbrepts) are on Dothan sandstone. Skeletal soils such as those of the Goldbeach and Sankey series have formed on the convex, active slopes of the Colebrooke Schist and Dothan Formations, respectively. Annual dieback of grass roots and incorporation of above-ground vegetation have added large amounts of organic matter to the surface layer of these soils. Annual burning of the grassland by Native Americans for many centuries incorporated additional organic carbon into the topsoil, contributing to the development of a thick, dark-colored umbric epipedon. Other possible causes for these prairie openings within the forests include manmade clearings for livestock grazing, as evidenced on aerial photographs by the rectangular shape of some of these areas (Jones and Ferrero 1989), or perhaps poor regrowth in old burned or landslide areas that have thin soils and are on high-lying, dry, generally south-facing slopes (Ferrero 1991).

Further east, in the xeric interior Coast Range area in the northern part of the survey area, the Looney unit is typified by Typic Palexerults such as Dumont and Pollard soils. These soils are on stable or metastable slopes. They formed in colluvium and residuum derived from sedimentary rock of the Umpqua Group. Base status in these soils is low because of the elevated rainfall in winter and the strong leaching environment. Typic Palexerults such as Acker and

Shastacosta soils have formed on metastable slopes. The Acker soils are moderately fine textured and have an increase in the content of rock fragments but are not skeletal, and the Shastacosta soils consist of loamy colluvial material that is high in content of rock fragments overlying a clayey subsoil (lithologic discontinuity) that is similar to that in the Dumont and Pollard soils. Skeletal soils such as those of the Beekman series (Dystric Xerochrepts) and the Vermisa series (Lithic Xerochrepts) are on active slopes.

In the Klamath Mountains area in the northeastern part of the survey area (mesic zone) are five different Jurassic geologies—the Dothan/Otter Point Formation; the Rogue Formation; diorite and related rock; gabbro, metagabbro, and related rock; and ultramafic rock. On stable or metastable slopes, the Looney unit is typified by Typic Palexerults, such as Dumont soils, that formed in colluvium and residuum derived from metasedimentary rock. Soils such as those of the Josephine series (Typic Haploxerults), Norling and Speaker series (Ultic Haploxeralfs), and Colestine series (Dystric Xerochrepts) have formed on metastable slopes. Skeletal soils such as those of the Atring and Kanid series (Dystric Xerochrepts) have formed on active slopes. In diorite and related rock on stable or metastable landscape positions, soils such as those of the Sitkum and Steinmetz series (Dystric Xerochrepts) have formed in medium textured to coarse textured residual material. In gabbro, metagabbro, and related rock, skeletal soils such as those of the Fantz series (Pachic Ultic Haploxerolls) and the Knapke series (Entic Ultic Haploxerolls) have formed on metastable or active slopes. Dark soil color is reflective of the parent material. On ultramafic rock, soils that are clayey, have an ochric epipedon and argillic horizon, and are skeletal are on stable to active landscapes. Examples are the Pearsoll series (Lithic Xerochrepts), the Dubakella series (Mollic Haploxeralfs), and the Eightlar series (Typic Xerochrepts). Gravecreek soils (Dystric Xerochrepts) are loamy, are skeletal, and have a cambic horizon. The surface layer of the soils that formed in ultramafic rock typically is red in color; however, the subsoil and substratum may range from red to brown to gray, depending on how the rock weathered into soil material. Soil reaction (pH) of ultramafic soils typically is slightly acid to neutral. These soils have a serpentinitic mineralogy classification because of the nature of the parent material.

Frigid zone

The Looney unit is at an elevation of 2,500 to 5,500 feet in the udic moisture regime and 3,000 to 5,500 feet in the xeric moisture regime. Only rock of the Klamath Mountains is in the frigid zone. Three Jurassic geologies are in the udic moisture regime—the Dothan/Otter Point Formation, the Colebrooke Schist Formation, and ultramafic rock. Three Jurassic geologies are in the xeric moisture regime—the Dothan/Otter Point Formation, diorite and related rock, and ultramafic rock.

Evidence of glaciation in the Klamath Mountains has been observed and documented in both the udic and xeric moisture regimes (Busby and Bestland 1992, Jones and Ferrero 1988, Jones and Ferrero 1989, Moring 1983). Glaciers in the Klamath Mountains formed during several glacial episodes of the late Pleistocene (Lee 1972, Sharp 1960). The height of this glaciation occurred during the Wisconsin stage, or about 75,000 years ago, when climatic and atmospheric conditions were favorable for the formation of extensive ice packs (Sharp 1960). Earlier glaciation (100,000 years before present) probably occurred in the Klamath Mountains, but evidence of this has most likely been altered by later erosional episodes (Woods 1988). The physiographic features created by glaciers are determined by the thickness and weight of the ice, the gradient of the slope, and the characteristics of the bedrock, such as the jointing patterns in hard rock (closely or widely spaced; horizontal or vertical) and the resistance and massiveness of rock such as granite (Woods 1988). Glacial features of the Klamath Mountains in this survey area include tarns, or glacial lake basins; cirque lakes; steep headwalls; and moraines (Busby and Bestland 1992, Jones and Ferrero 1988, Jones and Ferrero 1989). Small, shallow glacial lakes and tarns become meadows as a result of a gradual process of encroachment of alluvial debris into the shallow basin. During the initial stages of sedimentation, the perimeter of the tarn becomes swampy and vegetation becomes established. As the process continues, the basin becomes filled with alluvium and a grassy meadow is formed on the valley floor (Woods 1988). Snow Camp Meadow, near Snow Camp Mountain, is an example. Aquic Haplohumults are on the undulating topography of the meadow, and Cryaquepts are in the depressional areas and drainageways. Many lakes in the Klamath Mountains are in cirques carved by Pleistocene glaciers on north- and northeast-facing slopes. Examples include Game Lake, east of Gold Beach; Vulcan Lake, northeast of Brookings; and Babyfoot Lake, on the Curry-Josephine County line, west of Cave Junction. These cirque lakes collect the snowmelt and runoff from the surrounding higher elevations to form the headwaters of the present-day streams (Woods 1988).

Steep headwalls in the north-facing drainageway of Shasta Costa Creek, which is above 3,600 feet in elevation, exhibit abundant evidence of erosion by alpine glaciation (Jones and Ferrero 1988). Areas of talus slopes are below the headwalls of rock outcroppings. Haplumbrepts are in areas of gently sloping to very steep topography, and Cryaquepts formed in the erosional sediment deposited on the floor of the tarn. Moraines are mounds of angular rock and soil debris that are eroded and transported in ice as a glacier moves downslope. As the glacier retreats, debris from melting ice is left along the leading edge, creating a terminal moraine, and along the sides, creating a lateral moraine. Remnants of terminal and lateral moraines occur sporadically in small areas throughout the areas above 3,500 feet in elevation in the Klamath Mountains (Busby and Bestland 1992, Jones and Ferrero 1988, Jones and Ferrero 1989).

On stable slopes of the Dothan/Otter Point Formation in the udic moisture regime, soils such as those of the Pyrady series (Typic Palehumults) have formed in material derived from mudstone and those of the Zalea series (Typic Haplohumults) have formed in material weathered from siltstone. Typic Dystrochrepts such as Yorel soils have formed on metastable slopes. Skeletal soils such as those of the Bobsgarden and Tincup series (Umbric Dystrochrepts) and the Rilea series (Typic Dystrochrepts) have formed on active slopes. Loamy texture and brown color are characteristics of these soils. On north-facing slopes where accumulation of organic matter into the surface layer occurs more readily, soils such as those of the Stackyards series (Typic Haplumbrepts) and the Tolfork series (Pachic Haplumbrepts) have developed an umbric epipedon. On the Colebrooke Schist Formation, skeletal soils such as those of the Saddlepeak and Threetrees series (Typic Dystrochrepts) and the Scalerock series (Lithic Dystrochrepts) have formed on stable to active slopes. On ultramafic rock, the soils typically are loamy, have an ochric epipedon and a cambic horizon, and are skeletal. They are on stable to active landscapes. Examples are the Flycatcher soils (Lithic Eutrochrepts) and the Cedarcamp and Snowcamp soils (Dystric Eutrochrepts). The surface layer in the soils that formed in ultramafic rock typically is red in color; however, the subsoil and substratum may range from red to brown to gray, depending on how the rock weathered into soil material. Soil reaction (pH) of the ultramafic soils typically is slightly acid or neutral. These soils have a serpentinitic mineralogy classification because of the nature of the parent material.

On stable to active slopes of the Dothan/Otter Point Formation in the xeric moisture regime, skeletal soils such as those of the Bearcamp and Brandypeak series (Typic Xerumbrepts) and the Althouse and Jayar series (Dystric Xerochrepts) have formed in material derived from metasedimentary rock. The Bearcamp and Brandypeak soils are on ridgetops and north aspects. The Althouse and Jayar soils are on ridgetops and south aspects. Skeletal soils such as those of the Skymor series (Dystric Lithic Xerochrepts) have formed on active, south-facing slopes. Soils such as those of the Woodseye series (Lithic Xerumbrepts) are on north-facing slopes where accumulation of organic matter into the surface layer occurs more readily. In diorite and related rock on stable or metastable slopes, soils such as those of the Rogue series (Dystric Xerochrepts) have formed in medium textured to coarse textured residual material. In areas of ultramafic rock, the soils typically are clayey, have an ochric epipedon, have relatively few rock fragments, have an argillic horizon, and are red in color. They are on stable to active slopes. Perdin soils (Ultic Haploxeralfs) are an example. The surface layer of the soils that formed in ultramafic rock typically is red in color; however, the subsoil and substratum may range from red to brown to gray, depending on how the original material in this rock weathered into soil material. Soil reaction (pH) of the ultramafic soils typically is slightly acid or neutral. These soils have a serpentinitic mineralogy classification because of the nature of the parent material.

Soil Formation

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
SOILS OF COASTAL FLOOD PLAINS, TERRACES, AND DUNES (ISOMESIC ZONE)					
Horseshoe (Marine)	Beaches	Eolian sand	Beaches		Daily tidal fluctuations
	Active foredune	Eolian sand	Dune land		Sands high in quartz and feldspar minerals; tend to form parabola dunes
			Waldport, thin surface Frankport, thin surface	Typic Tropopsamments	Thin darkening of surface layer; no B horizon
	Deflation plain	Eolian material	Heceta	Typic Psammaquents	No B horizon; water table near surface
Horseshoe (Stream)	Low flood plain	Recent alluvium	Riverwash		Metal artifacts found in associated alluvium
			Bayside	Aeric Tropic Fluvaquents	Minimal organic matter in surface; no B horizon; daily tidal fluctuations
			Pistolriver	Aeric Tropaquepts	Umbric epipedon; cambic horizon; elevated water table at moderate depth in profile; daily tidal fluctuations
Ingram (Marine)	Stabilized dunes	Eolian sand	Waldport Frankport	Typic Tropopsamments	Minimal organic matter in surface layer; no B horizon
Ingram (Stream)	Higher flood plain	Late Holocene alluvium	Bagness	Fluventic Humitropepts	Umbric epipedon; cambic horizon
Tenmile (Marine)	Lowest marine terrace	Early Holocene marine clay	Chetco Langlois	Typic Tropaquepts Tropic Fluvaquents	Weak cambic horizon Minimal organic matter in surface layer; no B horizon; daily tidal fluctuations
	Convex interdunal position	Early Holocene sand deposits	Yaquina	Aquentic Haplorthods	Thin albic horizon at surface; spodic horizon
Winkle (Stream)	Lower stream terrace level	Late Holocene alluvium	Logsden Ettersburg	Typic Humitropepts	Umbric epipedon; cambic horizon; elevated organic carbon levels in surface layer
	Higher stream terrace level	Middle Holocene alluvium	Quillamook	Alic Pachic Melanudands	Umbric epipedon; cambic horizon; andic soil properties associated with surface layer
	Swale areas on higher stream terrace level	Middle Holocene alluvium	Euchre	Typic Melanaquands	Umbric epipedon; cambic horizon; andic soil properties associated with surface layer; elevated water table levels at moderate depth in soil profile

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
Whiskey Run (Marine)	Low marine terrace	Latest Pleistocene marine sediment	Chitwood	Aquic Humitropepts	Umbric epipedon; cambic horizon; elevated water table levels; elevated organic carbon levels in surface layer
Senecal (Stream)	Intermediate stream terrace level	Latest Pleistocene alluvium	Ekoms Winchuck	Typic Haplohumults	Umbric epipedon; argillic horizon; low base status
Low Pioneer (Marine)	Lowest middle marine terrace level (Cape Blanco terrace)	Late Pleistocene marine sediment	Gearhart	Typic Dystropepts	Umbric epipedon; cambic horizon; minimal organic carbon levels in surface layer; sandy texture
			Ferrelo	Typic Dystropepts	Umbric epipedon; cambic horizon; minimal organic carbon levels in surface layer; loamy texture
Middle Pioneer (Marine)	Intermediate middle marine terrace level (Pioneer terrace)	Late Pleistocene marine sediment	Depoe	Typic Duraquods	Albic horizon at surface; spodic horizon; ortstein layer within spodic horizon; water table at or near surface
			Nelscott	Typic Haplorthods	Albic horizon as subsurface layer; spodic horizon; ortstein layer within spodic horizon; water table at moderate depth in soil profile
			Bullards	Typic Haplorthods	Ochric epipedon; spodic horizon; occurs on older stabilized sand dunes
			Horseprairie	Andic Humitropepts	Umbric epipedon; cambic horizon; andic soil properties associated with surface layer
			Grindbrook	Aquic Humitropepts	Umbric epipedon; cambic horizon; elevated organic carbon levels in surface layer; water table at moderate depth in soil profile
			Wadecreek	Typic Haplohumults	Umbric epipedon; argillic horizon; low base status; water table at moderate depth in soil profile
			Klooqueh	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; low base status
			Crofland	Aquic Haplohumults	Umbric epipedon; argillic horizon; low base status; water table at moderate depth in soil profile
			Huffling	Typic Umbraquults	Umbric epipedon; argillic horizon; low base status; water table at or near the surface
High Pioneer (Marine)	Highest middle marine terrace level (Silver Butte terrace)	Late Pleistocene marine sediment	Bandon	Typic Haplorthods	Ochric epipedon; spodic horizon; ortstein layer within spodic horizon
			Bullards	Typic Haplorthods	Ochric epipedon; spodic horizon; occurs on older stabilized sand dunes
			Wadecreek	Typic Haplohumults	Umbric epipedon; argillic horizon; low base status; water table at moderate depth in soil profile

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
Dolph (Inland)	Dissected remnant high stream terraces	Late Pleistocene alluvium	Cunniff	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; low base status
Seven Devils (Marine)	Upper marine terrace level (Indian Creek terrace)	Middle Pleistocene marine sediment	Joeney	Typic Duraquods	Albic horizon at surface; spodic horizon; ortstein layer within spodic horizon; water table at or near surface
			Cunniff	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; low base status
Eola (Inland)	Dissected remnant high terraces	Middle Pleistocene alluvium	Cunniff	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; low base status
Griggs (Marine)	Deeply dissected remnant highest marine level (Poverty Ridge terrace)	Early Pleistocene marine sediment	Burnthill	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; low base status; siliceous mineralogy class
			Cashner	Typic Duraquods	Albic horizon at surface; spodic horizon; ortstein layer within spodic horizon; water table at moderate depth; siliceous mineralogy class
SOILS OF INLAND VALLEYS (MESIC ZONE)					
Horseshoe (Stream)	Low flood plain	Recent alluvium	Riverwash		Metal artifacts found in associated alluvium
			Quosatana	Fluvaquentic Humaquepts	Umbric epipedon; cambic horizon; elevated water table at or near the surface; subsoil gleyed because of water table
Ingram (Stream)	Higher flood plain	Late Holocene alluvium	Kirkendall	Fluventic Haplumbrepts	Umbric epipedon; cambic horizon
			Evans	Cumulic Haploxerolls	Thick mollic epipedon; no B horizon; high base status in surface layer
Winkle (Stream)	Convex areas on stream terraces	Late to Early Holocene alluvium	Eilertsen	Ultic Hapludalfs	Umbric epipedon; argillic horizon; low base status in subsoil and substratum
			Central Point	Pachic Haploxerolls	Thick mollic epipedon; cambic horizon; high base status in surface layer
			Foehlin	Typic Argixerolls	Mollic epipedon; argillic horizon
	Swale areas on stream terraces	Late to Early Holocene alluvium	Zyzzug	Typic Humaquepts	Umbric epipedon; cambic horizon; elevated water table at or near the surface
			Clawson	Typic Endoaquepts	Ochric epipedon; cambic horizon; elevated water table at or near the surface
			Cove	Vertic Epiaquolls	Mollic epipedon; cambic horizon; elevated water table at or near the surface; subsoil gleyed because of water table

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
Senecal (Stream)	Intermediate stream terrace level	Latest Pleistocene alluvium	Chismore	Aquic Haplohumults	Umbric epipedon; argillic horizon; low base status; elevated water table at moderate depth in soil profile
			Abegg	Ultic Haploxeralfs	Ochric epipedon; argillic horizon; low base status in subsoil and substratum
Dolph (Inland)	Dissected remnant high stream terraces	Late Pleistocene old alluvium	McCurdy	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; low base status
			Ruch	Mollic Palexeralfs	Thin, dark-colored surface layer; thick, well-developed argillic horizon; moderately high base status in upper part of soil
			Selmac	Ultic Haploxeralfs	Ochric epipedon; thin argillic horizon; moderate base status; lithologic discontinuity between parent material in the B horizon (loamy) and the 2C horizon (clayey)
Eola (Inland)	Dissected remnant high stream terraces	Middle Pleistocene old alluvium	Pollard	Typic Palexerults	Ochric epipedon; thick, well-developed argillic horizon; low base status

SOILS OF COASTAL HILLS AND MOUNTAINS (ISOMESIC ZONE)

COAST RANGE MOUNTAINS

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
Looney	Stable and metastable summits and side slopes	Colluvium and residuum derived from sedimentary rock of the Umpqua Group	Templeton	Andic Humitropepts	Umbric epipedon; cambic horizon; andic soil properties associated with the surface layer

KLAMATH MOUNTAINS

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
Looney	Stable and metastable summits and side slopes	Residuum and colluvium derived from metasedi-mentary rock of Cretaceous geologies	Bullgulch	Typic Haplohumults	Umbric epipedon; argillic horizon; few rock fragments in soil profile
	Stable summits and benches	Residuum and colluvium derived from metasedi-mentary rock of the Colebrooke Schist Formation	Desons	Typic Palehumults	Ochric epipedon; thick, well-developed argillic horizon; few rock fragments in soil profile; clayey texture; red soil color

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS					
Looney	Stable and metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedimentary rock of the Colebrooke Schist Formation	Watches	Typic Humitropepts	Ochric epipedon; cambic horizon; loamy texture; few rock fragments in soil profile; brown soil color
	Metastable and active side slopes	Colluvium derived from metasedimentary rock of the Colebrooke Schist Formation	Calfranch Capeblanco	Typic Humitropepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
	Stable summits and benches	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point Formation	Loeb Macklyn	Typic Haplohumults	Umbric epipedon; argillic horizon; few rock fragments in soil profile; clayey texture; red soil color
			Vondergreen	Aquic Hapludults	Ochric epipedon; argillic horizon; clayey texture; few rock fragments in soil profile; water table at moderate depth in soil profile; brown soil color
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point Formation	Bosland Floras Wedderburn Zwagg	Typic Humitropepts	Umbric epipedon; cambic horizon; loamy texture (except Floras soils, which are fine textured); brown soil color; few rock fragments in soil profile
			Grassyknob Reedsport Svensen	Andic Humitropepts	Umbric epipedon; cambic horizon; andic soil properties associated with the surface layer
	Metastable and active side slopes	Colluvium derived from metasedimentary rock of the Dothan/Otter Point Formation	Dulandy	Typic Humitropepts	Umbric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
			Guerin	Lithic Dystropepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
			Millicoma Whaleshead	Andic Humitropepts	Umbric epipedon; cambic horizon; andic soil properties associated with the surface layer; high volume of rock fragments in soil profile (skeletal)

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS					
Looney	Stable summits to active side slopes	Colluvium and residuum derived from ultramafic rock	Rustybutte Sebastian	Typic Hapludolls Lithic Hapludolls	Mollic epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal)

SOILS OF INTERIOR MOUNTAINS (MESIC ZONE)

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
COAST RANGE MOUNTAINS (Udic moisture regime)					
Looney	Stable and metastable summits and side slopes	Colluvium and residuum derived from sedimentary rock of the Umpqua Group	Bohannon Preacher	Andic Haplumbrepts	Umbric epipedon; cambic horizon; andic soil properties associated with the surface layer; few rock fragments in soil profile; loamy texture
	Metastable and active side slopes	Colluvium derived from sedimentary rock of the Umpqua Group	Digger	Dystric Eutrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; low base status
COAST RANGE MOUNTAINS (Xeric moisture regime)					
Looney	Stable and metastable summits and side slopes	Residuum and colluvium derived from sedimentary rock of the Umpqua Group	Dumont	Typic Palexerults	Ochric epipedon; thick, well-developed argillic horizon; clayey texture; few rock fragments in soil profile; reddish soil color; low base status
	Metastable side slopes	Colluvium derived from sedimentary rock of the Umpqua Group	Acker	Typic Palexerults	Ochric epipedon; cambic horizon; few rock fragments in soil profile; moderately fine texture; brown soil color; low base status
			Shastacosta	Typic Palexerults	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture overlying fine textured clay layer (lithologic discontinuity)
	Active side slopes	Colluvium derived from sedimentary rock of the Umpqua Group	Beekman	Dystric Xerochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; low base status
			Vermisa	Lithic Xerochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; low base status; shallow soil depth

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Udic moisture regime)					
Looney	Stable and metastable summits and side slopes	Residuum and colluvium derived from metasedimentary rock of Cretaceous geologies	Orford	Typic Palehumults	Umbric epipedon; thick, well-developed argillic horizon; few rock fragments in soil profile
	Stable summits and benches	Residuum and colluvium derived from metasedimentary rock of the Colebrooke Schist Formation	Edson Barkshanty	Typic Palehumults	Ochric epipedon; thick, well-developed argillic horizon; few rock fragments in soil profile; clayey texture; red soil color
	Stable and metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedimentary rock of the Colebrooke Schist Formation	Irma	Umbric Dystrochrepts	Ochric epipedon; cambic horizon; loamy texture; few rock fragments in soil profile; brown soil color
	Metastable and active side slopes	Colluvium derived from metasedimentary rock of the Colebrooke Schist Formation	Deadline	Umbric Dystrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
			Nailkeg	Typic Dystrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
	Stable summits and benches	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point Formation	Skookumhouse Hazelcamp	Typic Haplohumults	Umbric epipedon; argillic horizon; few rock fragments in soil profile; clayey texture; red soil color
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point Formation	Colepoint Crutchfield	Typic Haplumbrepts	Umbric epipedon; cambic horizon; loamy texture; brown soil color; few rock fragments in soil profile
			Fritsland Bravo	Umbric Dystrochrepts	Ochric epipedon; cambic horizon; loamy texture; brown soil color; few rock fragments in soil profile

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Udic moisture regime)					
Looney	Metastable and active side slopes	Colluvium derived from metasedi- mentary rock of the Dothan/Otter Point Formation	Cassiday Remote	Umbric Dystrochrepts Typic Dystrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
			Grouslous Umpcoos	Lithic Dystrochrepts Lithic Eutrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; shallow depth to bedrock
			Milbury	Typic Haplumbrepts	Umbric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
	Stable summits and benches	Residuum and colluvium derived from metasedi- mentary rock of the Galice Formation	Honeygrove	Typic Palehumults	Umbric epipedon; thick, well- developed argillic horizon; few rock fragments in soil profile; clayey texture; red soil color
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedi- mentary rock of the Galice Formation	Shivigny	Typic Palehumults	Umbric epipedon; thick, well- developed argillic horizon; clayey texture; brown soil color; high volume of rock fragments in soil profile (skeletal)
	Stable summits to active side slopes	Colluvium and residuum derived from ultramafic rock	Mislatnah Serpentano	Dystric Eutrochrepts	Ochric epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal)
			Greggo	Lithic Eutrochrepts	Ochric epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal); shallow soil depth
			Redflat	Dystric Eutrochrepts	Ochric epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; few rock fragments in soil profile

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Xeric moisture regime)					
Looney	Stable and metastable summits and side slopes	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point and Rogue Formations	Dumont	Typic Palexerults	Ochric epipedon; thick, well-developed argillic horizon; clayey texture; few rock fragments; reddish soil color; low base status
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point and Rogue Formations	Josephine Norling Speaker	Typic Palexerults Ultic Haploxeralfs Ultic Haploxeralfs	Ochric epipedon; thick, well-developed argillic horizon; few rock fragments in soil profile; loamy texture; reddish soil color
			Colestine	Dystric Xerochrepts	Ochric epipedon; cambic horizon; loamy texture; few rock fragments in soil profile; brown soil color
	Active side slopes	Colluvium derived from metasedimentary rock of the Dothan/Otter Point and Rogue Formations	Atring Kanid	Dystric Xerochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from diorite and related rock types	Sitkum Steinmetz	Dystric Xerochrepts	Ochric epipedon; cambic horizon; loamy texture; brown soil color; few rock fragments in soil profile
	Metastable and active side slopes	Colluvium derived from gabbro, metagabbro, and related rock types	Fantz Knapke	Pachic Ultic Haploxerolls Entic Ultic Haploxerolls	Mollic epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; dark soil color reflective of parent material origin

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Xeric moisture regime)					
Looney	Stable summits and active side slopes	Colluvium and residuum derived from ultramafic rock	Dubakella Eightlar	Mollic Haploxeralfs Typic Xerochrepts	Ochric epipedon; argillic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal); clayey texture
			Pearsoll	Lithic Xerochrepts	Ochric epipedon; argillic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal); shallow soil depth; clayey texture
			Gravecreek	Dystric Xerochrepts	Ochric epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal); loamy texture

SOILS OF INTERIOR MOUNTAINS (FRIGID ZONE)

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Udic moisture regime)					
Looney	Stable summits to active side slopes	Colluvium and residuum derived from metasedi- mentary rock of the Colebrooke Schist Formation	Saddlepeak Threetrees	Typic Dystrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
			Scalerock	Lithic Dystrochrepts	Ochric epipedon; cambic horizon; loamy texture; high volume of rock fragments in soil profile (skeletal); brown soil color; shallow soil depth
	Stable summits and benches	Residuum and colluvium derived from metasedi- mentary rock of the Dothan/Otter Point Formation	Pyrady Zalea	Typic Palehumults Typic Haplohumults	Umbric epipedon; argillic horizon; few rock fragments in soil profile; clayey texture; brown soil color
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from metasedi- mentary rock of the Dothan/Otter Point Formation	Yorel	Typic Dystrochrepts	Ochric epipedon; cambic horizon; few rock fragments in soil profile; brown soil color

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Udic moisture regime)					
Looney	Metastable and active side slopes	Colluvium derived from metasedimentary rock of the Dothan/Otter Point Formation	Bobsgarden Tincup Rilea	Umbric Dystrochrepts Umbric Dystrochrepts Typic Dystrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
			Euchrand	Lithic Dystrochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; shallow soil depth
			Stackyards Tolfork	Typic Haplumbrepts Pachic Haplumbrepts	Umbric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color
	Stable summits to active side slopes	Colluvium and residuum derived from ultramafic rock	Cedarcamp Snowcamp	Dystric Eutrochrepts	Ochric epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal)
			Flycatcher	Lithic Eutrochrepts	Ochric epipedon; cambic horizon; serpentinitic mineralogy class because of parent material; high volume of rock fragments in soil profile (skeletal); shallow soil depth
KLAMATH MOUNTAINS (Xeric moisture regime)					
Looney	Stable and metastable summits to active side slopes	Residuum and colluvium derived from metasedimentary rock of the Dothan/Otter Point and Rogue Formations	Bearcamp Brandypeak	Typic Xerumbrepts	Umbric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; low base status
			Woodseye	Lithic Xerumbrepts	Umbric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); shallow soil depth; loamy texture
			Althouse Jayar	Dystric Xerochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); loamy texture; brown soil color; low base status
			Skymor	Dystric Lithic Xerochrepts	Ochric epipedon; cambic horizon; high volume of rock fragments in soil profile (skeletal); shallow soil depth; loamy texture
	Metastable summits, side slopes, and benches	Residuum and colluvium derived from diorite and related rock types	Rogue	Dystric Xerochrepts	Ochric epipedon; cambic horizon; loamy texture; brown soil color; few rock fragments in soil profile

Soil Formation--Continued

Geomorphic surface	Landform and landscape position	Stratigraphy	Representative land type or series	Classification	Features
KLAMATH MOUNTAINS (Xeric moisture regime)					
Looney	Stable summits to active side slopes	Colluvium and residuum derived from ultramafic rock	Perdin	Ultic Haploxeralfs	Ochric epipedon; argillic horizon; serpentinitic mineralogy class because of parent material; few rock fragments in soil profile; clayey texture; red soil color

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Glossary

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Anadromous. Fish species which migrate from the sea to spawn in fresh water. Offspring return to the ocean where they spend most of their adult lives.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Andesite. Fine grained, dark-colored extrusive igneous rock that generally has comparatively large crystals in distinctly finer matrix material.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Backswamp. A swampy or marshy, depressed area on a flood plain. It has poor drainage because of the natural levees of the river.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Basin. A depressional area that has few, if any, surface drainage outlets.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Breccia. Coarse-grained clastic rock made up of angular broken rock fragments that are held together by mineral cement or are in a fine-grained matrix.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from glacial ice and snow abrasion.

Clastic rock. Consolidated sedimentary rock composed of cemented fragments broken or eroded from preexisting rock of any origin by chemical or mechanical weathering. Examples are conglomerate, sandstone, and siltstone.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Consociation. A delineated area on a soil map that is dominantly a single soil and similar soils or a single miscellaneous area.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Cordilleran. Refers to the mountainous western part of North America, between the Central Plains and the Pacific Ocean.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Deflation plain. An interdunal area excavated and maintained by the sorting out, lifting, and removal of loose, fine-grained soil particles (clays, silts, and fine sands) by the turbulent eddy action of the wind.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth's surface, especially a low-lying area surrounded by higher ground.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diorite. Coarse-grained igneous rock that resembles granite or granodiorite. It generally has about equal amounts of plagioclase feldspars and ferromagnesian minerals such as hornblende, biotite, and pyroxene.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diurnal. Refers to a daily cycle or repetitive pattern.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Edaphic. Resulting from or influenced by soil conditions rather than climatic factors.

Edge. Area where plant communities come together or where successional stages or vegetative conditions within plant communities come together.

Edge effect. The increased richness of flora and fauna in areas where plant communities or successional stages of plant communities come together and mix.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endemic. Restricted to or characteristic of a specific locality or area.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Feldspar. A group of the most common minerals in the earth's crust. All feldspars contain silicon, aluminum, and oxygen, and they may contain potassium, calcium, and sodium.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Foredune. A barrier ridge of sand immediately above the high tide line and parallel to the beach; an active foredune is one that has become conditionally stable with regard to wind erosion.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Gabbro. Dark, coarse-grained basic igneous rock that is the approximate intrusive equivalent of basalt.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Granodiorite. Granitic rock composed of granite and diorite.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Hillslope. The steep part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of the hill. In descending order, the components of a simple hillslope may include a shoulder slope, a backslope, a footslope, and a toeslope. Not all of these components, however, are necessarily evident in any given hillslope continuum. Complex hillslopes may include two or more sequences of backslopes or toeslopes.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Indurated. Pertaining to continuous or nearly continuous cementation by a dominant or codominant cementing agent.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Light textured soil. Sand or loamy sand.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Lithologic discontinuity. A significant change in particle-size distribution or mineralogy that indicates a difference in the material from which the soil horizons have formed.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Lowlands. A general term for low-lying land or an extensive region of low land, especially near a coast. Lowlands include the extended plains and land lying slightly above tide level.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metagabbro. A gabbro that has been physically and chemically altered by heat and pressure (metamorphosed).

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Metasedimentary rock. A sedimentary rock that has been subject to metamorphic processes. The degree of metamorphic alteration is not implied by the term.

Metavolcanic rock. A volcanic rock that has been subject to metamorphic processes. The degree of metamorphic alteration is not implied by the term.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Olivine. A common rock-forming silicate mineral that is rich in magnesium and iron.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Paleoseismicity. The study of the relative frequency and distribution of ancient earthquakes.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedogenesis. The process of soil formation.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Peridotite. A coarse-grained ultramafic rock consisting of olivine and pyroxene with accessory minerals. Peridotite is thought to make up much of the earth's mantle. It is referred to as serpentinite when altered.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Phyllite. A metamorphic rock in which clay minerals have crystallized into mica, giving the rock a silky sheen.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plagioclase feldspar. A feldspar that contains sodium and/or calcium in addition to aluminum, silicon, and oxygen.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and to maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproductive capacity of the key plants and promotes the accumulation of litter and mulch needed to conserve soil and water.

Puddling. Condition that occurs in certain wet soils as a result of compression and shearing. Puddling generally is accompanied by compaction.

Pyroxene. A group of dark-colored, rock-forming silicate minerals that contain varying amounts of calcium, sodium, magnesium, iron, and aluminum.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Ridge crest. The narrow summit of a ridge as applied to elevated areas where retreating backslopes are converging in such a way that the areas are almost exclusively composed of convex shoulders.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saprolite. Soft, friable, weathered bedrock that retains the fabric and structure of the parent rock while exhibiting weathering of crystals.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Schist. Metavolcanic rock that has been mostly or entirely crystallized and exhibits strong parallel or planar arrangement of platy or prismatic mineral grains. This rock can readily be split into thin plates or slabs.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Seral. Refers to the relative transitory aggregation of plants and animals within a sere; a preclimax stage of succession.

Sere. The series of stages in an ecological succession.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Serpentine. A greenish, greenish yellow, or greenish gray mineral that is composed of a complex group of hydrous magnesium silicates.

Serpentinite. A dark green to black rock that consists almost entirely of serpentine. Serpentinite has a greasy or silky luster and a tough, conchoidal or splintery fracture. It is a product of the alteration of magnesium-rich silicate minerals such as olivine and pyroxene and is evident in igneous or metamorphic rock.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. The slope bounding a drainageway and lying between the drainageway and the adjacent interfluve. It includes the toeslope, footslope, backslope, and shoulder slope.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site class. Relative productive capacity of a site for a particular stand.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant trees for a range of ages on soils that differ in productivity. The curves are based on the height of dominant trees 50 years old or 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that shows the average height of dominant and codominant trees for a range of ages on soils that differ in productivity. The curves are based on the height of dominant and codominant trees 100 years old or 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skeletal soil. A soil that has 35 percent rock fragments or more, by volume, in the particle-size control section.

Skid trail. A furrow made by a log that is skidded over the ground surface.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	1 to 8 percent
Strongly sloping	4 to 16 percent
Moderately steep	10 to 30 percent
Steep	20 to 60 percent
Very steep	45 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 3 percent
Undulating	1 to 8 percent
Rolling	4 to 16 percent
Hilly	10 to 30 percent
Steep	20 to 60 percent
Very steep	45 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strata. Collectively, the layers of rock in a geologic formation that are approximately the same kind of material throughout.

Strath terrace. A type of terrace that formed as an erosional surface cut into bedrock and has a thin mantle of alluvial deposits.

Stratigraphy. The branch of geology that deals with the definition and interpretation of layered earth material, including the conditions of its formation; its character, arrangement, sequence, age, and distribution; and its correlation by the use of fossils and other means.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Summit. A general term for the top or highest area of a landform such as a hill or mountain. It commonly refers to a high interfluve area of relatively gentle slopes flanked by steeper side slopes.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Syncline. A unit of folded strata that is concave upward.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Tectonic processes. Pertaining to rock deformation, including folding, faulting, and uplifting, that has taken place in the earth's crust.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Thrust fault. A reverse fault in which the dip of the fault plane is at a low angle to horizontal.

Tidal flat. An extensive, nearly horizontal, marshy or barren tract of land that is alternately covered and uncovered by the tide. It consists of unconsolidated sediment that is mostly clay, silt, and sand.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Toxicity (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Ultramafic rock. Rock that has a relatively high content of iron, is less than 45 percent silica, and has virtually no quartz or feldspar. It includes peridotite and serpentinite.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Vegetative site. A distinctive area that produces a characteristic natural plant community that differs from natural plant communities in other areas in kind, amount, and proportion of forage plants.

Vertical structure. The configuration of elements, parts, or constituents of a habitat, plant or animal community, or forest stand in a vertical orientation.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Wave-cut platform. A gently sloping surface produced by wave erosion that extends into the sea or lake from the base of the wave-cut cliff. It includes both the wave-cut bench and the abrasion platform.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windblast. The destructive effect of air friction on the tops of trees in coastal forest stands. Windblast results in stunted growth and reduces the quality of the timber and the potential yields.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

The tables in this survey give the properties and interpretations for the major components, which are given in the detailed soil map unit names. The properties and interpretations for the minor components, which are listed in the detailed soil map units, will be available in the National Soil Information System (NASIS) database for the survey area when the data fields for this information are populated.

Table 1.--Temperature and Precipitation

(Recorded in the period 1962-1991 at Bandon, Brookings, Gold Beach, and Illahe, Oregon, and in the period 1965-1993 at Port Orford, Oregon)

Month	Temperature					Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*	
BANDON										
January-----	53.4	38.1	45.7	68	22	191	9.12	4.67	13.00	14
February----	55.3	39.4	47.4	72	24	212	6.78	4.08	9.20	12
March-------	55.7	39.6	47.6	71	29	236	7.40	4.61	9.91	14
April-------	57.2	40.7	48.9	75	30	266	4.37	2.21	6.25	9
May---------	60.4	43.8	52.1	76	33	372	2.69	1.35	3.85	6
June--------	63.7	48.0	55.9	77	37	454	1.52	0.61	2.29	4
July--------	66.2	50.3	58.3	77	40	564	0.41	0.12	0.69	1
August------	67.1	50.5	58.8	77	39	574	0.98	0.13	1.73	2
September---	67.5	47.7	57.6	86	36	524	1.66	0.40	2.77	3
October-----	63.4	44.2	53.8	83	32	413	3.88	1.53	6.09	6
November----	57.6	41.9	49.7	72	27	284	8.72	5.68	12.04	14
December----	53.7	38.6	46.1	67	22	202	9.76	4.99	13.92	14
Yearly:										
Average----	60.1	43.6	51.8	---	---	---	---	---	---	---
Extreme----	100.0	8.0	---	90	18	---	---	---	---	---
Total------	---	---	---	---	---	4,291	57.28	47.92	66.14	99

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temperature higher than--	Temperature: 2 years in 10 will have-- Minimum temperature lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*	
BROOKINGS										
January-----	54.7	40.8	47.7	69	28	229	10.96	5.59	15.65	13
February----	56.4	42.0	49.2	76	30	252	8.68	5.05	11.92	12
March-------	57.2	41.6	49.4	75	32	281	9.25	5.97	12.23	14
April-------	59.5	42.5	51.0	79	33	313	5.29	2.57	7.65	9
May---------	63.2	46.0	54.6	86	37	452	3.54	1.08	5.55	5
June--------	66.3	49.3	57.8	91	42	530	1.53	0.61	2.30	2
July--------	67.7	51.1	59.4	89	44	600	0.55	0.10	0.96	1
August------	67.5	52.1	59.8	90	45	591	1.34	0.09	2.37	2
September---	68.5	51.2	59.8	95	42	562	2.10	0.24	3.46	3
October-----	64.5	47.9	56.2	86	38	485	5.65	2.17	8.56	7
November----	58.5	44.7	51.6	74	33	340	11.21	5.96	15.82	13
December----	54.8	41.1	48.0	69	28	242	11.75	6.92	16.81	14
Yearly:										
Average----	61.6	45.9	53.7	---	---	----	---	---	---	---
Extreme----	103.0	18.0	---	99	25	----	---	---	---	---
Total------	---	---	---	---	---	4,877	71.86	56.03	84.03	95

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temperature higher than--	Temperature: 2 years in 10 will have-- Minimum temperature lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*	
GOLD BEACH										
January-----	54.6	40.0	47.3	68	23	211	12.08	5.86	17.46	14
February----	55.9	41.2	48.6	72	28	230	7.99	3.53	11.79	20
March-------	56.1	41.1	48.6	70	31	246	10.34	5.63	14.49	16
April-------	58.0	42.3	50.2	74	32	290	5.63	2.56	8.27	10
May---------	61.2	45.3	53.2	76	36	393	3.69	1.43	5.59	5
June--------	65.0	49.1	57.1	80	41	488	1.62	0.56	2.49	3
July--------	67.9	51.0	59.4	78	44	581	0.47	0.10	0.96	1
August------	68.3	51.8	60.0	78	44	598	1.22	0.26	2.72	2
September---	68.0	50.6	59.3	86	41	556	2.32	0.29	3.96	3
October-----	64.2	47.4	55.8	82	37	451	5.53	1.70	8.66	6
November----	58.0	43.8	50.9	70	32	293	12.09	6.91	16.69	12
December----	54.8	40.6	47.7	67	24	216	13.41	6.93	19.07	12
Yearly:										
Average----	61.0	45.4	53.2	---	---	---	---	---	---	---
Extreme----	102.0	12.0	---	88	23	---	---	---	---	---
Total------	---	---	---	---	---	4,551	76.38	45.86	85.46	104

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature					Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*	
ILLAHE										
January-----	49.7	35.5	42.6	61	20	108	13.23	5.63	19.68	13
February----	54.4	37.4	45.9	71	22	174	11.49	6.24	16.12	12
March-------	59.1	38.2	48.7	78	28	249	10.63	6.38	14.43	13
April-------	64.9	39.0	52.0	86	30	344	5.13	2.56	7.36	8
May---------	72.0	43.4	57.7	95	32	511	3.02	1.28	4.49	5
June--------	79.4	48.3	63.9	100	38	681	1.22	0.38	1.91	2
July--------	87.2	51.1	69.2	104	41	870	0.26	0.05	0.56	0
August------	87.2	51.2	69.2	105	41	906	0.93	0.28	2.46	1
September---	83.0	48.2	65.6	102	37	757	2.38	0.45	4.39	3
October-----	69.4	43.7	56.6	90	31	488	5.94	1.84	9.29	7
November----	55.7	40.5	48.1	69	26	231	13.02	7.11	19.18	13
December----	49.5	36.0	42.8	63	20	108	13.21	6.81	20.79	13
Yearly:										
Average----	67.6	42.7	55.2	---	---	---	---	---	---	---
Extreme----	110.0	6.0	---	106	16	---	---	---	---	---
Total------	---	---	---	---	---	5,427	80.46	57.42	96.60	90

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature					Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*	
PORT ORFORD										
January-----	53.8	39.5	46.6	68	25	202	11.40	6.64	15.65	14
February----	55.3	40.6	47.9	71	26	207	8.66	4.77	12.10	13
March-------	56.1	40.8	48.5	71	30	234	9.08	5.29	12.46	13
April-------	58.0	41.8	49.9	75	32	270	5.17	2.70	7.33	10
May---------	61.8	45.1	53.4	79	33	384	3.24	1.09	5.01	6
June--------	65.3	49.3	57.3	80	38	501	1.85	0.73	2.80	4
July--------	68.4	51.7	60.1	78	43	596	0.58	0.17	1.08	1
August------	69.2	51.8	60.5	80	42	611	1.37	0.23	2.77	2
September---	68.8	50.3	59.6	86	39	531	1.91	0.31	3.26	3
October-----	64.1	46.4	55.3	83	34	431	4.82	1.69	7.42	7
November----	57.4	43.2	50.3	70	29	304	10.75	6.45	14.60	14
December----	53.8	39.8	46.8	67	24	215	12.42	6.71	17.44	15
Yearly:										
Average----	61.0	45.0	53.0	---	---	---	---	---	---	---
Extreme----	93.0	13.0	---	87	21	---	---	---	---	---
Total------	---	---	---	---	---	4,486	71.26	55.78	82.00	102

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (Threshold: 40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1962-1991 at Bandon, Brookings, Gold Beach, and Illahe, Oregon, and in the period 1965-1993 at Port Orford, Oregon)

Probability	Temperature		
	24 ^{o}F or lower	28 ^{o}F or lower	32 ^{o}F or lower
BANDON			
Last freezing temperature in spring:			
1 year in 10 later than--	February 19	March 12	May 14
2 years in 10 later than--	February 11	March 1	May 2
5 years in 10 later than--	January 26	February 10	April 8
First freezing temperature in fall:			
1 year in 10 earlier than--	November 28	November 12	October 16
2 years in 10 earlier than--	December 10	November 21	October 26
5 years in 10 earlier than--	January 2	December 10	November 14
BROOKINGS			
Last freezing temperature in spring:			
1 year in 10 later than--	February 18	February 23	April 11
2 years in 10 later than--	February 5	February 12	March 24
5 years in 10 later than--	January 12	January 20	February 20
First freezing temperature in fall:			
1 year in 10 earlier than--	December 1	December 7	November 21
2 years in 10 earlier than--	December 5	December 16	December 1
5 years in 10 earlier than--	December 13	January 4	December 20

Table 2.--Freeze Dates in Spring and Fall--Continued

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
GOLD BEACH			
Last freezing temperature in spring:			
1 year in 10 later than--	February 24	February 20	April 16
2 years in 10 later than--	February 17	February 11	March 31
5 years in 10 later than--	February 5	January 25	March 2
First freezing temperature in fall:			
1 year in 10 earlier than--	December 1	December 6	November 11
2 years in 10 earlier than--	December 14	December 17	November 22
5 years in 10 earlier than--	January 7	January 6	December 13
ILLAHE			
Last freezing temperature in spring:			
1 year in 10 later than--	February 21	April 1	May 11
2 years in 10 later than--	February 10	March 17	April 30
5 years in 10 later than--	January 20	February 17	April 9
First freezing temperature in fall:			
1 year in 10 earlier than--	November 23	November 16	September 30
2 years in 10 earlier than--	December 5	November 25	October 13
5 years in 10 earlier than--	December 27	December 12	November 7

Table 2.--Freeze Dates in Spring and Fall--Continued

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
PORT ORFORD			
Last freezing temperature in spring:			
1 year in 10 later than--	February 19	March 29	May 14
2 years in 10 later than--	February 9	March 11	April 25
5 years in 10 later than--	January 22	February 7	March 20
First freezing temperature in fall:			
1 year in 10 earlier than--	November 23	November 17	October 29
2 years in 10 earlier than--	December 7	December 1	November 8
5 years in 10 earlier than--	January 4	December 26	November 25

Table 3.--Growing Season

(Recorded in the period 1962-1991 at Bandon, Brookings, Gold Beach, and Illahe, Oregon, and in the period 1965-1993 at Port Orford, Oregon)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
BANDON			
9 years in 10	303	257	160
8 years in 10	313	272	180
5 years in 10	332	301	217
2 years in 10	351	331	254
1 year in 10	361	346	274
BROOKINGS			
9 years in 10	340	331	238
8 years in 10	346	338	260
5 years in 10	356	352	304
2 years in 10	365	365	347
1 year in 10	365	365	365
GOLD BEACH			
9 years in 10	317	305	229
8 years in 10	325	316	246
5 years in 10	342	336	280
2 years in 10	358	356	313
1 year in 10	365	365	330
ILLAHE			
9 years in 10	290	233	149
8 years in 10	301	252	169
5 years in 10	322	288	208
2 years in 10	343	323	248
1 year in 10	354	342	268

Table 3.--Growing Season--Continued

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
PORT ORFORD			
9 years in 10	314	256	173
8 years in 10	323	275	196
5 years in 10	339	310	239
2 years in 10	355	346	282
1 year in 10	363	365	305

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1B	Abegg gravelly loam, 2 to 7 percent slopes	370	*
1D	Abegg gravelly loam, 7 to 20 percent slopes	327	*
2F	Acker-Norling complex, 30 to 60 percent south slopes	2,122	0.2
3E	Agness-Sixes-Goldbeach complex, 0 to 30 percent slopes	992	*
4F	Agness-Sixes-Goldbeach complex, 30 to 60 percent south slopes	372	*
5F	Althouse-Jayar-Skymor complex, 30 to 60 percent south slopes	6,279	0.6
6F	Althouse-Jayar-Woodseye complex, 30 to 60 percent north slopes	1,583	0.2
7D	Aquic Haplohumults-Cryaquepts complex, 0 to 15 percent slopes	105	*
8E	Atring-Kanid-Vermisa complex, 12 to 30 percent slopes	1,674	0.2
9F	Atring-Kanid-Vermisa complex, 30 to 60 percent south slopes	11,768	1.1
9G	Atring-Kanid-Vermisa complex, 60 to 90 percent south slopes	10,977	1.0
10F	Atring-Rock outcrop-Kanid complex, 30 to 60 percent north slopes	544	*
11F	Atring-Rock outcrop-Kanid complex, 30 to 60 percent south slopes	4,911	0.5
12G	Atring-Rock outcrop-Vermisa complex, 60 to 90 percent south slopes	13,191	1.3
13G	Atring-Vermisa complex, 60 to 90 percent north slopes	3,854	0.4
14G	Atring-Vermisa-Rock outcrop complex, 60 to 90 percent north slopes	4,813	0.5
15A	Bagness-Pistolriver complex, 0 to 3 percent slopes	411	*
16E	Barkshanty-Nailkeg-Rock outcrop complex, cool, 0 to 30 percent slopes	553	*
17E	Barkshanty-Nailkeg-Rock outcrop complex, 0 to 30 percent slopes	578	*
18A	Bayside silty clay loam, 0 to 3 percent slopes	116	*
19	Beaches	1,909	0.2
20E	Bearcamp-Brandypeak complex, 0 to 30 percent slopes	5,240	0.5
21F	Bearcamp-Brandypeak-Woodseye complex, 30 to 60 percent north slopes	3,080	0.3
22F	Beekman-Colestine-Orthents complex, 30 to 60 percent south slopes	1,977	0.2
23G	Beekman-Orthents-Colestine complex, 60 to 90 percent south slopes	3,059	0.3
24G	Beekman-Rock outcrop-Vermisa complex, 60 to 90 percent south slopes	1,970	0.2
25G	Beekman-Vermisa complex, 60 to 90 percent south slopes	3,374	0.3
26A	Bigriver sandy loam, 0 to 3 percent slopes	204	*
27F	Bobsgarden-Rilea-Euchrand complex, cool, 30 to 60 percent south slopes	1,291	0.1
27G	Bobsgarden-Rilea-Euchrand complex, cool, 60 to 90 percent south slopes	702	*
28F	Bobsgarden-Rilea-Euchrand complex, 30 to 60 percent south slopes	3,782	0.4
28G	Bobsgarden-Rilea-Euchrand complex, 60 to 90 percent south slopes	526	*
29F	Bobsgarden-Rilea-Rock outcrop complex, conglomerate substratum, 30 to 60 percent south slopes	1,116	0.1
29G	Bobsgarden-Rilea-Rock outcrop complex, conglomerate substratum, 60 to 90 percent south slopes	802	*
30F	Bobsgarden-Rilea-Rock outcrop complex, cool, 30 to 60 percent south slopes	700	*
31F	Bobsgarden-Rilea-Rock outcrop complex, 30 to 60 percent south slopes	2,873	0.3
32E	Bobsgarden-Rilea-Yorel complex, cool, 0 to 30 percent slopes	1,631	0.2
33E	Bobsgarden-Rilea-Yorel complex, 0 to 30 percent slopes	2,368	0.2
34E	Bobsgarden-Rilea complex, conglomerate substratum, 0 to 30 percent slopes	314	*
35G	Brandypeak-Bearcamp-Woodseye complex, 60 to 90 percent north slopes	2,137	0.2
36F	Brandypeak-Rock outcrop-Bearcamp complex, 30 to 60 percent north slopes	1,808	0.2
37A	Brenner silt loam, 0 to 3 percent slopes	384	*
38B	Bullards-Bandon-Wadecreek complex, 0 to 8 percent slopes	2,996	0.3
38D	Bullards-Bandon-Wadecreek complex, 8 to 20 percent slopes	179	*
39D	Bullards-Ferrelo-Hebo complex, 0 to 20 percent slopes	4,128	0.4
40E	Bullgulch-Hunterscove complex, 0 to 30 percent slopes	6,166	0.6
41F	Bullgulch-Hunterscove complex, 30 to 60 percent north slopes	1,633	0.2
42F	Bullgulch-Hunterscove complex, 30 to 60 percent south slopes	2,436	0.2
43D	Burnthill-Cashner complex, 0 to 15 percent slopes	2,224	0.2
44E	Burnthill loam, 15 to 30 percent slopes	2,179	0.2
45F	Calfranch-Capeblanco-Watches complex, 30 to 60 percent south slopes	9,323	0.9
46G	Calfranch-Capeblanco-Watches complex, 60 to 90 percent north slopes	580	*
47F	Calfranch-Watches-Capeblanco complex, 30 to 60 percent north slopes	5,405	0.5
48G	Capeblanco-Calfranch-Watches complex, 60 to 90 percent south slopes	360	*
49F	Carpenterville-Houstenader-Huntley complex, 30 to 60 percent south slopes	284	*
50G	Cassiday-Grouslous-Bravo complex, 60 to 90 percent north slopes	13,282	1.3
51G	Cassiday-Grouslous-Bravo complex, 60 to 90 percent south slopes	21,204	2.0
52G	Cedarcamp-Flycatcher-Rock outcrop complex, 60 to 90 percent north slopes	1,341	0.1
53F	Cedarcamp-Snowcamp-Flycatcher complex, 30 to 60 percent north slopes	2,008	0.2

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
54F	Cedarcamp-Snowcamp-Flycatcher complex, 30 to 60 percent south slopes	2,075	0.2
55F	Cedarcamp-Snowcamp-Rock outcrop complex, 30 to 60 percent north slopes	1,215	0.1
56F	Cedarcamp-Snowcamp-Rock outcrop complex, 30 to 60 percent south slopes	3,758	0.4
57A	Central Point sandy loam, 0 to 3 percent slopes	146	*
58A	Chetco silt loam, 0 to 3 percent slopes	1,173	0.1
59A	Chismore-Pyburn complex, 0 to 3 percent slopes	193	*
59C	Chismore-Pyburn complex, 3 to 12 percent slopes	353	*
60B	Chitwood silt loam, 0 to 7 percent slopes	454	*
61A	Clawson sandy loam, 0 to 3 percent slopes	147	*
62F	Colepoint-Bravo-Cassiday complex, cool, 30 to 60 percent north slopes	1,281	0.1
63E	Colepoint-Nailkeg complex, cool, 0 to 30 percent slopes	1,493	0.1
64F	Colepoint-Nailkeg complex, cool, 30 to 60 percent north slopes	405	*
65A	Crofland silty clay loam, 0 to 3 percent slopes	433	*
66D	Crutchfield-Colepoint complex, 0 to 15 percent slopes	1,940	0.2
66E	Crutchfield-Colepoint complex, 15 to 30 percent slopes	3,148	0.3
67F	Crutchfield-Colepoint complex, 30 to 60 percent north slopes	1,107	0.1
68F	Crutchfield-Colepoint complex, 30 to 60 percent south slopes	1,515	0.1
69D	Cunniff silty clay loam, 0 to 15 percent slopes	3,020	0.3
69E	Cunniff silty clay loam, 15 to 30 percent slopes	4,010	0.4
70D	Cunniff-Joeney complex, 0 to 15 percent slopes	1,123	0.1
71F	Deadline-Barkshanty-Nailkeg complex, cool, 30 to 60 percent north slopes	9,487	0.9
72F	Deadline-Barkshanty-Nailkeg complex, 30 to 60 percent north slopes	6,887	0.7
73F	Deadline-Barkshanty-Nailkeg complex, 30 to 60 percent south slopes	32,200	3.1
74F	Deadline-Barkshanty-Rock outcrop complex, 30 to 60 percent north slopes	678	*
75E	Deadline-Irma-Nailkeg complex, cool, 0 to 30 percent slopes	2,702	0.3
76E	Deadline-Irma-Nailkeg complex, 0 to 30 percent slopes	3,774	0.4
77G	Deadline-Nailkeg complex, cool, 60 to 90 percent north slopes	1,159	0.1
78G	Deadline-Nailkeg complex, 60 to 90 percent north slopes	1,070	0.1
79G	Deadline-Nailkeg complex, 60 to 90 percent south slopes	3,400	0.3
80F	Deadline-Rock outcrop-Nailkeg complex, 30 to 60 percent south slopes	1,311	0.1
81G	Deadline-Rock outcrop-Nailkeg complex, 60 to 90 percent north slopes	524	*
82G	Deadline-Rock outcrop-Nailkeg complex, 60 to 90 percent south slopes	959	*
83E	Desons-Watches-Calfranch complex, 0 to 30 percent slopes	3,158	0.3
84G	Digger-Preacher-Bohannon complex, 60 to 90 percent north slopes	240	*
85F	Digger-Preacher-Bohannon complex, warm, 30 to 60 percent south slopes	7,844	0.7
86G	Digger-Preacher-Bohannon complex, warm, 60 to 90 percent north slopes	200	*
87F	Digger-Remote-Rock outcrop complex, warm, 30 to 60 percent south slopes	3,860	0.4
88F	Digger-Remote-Umpcoos complex, warm, 30 to 60 percent south slopes	15,589	1.5
89E	Digger-Remote complex, 3 to 30 percent slopes	3,439	0.3
90E	Digger-Remote complex, warm, 3 to 30 percent slopes	1,875	0.2
91F	Digger-Umpcoos-Dystrochrepts complex, warm, 30 to 60 percent south slopes	8,057	0.8
91G	Digger-Umpcoos-Dystrochrepts complex, warm, 60 to 90 percent south slopes	33,345	3.2
92G	Digger-Umpcoos-Rock outcrop complex, warm, 60 to 90 percent south slopes	4,422	0.4
93G	Digger-Umpcoos-Rock outcrop complex, warm, 60 to 90 percent south slopes, stony	552	*
94F	Dubakella-Cornutt-Pearsoll complex, 20 to 60 percent south slopes	943	*
95G	Dulandy-Bosland-Floras complex, 60 to 90 percent north slopes	4,769	0.5
96G	Dulandy-Bosland-Floras complex, 60 to 90 percent south slopes	3,807	0.4
97E	Dulandy-Guerin-Bosland complex, 0 to 30 percent slopes	1,067	0.1
98G	Dulandy-Guerin-Rock outcrop complex, 60 to 90 percent south slopes	1,755	0.2
99E	Dumont-Acker-Kanid complex, 0 to 30 percent slopes	6,807	0.6
100G	Dystrochrepts-Rock outcrop-Rubble land complex, 60 to 100 percent south slopes	2,795	0.3
101F	Dystrochrepts-Rubble land-Rock outcrop complex, 30 to 60 percent south slopes	683	*
102D	Edson-Barkshanty complex, cool, 0 to 15 percent slopes	297	*
102E	Edson-Barkshanty complex, cool, 15 to 30 percent slopes	1,826	0.2
103D	Edson-Barkshanty complex, 0 to 15 percent slopes	366	*
103E	Edson-Barkshanty complex, 15 to 30 percent slopes	8,387	0.8
104E	Eightlar-Gravecreek-Pearsoll complex, 3 to 30 percent slopes	1,572	0.1
105F	Eightlar-Gravecreek-Pearsoll complex, 30 to 60 percent north slopes	2,334	0.2
106B	Eilertsen-Zyzzug complex, 0 to 7 percent slopes	382	*
107C	Ekoms loam, 0 to 12 percent slopes	1,195	0.1
108F	Etelka-Remote-Whobrey complex, 30 to 60 percent north slopes	5,353	0.5

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
109F	Etelka-Remote-Whobrey complex, 30 to 60 percent south slopes	13,379	1.3
110D	Etelka-Whobrey-Remote complex, 7 to 15 percent slopes	607	*
110E	Etelka-Whobrey-Remote complex, 15 to 30 percent slopes	24,569	2.3
111A	Ettersburg loam, 0 to 3 percent slopes	339	*
112A	Evans silt loam, 0 to 3 percent slopes	111	*
113F	Fantz-Knapke complex, 30 to 60 percent south slopes	1,182	0.1
113G	Fantz-Knapke complex, 60 to 90 percent south slopes	1,520	0.1
114G	Fantz-Knapke complex, 60 to 90 percent north slopes	490	*
115F	Ferrelo-Bullards complex, 20 to 40 percent slopes	2,254	0.2
116D	Ferrelo-Gearhart complex, 0 to 15 percent slopes	1,466	0.1
116E	Ferrelo-Gearhart complex, 15 to 30 percent slopes	1,362	0.1
117F	Floras-Bosland-Dulandy complex, 30 to 60 percent north slopes	10,215	1.0
118F	Floras-Bosland-Dulandy complex, 30 to 60 percent south slopes	16,839	1.6
119A	Foehlin-Cove complex, 0 to 3 percent slopes	109	*
120E	Frankport sand, 0 to 30 percent slopes	375	*
121E	Frankport sand, thin surface, 0 to 30 percent slopes	1,277	0.1
122F	Fritsland-Bravo-Cassiday complex, 30 to 60 percent north slopes	42,000	4.0
123F	Fritsland-Bravo-Cassiday complex, 30 to 60 percent south slopes	88,310	8.4
124E	Gamelake-Tincup complex, 0 to 30 percent slopes	1,094	0.1
125F	Gamelake-Tincup complex, 30 to 60 percent south slopes	976	*
125G	Gamelake-Tincup complex, 60 to 90 percent south slopes	113	*
126A	Gauldy loam, 0 to 3 percent slopes	536	*
127A	Gauldy-Willanch complex, 0 to 3 percent slopes	1,144	0.1
128A	Gleneden silty clay loam, 0 to 3 percent slopes	1,340	0.1
129E	Grassyknob silt loam, 0 to 30 percent slopes	1,941	0.2
130F	Grassyknob silt loam, 30 to 60 percent south slopes	1,304	0.1
131G	Gravecreek-Eightlar-Pearsoll complex, 60 to 90 percent north slopes	527	*
132F	Gravecreek-Eightlar-Pearsoll complex, 30 to 60 percent south slopes	5,751	0.5
133G	Gravecreek-Pearsoll-Eightlar complex, 60 to 90 percent south slopes	1,071	0.1
134E	Greggo-Mislatnah-Rock outcrop complex, 0 to 30 percent slopes	4,852	0.5
135F	Greggo-Mislatnah-Rock outcrop complex, 30 to 60 percent south slopes	5,374	0.5
136G	Greggo-Rock outcrop-Mislatnah complex, 60 to 90 percent north slopes	666	*
137G	Greggo-Rock outcrop-Mislatnah complex, 60 to 90 percent south slopes	801	*
138B	Grindbrook-Wadecreek complex, 0 to 8 percent slopes	1,180	0.1
139G	Grouslous-Cassiday-Rock outcrop complex, 60 to 90 percent south slopes, stony	1,705	0.2
140F	Haplumbrepts-Rock outcrop-Cryaquepts complex, 0 to 75 percent north slopes	1,311	0.1
141G	Haplumbrepts-Rock outcrop-Rubble land complex, 60 to 100 percent north slopes	1,869	0.2
142E	Hazelcamp-Averlande-Rock outcrop complex, 0 to 30 percent slopes	906	*
143B	Hebo silty clay loam, 0 to 7 percent slopes	980	*
144A	Heceta fine sand, 0 to 3 percent slopes	136	*
145E	Honeygrove-Shivigny complex, 3 to 30 percent slopes	670	*
146F	Honeygrove-Shivigny complex, 30 to 60 percent north slopes	690	*
147E	Honeygrove-Shivigny complex, warm, 3 to 30 percent slopes	727	*
148D	Hooskanaden-Loneranch-Millicoma complex, 0 to 15 percent slopes	1,044	*
148E	Hooskanaden-Loneranch-Millicoma complex, 15 to 30 percent slopes	5,019	0.5
149E	Hooskanaden-Loneranch-Reinhart complex, 0 to 30 percent slopes	4,474	0.4
150F	Hooskanaden-Loneranch-Reinhart complex, 30 to 60 percent north slopes	908	*
151D	Horseprairie silt loam, 0 to 15 percent slopes	2,104	0.2
151E	Horseprairie silt loam, 15 to 30 percent slopes	578	*
152E	Houstenader-Carpenterville-Huntley complex, 0 to 30 percent slopes	1,867	0.2
153A	Huffling silty clay loam, 0 to 3 percent slopes	160	*
154G	Jayar-Althouse-Woodseye complex, 60 to 90 percent north slopes	1,108	0.1
155F	Jayar-Rock outcrop-Althouse complex, 30 to 60 percent south slopes	9,176	0.9
156G	Jayar-Skymor-Althouse complex, 60 to 90 percent south slopes	1,692	0.2
157E	Josephine-Pollard-Speaker complex, 2 to 30 percent slopes	674	*
158F	Kanid-Acker-Atring complex, 30 to 60 percent north slopes	8,406	0.8
159F	Kanid-Acker-Atring complex, 30 to 60 percent south slopes	5,956	0.6
160F	Kanid-Atring complex, 30 to 60 percent north slopes	5,548	0.5
160G	Kanid-Atring complex, 60 to 90 percent north slopes	8,480	0.8
161A	Kirkendall-Quosatana complex, 0 to 3 percent slopes	143	*
162A	Klooqueh silty clay loam, 0 to 3 percent slopes	544	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
162B	Klooqueh silty clay loam, 3 to 8 percent slopes	892	*
163F	Knapke-Fantz complex, 30 to 60 percent north slopes	145	*
164A	Langlois silty clay loam, 0 to 3 percent slopes	1,702	0.2
165D	Loeb-Macklyn complex, 0 to 15 percent slopes	469	*
165E	Loeb-Macklyn complex, 15 to 30 percent slopes	6,444	0.6
166E	Loeb-Macklyn-Vondergreen complex, 0 to 30 percent slopes	975	*
167A	Logsden silt loam, 0 to 3 percent slopes	1,032	*
168A	Logsden-Euchre complex, 0 to 3 percent slopes	680	*
169F	Loneranch-Hooskanaden-Millicoma complex, 30 to 60 percent slopes	1,891	0.2
170F	Loneranch-Hooskanaden-Reinhart complex, 30 to 60 percent south slopes	1,915	0.2
171B	McCurdy-Wintley complex, 0 to 7 percent slopes	135	*
172C	Meda gravelly loam, 3 to 15 percent slopes	807	*
173F	Milbury-Remote-Umpcoos complex, 30 to 60 percent north slopes	7,382	0.7
174F	Milbury-Remote-Umpcoos complex, warm, 30 to 60 percent north slopes	672	*
175F	Milbury-Umpcoos-Dystrochrepts complex, 30 to 60 percent north slopes	2,320	0.2
175G	Milbury-Umpcoos-Dystrochrepts complex, 60 to 90 percent north slopes	24,450	2.3
176F	Milbury-Umpcoos-Dystrochrepts complex, warm, 30 to 60 percent north slopes	591	*
176G	Milbury-Umpcoos-Dystrochrepts complex, warm, 60 to 90 percent north slopes	1,740	0.2
177G	Milbury-Umpcoos-Rock outcrop complex, 60 to 90 percent north slopes, stony	746	*
178F	Millicoma-Whaleshead-Reedsport complex, 30 to 60 percent south slopes	16,326	1.5
178G	Millicoma-Whaleshead-Reedsport complex, 60 to 90 percent south slopes	2,992	0.3
179G	Millicoma-Whaleshead-Reedsport complex, 60 to 90 percent north slopes	1,518	0.1
180F	Mislatnah-Greggo-Redflat complex, 30 to 60 percent south slopes	2,737	0.3
181F	Mislatnah-Greggo-Rock outcrop complex, 30 to 60 percent north slopes	203	*
182F	Mislatnah-Redflat-Greggo complex, 30 to 60 percent north slopes	2,940	0.3
183A	Nehalem silt loam, 0 to 3 percent slopes	804	*
184B	Nelscott-Depoe-Bullards complex, 0 to 8 percent slopes	4,584	0.4
185A	Nestucca silt loam, 0 to 3 percent slopes	1,101	0.1
186D	Orford-McDuff complex, 0 to 15 percent slopes	958	*
186E	Orford-McDuff complex, 15 to 30 percent slopes	2,212	0.2
187B	Orthents, 0 to 10 percent slopes	121	*
188G	Pearsoll-Gravecreek-Rock outcrop complex, 60 to 90 percent north slopes	2,624	0.2
189G	Pearsoll-Gravecreek-Rock outcrop complex, 60 to 90 percent south slopes	6,011	0.6
190F	Pearsoll-Rock outcrop-Gravecreek complex, 30 to 60 percent north slopes	1,771	0.2
191E	Pearsoll-Rock outcrop complex, 3 to 30 percent slopes	387	*
192F	Pearsoll-Rock outcrop complex, 30 to 60 percent south slopes	8,886	0.8
193E	Perdin-Rock outcrop complex, 5 to 30 percent slopes	7,026	0.7
194F	Perdin-Rock outcrop complex, 30 to 60 percent north slopes	7,395	0.7
194G	Perdin-Rock outcrop complex, 60 to 90 percent north slopes	4,425	0.4
195F	Perdin-Rock outcrop complex, 30 to 60 percent south slopes	8,075	0.8
195G	Perdin-Rock outcrop complex, 60 to 90 percent south slopes	4,711	0.4
196C	Pollard loam, 2 to 15 percent slopes	393	*
196D	Pollard loam, 15 to 30 percent slopes	198	*
197E	Pollard-Josephine-Shastacosta complex, 2 to 30 percent slopes	2,236	0.2
198E	Preacher-Blachly complex, warm, 0 to 30 percent slopes	256	*
199E	Preacher-Blachly-Digger complex, 0 to 30 percent slopes	5,149	0.5
200F	Preacher-Digger-Bohannon complex, 30 to 60 percent north slopes	6,212	0.6
201F	Preacher-Digger-Bohannon complex, warm, 30 to 60 percent north slopes	123	*
202D	Pyrady-Zalea-Yorel complex, 0 to 15 percent slopes	537	*
203B	Quillamook silt loam, 0 to 7 percent slopes	137	*
204E	Redflat-Mislatnah-Greggo complex, 0 to 30 percent slopes	5,577	0.5
205F	Reedsport-Whaleshead complex, 30 to 60 percent south slopes	267	*
206G	Reedsport-Whaleshead-Rock outcrop complex, 60 to 90 percent south slopes	305	*
207E	Remote-Digger-Rock outcrop complex, warm, 3 to 30 percent slopes	6,849	0.6
208F	Remote-Digger-Rock outcrop complex, warm, 30 to 60 percent north slopes	1,310	0.1
209F	Remote-Whobrey-Rock outcrop complex, 30 to 60 percent slopes	861	*
210G	Rilea-Euchrand-Rock outcrop complex, cool, 60 to 90 percent south slopes	183	*
211G	Rilea-Euchrand-Rock outcrop complex, 60 to 90 percent south slopes	2,118	0.2
212G	Rilea-Stackyards-Rock outcrop complex, cool, 60 to 90 percent north slopes	421	*
213G	Rilea-Stackyards-Rock outcrop complex, 60 to 90 percent north slopes	1,414	0.1
214	Riverwash	2,967	0.3

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
215G	Rock outcrop-Grouslous-Cassiday complex, 60 to 90 percent north slopes	1,624	0.2
216G	Rock outcrop-Grouslous-Cassiday complex, 60 to 90 percent south slopes	4,248	0.4
217	Rock outcrop-Orthents complex, 10 to 100 percent slopes	3,763	0.4
218E	Rogue cobbly coarse sandy loam, 12 to 30 percent slopes	187	*
219F	Rogue cobbly coarse sandy loam, 30 to 60 percent north slopes	264	*
220F	Rogue cobbly coarse sandy loam, 30 to 60 percent south slopes	560	*
221B	Ruch-Selmac complex, 2 to 7 percent slopes	290	*
221D	Ruch-Selmac complex, 7 to 20 percent slopes	117	*
222F	Rustybutte-Sebastian complex, 30 to 60 percent north slopes	621	*
223F	Rustybutte-Sebastian-Rock outcrop complex, 30 to 60 percent south slopes	2,312	0.2
224E	Saddlepeak-Threetrees complex, cool, 0 to 30 percent slopes	466	*
225D	Saddlepeak-Threetrees complex, 0 to 15 percent slopes	762	*
225E	Saddlepeak-Threetrees complex, 15 to 30 percent slopes	5,154	0.5
226E	Saddlepeak-Threetrees-Rock outcrop complex, 0 to 30 percent slopes	165	*
227F	Saddlepeak-Threetrees-Scalerock complex, cool, 30 to 60 percent north slopes	793	*
228F	Saddlepeak-Threetrees-Scalerock complex, 30 to 60 percent north slopes	1,336	0.1
229E	Sebastian-Rustybutte-Rock outcrop complex, 0 to 30 percent slopes	2,133	0.2
230E	Serpentano-Mislatnah complex, 3 to 30 percent slopes	582	*
231F	Serpentano-Mislatnah-Greggo complex, 30 to 60 percent north slopes	412	*
232F	Serpentano-Mislatnah-Greggo complex, 30 to 60 percent south slopes	1,085	0.1
233F	Shastacosta-Pollard-Beekman complex, 30 to 60 percent south slopes	3,466	0.3
234F	Shivigny-Honeygrove complex, warm, 30 to 60 percent south slopes	2,044	0.2
235F	Sitkum-Steinmetz complex, 30 to 60 percent north slopes	712	*
236F	Sitkum-Steinmetz complex, 30 to 60 percent south slopes	2,083	0.2
237E	Skookumhouse-Hazelcamp complex, cool, 0 to 30 percent slopes	2,697	0.3
238D	Skookumhouse-Hazelcamp-Averlande complex, 0 to 15 percent slopes	2,570	0.2
238E	Skookumhouse-Hazelcamp-Averlande complex, 15 to 30 percent slopes	36,965	3.5
239G	Skymor-Rock outcrop-Jayar complex, 60 to 90 percent south slopes	6,747	0.6
240E	Snowcamp-Cedarcamp-Flycatcher complex, 0 to 30 percent slopes	1,727	0.2
241E	Snowcamp-Cedarcamp-Rock outcrop complex, 0 to 30 percent slopes	3,210	0.3
242G	Snowcamp-Flycatcher-Rock outcrop complex, 60 to 90 percent south slopes	1,598	0.2
243F	Speaker-Josephine-Beekman complex, 30 to 60 percent south slopes	1,641	0.2
244G	Stackyards-Rilea-Euchrand complex, cool, 60 to 90 percent north slopes	1,871	0.2
245G	Stackyards-Rilea-Euchrand complex, 60 to 90 percent north slopes	1,107	0.1
246F	Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, cool, 30 to 60 percent north slopes	201	*
246G	Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, cool, 60 to 90 percent north slopes	430	*
247F	Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, 30 to 60 percent north slopes	242	*
247G	Stackyards-Rilea-Rock outcrop complex, conglomerate substratum, 60 to 90 percent north slopes	403	*
248F	Stackyards-Rilea-Rock outcrop complex, cool, 30 to 60 percent north slopes	184	*
249F	Stackyards-Rilea-Rock outcrop complex, 30 to 60 percent north slopes	2,022	0.2
250F	Stackyards-Rilea-Yorel complex, cool, 30 to 60 percent north slopes	2,773	0.3
251F	Stackyards-Rilea-Yorel complex, 30 to 60 percent north slopes	4,250	0.4
252G	Steinmetz-Sitkum complex, 60 to 90 percent north slopes	422	*
253G	Steinmetz-Sitkum complex, 60 to 90 percent south slopes	345	*
254D	Svensen-Reedsport complex, 0 to 15 percent slopes	2,075	0.2
254E	Svensen-Reedsport complex, 15 to 30 percent slopes	10,577	1.0
255E	Swedeheaven-Quailprairie-Sankey complex, 0 to 30 percent slopes	3,427	0.3
256F	Swedeheaven-Quailprairie-Sankey complex, 30 to 60 percent south slopes	1,372	0.1
257A	Takilma cobbly loam, 0 to 3 percent slopes	152	*
258E	Templeton silt loam, 0 to 30 percent slopes	145	*
259F	Templeton silt loam, 30 to 60 percent north slopes	268	*
260F	Threetrees-Saddlepeak-Scalerock complex, cool, 30 to 60 percent south slopes	519	*
261G	Threetrees-Saddlepeak-Scalerock complex, cool, 60 to 90 percent north slopes	200	*
262F	Threetrees-Saddlepeak-Scalerock complex, 30 to 60 percent south slopes	4,281	0.4
262G	Threetrees-Saddlepeak-Scalerock complex, 60 to 90 percent south slopes	768	*
263G	Threetrees-Saddlepeak-Scalerock complex, 60 to 90 percent north slopes	357	*
264F	Threetrees-Scalerock-Rock outcrop complex, 30 to 60 percent south slopes	342	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
265F	Tolfork-Tincup complex, 30 to 60 percent north slopes	1,274	0.1
265G	Tolfork-Tincup complex, 60 to 90 percent north slopes	586	*
266	Urban land	495	*
267F	Vermisa-Beekman-Colestine complex, 30 to 60 percent south slopes	1,829	0.2
268D	Waldport-Dune land complex, 12 to 30 percent slopes	284	*
269D	Waldport-Dune land-Heceta complex, 0 to 30 percent slopes	214	*
270E	Wedderburn-Zwagg complex, 0 to 30 percent slopes	1,339	0.1
271F	Wedderburn-Zwagg complex, 30 to 60 percent south slopes	1,654	0.2
271G	Wedderburn-Zwagg complex, 60 to 90 percent south slopes	199	*
272F	Whaleshead-Reedsport complex, 30 to 60 percent north slopes	372	*
272G	Whaleshead-Reedsport complex, 60 to 90 percent north slopes	179	*
273F	Whaleshead-Reedsport-Millicoma complex, 30 to 60 percent north slopes	11,484	1.1
274A	Winchuck silt loam, 0 to 3 percent slopes	261	*
274D	Winchuck silt loam, 3 to 15 percent slopes	823	*
274E	Winchuck silt loam, 15 to 30 percent slopes	113	*
275G	Woodseye-Rock outcrop-Brandypeak complex, 60 to 90 percent north slopes	5,843	0.6
276A	Yachats very fine sandy loam, 0 to 3 percent slopes	389	*
277A	Yaquina loamy fine sand, 0 to 3 percent slopes	108	*
278E	Zalea-Pyrady-Yorel complex, 15 to 30 percent slopes	6,444	0.6
279E	Zalea-Yorel-Rock outcrop complex, 0 to 30 percent slopes	869	*
W	Water	3,871	0.4
	Total	1,054,528	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture

(Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
1B------------------------ Abegg	IVs	---	---	---	---	2.0	---
1D------------------------ Abegg	IVs	---	---	---	---	2.0	---
2F:							
Acker---------------------	VIe	---	---	---	---	---	---
Norling-------------------	VIe	---	---	---	---	---	---
3E, 4F:							
Agness--------------------	VIe	---	---	---	---	---	---
Sixes---------------------	VIe	---	---	---	---	---	---
Goldbeach-----------------	VIIs	---	---	---	---	---	---
5F:							
Althouse------------------	VIe	---	---	---	---	---	---
Jayar---------------------	VIe	---	---	---	---	---	---
Skymor--------------------	VIIe	---	---	---	---	---	---
6F:							
Althouse------------------	VIe	---	---	---	---	---	---
Jayar---------------------	VIe	---	---	---	---	---	---
Woodseye------------------	VIIs	---	---	---	---	---	---
7D:							
Aquic Haplohumults--------	VIe	---	---	---	---	---	---
Cryaquepts----------------	VIIw	---	---	---	---	---	---
8E, 9F:							
Atring--------------------	VIe	---	---	---	---	---	---
Kanid---------------------	VIe	---	---	---	---	---	---
Vermisa-------------------	VIIe	---	---	---	---	---	---
9G:							
Atring--------------------	VIIe	---	---	---	---	---	---
Kanid---------------------	VIIe	---	---	---	---	---	---
Vermisa-------------------	VIIe	---	---	---	---	---	---
10F, 11F:							
Atring--------------------	VIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
10F, 11F:							
Rock outcrop	VIIIs	---	---	---	---	---	---
Kanid	VIe	---	---	---	---	---	---
12G:							
Atring	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Vermisa	VIIe	---	---	---	---	---	---
13G:							
Atring	VIIe	---	---	---	---	---	---
Vermisa	VIIe	---	---	---	---	---	---
14G:							
Atring	VIIe	---	---	---	---	---	---
Vermisa	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
15A:							
Bagness	IIw	IIw	---	3.0	6.0	8.0	15.0
Pistolriver	IIIw	IIIw	---	---	---	6.0	12.0
16E, 17E:							
Barkshanty	VIe	---	---	---	---	4.0	---
Nailkeg	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
18A Bayside	IIIw	---	---	---	---	6.0	---
19 Beaches	VIIIw	---	---	---	---	---	---
20E:							
Bearcamp	VIe	---	---	---	---	---	---
Brandypeak	VIe	---	---	---	---	---	---
21F:							
Bearcamp	VIe	---	---	---	---	---	---
Brandypeak	VIe	---	---	---	---	---	---
Woodseye	VIIs	---	---	---	---	---	---
22F:							
Beekman	VIe	---	---	---	---	---	---
Colestine	VIe	---	---	---	---	---	---
Orthents	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
23G:							
Beekman	VIIe	---	---	---	---	---	---
Orthents	VIIe	---	---	---	---	---	---
Colestine	VIIe	---	---	---	---	---	---
24G:							
Beekman	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Vermisa	VIIe	---	---	---	---	---	---
25G:							
Beekman	VIIe	---	---	---	---	---	---
Vermisa	VIIe	---	---	---	---	---	---
26A Bigriver	IIIw	IIIw	---	---	---	8.0	15.0
27F:							
Bobsgarden	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Euchrand	VIIe	---	---	---	---	---	---
27G:							
Bobsgarden	VIIe	---	---	---	---	---	---
Rilea	VIIe	---	---	---	---	---	---
Euchrand	VIIe	---	---	---	---	---	---
28F:							
Bobsgarden	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Euchrand	VIIe	---	---	---	---	---	---
28G:							
Bobsgarden	VIIe	---	---	---	---	---	---
Rilea	VIIe	---	---	---	---	---	---
Euchrand	VIIe	---	---	---	---	---	---
29F:							
Bobsgarden	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
29G:							
Bobsgarden	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
29G:							
Rilea---------------------	VIIe	---	---	---	---	---	---
Rock outcrop--------------	VIIIs	---	---	---	---	---	---
30F, 31F:							
Bobsgarden----------------	VIe	---	---	---	---	---	---
Rilea---------------------	VIe	---	---	---	---	---	---
Rock outcrop--------------	VIIIs	---	---	---	---	---	---
32E, 33E:							
Bobsgarden----------------	VIe	---	---	---	---	---	---
Rilea---------------------	VIe	---	---	---	---	---	---
Yorel---------------------	VIe	---	---	---	---	---	---
34E:							
Bobsgarden----------------	VIe	---	---	---	---	---	---
Rilea---------------------	VIe	---	---	---	---	---	---
35G:							
Brandypeak----------------	VIIe	---	---	---	---	---	---
Bearcamp------------------	VIIe	---	---	---	---	---	---
Woodseye------------------	VIIs	---	---	---	---	---	---
36F:							
Brandypeak----------------	VIe	---	---	---	---	---	---
Rock outcrop--------------	VIIIs	---	---	---	---	---	---
Bearcamp------------------	VIe	---	---	---	---	---	---
37A----------------------- Brenner	IIIw	---	---	---	---	4.0	---
38B:							
Bullards------------------	IIIe	IIIe	8.0	2.0	4.0	4.0	10.0
Bandon--------------------	IIIe	IIIe	8.0	---	---	3.0	10.0
Wadecreek-----------------	IIIe	IIIe	---	---	---	4.0	12.0
38D:							
Bullards------------------	IIIe	VIe	---	2.0	4.0	4.0	10.0
Bandon--------------------	IIIe	VIe	---	---	---	3.0	10.0
Wadecreek-----------------	IIIe	VIe	---	---	---	4.0	12.0
39D:							
Bullards------------------	IIIe	VIe	---	2.0	4.0	4.0	10.0
Ferrelo-------------------	IIIe	IVe	---	---	---	4.0	12.0

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
39D:							
Hebo----------------------	IVw	---	---	---	---	4.0	---
40E, 41F, 42F:							
Bullgulch-----------------	VIe	---	---	---	---	---	---
Hunterscove---------------	VIe	---	---	---	---	---	---
43D:							
Burnthill-----------------	IIIe	---	---	---	---	6.0	---
Cashner-------------------	IVw	---	---	---	---	3.0	---
44E----------------------- Burnthill	IVe	---	---	---	---	5.0	---
45F:							
Calfranch-----------------	VIe	---	---	---	---	---	---
Capeblanco----------------	VIe	---	---	---	---	---	---
Watches-------------------	VIe	---	---	---	---	---	---
46G:							
Calfranch-----------------	VIIe	---	---	---	---	---	---
Capeblanco----------------	VIIe	---	---	---	---	---	---
Watches-------------------	VIIe	---	---	---	---	---	---
47F:							
Calfranch-----------------	VIe	---	---	---	---	---	---
Watches-------------------	VIe	---	---	---	---	---	---
Capeblanco----------------	VIe	---	---	---	---	---	---
48G:							
Capeblanco----------------	VIIe	---	---	---	---	---	---
Calfranch-----------------	VIIe	---	---	---	---	---	---
Watches-------------------	VIIe	---	---	---	---	---	---
49F:							
Carpenterville------------	VIe	---	---	---	---	5.0	---
Houstenader--------------	VIe	---	---	---	---	5.0	---
Huntley-------------------	VIIe	---	---	---	---	3.0	---
50G, 51G:							
Cassiday------------------	VIIe	---	---	---	---	---	---
Grouslous-----------------	VIIs	---	---	---	---	---	---
Bravo---------------------	VIIe	---	---	---	---	---	---
52G:							
Cedarcamp-----------------	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
52G:							
Flycatcher	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
53F, 54F:							
Cedarcamp	VIe	---	---	---	---	---	---
Snowcamp	VIe	---	---	---	---	---	---
Flycatcher	VIIe	---	---	---	---	---	---
55F, 56F:							
Cedarcamp	VIs	---	---	---	---	---	---
Snowcamp	VIs	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
57A Central Point	IIw	---	---	---	---	3.0	---
58A Chetco	IVw	IVw	---	---	---	2.0	3.5
59A:							
Chismore	IIIw	---	---	---	---	6.0	---
Pyburn	IVw	---	---	---	---	3.0	---
59C:							
Chismore	IVe	---	---	---	---	6.0	---
Pyburn	IVw	---	---	---	---	3.0	---
60B Chitwood	IIIe	IIIe	---	2.5	5.0	6.0	---
61A Clawson	IIIw	---	---	---	---	4.0	---
62F:							
Colepoint	VIe	---	---	---	---	---	---
Bravo	VIe	---	---	---	---	---	---
Cassiday	VIe	---	---	---	---	---	---
63E, 64F:							
Colepoint	VIe	---	---	---	---	---	---
Nailkeg	VIe	---	---	---	---	---	---
65A Crofland	IIIw	IIIw	---	---	---	8.0	12.0
66D, 66E, 67F, 68F:							
Crutchfield	VIe	---	---	---	---	---	---
Colepoint	VIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
69D----------------------- Cunniff	IIIe	---	---	---	---	6.0	---
69E----------------------- Cunniff	IVe	---	---	---	---	5.0	---
70D:							
Cunniff------------------	IIIe	---	---	---	---	6.0	---
Joeney-------------------	IVw	---	---	---	---	1.0	---
71F, 72F, 73F:							
Deadline-----------------	VIe	---	---	---	---	---	---
Barkshanty---------------	VIe	---	---	---	---	---	---
Nailkeg------------------	VIe	---	---	---	---	---	---
74F:							
Deadline-----------------	VIe	---	---	---	---	---	---
Barkshanty---------------	VIe	---	---	---	---	---	---
Rock outcrop-------------	VIIIs	---	---	---	---	---	---
75E, 76E:							
Deadline-----------------	VIe	---	---	---	---	---	---
Irma---------------------	VIe	---	---	---	---	---	---
Nailkeg------------------	VIe	---	---	---	---	---	---
77G, 78G, 79G:							
Deadline-----------------	VIIe	---	---	---	---	---	---
Nailkeg------------------	VIIe	---	---	---	---	---	---
80F:							
Deadline-----------------	VIe	---	---	---	---	---	---
Rock outcrop-------------	VIIIs	---	---	---	---	---	---
Nailkeg------------------	VIe	---	---	---	---	---	---
81G, 82G:							
Deadline-----------------	VIIe	---	---	---	---	---	---
Rock outcrop-------------	VIIIs	---	---	---	---	---	---
Nailkeg------------------	VIIe	---	---	---	---	---	---
83E:							
Desons-------------------	VIe	---	---	---	---	---	---
Watches------------------	VIe	---	---	---	---	---	---
Calfranch----------------	VIe	---	---	---	---	---	---
84G:							
Digger-------------------	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
84G:							
Preacher	VIIe	---	---	---	---	---	---
Bohannon	VIIe	---	---	---	---	---	---
85F:							
Digger	VIe	---	---	---	---	---	---
Preacher	VIe	---	---	---	---	---	---
Bohannon	VIe	---	---	---	---	---	---
86G:							
Digger	VIIe	---	---	---	---	---	---
Preacher	VIIe	---	---	---	---	---	---
Bohannon	VIIe	---	---	---	---	---	---
87F:							
Digger	VIe	---	---	---	---	---	---
Remote	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
88F:							
Digger	VIe	---	---	---	---	---	---
Remote	VIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
89E, 90E:							
Digger	VIe	---	---	---	---	---	---
Remote	VIe	---	---	---	---	---	---
91F:							
Digger	VIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Dystrochrepts	VIe	---	---	---	---	---	---
91G:							
Digger	VIIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Dystrochrepts	VIIe	---	---	---	---	---	---
92G, 93G:							
Digger	VIIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
94F:							
Dubakella----------------	VIIe	---	---	---	---	---	---
Cornutt------------------	VIe	---	---	---	---	---	---
Pearsoll-----------------	VIIs	---	---	---	---	---	---
95G, 96G:							
Dulandy------------------	VIIe	---	---	---	---	---	---
Bosland------------------	VIIe	---	---	---	---	---	---
Floras-------------------	VIIe	---	---	---	---	---	---
97E:							
Dulandy------------------	VIe	---	---	---	---	---	---
Guerin-------------------	VIIe	---	---	---	---	---	---
Bosland------------------	VIe	---	---	---	---	---	---
98G:							
Dulandy------------------	VIIe	---	---	---	---	---	---
Guerin-------------------	VIIe	---	---	---	---	---	---
Rock outcrop-------------	VIIIs	---	---	---	---	---	---
99E:							
Dumont-------------------	VIe	---	---	---	---	---	---
Acker--------------------	VIe	---	---	---	---	---	---
Kanid--------------------	VIe	---	---	---	---	---	---
100G:							
Dystrochrepts------------	VIIe	---	---	---	---	---	---
Rock outcrop-------------	VIIIs	---	---	---	---	---	---
Rubble land--------------	VIIIs	---	---	---	---	---	---
101F:							
Dystrochrepts------------	VIe	---	---	---	---	---	---
Rubble land--------------	VIIIs	---	---	---	---	---	---
Rock outcrop-------------	VIIIs	---	---	---	---	---	---
102D, 102E, 103D, 103E:							
Edson--------------------	VIe	---	---	---	---	4.0	---
Barkshanty---------------	VIe	---	---	---	---	4.0	---
104E:							
Eightlar-----------------	VIe	---	---	---	---	---	---
Gravecreek---------------	VIe	---	---	---	---	---	---
Pearsoll-----------------	VIIs	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
105F:							
Eightlar	VIe	---	---	---	---	---	---
Gravecreek	VIe	---	---	---	---	---	---
Pearsoll	VIIs	---	---	---	---	---	---
106B:							
Eilertsen	IIe	---	---	3.0	---	8.0	---
Zyzzug	IIIw	---	---	3.0	---	3.0	---
107C Ekoms	IIIe	IIIe	---	---	---	6.0	12.0
108F, 109F:							
Etelka	VIe	---	---	---	---	4.0	---
Remote	VIe	---	---	---	---	2.0	---
Whobrey	VIe	---	---	---	---	2.0	---
110D, 110E:							
Etelka	VIe	---	---	---	---	4.0	---
Whobrey	VIe	---	---	---	---	3.0	---
Remote	VIe	---	---	---	---	2.0	---
111A Ettersburg	IIe	IIe	---	3.0	6.0	8.0	15.0
112A Evans	IIIw	---	---	---	---	5.0	---
113F:							
Fantz	VIe	---	---	---	---	---	---
Knapke	VIe	---	---	---	---	---	---
113G, 114G:							
Fantz	VIIe	---	---	---	---	---	---
Knapke	VIIe	---	---	---	---	---	---
115F:							
Ferrelo	VIe	---	---	---	---	---	---
Bullards	VIe	---	---	---	---	4.0	---
116D:							
Ferrelo	IIIe	---	---	---	---	4.0	---
Gearhart	IVe	---	---	---	---	3.0	---
116E:							
Ferrelo	IVe	---	---	---	---	4.0	---
Gearhart	IVe	---	---	---	---	3.0	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
117F, 118F:							
Floras	VIe	---	---	---	---	---	---
Bosland	VIe	---	---	---	---	---	---
Dulandy	VIe	---	---	---	---	---	---
119A:							
Foehlin	IVc	---	---	---	---	3.0	---
Cove	IVw	---	---	---	---	4.0	---
120E Frankport	VIIe	---	---	---	---	---	---
121E Frankport	VIIe	---	---	---	---	2.0	---
122F, 123F:							
Fritsland	VIe	---	---	---	---	---	---
Bravo	VIe	---	---	---	---	---	---
Cassiday	VIe	---	---	---	---	---	---
124E, 125F:							
Gamelake	VIe	---	---	---	---	---	---
Tincup	VIs	---	---	---	---	---	---
125G:							
Gamelake	VIIe	---	---	---	---	---	---
Tincup	VIIe	---	---	---	---	---	---
126A Gauldy	IVs	---	---	---	---	6.0	---
127A:							
Gauldy	IVs	---	---	---	---	6.0	---
Willanch	IIIw	---	---	---	---	4.0	---
128A Gleneden	IIIe	---	---	---	---	6.0	---
129E, 130F Grassyknob	VIe	---	---	---	---	6.0	---
131G:							
Gravecreek	VIIe	---	---	---	---	---	---
Eightlar	VIIe	---	---	---	---	---	---
Pearsoll	VIIs	---	---	---	---	---	---
132F:							
Gravecreek	VIe	---	---	---	---	---	---
Eightlar	VIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
132F:							
Pearsoll	VIIs	---	---	---	---	---	---
133G:							
Gravecreek	VIIe	---	---	---	---	---	---
Pearsoll	VIIs	---	---	---	---	---	---
Eightlar	VIIe	---	---	---	---	---	---
134E, 135F:							
Greggo	VIIe	---	---	---	---	---	---
Mislatnah	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
136G, 137G:							
Greggo	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Mislatnah	VIIe	---	---	---	---	---	---
138B:							
Grindbrook	IIe	IIe	---	---	---	4.0	12.0
Wadecreek	IIIe	IIIe	---	---	---	4.0	12.0
139G:							
Grouslous	VIIs	---	---	---	---	---	---
Cassiday	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
140F:							
Haplumbrepts	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Cryaquepts	VIIw	---	---	---	---	---	---
141G:							
Haplumbrepts	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Rubble land	VIIIs	---	---	---	---	---	---
142E:							
Hazelcamp	VIe	---	---	---	---	4.0	---
Averlande	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
143B Hebo	IVw	---	---	---	---	4.0	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
144A---------------------- Heceta	IVw	---	---	---	---	2.0	---
145E:							
Honeygrove----------------	VIe	---	---	---	---	---	---
Shivigny------------------	VIe	---	---	---	---	---	---
146F:							
Honeygrove----------------	VIe	---	---	---	---	---	---
Shivigny------------------	VIe	---	---	---	---	---	---
147E:							
Honeygrove----------------	VIe	---	---	---	---	---	---
Shivigny------------------	VIe	---	---	---	---	---	---
148D, 148E:							
Hooskanaden---------------	VIe	---	---	---	---	6.0	---
Loneranch-----------------	VIe	---	---	---	---	5.0	---
Millicoma-----------------	VIe	---	---	---	---	2.0	---
149E, 150F:							
Hooskanaden---------------	VIe	---	---	---	---	6.0	---
Loneranch-----------------	VIe	---	---	---	---	5.0	---
Reinhart------------------	VIIe	---	---	---	---	3.0	---
151D---------------------- Horseprairie	IIIe	IIIe	---	---	---	8.0	15.0
151E---------------------- Horseprairie	IVe	---	---	---	---	8.0	---
152E:							
Houstenader---------------	VIe	---	---	---	---	5.0	---
Carpenterville------------	VIe	---	---	---	---	5.0	---
Huntley-------------------	VIIe	---	---	---	---	3.0	---
153A---------------------- Huffling	IVw	---	---	---	---	4.0	---
154G:							
Jayar---------------------	VIIe	---	---	---	---	---	---
Althouse------------------	VIIe	---	---	---	---	---	---
Woodseye------------------	VIIs	---	---	---	---	---	---
155F:							
Jayar---------------------	VIe	---	---	---	---	---	---
Rock outcrop--------------	VIIIs	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
155F:							
Althouse	VIe	---	---	---	---	---	---
156G:							
Jayar	VIIe	---	---	---	---	---	---
Skymor	VIIe	---	---	---	---	---	---
Althouse	VIIe	---	---	---	---	---	---
157E:							
Josephine	VIe	---	---	---	---	---	---
Pollard	VIe	---	---	---	---	3.0	---
Speaker	VIe	---	---	---	---	---	---
158F, 159F:							
Kanid	VIe	---	---	---	---	---	---
Acker	VIe	---	---	---	---	---	---
Atring	VIe	---	---	---	---	---	---
160F:							
Kanid	VIe	---	---	---	---	---	---
Atring	VIe	---	---	---	---	---	---
160G:							
Kanid	VIIe	---	---	---	---	---	---
Atring	VIIe	---	---	---	---	---	---
161A:							
Kirkendall	IIw	---	---	5.0	---	15.0	---
Quosatana	IIIw	---	---	4.0	---	12.0	---
162A Klooqueh	IIc	IIe	---	---	---	8.0	15.0
162B Klooqueh	IIIe	IIIe	---	---	---	8.0	15.0
163F:							
Knapke	VIe	---	---	---	---	---	---
Fantz	VIe	---	---	---	---	---	---
164A Langlois	IVw	IVw	---	6.0	---	8.0	12.0
165D, 165E:							
Loeb	VIe	---	---	---	---	6.0	---
Macklyn	VIe	---	---	---	---	5.0	---
166E:							
Loeb	VIe	---	---	---	---	6.0	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
166E:							
Macklyn	VIe	---	---	---	---	5.0	---
Vondergreen	VIe	---	---	---	---	---	---
167A Logsden	IIc	IIc	---	3.0	4.0	8.0	14.0
168A:							
Logsden	IIc	IIc	---	3.0	4.0	8.0	14.0
Euchre	IIIw	IIIw	---	---	---	8.0	12.0
169F:							
Loneranch	VIe	---	---	---	---	5.0	---
Hooskanaden	VIe	---	---	---	---	6.0	---
Millicoma	VIe	---	---	---	---	---	---
170F:							
Loneranch	VIe	---	---	---	---	5.0	---
Hooskanaden	VIe	---	---	---	---	6.0	---
Reinhart	VIIe	---	---	---	---	3.0	---
171B:							
McCurdy	IIIe	IIIe	---	3.0	6.0	8.0	15.0
Wintley	IIIe	IIIe	---	6.0	---	8.0	15.0
172C Meda	IIIe	---	---	2.5	---	8.0	---
173F, 174F:							
Milbury	VIe	---	---	---	---	---	---
Remote	VIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
175F:							
Milbury	VIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Dystrochrepts	VIe	---	---	---	---	---	---
175G:							
Milbury	VIIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Dystrochrepts	VIIe	---	---	---	---	---	---
176F:							
Milbury	VIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
176F:							
Dystrochrepts	VIe	---	---	---	---	---	---
176G:							
Milbury	VIIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Dystrochrepts	VIIe	---	---	---	---	---	---
177G:							
Milbury	VIIe	---	---	---	---	---	---
Umpcoos	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
178F:							
Millicoma	VIe	---	---	---	---	---	---
Whaleshead	VIe	---	---	---	---	---	---
Reedsport	VIe	---	---	---	---	4.0	---
178G, 179G:							
Millicoma	VIIe	---	---	---	---	---	---
Whaleshead	VIIe	---	---	---	---	---	---
Reedsport	VIIe	---	---	---	---	---	---
180F:							
Mislatnah	VIe	---	---	---	---	---	---
Greggo	VIIe	---	---	---	---	---	---
Redflat	VIe	---	---	---	---	---	---
181F:							
Mislatnah	VIe	---	---	---	---	---	---
Greggo	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
182F:							
Mislatnah	VIe	---	---	---	---	---	---
Redflat	VIe	---	---	---	---	---	---
Greggo	VIIe	---	---	---	---	---	---
183A Nehalem	IIc	IIc	---	3.0	6.0	8.0	15.0
184B:							
Nelscott	IIIe	---	8.0	---	---	9.0	---
Depoe	VIw	---	8.0	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
184B:							
Bullards	IIIe	IIIe	8.0	2.0	4.0	4.0	10.0
185A Nestucca	IIIw	IIIw	---	3.0	6.0	8.0	15.0
186D:							
Orford	VIe	VIe	---	4.0	12.0	4.0	12.0
McDuff	VIe	---	---	---	---	3.0	---
186E:							
Orford	VIe	---	---	---	---	3.0	---
McDuff	VIe	---	---	---	---	3.0	---
187B Orthents	VIIe	---	---	---	---	---	---
188G, 189G:							
Pearsoll	VIIs	---	---	---	---	---	---
Gravecreek	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
190F:							
Pearsoll	VIIs	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Gravecreek	VIe	---	---	---	---	---	---
191E, 192F:							
Pearsoll	VIIs	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
193E, 194F, 194G, 195F, 195G:							
Perdin	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
196C Pollard	IVe	---	---	---	---	3.0	---
196D Pollard	VIe	---	---	---	---	3.0	---
197E:							
Pollard	VIe	---	---	---	---	3.0	---
Josephine	VIe	---	---	---	---	---	---
Shastacosta	VIe	---	---	---	---	---	---
198E:							
Preacher	VIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
198E:							
Blachly	VIe	---	---	---	---	---	---
199E:							
Preacher	VIe	---	---	---	---	---	---
Blachly	VIe	---	---	---	---	---	---
Digger	VIe	---	---	---	---	---	---
200F, 201F:							
Preacher	VIe	---	---	---	---	---	---
Digger	VIe	---	---	---	---	---	---
Bohannon	VIe	---	---	---	---	---	---
202D:							
Pyrady	VIe	---	---	---	---	---	---
Zalea	VIe	---	---	---	---	---	---
Yorel	VIe	---	---	---	---	---	---
203B Quillamook	IIe	IIe	---	3.0	4.0	14.0	16.0
204E:							
Redflat	VIe	---	---	---	---	---	---
Mislatnah	VIe	---	---	---	---	---	---
Greggo	VIIe	---	---	---	---	---	---
205F:							
Reedsport	VIe	---	---	---	---	4.0	---
Whaleshead	VIe	---	---	---	---	---	---
206G:							
Reedsport	VIIe	---	---	---	---	---	---
Whaleshead	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
207E, 208F:							
Remote	VIe	---	---	---	---	---	---
Digger	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
209F:							
Remote	VIe	---	---	---	---	2.0	---
Whobrey	VIe	---	---	---	---	2.0	---
Rock outcrop	VIIIs	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Cranberries	Grass-legume hay		Pasture	
	N	I	I	N	I	N	I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
210G, 211G:							
Rilea	VIIe	---	---	---	---	---	---
Euchrand	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
212G, 213G:							
Rilea	VIIe	---	---	---	---	---	---
Stackyards	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
214 Riverwash	VIIIw	---	---	---	---	---	---
215G, 216G:							
Rock outcrop	VIIIs	---	---	---	---	---	---
Grouslous	VIIs	---	---	---	---	---	---
Cassiday	VIIe	---	---	---	---	---	---
217:							
Rock outcrop	VIIIs	---	---	---	---	---	---
Orthents	VIIe	---	---	---	---	---	---
218E, 219F, 220F Rogue	VIe	---	---	---	---	---	---
221B, 221D:							
Ruch	IVe	---	---	---	---	3.0	---
Selmac	IVe	---	---	---	---	3.0	---
222F:							
Rustybutte	VIe	---	---	---	---	---	---
Sebastian	VIIe	---	---	---	---	2.0	---
223F:							
Rustybutte	VIe	---	---	---	---	---	---
Sebastian	VIIe	---	---	---	---	2.0	---
Rock outcrop	VIIIs	---	---	---	---	---	---
224E, 225D, 225E:							
Saddlepeak	VIe	---	---	---	---	---	---
Threetrees	VIe	---	---	---	---	---	---
226E:							
Saddlepeak	VIe	---	---	---	---	---	---
Threetrees	VIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
226E:							
Rock outcrop	VIIIs	---	---	---	---	---	---
227F, 228F:							
Saddlepeak	VIe	---	---	---	---	---	---
Threetrees	VIe	---	---	---	---	---	---
Scalerock	VIIe	---	---	---	---	---	---
229E:							
Sebastian	VIIe	---	---	---	---	2.0	---
Rustybutte	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
230E:							
Serpentano	VIe	---	---	---	---	---	---
Mislatnah	VIe	---	---	---	---	---	---
231F, 232F:							
Serpentano	VIIe	---	---	---	---	---	---
Mislatnah	VIe	---	---	---	---	---	---
Greggo	VIIe	---	---	---	---	---	---
233F:							
Shastacosta	VIe	---	---	---	---	---	---
Pollard	VIe	---	---	---	---	3.0	---
Beekman	VIe	---	---	---	---	---	---
234F:							
Shivigny	VIe	---	---	---	---	---	---
Honeygrove	VIe	---	---	---	---	---	---
235F, 236F:							
Sitkum	VIe	---	---	---	---	---	---
Steinmetz	VIe	---	---	---	---	---	---
237E:							
Skookumhouse	VIe	---	---	---	---	4.0	---
Hazelcamp	VIe	---	---	---	---	4.0	---
238D, 238E:							
Skookumhouse	VIe	---	---	---	---	4.0	---
Hazelcamp	VIe	---	---	---	---	4.0	---
Averlande	VIIe	---	---	---	---	---	---
239G:							
Skymor	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
239G:							
Rock outcrop	VIIIs	---	---	---	---	---	---
Jayar	VIIe	---	---	---	---	---	---
240E:							
Snowcamp	VIe	---	---	---	---	---	---
Cedarcamp	VIe	---	---	---	---	---	---
Flycatcher	VIIe	---	---	---	---	---	---
241E:							
Snowcamp	VIs	---	---	---	---	---	---
Cedarcamp	VIs	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
242G:							
Snowcamp	VIIe	---	---	---	---	---	---
Flycatcher	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
243F:							
Speaker	VIe	---	---	---	---	---	---
Josephine	VIe	---	---	---	---	---	---
Beekman	VIe	---	---	---	---	---	---
244G, 245G:							
Stackyards	VIIe	---	---	---	---	---	---
Rilea	VIIe	---	---	---	---	---	---
Euchrand	VIIe	---	---	---	---	---	---
246F:							
Stackyards	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
246G:							
Stackyards	VIIe	---	---	---	---	---	---
Rilea	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
247F:							
Stackyards	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
247G:							
Stackyards	VIIe	---	---	---	---	---	---
Rilea	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
248F, 249F:							
Stackyards	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
250F, 251F:							
Stackyards	VIe	---	---	---	---	---	---
Rilea	VIe	---	---	---	---	---	---
Yorel	VIe	---	---	---	---	---	---
252G, 253G:							
Steinmetz	VIIe	---	---	---	---	---	---
Sitkum	VIIe	---	---	---	---	---	---
254D, 254E:							
Svensen	VIe	---	---	---	---	---	---
Reedsport	VIe	---	---	---	---	4.0	---
255E, 256F:							
Swedeheaven	VIe	---	---	---	---	---	---
Quailprairie	VIe	---	---	---	---	---	---
Sankey	VIIe	---	---	---	---	---	---
257A Takilma	IVs	---	---	---	---	---	---
258E, 259F Templeton	VIe	---	---	---	---	5.0	---
260F:							
Threetrees	VIe	---	---	---	---	---	---
Saddlepeak	VIe	---	---	---	---	---	---
Scalerock	VIIe	---	---	---	---	---	---
261G:							
Threetrees	VIIe	---	---	---	---	---	---
Saddlepeak	VIIe	---	---	---	---	---	---
Scalerock	VIIe	---	---	---	---	---	---
262F:							
Threetrees	VIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
262F:							
Saddlepeak	VIe	---	---	---	---	---	---
Scalerock	VIIe	---	---	---	---	---	---
262G, 263G:							
Threetrees	VIIe	---	---	---	---	---	---
Saddlepeak	VIIe	---	---	---	---	---	---
Scalerock	VIIe	---	---	---	---	---	---
264F:							
Threetrees	VIe	---	---	---	---	---	---
Scalerock	VIIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
265F:							
Tolfork	VIs	---	---	---	---	---	---
Tincup	VIs	---	---	---	---	---	---
265G:							
Tolfork	VIIe	---	---	---	---	---	---
Tincup	VIIe	---	---	---	---	---	---
266 Urban land	VIIIs	---	---	---	---	---	---
267F:							
Vermisa	VIIe	---	---	---	---	---	---
Beekman	VIe	---	---	---	---	---	---
Colestine	VIe	---	---	---	---	---	---
268D:							
Waldport	VIIe	---	---	---	---	2.0	---
Dune land	VIIIe	---	---	---	---	---	---
269D:							
Waldport	VIIe	---	---	---	---	2.0	---
Dune land	VIIIe	---	---	---	---	---	---
Heceta	IVw	---	---	---	---	2.0	---
270E, 271F:							
Wedderburn	VIe	---	---	---	---	5.0	---
Zwagg	VIe	---	---	---	---	4.0	---
271G:							
Wedderburn	VIIe	---	---	---	---	---	---

See footnote at end of table.

Table 5.--Land Capability Classes and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability N	Land capability I	Cranberries I	Grass-legume hay N	Grass-legume hay I	Pasture N	Pasture I
			Tons	*Tons*	*Tons*	*AUM**	*AUM**
271G:							
Zwagg	VIIe	---	---	---	---	---	---
272F:							
Whaleshead	VIe	---	---	---	---	---	---
Reedsport	VIe	---	---	---	---	4.0	---
272G:							
Whaleshead	VIIe	---	---	---	---	---	---
Reedsport	VIIe	---	---	---	---	---	---
273F:							
Whaleshead	VIe	---	---	---	---	---	---
Reedsport	VIe	---	---	---	---	4.0	---
Millicoma	VIe	---	---	---	---	---	---
274A Winchuck	IIe	IIe	---	---	---	6.0	9.0
274D Winchuck	IIIe	IIIe	---	---	---	6.0	9.0
274E Winchuck	IVe	---	---	---	---	3.0	---
275G:							
Woodseye	VIIs	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---
Brandypeak	VIIe	---	---	---	---	---	---
276A Yachats	IIIw	IIIw	---	---	---	8.0	15.0
277A Yaquina	IVw	---	---	---	---	3.0	---
278E:							
Zalea	VIe	---	---	---	---	---	---
Pyrady	VIe	---	---	---	---	---	---
Yorel	VIe	---	---	---	---	---	---
279E:							
Zalea	VIe	---	---	---	---	---	---
Yorel	VIe	---	---	---	---	---	---
Rock outcrop	VIIIs	---	---	---	---	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 6.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
1B	Abegg gravelly loam, 2 to 7 percent slopes (if irrigated)
57A	Central Point sandy loam, 0 to 3 percent slopes
61A	Clawson sandy loam, 0 to 3 percent slopes (if drained)
112A	Evans silt loam, 0 to 3 percent slopes
221B	Ruch-Selmac complex, 2 to 7 percent slopes

Table 7.--Forestland Management

(Data were collected only for the soils that currently support forestland)

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
1B-------------------- Abegg	Slight	Slight	Moderate	Severe	Slight	Moderate	Slight	Moderate	Slight
1D-------------------- Abegg	Slight	Slight	Severe	Severe	Slight	Moderate	Slight	Moderate	Slight
2F:									
Acker----------------	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Norling--------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Moderate
5F:									
Althouse-------------	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Severe	Severe
Jayar----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Skymor.									
6F:									
Althouse-------------	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Moderate	Moderate
Jayar----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Woodseye-------------	Severe	Moderate	Severe	Moderate	Slight	Severe	Severe	Moderate	Moderate
8E:									
Atring---------------	Slight	Slight	Moderate	Moderate	Slight	Moderate	Moderate	Moderate	Slight
Kanid----------------	Slight	Slight	Moderate	Moderate	Slight	Moderate	Slight	Moderate	Slight
Vermisa--------------	Moderate	Slight	Moderate	Moderate	Slight	Severe	Severe	Moderate	Moderate
9F:									
Atring---------------	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Moderate	Moderate	Moderate
Kanid----------------	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Slight	Moderate	Severe
Vermisa--------------	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Moderate	Severe
9G:									
Atring---------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate	Moderate
Kanid----------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Slight	Moderate	Severe
Vermisa--------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Moderate	Severe
10F:									
Atring---------------	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Rock outcrop.									
Kanid----------------	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Moderate	Moderate
11F:									
Atring---------------	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Moderate	Moderate	Moderate
Rock outcrop.									

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
11F:									
Kanid	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Slight	Moderate	Severe
12G:									
Atring	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate	Moderate
Rock outcrop.									
Vermisa	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Moderate	Severe
13G:									
Atring	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Vermisa	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Moderate	Moderate
14G:									
Atring	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Vermisa	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Moderate	Moderate
Rock outcrop.									
16E, 17E:									
Barkshanty	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Nailkeg	Moderate	Slight	Severe	Severe	Slight	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
20E:									
Bearcamp	Slight	Slight	Moderate	Moderate	Slight	Moderate	Slight	Moderate	Slight
Brandypeak	Moderate	Slight	Moderate	Moderate	Slight	Moderate	Moderate	Moderate	Slight
21F:									
Bearcamp	Moderate	Moderate	Severe	Moderate	Slight	Moderate	Slight	Moderate	Slight
Brandypeak	Severe	Moderate	Severe	Moderate	Slight	Moderate	Moderate	Moderate	Slight
Woodseye	Severe	Moderate	Severe	Moderate	Slight	Severe	Severe	Moderate	Slight
22F:									
Beekman	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Colestine	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Orthents.									
23G:									
Beekman	Severe	Severe	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Orthents.									
Colestine	Severe	Severe	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
24G:									
Beekman	Severe	Severe	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Rock outcrop.									

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
24G:									
Vermisa--------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Moderate	Severe
25G:									
Beekman--------------	Severe	Severe	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Vermisa--------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Moderate	Severe
27F:									
Bobsgarden-----------	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Rilea----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Moderate
Euchrand-------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
27G:									
Bobsgarden-----------	Severe	Severe	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Rilea----------------	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Euchrand-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
28F:									
Bobsgarden-----------	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Rilea----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Moderate
Euchrand-------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
28G:									
Bobsgarden-----------	Severe	Severe	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Rilea----------------	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Euchrand-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
29F:									
Bobsgarden-----------	Moderate	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Severe
Rilea----------------	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
29G:									
Bobsgarden-----------	Severe	Severe	Severe	Severe	Severe	Severe	Moderate	Severe	Severe
Rilea----------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
30F, 31F:									
Bobsgarden-----------	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Rilea----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Moderate
Rock outcrop.									
32E, 33E:									
Bobsgarden-----------	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equip- ment limitat- ion	Soil compac- tion	Soil dis- place- ment	Seedling mortal- ity	Wind- throw	Plant compet- ition	Fire damage
32E, 33E:									
Rilea	Moderate	Slight	Moderate	Moderate	Slight	Slight	Moderate	Moderate	Slight
Yorel	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
34E:									
Bobsgarden	Slight	Slight	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate
Rilea	Moderate	Slight	Moderate	Moderate	Slight	Moderate	Severe	Moderate	Moderate
35G:									
Brandypeak	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Moderate	Slight
Bearcamp	Severe	Severe	Severe	Moderate	Slight	Moderate	Slight	Moderate	Slight
Woodseye	Severe	Severe	Severe	Moderate	Slight	Severe	Severe	Moderate	Slight
36F:									
Brandypeak	Severe	Moderate	Severe	Moderate	Slight	Moderate	Moderate	Moderate	Slight
Rock outcrop.									
Bearcamp	Moderate	Moderate	Severe	Moderate	Slight	Moderate	Slight	Moderate	Slight
38B, 38D:									
Bullards	Slight	Moderate	Slight	Moderate	Moderate	Moderate	Moderate	Severe	Slight
Bandon	Slight	Moderate	Slight	Moderate	Moderate	Slight	Severe	Severe	Slight
Wadecreek	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Severe	Slight
39D:									
Bullards	Slight	Moderate	Slight	Moderate	Moderate	Moderate	Moderate	Severe	Slight
Ferrelo	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
Hebo	Slight	Slight	Severe	Severe	Moderate	Severe	Severe	Severe	Slight
40E:									
Bullgulch	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
Hunterscove	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
41F:									
Bullgulch	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
Hunterscove	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
42F:									
Bullgulch	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
Hunterscove	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Moderate
43D:									
Burnthill	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
Cashner	Slight	Moderate	Severe	Severe	Moderate	Severe	Moderate	Severe	Slight
44E Burnthill	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
45F:									
Calfranch	Moderate	Moderate	Severe	Severe	Slight	Severe	Moderate	Severe	Moderate
Capeblanco	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate
Watches	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
46G:									
Calfranch	Severe	Severe	Severe	Severe	Slight	Moderate	Moderate	Severe	Slight
Capeblanco	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Slight
Watches	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
47F:									
Calfranch	Moderate	Moderate	Severe	Severe	Slight	Moderate	Moderate	Severe	Slight
Watches	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
Capeblanco	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe	Severe	Slight
48G:									
Capeblanco	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate
Calfranch	Severe	Severe	Severe	Severe	Slight	Severe	Moderate	Severe	Moderate
Watches	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
50G:									
Cassiday	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Grouslous	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
Bravo	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
51G:									
Cassiday	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Grouslous	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Bravo	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
52G:									
Cedarcamp	Severe	Severe	Severe	Severe	Moderate	Severe	Slight	Severe	Moderate
Flycatcher	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate
Rock outcrop.									
53F:									
Cedarcamp	Moderate	Moderate	Severe	Severe	Moderate	Severe	Slight	Severe	Moderate
Snowcamp	Severe	Moderate	Severe	Severe	Moderate	Severe	Moderate	Severe	Moderate
Flycatcher	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate
54F:									
Cedarcamp	Moderate	Moderate	Severe	Severe	Moderate	Severe	Slight	Severe	Severe
Snowcamp	Severe	Moderate	Severe	Severe	Moderate	Severe	Moderate	Severe	Severe

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
54F:									
Flycatcher	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
55F:									
Cedarcamp	Moderate	Moderate	Severe	Severe	Moderate	Severe	Slight	Severe	Moderate
Snowcamp	Severe	Moderate	Severe	Severe	Moderate	Severe	Moderate	Severe	Moderate
Rock outcrop.									
56F:									
Cedarcamp	Moderate	Moderate	Severe	Severe	Moderate	Severe	Slight	Severe	Severe
Snowcamp	Severe	Moderate	Severe	Severe	Moderate	Severe	Moderate	Severe	Severe
Rock outcrop.									
59A, 59C:									
Chismore	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
Pyburn.									
60B Chitwood	Slight	Slight	Severe	Severe	Slight	Moderate	Severe	Severe	Slight
62F:									
Colepoint	Severe	Moderate	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Bravo	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Cassiday	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
63E:									
Colepoint	Moderate	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Nailkeg	Moderate	Slight	Severe	Severe	Slight	Moderate	Severe	Moderate	Moderate
64F:									
Colepoint	Severe	Moderate	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Nailkeg	Severe	Moderate	Severe	Severe	Moderate	Slight	Severe	Moderate	Slight
66D:									
Crutchfield	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Moderate	Slight
Colepoint	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
66E:									
Crutchfield	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Moderate	Slight
Colepoint	Moderate	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
67F:									
Crutchfield	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Colepoint	Severe	Moderate	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
68F:									
Crutchfield	Severe	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
68F:									
Colepoint------------	Severe	Moderate	Severe	Severe	Moderate	Moderate	Slight	Severe	Moderate
69D------------------- Cunniff	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
69E------------------- Cunniff	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
70D:									
Cunniff--------------	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
Joeney---------------	Slight	Slight	Severe	Severe	Moderate	Severe	Severe	Severe	Slight
71F, 72F:									
Deadline-------------	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Barkshanty-----------	Moderate	Moderate	Severe	Severe	Severe	Slight	Slight	Moderate	Slight
Nailkeg--------------	Severe	Moderate	Severe	Severe	Moderate	Slight	Severe	Moderate	Slight
73F:									
Deadline-------------	Severe	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Barkshanty-----------	Moderate	Moderate	Severe	Severe	Severe	Slight	Slight	Severe	Moderate
Nailkeg--------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate
74F:									
Deadline-------------	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Barkshanty-----------	Moderate	Moderate	Severe	Severe	Severe	Slight	Slight	Moderate	Slight
Rock outcrop.									
75E, 76E:									
Deadline-------------	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Moderate	Moderate
Irma-----------------	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Nailkeg--------------	Moderate	Slight	Severe	Severe	Slight	Moderate	Severe	Moderate	Moderate
77G, 78G:									
Deadline-------------	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Nailkeg--------------	Severe	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate	Slight
79G:									
Deadline-------------	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Nailkeg--------------	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
80F:									
Deadline-------------	Severe	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Rock outcrop.									
Nailkeg--------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
81G:									
Deadline	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Rock outcrop.									
Nailkeg	Severe	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate	Slight
82G:									
Deadline	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Rock outcrop.									
Nailkeg	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
83E:									
Desons	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
Watches	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
Calfranch	Slight	Slight	Severe	Severe	Slight	Moderate	Moderate	Severe	Slight
84G:									
Digger	Severe	Severe	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight
Preacher	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Bohannon	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
85F:									
Digger	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Severe	Severe
Preacher	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
Bohannon	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Moderate
86G:									
Digger	Severe	Severe	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight
Preacher	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Bohannon	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
87F:									
Digger	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Severe	Severe
Remote	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Rock outcrop.									
88F:									
Digger	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Severe	Severe
Remote	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Severe	Severe
Umpcoos	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
89E, 90E:									
Digger	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Remote	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
91F:									
Digger	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Severe	Severe
Umpcoos	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Dystrochrepts.									
91G:									
Digger	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Severe	Severe
Umpcoos	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Dystrochrepts.									
92G:									
Digger	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Severe	Severe
Umpcoos	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
93G:									
Digger	Severe	Severe	Severe	Severe	Severe	Slight	Moderate	Severe	Severe
Umpcoos	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
94F:									
Dubakella	Severe	Severe	Severe	Severe	Slight	Severe	Moderate	Moderate	Moderate
Cornutt	Severe	Moderate	Severe	Severe	Severe	Severe	Slight	Severe	Moderate
Pearsoll	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
95G:									
Dulandy	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Bosland	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Floras	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
96G:									
Dulandy	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Bosland	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Slight
Floras	Severe	Severe	Severe	Severe	Moderate	Moderate	Slight	Severe	Moderate
97E:									
Dulandy	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
Guerin	Moderate	Slight	Moderate	Moderate	Slight	Moderate	Severe	Severe	Slight
Bosland	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
98G:									
Dulandy	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Guerin	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equip-ment limitat-ion	Soil compac-tion	Soil dis-place-ment	Seedling mortal-ity	Wind-throw	Plant compet-ition	Fire damage
98G:									
Rock outcrop.									
99E:									
Dumont	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Acker	Slight	Slight	Severe	Severe	Moderate	Moderate	Slight	Moderate	Slight
Kanid	Slight	Slight	Moderate	Moderate	Slight	Moderate	Slight	Moderate	Slight
102D:									
Edson	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
Barkshanty	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Moderate	Slight
102E:									
Edson	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Barkshanty	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
103D:									
Edson	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
Barkshanty	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Moderate	Slight
103E:									
Edson	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Barkshanty	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
104E:									
Eightlar	Slight	Slight	Severe	Severe	Slight	Severe	Slight	Severe	Moderate
Gravecreek	Slight	Slight	Moderate	Moderate	Slight	Severe	Moderate	Severe	Moderate
Pearsoll	Moderate	Slight	Moderate	Moderate	Slight	Severe	Severe	Severe	Moderate
105F:									
Eightlar	Moderate	Moderate	Severe	Severe	Moderate	Severe	Slight	Severe	Moderate
Gravecreek	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Moderate	Severe	Moderate
Pearsoll	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Moderate
106B:									
Eilertsen	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
Zyzzug.									
107C: Ekoms	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Severe	Slight
108F:									
Etelka	Moderate	Moderate	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight
Remote	Moderate	Moderate	Severe	Severe	Severe	Slight	Slight	Moderate	Slight
Whobrey	Moderate	Moderate	Severe	Severe	Severe	Moderate	Moderate	Severe	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns: Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
109F:									
Etelka	Moderate	Moderate	Severe	Severe	Severe	Slight	Moderate	Severe	Slight
Remote	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Whobrey	Moderate	Moderate	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate
110D, 110E:									
Etelka	Slight	Slight	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Whobrey	Slight	Slight	Severe	Severe	Moderate	Moderate	Moderate	Severe	Slight
Remote	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
111A Ettersburg	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
113F:									
Fantz	Severe	Moderate	Severe	Moderate	Slight	Severe	Moderate	Severe	Moderate
Knapke	Moderate	Moderate	Severe	Slight	Slight	Severe	Slight	Severe	Moderate
113G:									
Fantz	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate	Severe	Severe
Knapke	Severe	Severe	Severe	Slight	Slight	Severe	Slight	Severe	Severe
114G:									
Fantz	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate	Moderate	Slight
Knapke	Severe	Severe	Severe	Slight	Slight	Severe	Slight	Moderate	Slight
115F:									
Ferrelo	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Bullards	Moderate	Moderate	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Slight
116D:									
Ferrelo	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
Gearhart	Moderate	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Severe	Moderate
116E:									
Ferrelo	Slight	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
Gearhart	Moderate	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
117F:									
Floras	Severe	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
Bosland	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Dulandy	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
118F:									
Floras	Severe	Moderate	Severe	Severe	Moderate	Moderate	Slight	Severe	Moderate
Bosland	Severe	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Slight
Dulandy	Severe	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
	Management concerns								
122F:									
Fritsland------------	Severe	Moderate	Severe	Severe	Severe	Slight	Slight	Moderate	Slight
Bravo----------------	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Cassiday-------------	Severe	Moderate	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight
123F:									
Fritsland------------	Severe	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Bravo----------------	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Cassiday-------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Moderate
124E:									
Gamelake-------------	Slight	Slight	Moderate	Moderate	Slight	Slight	Slight	Moderate	Slight
Tincup---------------	Moderate	Slight	Moderate	Moderate	Slight	Moderate	Moderate	Moderate	Moderate
125F:									
Gamelake-------------	Moderate	Moderate	Severe	Moderate	Slight	Slight	Slight	Moderate	Slight
Tincup---------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Severe
125G:									
Gamelake-------------	Severe	Severe	Severe	Moderate	Slight	Slight	Slight	Moderate	Slight
Tincup---------------	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Severe
131G:									
Gravecreek-----------	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Severe	Moderate
Eightlar-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Slight	Severe	Moderate
Pearsoll-------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Moderate
132F:									
Gravecreek-----------	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Moderate	Severe	Severe
Eightlar-------------	Moderate	Moderate	Severe	Severe	Moderate	Severe	Slight	Severe	Severe
Pearsoll-------------	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
133G:									
Gravecreek-----------	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Severe	Severe
Pearsoll-------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Eightlar-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Slight	Severe	Severe
134E:									
Greggo---------------	Moderate	Slight	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Mislatnah------------	Moderate	Slight	Severe	Severe	Moderate	Severe	Moderate	Severe	Moderate
Rock outcrop.									
135F:									
Greggo---------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
135F:									
Mislatnah	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Severe
Rock outcrop.									
136G, 137G:									
Greggo	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
Mislatnah	Severe	Severe	Severe	Severe	Severe	Severe	Moderate	Severe	Severe
138B:									
Grindbrook	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
Wadecreek	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Severe	Slight
139G:									
Grouslous	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Cassiday	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Rock outcrop.									
142E:									
Hazelcamp	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Moderate	Slight
Averlande	Moderate	Slight	Severe	Severe	Slight	Severe	Severe	Moderate	Moderate
Rock outcrop.									
143B Hebo	Slight	Slight	Severe	Severe	Moderate	Severe	Severe	Severe	Slight
145E:									
Honeygrove	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Shivigny	Slight	Slight	Moderate	Moderate	Slight	Slight	Slight	Moderate	Slight
146F:									
Honeygrove	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Shivigny	Moderate	Moderate	Severe	Moderate	Slight	Slight	Slight	Moderate	Slight
147E:									
Honeygrove	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Shivigny	Slight	Slight	Moderate	Moderate	Slight	Slight	Slight	Moderate	Slight
148D:									
Hooskanaden.									
Loneranch.									
Millicoma	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
148E:									
Hooskanaden.									
Loneranch.									

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equip- ment limitat- ion	Soil compac- tion	Soil dis- place- ment	Seedling mortal- ity	Wind- throw	Plant compet- ition	Fire damage
148E:									
Millicoma	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
151D Horseprairie	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
151E Horseprairie	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
154G:									
Jayar	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Althouse	Severe	Severe	Severe	Moderate	Moderate	Moderate	Slight	Moderate	Moderate
Woodseye	Severe	Severe	Severe	Moderate	Slight	Severe	Severe	Moderate	Slight
155F:									
Jayar	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Rock outcrop.									
Althouse	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Severe	Severe
156G:									
Jayar	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Skymor.									
Althouse	Severe	Severe	Severe	Moderate	Moderate	Moderate	Slight	Severe	Severe
157E:									
Josephine	Slight	Slight	Severe	Severe	Moderate	Moderate	Slight	Moderate	Slight
Pollard	Slight	Slight	Severe	Severe	Slight	Moderate	Slight	Moderate	Slight
Speaker	Moderate	Slight	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Slight
158F:									
Kanid	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Moderate	Moderate
Acker	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Moderate	Slight
Atring	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
159F:									
Kanid	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Slight	Moderate	Severe
Acker	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Atring	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Moderate	Moderate	Moderate
160F:									
Kanid	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Slight	Moderate	Moderate
Atring	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
160G:									
Kanid	Severe	Severe	Severe	Moderate	Moderate	Moderate	Slight	Moderate	Moderate
Atring	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
161A:									
Kirkendall	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Severe	Slight
Quosatana.									
163F:									
Knapke	Moderate	Moderate	Severe	Slight	Slight	Severe	Slight	Moderate	Slight
Fantz	Severe	Moderate	Severe	Moderate	Slight	Severe	Moderate	Moderate	Slight
165D:									
Loeb	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
Macklyn	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
165E:									
Loeb	Moderate	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
Macklyn	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
166E:									
Loeb	Moderate	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
Macklyn	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
Vondergreen	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
169F:									
Loneranch.									
Hooskanaden.									
Millicoma	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Moderate
171B:									
McCurdy	Slight	Slight	Moderate	Severe	Moderate	Slight	Moderate	Moderate	Slight
Wintley	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Moderate	Slight
172C Meda	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
173F, 174F:									
Milbury	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Remote	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Slight	Moderate	Moderate
Umpcoos	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
175F:									
Milbury	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Umpcoos	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Dystrochrepts.									
175G:									
Milbury	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Umpcoos	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
175G:									
Dystrochrepts.									
176F:									
Milbury	Moderate	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Umpcoos	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Dystrochrepts.									
176G:									
Milbury	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Umpcoos	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Dystrochrepts.									
177G:									
Milbury	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Moderate
Umpcoos	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
178F:									
Millicoma	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Moderate
Whaleshead	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Slight	Severe	Severe
Reedsport	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Slight
178G:									
Millicoma	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Moderate
Whaleshead	Severe	Severe	Severe	Severe	Moderate	Moderate	Slight	Severe	Severe
Reedsport	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
179G:									
Millicoma	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Whaleshead	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Severe	Moderate
Reedsport	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
180F:									
Mislatnah	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Severe
Greggo	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Redflat	Moderate	Moderate	Severe	Severe	Severe	Severe	Slight	Severe	Severe
181F:									
Mislatnah	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Greggo	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns: Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
182F:									
Mislatnah------------	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Redflat--------------	Moderate	Moderate	Severe	Severe	Severe	Severe	Slight	Severe	Moderate
Greggo---------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
184B:									
Nelscott-------------	Slight	Moderate	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
Depoe----------------	Slight	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Slight
Bullards-------------	Slight	Moderate	Slight	Moderate	Moderate	Moderate	Moderate	Severe	Slight
186D:									
Orford---------------	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
McDuff---------------	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Moderate	Slight
186E:									
Orford---------------	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
McDuff---------------	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Moderate	Slight
188G:									
Pearsoll-------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Moderate
Gravecreek-----------	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Severe	Moderate
Rock outcrop.									
189G:									
Pearsoll-------------	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe	Severe
Gravecreek-----------	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Severe	Severe
Rock outcrop.									
190F:									
Pearsoll-------------	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Severe	Moderate
Rock outcrop.									
Gravecreek-----------	Moderate	Moderate	Severe	Moderate	Moderate	Severe	Moderate	Severe	Moderate
191E:									
Pearsoll-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Moderate
Rock outcrop.									
192F:									
Pearsoll-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
196C------------------ Pollard	Slight	Slight	Moderate	Severe	Slight	Moderate	Slight	Moderate	Slight
196D------------------ Pollard	Slight	Slight	Severe	Severe	Slight	Moderate	Slight	Moderate	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equip-ment limitat-ion	Soil compac-tion	Soil dis-place-ment	Seedling mortal-ity	Wind-throw	Plant compet-ition	Fire damage
197E:									
Pollard	Slight	Slight	Severe	Severe	Slight	Moderate	Slight	Moderate	Slight
Josephine	Slight	Slight	Severe	Severe	Moderate	Moderate	Slight	Moderate	Slight
Shastacosta	Slight	Slight	Moderate	Moderate	Slight	Moderate	Slight	Moderate	Slight
198E:									
Preacher	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Blachly	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
199E:									
Preacher	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Blachly	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Digger	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
200F, 201F:									
Preacher	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Digger	Severe	Moderate	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight
Bohannon	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
202D:									
Pyrady	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Moderate	Slight
Zalea	Slight	Slight	Moderate	Severe	Moderate	Slight	Moderate	Moderate	Slight
Yorel	Moderate	Slight	Moderate	Severe	Moderate	Slight	Moderate	Moderate	Slight
204E:									
Redflat	Slight	Slight	Severe	Severe	Moderate	Severe	Slight	Severe	Moderate
Mislatnah	Moderate	Slight	Severe	Severe	Moderate	Severe	Moderate	Severe	Moderate
Greggo	Moderate	Slight	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
205F:									
Reedsport	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Slight
Whaleshead	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Slight	Severe	Severe
206G:									
Reedsport	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate
Whaleshead	Severe	Severe	Severe	Severe	Moderate	Moderate	Slight	Severe	Severe
Rock outcrop.									
207E:									
Remote	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Digger	Moderate	Slight	Severe	Moderate	Slight	Slight	Moderate	Moderate	Moderate
Rock outcrop.									

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equip- ment limitat- ion	Soil compac- tion	Soil dis- place- ment	Seedling mortal- ity	Wind- throw	Plant compet- ition	Fire damage
208F:									
Remote	Moderate	Moderate	Severe	Severe	Severe	Slight	Slight	Moderate	Slight
Digger	Severe	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Rock outcrop.									
209F:									
Remote	Moderate	Moderate	Severe	Severe	Severe	Moderate	Slight	Severe	Moderate
Whobrey	Moderate	Moderate	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate
Rock outcrop.									
210G, 211G:									
Rilea	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
Euchrand	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
212G, 213G:									
Rilea	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Stackyards	Severe	Severe	Severe	Slight	Slight	Moderate	Slight	Moderate	Moderate
Rock outcrop.									
215G:									
Rock outcrop.									
Grouslous	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
Cassiday	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
216G:									
Rock outcrop.									
Grouslous	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Cassiday	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
218E Rogue	Moderate	Moderate	Moderate	Moderate	Severe	Moderate	Moderate	Moderate	Moderate
219F Rogue	Severe	Severe	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate
220F Rogue	Severe	Severe	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe
221B, 221D:									
Ruch	Slight	Slight	Moderate	Severe	Moderate	Moderate	Slight	Moderate	Slight
Selmac	Slight	Slight	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Slight
224E:									
Saddlepeak	Slight	Slight	Severe	Severe	Slight	Moderate	Moderate	Moderate	Moderate
Threetrees	Moderate	Slight	Severe	Severe	Slight	Moderate	Severe	Moderate	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
225D:									
Saddlepeak-----------	Slight	Slight	Moderate	Severe	Slight	Moderate	Moderate	Moderate	Moderate
Threetrees-----------	Slight	Slight	Moderate	Severe	Slight	Moderate	Severe	Moderate	Moderate
225E:									
Saddlepeak-----------	Slight	Slight	Severe	Severe	Slight	Moderate	Moderate	Moderate	Moderate
Threetrees-----------	Moderate	Slight	Severe	Severe	Slight	Moderate	Severe	Moderate	Moderate
226E:									
Saddlepeak-----------	Slight	Slight	Severe	Severe	Slight	Moderate	Moderate	Moderate	Moderate
Threetrees-----------	Moderate	Slight	Severe	Severe	Slight	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
227F, 228F:									
Saddlepeak-----------	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate
Threetrees-----------	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
Scalerock------------	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
230E:									
Serpentano-----------	Moderate	Slight	Moderate	Moderate	Slight	Severe	Slight	Severe	Moderate
Mislatnah------------	Moderate	Slight	Severe	Severe	Moderate	Severe	Moderate	Severe	Moderate
231F:									
Serpentano-----------	Severe	Moderate	Severe	Moderate	Moderate	Severe	Slight	Severe	Moderate
Mislatnah------------	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Greggo---------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
232F:									
Serpentano-----------	Severe	Moderate	Severe	Moderate	Moderate	Severe	Slight	Severe	Moderate
Mislatnah------------	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Severe
Greggo---------------	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
233F:									
Shastacosta----------	Moderate	Moderate	Severe	Moderate	Slight	Severe	Slight	Severe	Moderate
Pollard--------------	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Slight	Moderate	Slight
Beekman--------------	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
234F:									
Shivigny-------------	Moderate	Moderate	Severe	Moderate	Slight	Slight	Slight	Severe	Slight
Honeygrove-----------	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
235F:									
Sitkum---------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Slight
Steinmetz------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Slight	Moderate	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equip- ment limitat- ion	Soil compac- tion	Soil dis- place- ment	Seedling mortal- ity	Wind- throw	Plant compet- ition	Fire damage
236F:									
Sitkum---------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Moderate	Severe	Moderate
Steinmetz------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Slight	Severe	Slight
237E:									
Skookumhouse---------	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Hazelcamp------------	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Moderate	Slight
238D:									
Skookumhouse---------	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Moderate	Slight
Hazelcamp------------	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Moderate	Slight
Averlande------------	Moderate	Slight	Moderate	Severe	Slight	Severe	Severe	Moderate	Moderate
238E:									
Skookumhouse---------	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Moderate	Slight
Hazelcamp------------	Moderate	Slight	Severe	Severe	Slight	Slight	Moderate	Moderate	Slight
Averlande------------	Moderate	Slight	Severe	Severe	Slight	Severe	Severe	Moderate	Moderate
239G:									
Skymor.									
Rock outcrop.									
Jayar----------------	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Severe	Severe
240E:									
Snowcamp-------------	Moderate	Slight	Severe	Severe	Slight	Severe	Moderate	Severe	Moderate
Cedarcamp------------	slight	Slight	Severe	Severe	Slight	Severe	Slight	Severe	Moderate
Flycatcher-----------	Moderate	Slight	Severe	Severe	Slight	Severe	Severe	Severe	Moderate
241E:									
Snowcamp-------------	Moderate	Slight	Severe	Severe	Slight	Severe	Moderate	Severe	Moderate
Cedarcamp------------	Slight	Slight	Severe	Severe	Slight	Severe	Slight	Severe	Moderate
Rock outcrop.									
242G:									
Snowcamp-------------	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate	Severe	Severe
Flycatcher-----------	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
243F:									
Speaker--------------	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Josephine------------	Moderate	Moderate	Severe	Severe	Severe	Severe	Slight	Severe	Moderate
Beekman--------------	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
244G, 245G:									
Stackyards-----------	Severe	Severe	Severe	Slight	Slight	Moderate	Slight	Moderate	Moderate
Rilea----------------	Severe	Severe	Severe	Moderate	Moderate	Slight	Moderate	Moderate	Moderate
Euchrand-------------	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
246F:									
Stackyards-----------	Moderate	Moderate	Severe	Slight	Slight	Moderate	Moderate	Moderate	Moderate
Rilea----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
246G:									
Stackyards-----------	Severe	Severe	Severe	Slight	Slight	Moderate	Moderate	Moderate	Moderate
Rilea----------------	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
247F:									
Stackyards-----------	Moderate	Moderate	Severe	Slight	Slight	Moderate	Moderate	Moderate	Moderate
Rilea----------------	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
247G:									
Stackyards-----------	Severe	Severe	Severe	Slight	Slight	Moderate	Moderate	Moderate	Moderate
Rilea----------------	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Moderate	Moderate
Rock outcrop.									
248F, 249F:									
Stackyards-----------	Moderate	Moderate	Severe	Slight	Slight	Moderate	Slight	Moderate	Moderate
Rilea----------------	Severe	Moderate	Severe	Severe	Severe	Slight	Moderate	Moderate	Moderate
Rock outcrop.									
250F, 251F:									
Stackyards-----------	Moderate	Moderate	Severe	Slight	Slight	Moderate	Slight	Moderate	Moderate
Rilea----------------	Severe	Moderate	Severe	Severe	Severe	Slight	Moderate	Moderate	Moderate
Yorel----------------	Severe	Moderate	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight
252G:									
Steinmetz------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Slight	Moderate	Slight
Sitkum---------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Slight
253G:									
Steimentz------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Slight	Severe	Slight
Sitkum---------------	Severe	Severe	Severe	Moderate	Severe	Moderate	Moderate	Severe	Moderate

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns: Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
254D:									
Svensen	Slight	Slight	Moderate	Severe	Slight	Slight	Slight	Severe	Slight
Reedsport	Slight	Slight	Moderate	Severe	Slight	Slight	Moderate	Severe	Slight
254E:									
Svensen	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
Reedsport	Slight	Slight	Severe	Severe	Slight	Slight	Moderate	Severe	Slight
258E Templeton	Moderate	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
259F Templeton	Severe	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
260F:									
Threetrees	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe
Saddlepeak	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Severe
Scalerock	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
261G:									
Threetrees	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
Saddlepeak	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate
Scalerock	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
262F:									
Threetrees	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe
Saddlepeak	Moderate	Moderate	Severe	Severe	Moderate	Moderate	Moderate	Severe	Severe
Scalerock	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
262G:									
Threetrees	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe
Saddlepeak	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Severe	Severe
Scalerock	Severe	Severe	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
263G:									
Threetrees	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
Saddlepeak	Severe	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate
Scalerock	Severe	Severe	Severe	Severe	Moderate	Moderate	Severe	Moderate	Moderate
264F:									
Threetrees	Severe	Moderate	Severe	Severe	Moderate	Moderate	Severe	Severe	Severe
Scalerock	Severe	Moderate	Severe	Severe	Moderate	Severe	Severe	Severe	Severe
Rock outcrop.									
265F:									
Tolfork	Severe	Moderate	Severe	Slight	Moderate	Moderate	Slight	Moderate	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns								
	Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
265F:									
Tincup	Severe	Moderate	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
265G:									
Tolfork	Severe	Severe	Severe	Slight	Moderate	Moderate	Slight	Moderate	Slight
Tincup	Severe	Severe	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
267F:									
Vermisa	Severe	Moderate	Severe	Moderate	Moderate	Severe	Severe	Moderate	Severe
Beekman	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
Colestine	Severe	Moderate	Severe	Severe	Severe	Severe	Moderate	Severe	Moderate
270E:									
Wedderburn	Slight	Slight	Severe	Severe	Slight	Slight	Slight	Severe	Slight
Zwagg.									
271F:									
Wedderburn	Severe	Moderate	Severe	Severe	Moderate	Moderate	Slight	Severe	Slight
Zwagg.									
271G:									
Wedderburn	Severe	Severe	Severe	Severe	Moderate	Moderate	Slight	Severe	Slight
Zwagg.									
272F:									
Whaleshead	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Moderate
Reedsport	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
272G:									
Whaleshead	Severe	Severe	Severe	Severe	Moderate	Slight	Slight	Severe	Moderate
Reedsport	Severe	Severe	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
273F:									
Whaleshead	Moderate	Moderate	Severe	Severe	Moderate	Slight	Slight	Severe	Moderate
Reedsport	Moderate	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
Millicoma	Severe	Moderate	Severe	Severe	Moderate	Slight	Moderate	Severe	Slight
274A, 274D Winchuck	Slight	Slight	Moderate	Severe	Moderate	Slight	Slight	Severe	Slight
274E Winchuck	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Severe	Slight
275G:									
Woodseye	Severe	Severe	Severe	Moderate	Slight	Severe	Severe	Moderate	Slight
Rock outcrop.									
Brandypeak	Severe	Severe	Severe	Moderate	Slight	Moderate	Moderate	Moderate	Slight

Table 7.--Forestland Management--Continued

Soil name and map symbol	Management concerns: Sheet and rill erosion	Cut and fill erosion	Equipment limitation	Soil compaction	Soil displacement	Seedling mortality	Windthrow	Plant competition	Fire damage
278E:									
Zalea----------------	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Pyrady---------------	Slight	Slight	Severe	Severe	Moderate	Slight	Slight	Moderate	Slight
Yorel----------------	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
279E:									
Zalea----------------	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Yorel----------------	Moderate	Slight	Severe	Severe	Moderate	Slight	Moderate	Moderate	Slight
Rock outcrop.									

Table 8.--Forestland Productivity

(Data were collected only for the soils that currently support forestland. CMAI means culmination of mean and periodic annual increment (stand age). Absence of an entry indicates that information was not available)

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
1B, 1D----------- Abegg	Douglas fir[3]---------	90	116	90	124	57,000	120	121	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Ponderosa pine[3]------	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
2F:									
Acker-----------	Douglas fir[3]---------	90	116	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Norling---------	Douglas fir[3]---------	87	111	90	116	51,900	130	108	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
5F:									
Althouse--------	Douglas fir[3]---------	106	147	90	143	73,400	110	149	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Jayar-----------	Douglas fir[3]---------	93	122	90	123	55,800	120	119	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Skymor.									
6F:									
Althouse--------	Douglas fir[3]---------	100	136	90	137	66,100	110	140	60
	White fir[3]-----------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Jayar-----------	Douglas fir[3]---------	90	116	90	115	50,700	130	106	60
	White fir[3]-----------	81	198	70	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Woodseye--------	Douglas fir[3]---------	70[4]	79	90	91[4]	33,000	160	72	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
8E:									
Atring----------	Douglas fir[3]---------	79	96	90	106	46,800	150	92	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	75	---	---	---	---	---	---	---
Kanid-----------	Douglas fir[3]---------	102	140	90	138	67,200	110	142	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Vermisa---------	Douglas fir[3]---------	69	---	---	92	33,900	160	73	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
9F, 9G:									
Atring----------	Douglas fir[3]---------	85	107	90	114	49,500	130	105	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Kanid-----------	Douglas fir[3]---------	98	132	90	133	61,800	110	134	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Vermisa---------	Douglas fir[3]---------	69	---	---	92	33,900	160	73	60
	Canyon live oak------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
10F:									
Atring----------	Douglas fir[3]---------	79	96	90	106	46,800	150	92	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	75	---	---	---	---	---	---	---
Rock outcrop.									
Kanid-----------	Douglas fir[3]---------	102	140	90	138	67,200	110	142	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	75	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
11F:									
Atring	Douglas fir[3]	85	107	90	114	49,500	130	105	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
Rock outcrop.									
Kanid	Douglas fir[3]	98	132	90	133	61,800	110	134	60
	Tanoak	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
12G:									
Atring	Douglas fir[3]	85	107	90	114	49,500	130	105	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Rock outcrop.									
Vermisa	Douglas fir[3]	69	---	---	92	33,900	160	73	60
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
13G:									
Atring	Douglas fir[3]	79	96	90	106	46,800	150	92	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
Vermisa	Douglas fir[3]	72[4]	83	90	96[4]	38,100	160	78	60
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
14G:									
Atring	Douglas fir[3]	79	96	90	106	46,800	150	92	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
14G:									
Vermisa	Douglas fir[3]	72[4]	83	90	96[4]	38,100	160	78	60
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
16E:									
Barkshanty	Douglas fir[3]	94	123	90	128	61,600	120	127	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Nailkeg	Douglas fir[3]	95	125	90	122	54,700	110	118	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
Rock outcrop.									
17E:									
Barkshanty	Douglas fir[3]	91	118	90	121	53,500	120	116	60
	Tanoak	---	---	---	---	---	---	---	---
Nailkeg	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
20E:									
Bearcamp	Douglas fir[3]	98	132	90	134	62,900	110	136	60
	White fir[3]	76	183	70	---	---	---	---	---
Brandypeak	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	White fir[3]	---	---	---	---	---	---	---	---
21F:									
Bearcamp	Douglas fir[3]	98	132	90	134	62,900	110	136	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Brandypeak	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
21F:									
Woodseye	Douglas fir[3]	70[4]	79	90	91[4]	33,000	160	72	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
22F:									
Beekman	Douglas fir[3]	87	111	90	116	51,900	130	108	60
	Tanoak	---	---	---	---	---	---	---	---
Colestine	Douglas fir[3]	90	116	90	110	48,300	140	98	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
Orthents.									
23G:									
Beekman	Douglas fir[3]	87	111	90	116	51,900	130	108	60
	Tanoak	---	---	---	---	---	---	---	---
Orthents.									
Colestine	Douglas fir[3]	90	116	90	110	48,300	140	98	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
24G:									
Beekman	Douglas fir[3]	87	111	90	116	51,900	130	108	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Rock outcrop.									
Vermisa	Douglas fir[3]	69	---	---	92	33,900	160	73	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
25G:									
Beekman	Douglas fir[3]	87	111	90	116	51,900	130	108	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
25G:									
Vermisa	Douglas fir[3]	69	---	---	92	33,900	160	73	60
	Canyon live oak	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
27F, 27G:									
Bobsgarden	Douglas fir[3]	96	128	90	132	60,700	110	133	60
	Western hemlock[3]	81	---	---	120	66,000	80	180	50
Rilea	Douglas fir[3]	82	102	90	112	50,800	140	101	60
	Western hemlock[3]	69	---	---	102	56,200	90	145	60
	Port Orford cedar	---	---	---	---	---	---	---	---
Euchrand	Douglas fir[3]	73[4]	84	90	92[4]	33,900	160	73	60
	Western hemlock	---	---	---	---	---	---	---	---
28F, 28G:									
Bobsgarden	Douglas fir[3]	91	118	90	119	55,500	130	113	60
	Tanoak	---	---	---	---	---	---	---	---
Rilea	Douglas fir[3]	76	91	90	101	40,900	150	85	60
	Tanoak	---	---	---	---	---	---	---	---
Euchrand	Douglas fir[3]	73	84	90	92	33,900	160	73	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
29F, 29G:									
Bobsgarden	Douglas fir[3]	65[4]	---	---	86[4]	28,500	160	66	70
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Rilea	Douglas fir[3]	60[4]	---	---	80[4]	23,400	160	58	70
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Rock outcrop.									
30F:									
Bobsgarden	Douglas fir[3]	96	128	90	132	60,700	110	133	60
	Western hemlock[3]	81	---	---	120	66,000	80	180	50

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
30F:									
Rilea-----------	Douglas fir[3]---------	82	102	90	112	50,800	140	101	60
	Western hemlock[3]-----	69	---	---	102	56,200	90	145	60
	Port Orford cedar----	---	---	---	---	---	---	---	---
Rock outcrop.									
31F:									
Bobsgarden------	Douglas fir[3]---------	91	118	90	119	55,500	130	113	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Rilea-----------	Douglas fir[3]---------	76	91	90	101	40,900	150	85	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
32E:									
Bobsgarden------	Douglas fir[3]---------	96	128	90	132	60,700	110	133	60
	Western hemlock[3]-----	81	---	---	120	66,000	80	180	50
Rilea-----------	Douglas fir[3]---------	82	102	90	112	50,800	140	101	60
	Western hemlock[3]-----	69	---	---	102	56,200	90	145	60
	Port Orford cedar----	---	---	---	---	---	---	---	---
Yorel-----------	Douglas fir[3]---------	97[4]	130	90	132[4]	60,700	110	133	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
33E:									
Bobsgarden------	Douglas fir[3]---------	91	118	90	119	55,500	130	113	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Rilea-----------	Douglas fir[3]---------	76	91	90	101	40,900	150	85	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Yorel-----------	Douglas fir[3]---------	97	130	90	132	60,700	110	133	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
34E:									
Bobsgarden	Douglas fir[3]	65[4]	---	---	86[4]	28,500	160	66	70
	Tanoak	---	---	---	---	---	---	---	---
Rilea	Douglas fir[3]	60[4]	---	---	80[4]	23,400	160	58	70
	Tanoak	---	---	---	---	---	---	---	---
35G:									
Brandypeak	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Bearcamp	Douglas fir[3]	98	132	90	134	62,900	110	136	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Woodseye	Douglas fir[3]	70[4]	79	90	91[4]	33,000	160	72	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
36F:									
Brandypeak	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
Bearcamp	Douglas fir[3]	98	132	90	134	62,900	110	136	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
38B, 38D:									
Bullards	Grand fir[3]	79	193	70	---	---	---	---	---
	Douglas fir[3]	104	143	90	131	59,600	110	131	60
	Sitka spruce[3]	---	---	---	157	---	---	235	70
	Port Orford cedar	---	---	---	---	---	---	---	---
	Western hemlock	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
38B, 38D:									
Bandon----------	Douglas fir[3]---------	104	143	90	135	63,900	110	138	60
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Sitka spruce[3]--------	---	---	---	142	---	---	205	70
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
Wadecreek-------	Douglas fir[3]---------	104	143	90	143	72,400	110	149	60
	Port Orford cedar[3]---	---	---	---	---	---	---	---	---
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
39D:									
Bullards--------	Grand fir[3]-----------	79	193	70	---	---	---	---	---
	Douglas fir[3]---------	104	143	90	131	59,600	110	131	60
	Sitka spruce[3]--------	---	---	---	157	---	---	235	70
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
Ferrelo---------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Sitka spruce[3]--------	---	---	---	156	---	---	233	70
	Western hemlock------	---	---	---	---	---	---	---	---
Hebo------------	Sitka spruce[3]--------	---	---	---	154	---	---	229	70
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Douglas fir----------	124	182	90	164	85,200	100	174	60
	Western hemlock------	---	---	---	---	---	---	---	---
40E:									
Bullgulch-------	Douglas fir[3]---------	131	195	90	174	93,800	100	185	60
	Sitka spruce[3]--------	---	---	---	156	---	---	233	70
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
40E:									
Hunterscove-----	Douglas fir[3]---------	132	197	90	183	91,600	90	194	60
	Sitka spruce[3]--------	---	---	---	151	---	---	224	70
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
41F:									
Bullgulch-------	Douglas fir[3]---------	131	195	90	174	93,800	100	185	60
	Sitka spruce[3]--------	---	---	---	156	---	---	233	70
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
Hunterscove-----	Douglas fir[3]---------	132	197	90	183	91,600	90	194	60
	Sitka spruce[3]--------	---	---	---	151	---	---	224	70
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
42F:									
Bullgulch-------	Douglas fir[3]---------	126	186	90	171	91,200	100	182	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Hunterscove-----	Douglas fir[3]---------	122	178	90	164	85,200	100	174	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
43D:									
Burnthill-------	Douglas fir[3]---------	120	175	90	150	72,400	100	158	60
	Port Orford cedar[3]---	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western hemlock[3]-----	93	---	---	132	77,200	80	204	50
Cashner---------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
44E--------------- Burnthill	Douglas fir[3]---------	120	175	90	150	72,400	100	158	60
	Port Orford cedar[3]---	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western hemlock[3]-----	93	---	---	132	77,200	80	204	50
45F:									
Calfranch-------	Douglas fir[3]---------	107	149	90	143	72,400	110	149	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Capeblanco------	Douglas fir[3]---------	115	163	90	156	78,000	100	165	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Watches---------	Douglas fir[3]---------	111	156	90	150	72,400	100	158	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
46G:									
Calfranch-------	Douglas fir[3]---------	107	149	90	143	72,400	110	149	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
Capeblanco------	Douglas fir[3]---------	115	163	90	156	78,000	100	165	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
Watches---------	Douglas fir[3]---------	111	156	90	150	72,400	100	158	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
47F:									
Calfranch-------	Douglas fir[3]---------	107	149	90	143	72,400	110	149	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
Watches---------	Douglas fir[3]---------	111	156	90	150	72,400	100	158	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
47F:									
Capeblanco------	Douglas fir[3]---------	115	163	90	156	78,000	100	165	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
48G:									
Capeblanco------	Douglas fir[3]---------	115	163	90	156	78,000	100	165	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Calfranch-------	Douglas fir[3]---------	107	149	90	143	72,400	110	149	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Watches---------	Douglas fir[3]---------	111	156	90	150	72,400	100	158	60
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
50G:									
Cassiday--------	Douglas fir[3]---------	116	167	90	157	79,000	100	167	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Grouslous-------	Douglas fir[3]---------	90	116	90	121	53,500	120	116	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Bravo-----------	Douglas fir[3]---------	123	180	90	159	80,900	100	169	60
	Tanoak---------------	---	---	---	---	---	---	---	---
51G:									
Cassiday--------	Douglas fir[3]---------	116	167	90	157	79,000	100	167	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Grouslous-------	Douglas fir[3]---------	90	116	90	121	53,500	120	116	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Bravo-----------	Douglas fir[3]---------	115	163	90	157	79,000	100	167	60
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
52G:									
Cedarcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Flycatcher	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Rock outcrop.									
53F, 54F:									
Cedarcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Snowcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Flycatcher	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
55F, 56F:									
Cedarcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Snowcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
59A, 59C:									
Chismore--------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
Pyburn.									
60B------------- Chitwood	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Sitka spruce[3]--------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
62F:									
Colepoint-------	Douglas fir[3]---------	106	147	90	140	69,400	110	145	60
	Western hemlock[3]-----	101	---	---	143	74,700	70	224	50
	Red alder------------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
Bravo-----------	Douglas fir[3]---------	123	180	90	159	80,900	100	169	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Cassiday--------	Douglas fir[3]---------	116	167	90	157	79,000	100	167	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
63E:									
Colepoint-------	Douglas fir[3]---------	106	147	90	140	69,400	110	145	60
	Western hemlock[3]-----	101	---	---	143	74,700	70	224	50
	Red alder------------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
Nailkeg---------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
64F:									
Colepoint-------	Douglas fir[3]---------	106	147	90	140	69,400	110	145	60
	Western hemlock[3]-----	101	---	---	143	74,700	70	224	50
	Red alder------------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
Nailkeg---------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
66D, 66E:									
Crutchfield-----	Douglas fir[3]---------	115	163	90	154	76,200	100	163	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Colepoint-------	Douglas fir[3]---------	106	147	90	140	69,400	110	145	60
	Tanoak---------------	---	---	---	---	---	---	---	---
67F:									
Crutchfield-----	Douglas fir[3]---------	115	163	90	154	76,200	100	163	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Colepoint-------	Douglas fir[3]---------	106	147	90	140	69,400	110	145	60
	Tanoak---------------	---	---	---	---	---	---	---	---
68F:									
Crutchfield-----	Douglas fir[3]---------	111	156	90	141	70,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Colepoint-------	Douglas fir[3]---------	95	125	90	127	60,500	120	125	60
	Tanoak---------------	---	---	---	---	---	---	---	---
69D, 69E--------- Cunniff	Douglas fir[3]---------	112	158	90	148	70,500	100	156	60
	Sitka spruce[3]--------	---	---	---	200	---	---	300	70
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
70D:									
Cunniff---------	Douglas fir[3]---------	112	158	90	148	70,500	100	156	60
	Sitka spruce[3]--------	---	---	---	200	---	---	300	70
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
70D:									
Joeney----------	Douglas fir----------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Sitka spruce---------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
71F:									
Deadline--------	Douglas fir[3]---------	119	173	90	164	85,200	100	174	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
Barkshanty------	Douglas fir[3]---------	94	123	90	128	61,600	120	127	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
Nailkeg---------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
72F:									
Deadline--------	Douglas fir[3]---------	119	173	90	164	85,200	100	174	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Barkshanty------	Douglas fir[3]---------	94	123	90	128	61,600	120	127	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Nailkeg---------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
73F:									
Deadline--------	Douglas fir[3]---------	108	150	90	141	70,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Barkshanty------	Douglas fir[3]---------	91	118	90	121	53,500	120	116	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Nailkeg---------	Douglas fir[3]---------	85	107	90	110	48,300	140	98	60
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
74F:									
Deadline	Douglas fir[3]	119	173	90	164	85,200	100	174	60
	Tanoak	---	---	---	---	---	---	---	---
Barkshanty	Douglas fir[3]	94	123	90	128	61,600	120	127	60
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
75E:									
Deadline	Douglas fir[3]	119	173	90	164	85,200	100	174	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Irma	Douglas fir[3]	120	175	90	156	78,000	100	165	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Nailkeg	Douglas fir[3]	95	125	90	122	54,700	120	118	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
76E:									
Deadline	Douglas fir[3]	119	173	90	164	85,200	100	174	60
	Tanoak	---	---	---	---	---	---	---	---
Irma	Douglas fir[3]	120	175	90	156	78,000	100	165	60
	Tanoak	---	---	---	---	---	---	---	---
Nailkeg	Douglas fir[3]	95	125	90	122	54,700	120	118	60
	Tanoak	---	---	---	---	---	---	---	---
77G:									
Deadline	Douglas fir[3]	119	173	90	164	85,200	100	174	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
77G:									
Nailkeg----------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
78G:									
Deadline--------	Douglas fir[3]---------	119	173	90	164	85,200	100	174	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Nailkeg----------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
79G:									
Deadline--------	Douglas fir[3]---------	108	150	90	141	70,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Nailkeg----------	Douglas fir[3]---------	85	107	90	110	48,300	140	98	60
	Tanoak---------------	---	---	---	---	---	---	---	---
80F:									
Deadline--------	Douglas fir[3]---------	108	150	90	141	70,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
Nailkeg----------	Douglas fir[3]---------	85	107	90	110	48,300	140	98	60
	Tanoak---------------	---	---	---	---	---	---	---	---
81G:									
Deadline--------	Douglas fir[3]---------	119	173	90	164	85,200	100	174	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
Nailkeg----------	Douglas fir[3]---------	95	125	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
82G:									
Deadline--------	Douglas fir[3]---------	108	150	90	141	70,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
82G:									
Nailkeg	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	Tanoak	---	---	---	---	---	---	---	---
83E:									
Desons	Douglas fir[3]	141	216	90	192	98,700	90	202	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Watches	Douglas fir[3]	111	156	90	150	72,400	100	158	60
	Tanoak	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western hemlock	---	---	---	---	---	---	---	---
Calfranch	Douglas fir[3]	107	149	90	143	72,400	110	149	60
	Tanoak	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western hemlock	---	---	---	---	---	---	---	---
84G:									
Digger	Douglas fir[3]	87	111	90	117	53,000	130	110	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Preacher	Douglas fir[3]	138	210	90	174	93,800	100	185	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Bohannon	Douglas fir[3]	113	160	90	153	75,200	100	162	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Bigleaf maple	---	---	---	---	---	---	---	---
85F:									
Digger	Douglas fir[3]	83	103	90	111	49,600	140	100	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Preacher	Douglas fir[3]	120[4]	175	90	151[4]	73,300	100	159	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
85F:									
Bohannon--------	Douglas fir[3]---------	113	160	90	153	75,200	100	162	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
86G:									
Digger----------	Douglas fir[3]---------	87	111	90	117	53,000	130	110	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Preacher--------	Douglas fir[3]---------	125	184	90	159	80,900	100	169	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Bohannon--------	Douglas fir[3]---------	113	160	90	153	75,200	100	162	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
87F:									
Digger----------	Douglas fir[3]---------	83	103	90	111	49,600	140	100	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Remote----------	Douglas fir[3]---------	104	143	90	142	71,400	100	148	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Rock outcrop.									
88F:									
Digger----------	Douglas fir[3]---------	83	103	90	111	49,600	140	100	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Remote----------	Douglas fir[3]---------	104	143	90	142	71,400	110	148	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
88F:									
Umpcoos	Douglas fir[3]	61	---	---	79	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
89E:									
Digger	Douglas fir[3]	87	111	90	117	53,000	130	110	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Remote	Douglas fir[3]	111	156	90	145	74,400	110	152	60
	Western hemlock	---	---	---	---	---	---	---	---
	Grand fir	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
90E:									
Digger	Douglas fir[3]	83	103	90	111	49,600	140	100	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Remote	Douglas fir[3]	104	143	90	142	71,400	110	148	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
91F, 91G:									
Digger	Douglas fir[3]	83	103	90	111	49,600	140	100	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Umpcoos	Douglas fir[3]	61	---	---	79	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Dystrochrepts.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
92G, 93G:									
Digger----------	Douglas fir[3]---------	83	103	90	111	49,600	140	100	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Umpcoos---------	Douglas fir[3]---------	61	---	---	79	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Rock outcrop.									
94F:									
Dubakella-------	Jeffrey pine[3]--------	---	---	---	60	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
Cornutt---------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Pearsoll--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
95G:									
Dulandy---------	Douglas fir[3]---------	103	141	90	140	69,400	110	145	60
	Redwood[3]-------------	---	---	---	124	122,900	129	154	127
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Bosland---------	Douglas fir[3]---------	121	176	90	162	83,500	100	172	60
	Redwood[3]-------------	---	---	---	131	130,700	124	164	121
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Floras----------	Douglas fir[3]---------	115	163	90	170	90,400	100	181	60
	Redwood[3]-------------	---	---	---	126	124,700	127	156	125
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
96G:									
Dulandy----------	Douglas fir[3]----------	103	141	90	140	69,400	110	145	60
	Redwood[3]-------------	---	---	---	124	122,900	129	154	127
	Tanoak---------------	---	---	---	---	---	---	---	---
Bosland----------	Douglas fir[3]----------	121	176	90	162	83,500	100	172	60
	Redwood[3]-------------	---	---	---	131	130,700	124	164	121
	Tanoak---------------	---	---	---	---	---	---	---	---
Floras-----------	Douglas fir[3]----------	115	163	90	170	90,400	100	181	60
	Redwood[3]-------------	---	---	---	126	124,700	127	156	125
	Tanoak---------------	---	---	---	---	---	---	---	---
97E:									
Dulandy----------	Douglas fir[3]----------	103	141	90	140	69,400	110	145	60
	Redwood[3]-------------	---	---	---	124	122,900	129	154	127
	Tanoak---------------	---	---	---	---	---	---	---	---
Guerin-----------	Douglas fir[3]----------	98	132	90	132	60,700	110	133	60
	Redwood[3]-------------	---	---	---	106	54,000	141	132	140
	Tanoak---------------	---	---	---	---	---	---	---	---
Bosland----------	Douglas fir[3]----------	121	176	90	162	83,500	100	172	60
	Redwood[3]-------------	---	---	---	131	130,700	124	164	121
	Tanoak---------------	---	---	---	---	---	---	---	---
98G:									
Dulandy----------	Douglas fir[3]----------	103	141	90	140	69,400	110	145	60
	Redwood[3]-------------	---	---	---	124	122,900	129	154	127
	Tanoak---------------	---	---	---	---	---	---	---	---
Guerin-----------	Douglas fir[3]----------	98	132	90	132	60,700	110	133	60
	Redwood[3]-------------	---	---	---	106	54,000	141	132	140
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
99E:									
Dumont-----------	Douglas fir[3]----------	100	136	90	132	60,700	110	133	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	70	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
99E:									
Acker-----------	Douglas fir[3]---------	90	116	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Kanid-----------	Douglas fir[3]---------	102	140	90	138	67,200	110	142	60
	Tanoak---------------	---	---	---	---	---	---	---	---
102D, 102E:									
Edson-----------	Douglas fir[3]---------	91	118	90	119	55,500	130	113	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Barkshanty------	Douglas fir[3]---------	94	123	90	128	61,600	120	127	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western redcedar-----	---	---	---	---	---	---	---	---
103D, 103E:									
Edson-----------	Douglas fir[3]---------	89	114	90	118	54,300	130	111	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Barkshanty------	Douglas fir[3]---------	109	152	90	142	71,400	110	148	60
	Tanoak---------------	---	---	---	---	---	---	---	---
104E:									
Eightlar--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	79	96	90	103	43,200	150	88	60
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Gravecreek------	Jeffrey pine[3]--------	---	---	---	87	---	---	---	---
	Douglas fir[3]---------	64	---	---	84	26,700	160	63	70
	Sugar pine[3]----------	60	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
Pearsoll--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
105F:									
Eightlar--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	79	96	90	103	43,200	150	88	60
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Gravecreek------	Jeffrey pine[3]--------	---	---	---	87	---	---	---	---
	Douglas fir[3]---------	64	---	---	84	26,700	160	63	70
	Sugar pine[3]----------	60	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
Pearsoll--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
106B:									
Eilertsen-------	Douglas fir[3]---------	124	182	90	165	86,100	100	176	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Zyzzug.									
107C------------ Ekoms	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
108F:									
Etelka----------	Douglas fir[3]---------	122	178	90	164	85,200	100	174	60
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Bigleaf maple--------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Remote----------	Douglas fir[3]---------	111	156	90	145	74,400	110	152	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
108F:									
Whobrey	Douglas fir[3]	82	102	90	105	45,600	150	91	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
109F:									
Etelka	Douglas fir[3]	122	178	90	164	85,200	100	174	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Bigleaf maple	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Remote	Douglas fir[3]	104	143	90	142	71,400	110	148	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Whobrey	Douglas fir[3]	82	102	90	105	45,600	150	91	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
110D, 110E:									
Etelka	Douglas fir[3]	122	178	90	164	85,200	100	174	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Bigleaf maple	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Whobrey	Douglas fir[3]	82	102	90	105	45,600	150	91	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Remote	Douglas fir[3]	104	143	90	142	71,400	110	148	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
111A------------- Ettersburg	Douglas fir[3]---------	128	190	90	173	93,000	100	184	60
	California laurel----	---	---	---	---	---	---	---	---
	Redwood--------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
113F:									
Fantz-----------	Douglas fir[3]---------	50[4]	---	---	---	---	---	---	---
	Ponderosa pine[3]------	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
Knapke----------	Douglas fir[3]---------	55[4]	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Ponderosa pine-------	---	---	---	---	---	---	---	---
113G:									
Fantz-----------	Douglas fir[3]---------	50[4]	---	---	---	---	---	---	---
	Ponderosa pine[3]------	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
Knapke----------	Douglas fir[3]---------	55[4]	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Ponderosa pine[3]------	---	---	---	---	---	---	---	---
114G:									
Fantz-----------	Douglas fir[3]---------	60[4]	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Knapke----------	Douglas fir[3]---------	65[4]	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
115F:									
Ferrelo---------	Sitka spruce[3]--------	---	---	---	156	---	---	233	70
	Grand fir[3]-----------	90	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
115F:									
Bullards--------	Grand fir[3]----------	79	193	70	---	---	---	---	---
	Douglas fir[3]---------	104	143	90	131	59,600	110	131	60
	Sitka spruce[3]--------	---	---	---	157	---	---	235	70
	Port Orford cedar----	---	---	---	---	---	---	---	---
116D, 116E:									
Ferrelo---------	Sitka spruce[3]--------	---	---	---	156	---	---	233	70
	Grand fir[3]----------	90	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
Gearhart--------	Douglas fir[3]---------	87	111	90	110	48,300	140	98	60
	Sitka spruce[3]--------	---	---	---	135	---	---	188	70
	Shore pine-----------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
117F:									
Floras----------	Douglas fir[3]---------	115	163	90	170	90,400	100	181	60
	Redwood[3]-------------	---	---	---	126	124,700	127	156	125
	Tanoak---------------	---	---	---	---	---	---	---	---
Bosland---------	Douglas fir[3]---------	121	176	90	162	83,500	100	172	60
	Redwood[3]-------------	---	---	---	131	130,700	124	164	121
	Tanoak---------------	---	---	---	---	---	---	---	---
Dulandy---------	Douglas fir[3]---------	103	141	90	140	69,400	110	145	60
	Redwood[3]-------------	---	---	---	124	122,900	129	154	127
	Tanoak---------------	---	---	---	---	---	---	---	---
118F:									
Floras----------	Douglas fir[3]---------	115	163	90	170	90,400	100	181	60
	Redwood[3]-------------	---	---	---	126	124,700	127	156	125
	Tanoak---------------	---	---	---	---	---	---	---	---
Bosland---------	Douglas fir[3]---------	121	176	90	162	83,500	100	172	60
	Redwood[3]-------------	---	---	---	131	130,700	124	164	121
	Tanoak---------------	---	---	---	---	---	---	---	---
Dulandy---------	Douglas fir[3]---------	103	141	90	140	69,400	110	145	60
	Redwood[3]-------------	---	---	---	124	122,900	129	154	127
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
122F:									
Fritsland-------	Douglas fir[3]---------	126	186	90	172	92,100	100	183	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Bravo-----------	Douglas fir[3]---------	123	180	90	159	80,900	100	169	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Cassiday--------	Douglas fir[3]---------	116	167	90	157	79,000	100	167	60
	Tanoak---------------	---	---	---	---	---	---	---	---
123F:									
Fritsland-------	Douglas fir[3]---------	126	186	90	172	92,100	100	183	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Bravo-----------	Douglas fir[3]---------	115	163	90	157	79,000	100	167	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Cassiday--------	Douglas fir[3]---------	116	167	90	157	79,000	100	167	60
	Tanoak---------------	---	---	---	---	---	---	---	---
124E:									
Gamelake--------	Douglas fir[3]---------	83	103	90	110	48,300	140	98	60
	White fir[3]-----------	59	124	70	---	---	---	---	---
	Shasta red fir[3]------	61	---	---	---	---	---	---	---
Tincup----------	Douglas fir[3]---------	78	94	90	103	43,200	150	88	60
	White fir[3]-----------	64	142	70	---	---	---	---	---
	Shasta red fir[3]------	66	---	---	---	---	---	---	---
125F, 125G:									
Gamelake--------	Douglas fir[3]---------	83	103	90	110	48,300	140	98	60
	White fir[3]-----------	59	124	70	---	---	---	---	---
	Shasta red fir[3]------	61	---	---	---	---	---	---	---
Tincup----------	Douglas fir[3]---------	78	94	90	103	43,200	150	88	60
	White fir[3]-----------	64	142	70	---	---	---	---	---
	Shasta red fir[3]------	66	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
131G:									
Gravecreek------	Jeffrey pine[3]--------	---	---	---	87	---	---	---	---
	Douglas fir[3]---------	64	---	---	84	26,700	160	63	70
	Sugar pine[3]----------	60	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
Eightlar--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	79	96	90	103	43,200	150	88	60
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Pearsoll--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
132F:									
Gravecreek------	California laurel----	---	---	---	---	---	---	---	---
	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Eightlar--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Pearsoll--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
133G:									
Gravecreek------	California laurel----	---	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
133G:									
Pearsoll--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
Eightlar--------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
134E:									
Greggo----------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Knobcone pine--------	---	---	---	---	---	---	---	---
Mislatnah-------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Knobcone pine--------	---	---	---	---	---	---	---	---
Rock outcrop.									
135F:									
Greggo----------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Knobcone pine--------	---	---	---	---	---	---	---	---
Mislatnah-------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Lodgepole pine-------	---	---	---	---	---	---	---	---
Rock outcrop.									
136G:									
Greggo----------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
136G:									
Rock outcrop.									
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
137G:									
Greggo	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Rock outcrop.									
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Lodgepole pine	---	---	---	---	---	---	---	---
138B:									
Grindbrook	Douglas fir[3]	---	---	---	---	---	---	---	---
	Sitka spruce[3]	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
Wadecreek	Douglas fir[3]	104	143	90	143	72,400	110	149	60
	Port Orford cedar[3]	---	---	---	---	---	---	---	---
	Sitka spruce[3]	---	---	---	---	---	---	---	---
139G:									
Grouslous	Douglas fir[3]	90	116	90	121	53,500	120	116	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Cassiday	Douglas fir[3]	116	167	90	157	79,000	100	167	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
142E:									
Hazelcamp-------	Douglas fir[3]---------	113	160	90	150	72,400	100	158	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Averlande-------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
143B-------------	Sitka spruce[3]--------	---	---	---	154	---	---	229	70
Hebo	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Douglas fir----------	124	182	90	164	85,200	100	174	60
	Western hemlock------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
145E:									
Honeygrove------	Douglas fir[3]---------	117	169	90	143	72,400	110	149	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
Shivigny--------	Douglas fir[3]---------	110	154	90	144	73,400	110	150	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
146F:									
Honeygrove------	Douglas fir[3]---------	117	169	90	143	72,400	110	149	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
Shivigny--------	Douglas fir[3]---------	110	154	90	144	73,400	110	150	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
147E:									
Honeygrove------	Douglas fir[3]---------	117	169	90	143	72,400	110	149	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	65	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
147E:									
Shivigny	Douglas fir[3]	110	154	90	144	73,400	110	150	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
148D, 148E:									
Hooskanaden.									
Loneranch.									
Millicoma	Douglas fir[3]	113	160	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Sitka spruce[3]	---	---	---	169	---	---	255	70
151D, 151E	Sitka spruce[3]	---	---	---	174	---	---	262	70
Horseprairie	Grand fir[3]	90	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Western hemlock	---	---	---	---	---	---	---	---
154G:									
Jayar	Douglas fir[3]	90	116	90	115	50,700	130	106	60
	White fir[3]	81	198	70	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Althouse	Douglas fir[3]	100	136	90	137	66,100	110	140	60
	White fir[3]	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Woodseye	Douglas fir[3]	70[4]	79	90	91[4]	33,000	160	72	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
155F:									
Jayar	Douglas fir[3]	93	122	90	123	55,800	120	119	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
155F:									
Rock outcrop.									
Althouse	Douglas fir[3]	106	147	90	143	72,400	110	149	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
156G:									
Jayar	Douglas fir[3]	93	122	90	123	55,800	120	119	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Skymor	White fir	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Althouse	Douglas fir[3]	106	147	90	143	72,400	110	149	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
157E:									
Josephine	Douglas fir[3]	114	162	90	157	79,000	100	167	60
	Tanoak	---	---	---	---	---	---	---	---
	Ponderosa pine[3]	---	---	---	---	---	---	---	---
Pollard	Douglas fir[3]	86	109	90	118	54,300	130	111	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Speaker	Douglas fir[3]	98	132	90	132	60,700	120	133	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Ponderosa pine[3]	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
158F:									
Kanid	Douglas fir[3]	102	140	90	138	67,200	110	142	60
	Tanoak	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
158F:									
Acker-----------	Douglas fir[3]---------	96	128	90	129	62,800	120	128	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Atring----------	Douglas fir[3]---------	79	96	90	106	46,800	150	92	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	75	---	---	---	---	---	---	---
159F:									
Kanid-----------	Douglas fir[3]---------	98	132	90	133	61,800	110	134	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Acker-----------	Douglas fir[3]---------	90	116	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Atring----------	Douglas fir[3]---------	85	107	90	114	49,500	130	105	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
160F, 160G:									
Kanid-----------	Douglas fir[3]---------	102	140	90	138	67,200	110	142	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
Atring----------	Douglas fir[3]---------	79	96	90	106	46,800	150	92	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	75	---	---	---	---	---	---	---
161A:									
Kirkendall------	Douglas fir[3]---------	122	178	90	160	81,800	100	170	60
	Western hemlock------	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Quosatana.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
163F:									
Knapke	Douglas fir[3]	65[4]	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Fantz	Douglas fir[3]	60[4]	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
165D, 165E:									
Loeb	Douglas fir[3]	105	145	90	139	68,300	110	144	60
	Redwood[3]	---	---	---	135	135,700	122	177	119
	Tanoak	---	---	---	---	---	---	---	---
Macklyn	Douglas fir[3]	108	150	90	147	69,500	100	154	60
	Redwood[3]	---	---	---	128	127,400	126	159	124
	Tanoak	---	---	---	---	---	---	---	---
166E:									
Loeb	Douglas fir[3]	105	145	90	139	68,300	110	144	60
	Redwood[3]	---	---	---	135	135,700	122	177	119
	Tanoak	---	---	---	---	---	---	---	---
Macklyn	Douglas fir[3]	108	150	90	147	69,500	100	154	60
	Redwood[3]	---	---	---	128	127,400	126	159	124
	Tanoak	---	---	---	---	---	---	---	---
Vondergreen	Douglas fir[3]	122	178	90	157	79,000	100	167	60
	Redwood[3]	---	---	---	130	130,000	125	161	122
	Tanoak	---	---	---	---	---	---	---	---
169F:									
Loneranch.									
Hooskanaden.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
169F:									
Millicoma	Douglas fir[3]	113	160	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Sitka spruce	---	---	---	169	---	---	255	70
	Western hemlock	---	---	---	---	---	---	---	---
171B:									
McCurdy	Douglas fir[3]	123	180	90	161	82,700	100	171	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Wintley	Douglas fir[3]	119	173	90	156	78,000	100	165	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
172C: Meda	Douglas fir[3]	128	190	90	168	88,700	100	179	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
173F:									
Milbury	Douglas fir[3]	120[4]	175	90	165[4]	86,100	100	176	60
	Western hemlock[3]	100	---	---	142	73,800	70	222	50
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
Remote	Douglas fir[3]	111	156	90	145	74,400	110	152	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Umpcoos	Douglas fir[3]	67	---	---	88	30,200	160	68	70
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
174F:									
Milbury	Douglas fir[3]	109	152	90	149	71,400	100	157	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Remote	Douglas fir[3]	111	156	90	145	74,400	110	152	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Umpcoos	Douglas fir[3]	67	---	---	88	30,200	160	68	70
	Tanoak	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
175F, 175G:									
Milbury	Douglas fir[3]	120[4]	175	90	165[4]	86,100	100	176	90
	Western hemlock[3]	100	---	---	142	73,800	70	222	50
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
Umpcoos	Douglas fir[3]	67	---	---	88	30,200	160	68	70
	Western hemlock	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Dystrochrepts.									
176F, 176G:									
Milbury	Douglas fir[3]	109	152	90	149	71,400	100	157	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Umpcoos	Douglas fir[3]	67	---	---	88	30,200	160	68	70
	Tanoak	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Dystrochrepts.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
177G:									
Milbury	Douglas fir[3]	120[4]	175	90	165[4]	86,100	100	176	60
	Western hemlock[3]	100	---	---	142	73,800	70	222	50
	Western redcedar[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Umpcoos	Douglas fir[3]	67	---	---	88	30,200	160	68	70
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Rock outcrop.									
178F, 178G:									
Millicoma	Douglas fir[3]	113	160	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Sitka spruce	---	---	---	169	---	---	255	70
	Tanoak	---	---	---	---	---	---	---	---
Whaleshead	Douglas fir[3]	102	140	90	135	63,900	110	138	60
	Sitka spruce[3]	---	---	---	183	---	---	276	70
	Grand fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Reedsport	Douglas fir[3]	114	162	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Sitka spruce[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
179G:									
Millicoma	Douglas fir[3]	113	160	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Sitka spruce	---	---	---	---	---	---	---	---
Whaleshead	Douglas fir[3]	102	140	90	135	63,900	110	138	60
	Sitka spruce[3]	---	---	---	183	---	---	276	70
	Grand fir[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
179G:									
Reedsport	Douglas fir[3]	114	162	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
180F:									
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Lodgepole pine	---	---	---	---	---	---	---	---
Greggo	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Redflat	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
181F:									
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Greggo	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
182F:									
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Redflat	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Lodgepole pine	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
Greggo	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
184B:									
Nelscott	Sitka spruce[3]	---	---	---	142	---	---	205	50
	Douglas fir[3]	107	149	90	140	69,400	110	145	60
	Shore pine	---	---	---	80	---	---	69	90
	Port Orford cedar	---	---	---	---	---	---	---	---
Depoe	Sitka spruce[3]	---	---	---	140	---	---	200	50
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Shore pine	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Bullards	Sitka spruce[3]	---	---	---	157	---	---	235	70
	Douglas fir[3]	104	143	90	131	59,600	110	131	60
	Grand fir[3]	79	193	70	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
186D, 186E:									
Orford	Douglas fir[3]	112	158	90	150	72,400	100	158	60
	Red alder	---	---	---	---	---	---	---	---
McDuff	Douglas fir[3]	109	152	90	144	73,400	110	150	60
	Red alder	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
188G:									
Pearsoll	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Gravecreek	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
Rock outcrop.									
189G:									
Pearsoll	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
Gravecreek	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
190F:									
Pearsoll	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
Gravecreek	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
191E, 192F:									
Pearsoll	Jeffrey pine	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
196C, 196D: Pollard	Douglas fir[3]	100[4]	136	90	140[4]	69,400	110	145	60
	Tanoak	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Oregon white oak	---	---	---	---	---	---	---	---
197E:									
Pollard	Douglas fir[3]	86	109	90	118	54,300	130	111	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Josephine	Douglas fir[3]	114	162	90	157	79,000	100	167	60
	Tanoak	---	---	---	---	---	---	---	---
	Ponderosa pine[3]	---	---	---	---	---	---	---	---
Shastacosta	Douglas fir[3]	87	111	90	118	54,300	130	111	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
198E:									
Preacher	Douglas fir[3]	125	184	90	159	80,900	100	169	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Blachly	Douglas fir[3]	97	130	90	131	59,600	110	131	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
199E:									
Preacher	Douglas fir[3]	138	210	90	174	93,800	100	185	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Blachly	Douglas fir[3]	97	130	90	131	59,600	110	131	60
	Red alder	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
199E:									
Digger	Douglas fir[3]	87	111	90	117	53,000	130	110	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
200F:									
Preacher	Douglas fir[3]	138	210	90	174	93,800	100	185	60
	Red alder	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
Digger	Douglas fir[3]	87	111	90	117	53,000	130	110	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Bohannon	Douglas fir[3]	113	160	90	153	75,200	100	162	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Bigleaf maple	---	---	---	---	---	---	---	---
201F:									
Preacher	Douglas fir[3]	125	184	90	159	80,900	100	169	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Digger	Douglas fir[3]	87	111	90	117	53,000	130	110	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacifc madrone	---	---	---	---	---	---	---	---
Bohannon	Douglas fir[3]	113	160	90	153	75,200	100	162	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
202D:									
Pyrady	Douglas fir[3]	74	86	90	98	37,600	150	81	60
	Tanoak	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Zalea	Douglas fir[3]	85	107	90	114	49,500	130	105	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacifc madrone	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
202D:									
Yorel	Douglas fir[3]	97	130	90	132	60,700	110	133	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
204E:									
Redflat	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
	Lodgepole pine	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Greggo	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
205F:									
Reedsport	Douglas fir[3]	114	162	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Sitka spruce[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Whaleshead	Douglas fir[3]	102	140	90	135	63,900	110	138	60
	Sitka spruce[3]	---	---	---	183	---	---	276	70
	Grand fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
206G:									
Reedsport	Douglas fir[3]	114	162	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Sitka spruce[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
206G:									
Whaleshead------	Douglas fir[3]---------	102	140	90	135	63,900	110	138	60
	Sitka spruce[3]--------	---	---	---	183	---	---	276	70
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
207E:									
Remote----------	Douglas fir[3]---------	104	143	90	142	71,400	110	148	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Digger----------	Douglas fir[3]---------	83	103	90	111	49,600	140	100	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Rock outcrop.									
208F:									
Remote----------	Douglas fir[3]---------	111	156	90	145	74,400	110	152	60
	Pacific madrone------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Digger----------	Douglas fir[3]---------	87	111	90	117	53,000	130	110	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Rock outcrop.									
209F:									
Remote----------	Douglas fir[3]---------	104	143	90	142	71,400	110	148	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Whobrey---------	Douglas fir[3]---------	82	102	90	105	45,600	150	91	60
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Western redcedar[3]----	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
209F:									
Rock outcrop.									
210G:									
Rilea-----------	Douglas fir[3]---------	82	102	90	112	50,800	140	101	60
	Western hemlock[3]-----	69	---	---	102	56,200	90	145	60
	Port Orford cedar----	---	---	---	---	---	---	---	---
Euchrand--------	Douglas fir[3]---------	73[4]	84	90	92[4]	33,900	160	73	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									
211G:									
Rilea-----------	Douglas fir[3]---------	76	91	90	101	40,900	150	85	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Euchrand--------	Douglas fir[3]---------	73[4]	84	90	92[4]	33,900	160	73	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Rock outcrop.									
212G:									
Rilea-----------	Douglas fir[3]---------	82	102	90	112	50,800	140	101	60
	Western hemlock[3]-----	69	---	---	102	56,200	90	145	60
	Port Orford cedar----	---	---	---	---	---	---	---	---
Stackyards------	Douglas fir[3]---------	86	109	90	116	51,900	130	108	60
	Western hemlock[3]-----	82	---	---	121	67,000	80	182	50
	Port Orford cedar----	---	---	---	---	---	---	---	---
Rock outcrop.									
213G:									
Rilea-----------	Douglas fir[3]---------	76	91	90	101	40,900	150	85	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
213G:									
Stackyards	Douglas fir[3]	82	102	90	109	47,200	140	97	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
Rock outcrop.									
215G:									
Rock outcrop.									
Grouslous	Douglas fir[3]	90	116	90	121	53,500	120	116	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Cassiday	Douglas fir[3]	116	167	90	157	79,000	100	167	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
216G:									
Rock outcrop.									
Grouslous	Douglas fir[3]	90	116	90	121	53,500	120	116	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Cassiday	Douglas fir[3]	116	167	90	157	79,000	100	167	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
218E, 219F: Rogue	Douglas fir[3]	81	100	90	107	44,800	140	94	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
220F: Rogue	Douglas fir[3]	70[4]	79	90	90[4]	31,800	160	70	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
221B, 221D:									
Ruch	Douglas fir[3]	90[4]	116	90	120[4]	52,400	120	115	60
	Tanoak	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Oregon white oak	---	---	---	---	---	---	---	---
Selmac	Douglas fir[3]	86	109	90	117	53,000	130	110	60
	Tanoak	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
224E:									
Saddlepeak	Douglas fir[3]	109	152	90	141	70,400	110	146	60
	Western hemlock[3]	108	---	---	153	95,100	80	243	50
	Port Orford cedar	---	---	---	---	---	---	---	---
Threetrees	Douglas fir[3]	98	132	90	131	59,600	110	131	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
225D, 225E:									
Saddlepeak	Douglas fir[3]	106	147	90	140	69,400	110	145	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Threetrees	Douglas fir[3]	91	118	90	122	54,700	120	118	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
226E:									
Saddlepeak	Douglas fir[3]	106	147	90	140	69,400	110	145	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
226E:									
Threetrees	Douglas fir[3]	91	118	90	122	54,700	120	118	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Rock outcrop.									
227F:									
Saddlepeak	Douglas fir[3]	109	152	90	141	70,400	110	146	60
	Western hemlock[3]	108	---	---	153	95,100	80	243	60
	Port Orford cedar	---	---	---	---	---	---	---	---
Threetrees	Douglas fir[3]	98	132	90	131	59,600	110	131	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Scalerock	Douglas fir[3]	76	91	90	100	39,800	150	84	60
	Tanoak	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
228F:									
Saddlepeak	Douglas fir[3]	106	147	90	140	69,400	110	145	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Threetrees	Douglas fir[3]	98	132	90	131	59,600	110	131	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Scalerock	Douglas fir[3]	76	91	90	100	39,800	150	84	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
230E:									
Serpentano	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
231F:									
Serpentano	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Mislatnah	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Greggo	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
232F:									
Serpentano	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Lodgepole pine	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
232F:									
Mislatnah-------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Incense cedar[3]-------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Lodgepole pine-------	---	---	---	---	---	---	---	---
Greggo----------	Jeffrey pine[3]--------	---	---	---	---	---	---	---	---
	Western white pine[3]--	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
233F:									
Shastacosta-----	Douglas fir[3]---------	87	111	90	118	54,300	130	111	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Pollard---------	Douglas fir[3]---------	86	109	90	118	54,300	130	111	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Beekman---------	Douglas fir[3]---------	87	111	90	116	51,900	130	108	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
234F:									
Shivigny--------	Douglas fir[3]---------	110	154	90	144	73,400	110	150	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Honeygrove------	Douglas fir[3]---------	117	169	90	143	72,400	110	149	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Sugar pine[3]----------	65	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
235F:									
Sitkum----------	Douglas fir[3]---------	90[4]	116	90	120[4]	52,400	120	115	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
235F:									
Steinmetz-------	Douglas fir[3]---------	105[4]	145	90	140[4]	69,400	110	145	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Incense cedar--------	---	---	---	---	---	---	---	---
236F:									
Sitkum----------	Douglas fir[3]---------	85[4]	107	90	112[4]	50,800	140	101	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Steinmetz-------	Douglas fir[3]---------	95[4]	125	90	127[4]	60,500	120	125	60
	Sugar pine[3]----------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
237E:									
Skookumhouse----	Douglas fir[3]---------	122	178	90	161	82,700	100	171	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
Hazelcamp-------	Douglas fir[3]---------	113	160	90	150	72,400	100	158	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
238D, 238E:									
Skookumhouse----	Douglas fir[3]---------	122	178	90	161	82,700	100	171	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Hazelcamp-------	Douglas fir[3]---------	113	160	90	150	72,400	100	158	60
	Tanoak---------------	---	---	---	---	---	---	---	---
Averlande-------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
239G:									
Skymor----------	White fir------------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
239G:									
Jayar	Douglas fir[3]	93	122	90	123	55,800	120	119	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
240E:									
Snowcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
Cedarcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Flycatcher	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
241E:									
Snowcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Cedarcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
242G:									
Snowcamp	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Douglas fir[3]	---	---	---	---	---	---	---	---
	Western white pine[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Flycatcher	Jeffrey pine[3]	---	---	---	---	---	---	---	---
	Knobcone pine	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
Rock outcrop.									
243F:									
Speaker	Douglas fir[3]	92	120	90	123	55,800	120	119	60
	Tanoak	---	---	---	---	---	---	---	---
	Ponderosa pine[3]	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
Josephine	Douglas fir[3]	100	136	90	137	66,100	110	140	60
	Tanoak	---	---	---	---	---	---	---	---
	Incense cedar[3]	---	---	---	---	---	---	---	---
	California black oak	---	---	---	---	---	---	---	---
	Ponderosa pine[3]	---	---	---	---	---	---	---	---
Beekman	Douglas fir[3]	87	111	90	116	51,900	130	108	60
	Tanoak	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
244G:									
Stackyards	Douglas fir[3]	86	109	90	116	51,900	130	108	60
	Western hemlock[3]	82	---	---	121	67,000	80	182	50
	Port Orford cedar	---	---	---	---	---	---	---	---
Rilea	Douglas fir[3]	82	102	90	112	50,800	140	101	60
	Western hemlock[3]	69	---	---	102	56,200	90	145	60
	Port Orford cedar	---	---	---	---	---	---	---	---
Euchrand	Douglas fir[3]	73[4]	84	90	92[4]	33,900	160	73	60
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
245G:									
Stackyards	Douglas fir[3]	82	102	90	109	47,200	140	97	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
Rilea	Douglas fir[3]	76	91	90	101	40,900	150	85	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
Euchrand	Douglas fir[3]	73	84	90	92	33,900	160	73	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
246F, 246G:									
Stackyards	Douglas fir[3]	86	109	90	116	51,900	130	108	60
	Western hemlock[3]	82	---	---	121	67,000	80	182	50
Rilea	Douglas fir[3]	71[4]	81	90	90[4]	31,800	160	70	60
	Western hemlock[3]	61[4]	---	---	91[4]	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Rock outcrop.									
247F, 247G:									
Stackyards	Douglas fir[3]	65[4]	---	---	86[4]	28,500	160	66	70
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---
Rilea	Douglas fir[3]	60[4]	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Rock outcrop.									
248F:									
Stackyards	Douglas fir[3]	86	109	90	116	51,900	130	108	60
	Western hemlock[3]	82	---	---	121	67,000	80	182	60
	Port Orford cedar	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
248F:									
Rilea-----------	Douglas fir[3]---------	82	102	90	112	50,800	140	101	60
	Western hemlock[3]-----	69	---	---	102	56,200	90	145	60
	Port Orford cedar----	---	---	---	---	---	---	---	---
Rock outcrop.									
249F:									
Stackyards------	Douglas fir[3]---------	82	102	90	109	47,200	140	97	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Rilea-----------	Douglas fir[3]---------	76	91	90	101	40,900	150	85	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Rock outcrop.									
250F:									
Stackyards------	Douglas fir[3]---------	86	109	90	116	51,900	130	108	60
	Western hemlock[3]-----	82	---	---	121	67,000	80	182	50
	Port Orford cedar----	---	---	---	---	---	---	---	---
Rilea-----------	Douglas fir[3]---------	82	102	90	112	50,800	140	101	60
	Western hemlock[3]-----	69	---	---	102	56,200	90	145	60
	Port Orford cedar----	---	---	---	---	---	---	---	---
Yorel-----------	Douglas fir[3]---------	97	130	90	132	60,700	110	133	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
251F:									
Stackyards------	Douglas fir[3]---------	82	100	90	109	47,200	140	97	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Rilea-----------	Douglas fir[3]---------	76	91	90	101	40,900	150	85	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
251F:									
Yorel	Douglas fir[3]	97	130	90	132	60,700	110	133	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
252G:									
Steinmetz	Douglas fir[3]	105[4]	145	90	140[4]	69,400	110	145	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
	Incense cedar	---	---	---	---	---	---	---	---
Sitkum	Douglas fir[3]	90[4]	116	90	120[4]	52,400	120	115	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
253G:									
Steinmetz	Douglas fir[3]	95[4]	125	90	127[4]	60,500	120	125	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---					
Sitkum	Douglas fir[3]	85[4]	107	90	112[4]	50,800	140	101	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Canyon live oak	---	---	---	---	---	---	---	---
254D, 254E:									
Svensen	Douglas fir[3]	122	178	90	153	75,200	100	162	60
	Sitka spruce[3]	---	---	---	155	---	---	231	70
	Grand fir[3]	90	217	70	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Western redcedar	---	---	---	---	---	---	---	---
Reedsport	Douglas fir[3]	114	162	90	150	72,400	100	158	60
	Sitka spruce[3]	---	---	---	---	---	---	---	---
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
258E------------- Templeton	Douglas fir[3]---------	125	184	90	166	87,000	100	177	60
	Sitka spruce[3]--------	---	---	---	169	---	---	255	70
	Western hemlock[3]-----	112	---	---	161	100,800	80	256	50
	Red alder------------	---	---	---	---	---	---	---	---
	Grand fir------------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
259F------------- Templeton	Douglas fir[3]---------	125	184	90	166	87,000	100	177	60
	Sitka spruce[3]--------	---	---	---	169	---	---	255	70
	Western hemlock[3]-----	112	---	---	161	100,800	80	256	50
	Red alder------------	---	---	---	---	---	---	---	---
	Grand fir------------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
	California laurel----	---	---	---	---	---	---	---	---
260F:									
Threetrees------	Douglas fir[3]---------	98	132	90	131	59,600	110	131	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Saddlepeak------	Douglas fir[3]---------	109	152	90	141	70,400	110	146	60
	Western hemlock[3]-----	108	---	---	153	95,100	80	243	50
Scalerock-------	Douglas fir[3]---------	76	91	90	100	39,800	150	84	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
261G:									
Threetrees------	Douglas fir[3]---------	98	132	90	131	59,600	110	131	60
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
Saddlepeak------	Douglas fir[3]---------	109	152	90	141	70,400	110	146	60
	Western hemlock[3]-----	108	---	---	153	95,100	80	243	50
	Port Orford cedar----	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1] Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
261G:									
Scalerock-------	Douglas fir[3]---------	76	91	90	100	39,800	150	84	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
	Pacifc madrone-------	---	---	---	---	---	---	---	---
262F, 262G:									
Threetrees------	Douglas fir[3]---------	91	118	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Saddlepeak------	Douglas fir[3]---------	106	147	90	140	69,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Scalerock-------	Douglas fir[3]---------	58	---	---	73	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
263G:									
Threetrees------	Douglas fir[3]---------	98	132	90	131	59,600	110	131	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Saddlepeak------	Douglas fir[3]---------	106	147	90	140	69,400	110	146	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Scalerock-------	Douglas fir[3]---------	76	91	90	100	39,800	150	84	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
	Pacifc madrone-------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
264F:									
Threetrees------	Douglas fir[3]---------	91	118	90	122	54,700	120	118	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Scalerock-------	Douglas fir[3]---------	58	---	---	73	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Rock outcrop.									
265F, 265G:									
Tolfork---------	Douglas fir[3]---------	92	120	90	122	54,700	120	118	60
	White fir[3]-----------	75	179	70	---	---	---	---	---
	Shasta red fir[3]------	76	---	---	---	---	---	---	---
Tincup----------	Douglas fir[3]---------	83	103	90	111	49,600	140	100	60
	White fir[3]-----------	66	149	70	---	---	---	---	---
	Shasta red fir[3]------	69	---	---	---	---	---	---	---
267F:									
Vermisa---------	Douglas fir[3]---------	69	---	90	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Beekman---------	Douglas fir[3]---------	87	111	90	116	51,900	130	108	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Canyon live oak------	---	---	---	---	---	---	---	---
Colestine-------	Douglas fir[3]---------	90	116	90	110	48,300	140	98	60
	Canyon live oak------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	*Yr*		*Fbm/acre*	*Yr*	*Cu ft/acre*	*Yr*
270E:									
Wedderburn------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Redwood--------------	---	---	---	---	---	---	---	---
Zwagg.									
271F, 271G:									
Wedderburn------	Douglas fir[3]---------	---	---	---	---	---	---	---	---
	Tanoak---------------	---	---	---	---	---	---	---	---
	Redwood--------------	---	---	---	---	---	---	---	---
Zwagg.									
272F, 272G:									
Whaleshead------	Douglas fir[3]---------	102	140	90	135	63,900	110	138	60
	Sitka spruce[3]--------	---	---	---	183	---	---	276	70
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
Reedsport-------	Douglas fir[3]---------	114	162	90	150	72,400	100	158	60
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---
273F:									
Whaleshead------	Douglas fir[3]---------	102	140	90	135	63,900	110	138	60
	Sitka spruce[3]--------	---	---	---	183	---	---	276	70
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Western hemlock------	---	---	---	---	---	---	---	---
Reedsport-------	Douglas fir[3]---------	114	162	90	150	72,400	100	158	60
	Grand fir[3]-----------	---	---	---	---	---	---	---	---
	Western hemlock[3]-----	---	---	---	---	---	---	---	---
	Red alder------------	---	---	---	---	---	---	---	---
	Port Orford cedar----	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]: Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	Yr		Fbm/acre	Yr	Cu ft/acre	Yr
273F:									
Millicoma	Douglas fir[3]	113	160	90	150	72,400	100	158	60
	Grand fir[3]	---	---	---	---	---	---	---	---
	Western hemlock[3]	---	---	---	---	---	---	---	---
	Red alder	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
274A, 274D, 274E									
Winchuck	Douglas fir[3]	---	---	---	---	---	---	---	---
	Redwood[3]	---	---	---	182	200,800	99	307	88
	Tanoak	---	---	---	---	---	---	---	---
	California laurel	---	---	---	---	---	---	---	---
275G:									
Woodseye	Douglas fir[3]	70[4]	79	90	91[4]	33,000	160	72	60
	White fir[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
Rock outcrop.									
Brandypeak	Douglas fir[3]	85	107	90	110	48,300	140	98	60
	Sugar pine[3]	---	---	---	---	---	---	---	---
	Tanoak	---	---	---	---	---	---	---	---
278E:									
Zalea	Douglas fir[3]	85	107	90	115	50,700	130	106	60
	Tanoak	---	---	---	---	---	---	---	---
	Pacific madrone	---	---	---	---	---	---	---	---
Pyrady	Douglas fir[3]	74	86	90	98	37,600	150	81	60
	Tanoak	---	---	---	---	---	---	---	---
	Port Orford cedar	---	---	---	---	---	---	---	---
Yorel	Douglas fir[3]	97	130	90	132	60,700	110	133	60
	Tanoak	---	---	---	---	---	---	---	---
	Golden chinkapin	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 8.--Forestland Productivity--Continued

Soil name and map symbol	Common trees	Potential productivity[1]							
		Site index (50-year)	Annual growth	CMAI age	Site index (100-year)	Total yield (Scribner rule)[2]	CMAI age	Annual growth	CMAI age
			Cu ft/acre	***Yr***		***Fbm/acre***	***Yr***	*Cu ft/acre*	***Yr***
279E:									
Zalea-----------	Douglas fir[3]---------	85	107	90	115	50,700	130	106	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Golden chinkapin-----	---	---	---	---	---	---	---	---
Yorel-----------	Douglas fir[3]---------	97	130	90	132	60,700	110	133	60
	Tanoak---------------	---	---	---	---	---	---	---	---
	Pacific madrone------	---	---	---	---	---	---	---	---
Rock outcrop.									

[1] Yield data based on fully stocked, even-aged stand.
[2] Total yield for redwood based on International rule, 1/4 inch.
[3] Recommended trees to plant.
[4] Estimated site index and productivity (no data available).

Table 9.--Windbreaks and Environmental Plantings

(The symbol < means less than; > means more than. Only the soils suited to windbreaks and environmental plantings are listed. Absence of an entry indicates that trees generally do not grow to the given height on that soil)

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
15A:					
Bagness	---	Rhododendron, lilac, willow.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
Pistolriver	---	Amur maple, lilac, willow, redosier dogwood.	Redwood, northern whitecedar.	Shore pine, Pacific dogwood, California laurel.	Douglas fir, Scotch pine, western redcedar.
18A Bayside	Hardhack	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir, idahybrid poplar.
38B, 38D:					
Bullards	---	Pacific waxmyrtle, willow, redosier dogwood.	---	Shore pine, Pacific dogwood.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
Bandon	---	Rhododendron, willow, Pacific waxmyrtle, redosier dogwood.	---	Pacific dogwood, California laurel.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
Wadecreek	Hardhack	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Sitka spruce, shore pine, redwood.	Douglas fir.
39D:					
Bullards	---	Pacific waxmyrtle, willow, redosier dogwood.	---	Shore pine, Pacific dogwood.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
Ferrelo	---	Lilac, rhododendron, willow.	---	Shore pine, grand fir, redwood, Pacific dogwood, California laurel.	Douglas fir, western redcedar, Sitka spruce, Norway spruce.
Hebo	Hardhack	Sitka alder, Pacific waxmyrtle, willow.	Northern whitecedar.	Sitka spruce, shore pine.	Douglas fir, western redcedar.
43D:					
Burnthill	---	Rhododendron, lilac, willow.	Northern whitecedar.	Shore pine, redwood, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
Cashner.					

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
44E: Burnthill	---	Rhododendron, lilac, willow.	Northern whitecedar.	Shore pine, redwood, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
49F:					
Carpenterville	---	Lilac, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood, Oregon white oak.	Douglas fir.
Houstenader	Hardhack	Pacific waxmyrtle, willow, redosier dogwood.	California laurel	Shore pine, Pacific dogwood, Oregon white oak.	Douglas fir.
Huntley.					
58A: Chetco	Hardhack	Sitka alder, Pacific waxmyrtle, willow.	Northern whitecedar.	Sitka spruce, shore pine.	Douglas fir, western redcedar.
60B: Chitwood	Hardhack	Willow, Pacific waxmyrtle.	California laurel, northern whitecedar.	Sitka spruce, shore pine, redwood.	Douglas fir.
65A: Crofland	Hardhack	Pacific waxmyrtle	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
69D, 69E: Cunniff	Hardhack	Pacific waxmyrtle	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
70D:					
Cunniff	Hardhack	Pacific waxmyrtle	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Joeney.					
102D, 102E, 103D, 103E:					
Edson	Hardhack	Willow, Pacific waxmyrtle.	California laurel, northern whitecedar.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Barkshanty.					
107C: Ekoms	---	Rhododendron, willow, Pacific waxmyrtle.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Western redcedar, Sitka spruce, Norway spruce, Douglas fir.

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
111A------------- Ettersburg	---	Rhododendron, lilac, willow, redosier dogwood, Pacific waxmyrtle.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Western redcedar, Sitka spruce, Norway spruce, idahybrid poplar, Douglas fir.
115F:					
Ferrelo----------	---	Lilac, rhododendron, willow.	---	Shore pine, grand fir, redwood, Pacific dogwood, California laurel.	Douglas fir, western redcedar, Sitka spruce, Norway spruce.
Bullards---------	---	Pacific waxmyrtle, willow, redosier dogwood.	---	Shore pine, Pacific dogwood.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
116D, 116E:					
Ferrelo----------	---	Lilac, rhododendron, willow.	---	Shore pine, grand fir, redwood, Pacific dogwood, California laurel.	Douglas fir, western redcedar, Sitka spruce, Norway spruce.
Gearhart---------	---	Willow, Pacific waxmyrtle, redosier dogwood.	---	Sitka spruce, shore pine, Pacific dogwood.	Douglas fir, Scotch pine, western redcedar.
128A------------- Gleneden	Hardhack----------	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
129E, 130F-------- Grassyknob	---	Amur maple, rhododendron, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood, California laurel.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
138B:					
Grindbrook-------	Hardhack----------	Willow, redosier dogwood, Pacific waxmyrtle.	Northern whitecedar.	Redwood, Pacific dogwood, California laurel.	Norway spruce, Douglas fir, western redcedar, Lombardy poplar.
Wadecreek--------	Hardhack----------	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Sitka spruce, shore pine, redwood.	Douglas fir.
142E:					
Hazelcamp--------	---	Amur maple, rhododendron, lilac, Pacific serviceberry, willow.	Northern whitecedar, California laurel.	Redwood, Scotch pine, shore pine.	Douglas fir, Lombardy poplar.
Averlande.					
Rock outcrop.					

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
143B------------- Hebo	Hardhack----------	Sitka alder, Pacific waxmyrtle, willow.	Northern whitecedar.	Sitka spruce, shore pine.	Douglas fir, western redcedar.
148D, 148E:					
Hooskanaden------	Hardhack----------	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Loneranch--------	---	Lilac, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood.	Douglas fir, Sitka spruce.
Millicoma.					
149E, 150F:					
Hooskanaden------	Hardhack----------	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Loneranch--------	---	Lilac, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood.	Douglas fir, Sitka spruce.
Reinhart.					
151D, 151E-------- Horseprairie	---	Rhododendron, lilac, willow.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
152E:					
Houstenader------	Hardhack----------	Pacific waxmyrtle, willow, redosier dogwood.	California laurel	Shore pine, Pacific dogwood, Oregon white oak.	Douglas fir.
Carpenterville---	---	Lilac, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood, Oregon white oak.	Douglas fir.
Huntley.					
153A------------- Huffling	Hardhack----------	Sitka alder, Pacific waxmyrtle.	Northern whitecedar.	Sitka spruce, shore pine, green ash.	Douglas fir, western redcedar.
162A, 162B-------- Klooqueh	---	Pacific waxmyrtle, Tatarian honeysuckle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
164A------------- Langlois	Hardhack----------	Willow, Pacific waxmyrtle, Sitka alder.	Northern whitecedar.	Shore pine, Sitka spruce.	Douglas fir, western redcedar.

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
165D, 165E:					
Loeb	Hardhack	Amur maple, willow, Pacific waxmyrtle, Tatarian honeysuckle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Macklyn	Redosier dogwood, hardhack.	Amur maple, rhododendron, lilac, willow.	Northern whitecedar, California laurel.	Redwood, Scotch pine, shore pine.	Douglas fir.
166E:					
Loeb	Hardhack	Amur maple, willow, Pacific waxmyrtle, Tatarian honeysuckle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Macklyn	Redosier dogwood, hardhack.	Amur maple, rhododendron, lilac, willow.	Northern whitecedar, California laurel.	Redwood, Scotch pine, shore pine.	Douglas fir.
Vondergreen.					
167A Logsden	---	Rhododendron, lilac, willow.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
168A:					
Logsden	---	Rhododendron, lilac, willow.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
Euchre	Hardhack	Willow, Pacific waxmyrtle, redosier dogwood.	Northern whitecedar.	Redwood, Pacific dogwood, California laurel.	Douglas fir, Norway spruce, Austrian pine, western redcedar.
169F:					
Loneranch	---	Lilac, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood.	Douglas fir, Sitka spruce.
Hooskanaden	Hardhack	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Millicoma.					
170F:					
Loneranch	---	Lilac, willow, redosier dogwood, Pacific waxmyrtle.	---	Shore pine, Pacific dogwood.	Douglas fir, Sitka spruce.

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
170F:					
Hooskanaden	Hardhack	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
Reinhart.					
172C: Meda	---	Pacific waxmyrtle, Pacific rhododendron.	---	California laurel, shore pine, Pacific dogwood, green ash.	Douglas fir, idahybrid poplar, Austrian pine, Lombardy poplar, Scotch pine, western redcedar.
178F, 178G, 179G:					
Millicoma.					
Whaleshead.					
Reedsport	---	Redosier dogwood, lilac.	---	Shore pine, green ash, Pacific dogwood.	Douglas fir.
183A: Nehalem	---	Rhododendron, lilac, willow.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.
184B:					
Nelscott	---	Lilac, willow, Pacific waxmyrtle, redosier dogwood.	---	Shore pine, Pacific dogwood.	Douglas fir.
Depoe	Hardhack	Willow, Pacific waxmyrtle.	Shore pine	---	---
Bullards	---	Pacific waxmyrtle, willow, redosier dogwood.	---	Shore pine, Pacific dogwood.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
185A: Nestucca	---	Redosier dogwood	Monterey cypress	California laurel, red maple, Pacific dogwood.	Sitka spruce, Norway spruce, idahybrid poplar, Douglas fir, Austrian pine, western redcedar.
186D, 186E:					
Orford	Hardhack	Pacific waxmyrtle	Northern whitecedar, Monterey cypress, California laurel.	Shore pine	Douglas fir, Port Orford cedar, western redcedar, idahybrid poplar.
McDuff.					

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
203B: Quillamook	---	Rhododendron, willow, Pacific waxmyrtle.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Douglas fir, Norway spruce, western redcedar.
205F:					
Reedsport	---	Redosier dogwood, lilac.	---	Shore pine, green ash, Pacific dogwood.	Douglas fir.
Whaleshead.					
206G:					
Reedsport	---	Redosier dogwood, lilac.	---	Shore pine, green ash, Pacific dogwood.	Douglas fir.
Whaleshead.					
Rock outcrop.					
237E:					
Skookumhouse	Hardhack	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Shore pine	Douglas fir, redwood, western redcedar.
Hazelcamp	---	Amur maple, rhododendron, lilac, Pacific serviceberry, willow.	Northern whitecedar, California laurel.	Redwood, Scotch pine, shore pine.	Douglas fir, Lombardy poplar.
238D, 238E:					
Skookumhouse	Hardhack	Willow, Pacific waxmyrtle.	Northern whitecedar, California laurel.	Shore pine	Douglas fir, redwood, western redcedar.
Hazelcamp	---	Amur maple, rhododendron, lilac, Pacific serviceberry, willow.	Northern whitecedar, California laurel.	Redwood, Scotch pine, shore pine.	Douglas fir, Lombardy poplar.
Averlande.					
254D, 254E: Svensen.					
Reedsport	---	Redosier dogwood, lilac.	---	Shore pine, green ash, Pacific dogwood.	Douglas fir.
258E, 259F: Templeton	---	Rhododendron, lilac, willow.	Northern whitecedar.	Redwood, shore pine, Pacific dogwood, California laurel.	Sitka spruce, Norway spruce, Douglas fir, western redcedar.

Table 9.--Windbreaks and Environmental Plantings--Continued

Soil name and map symbol	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
270E, 271F, 271G:					
Wedderburn	---	Amur maple, lilac, willow, redosier dogwood.	Redwood, northern whitecedar.	Shore pine, Pacific dogwood, California laurel.	Douglas fir, Scotch pine, western redcedar.
Zwagg	---	Amur maple, rhododendron, willow, redosier dogwood.	Redwood	Shore pine, Pacific dogwood, California laurel.	Sitka spruce, Douglas fir, Scotch pine, western redcedar.
272F, 272G:					
Whaleshead.					
Reedsport	---	Redosier dogwood, lilac.	---	Shore pine, green ash, Pacific dogwood.	Douglas fir.
273F:					
Whaleshead.					
Reedsport	---	Redosier dogwood, lilac.	---	Shore pine, green ash, Pacific dogwood.	Douglas fir.
Millicoma.					
274A, 274D, 274E-- Winchuck	Hardhack	Pacific waxmyrtle, Tatarian honeysuckle.	Northern whitecedar, California laurel.	Redwood, Sitka spruce, shore pine.	Douglas fir.
276A-- Yachats	---	Amur maple, Pacific waxmyrtle, redosier dogwood.	Northern whitecedar.	Pacific dogwood, lodgepole pine, green ash, California laurel.	Douglas fir, idahybrid poplar, Scotch pine, western redcedar.

Table 10.--Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1B-------------------- Abegg	Moderate: small stones, dusty.	Moderate: small stones, dusty.	Severe: small stones.	Moderate: dusty.	Moderate: small stones, large stones.
1D-------------------- Abegg	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.	Moderate: small stones, large stones, slope.
2F:					
Acker----------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Norling--------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
3E:					
Agness---------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Sixes----------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Goldbeach------------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.	Severe: slope, depth to rock.
4F:					
Agness---------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Sixes----------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Goldbeach------------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: slope, depth to rock.
5F:					
Althouse-------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Jayar----------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Skymor---------------	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
6F:					
Althouse	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Jayar	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Woodseye	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
7D:					
Aquic Haplohumults	Moderate: slope, wetness.	Moderate: slope, wetness.	Severe: slope.	Moderate: wetness.	Severe: droughty.
Cryaquepts	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
8E:					
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
Kanid	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: small stones.	Severe: small stones, droughty, slope.
9F, 9G:					
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Kanid	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
10F, 11F:					
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Kanid	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
12G:					
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
13G:					
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
14G:					
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
15A:					
Bagness	Severe: flooding.	Moderate: percs slowly.	Moderate: small stones, flooding.	Slight	Moderate: flooding.
Pistolriver	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty, flooding.
16E, 17E:					
Barkshanty	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Nailkeg	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
18A------------------- Bayside	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
19-------------------- Beaches	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy, excess salt.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: excess salt, wetness, droughty.
20E:					
Bearcamp-------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: small stones, slope.
Brandypeak-----------	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope, dusty.	Severe: small stones, slope.
21F:					
Bearcamp-------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Brandypeak-----------	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, slope.
Woodseye-------------	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
22F:					
Beekman--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Colestine------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Orthents-------------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
23G:					
Beekman--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Orthents-------------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Colestine------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
24G:					
Beekman	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
25G:					
Beekman	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Vermisa	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
26A Bigriver	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
27F, 27G, 28F, 28G:					
Bobsgarden	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Rilea	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Euchrand	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: small stones, slope, depth to rock.
29F, 29G:					
Bobsgarden	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Rilea	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
30F, 31F:					
Bobsgarden	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
30F, 31F:					
Rilea----------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Rock outcrop---------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
32E, 33E:					
Bobsgarden-----------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Rilea----------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
Yorel----------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
34E:					
Bobsgarden-----------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Rilea----------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, droughty, slope.
35G:					
Brandypeak-----------	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, slope.
Bearcamp-------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Woodseye-------------	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
36F:					
Brandypeak-----------	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, slope.
Rock outcrop---------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Bearcamp-------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
37A------------------- Brenner	Severe: flooding, ponding, too acid.	Severe: ponding, too acid.	Severe: ponding, flooding, too acid.	Severe: ponding.	Severe: too acid, ponding, flooding.
38B:					
Bullards-------------	Slight----------	Slight----------	Moderate: slope.	Slight----------	Moderate: droughty.
Bandon---------------	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight----------	Severe: too acid.
Wadecreek------------	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight----------	Severe: too acid.
38D:					
Bullards-------------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: droughty, slope.
Bandon---------------	Severe: too acid.	Severe: too acid.	Severe: slope, too acid.	Slight----------	Severe: too acid.
Wadecreek------------	Severe: too acid.	Severe: too acid.	Severe: slope, too acid.	Slight----------	Severe: too acid.
39D:					
Bullards-------------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: droughty, slope.
Ferrelo--------------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
Hebo-----------------	Severe: ponding, percs slowly, too acid.	Severe: ponding, too acid, percs slowly.	Severe: ponding, percs slowly.	Severe: ponding.	Severe: too acid, ponding.
40E:					
Bullgulch------------	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Hunterscove----------	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
41F, 42F:					
Bullgulch------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hunterscove----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
43D:					
Burnthill------------	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight----------	Slight.
Cashner--------------	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness.	Severe: too acid, wetness.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
44E------------------- Burnthill	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
45F, 46G:					
Calfranch------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Capeblanco-----------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Watches--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
47F:					
Calfranch------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Watches--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Capeblanco-----------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
48G:					
Capeblanco-----------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Calfranch------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Watches--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
49F:					
Carpenterville-------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Houstenader----------	Severe: slope, wetness.	Severe: slope.	Severe: slope, small stones, wetness.	Severe: slope.	Severe: slope.
Huntley--------------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
50G, 51G:					
Cassiday	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Grouslous	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Bravo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
52G:					
Cedarcamp	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Flycatcher	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: droughty, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
53F, 54F:					
Cedarcamp	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Snowcamp	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
Flycatcher	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
55F, 56F:					
Cedarcamp	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Snowcamp	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
57A Central Point	Slight	Slight	Moderate: small stones.	Slight	Moderate: droughty.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
58A------------------- Chetco	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
59A:					
Chismore-------------	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Pyburn---------------	Severe: wetness, percs slowly, too clayey.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
59C:					
Chismore-------------	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
Pyburn---------------	Severe: wetness, percs slowly, too clayey.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
60B------------------- Chitwood	Severe: wetness, too acid.	Severe: too acid.	Severe: wetness, too acid.	Moderate: wetness.	Severe: too acid.
61A------------------- Clawson	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
62F:					
Colepoint------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bravo----------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cassiday-------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
63E:					
Colepoint------------	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Nailkeg--------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
64F:					
Colepoint------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Nailkeg--------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
65A------------------- Crofland	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
66D:					
Crutchfield	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Moderate: depth to rock.
Colepoint	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
66E:					
Crutchfield	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Colepoint	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
67F, 68F:					
Crutchfield	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Colepoint	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
69D Cunniff	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
69E Cunniff	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
70D:					
Cunniff	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
Joeney	Severe: wetness, cemented pan.	Severe: wetness, cemented pan.	Severe: wetness, cemented pan.	Severe: wetness.	Severe: wetness, cemented pan.
71F, 72F, 73F:					
Deadline	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Barkshanty	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Nailkeg	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
74F:					
Deadline	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Barkshanty	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
75E, 76E:					
Deadline	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, droughty, slope.
Irma	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
Nailkeg	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
77G, 78G, 79G:					
Deadline	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Nailkeg	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
80F, 81G, 82G:					
Deadline	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Nailkeg	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
83E:					
Desons	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Watches	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Calfranch	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, droughty, slope.
84G:					
Digger	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Preacher	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
84G:					
Bohannon	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
85F:					
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Preacher	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Bohannon	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
86G:					
Digger	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Preacher	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Bohannon	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
87F:					
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
88F:					
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Remote	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Umpcoos	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
89E, 90E:					
Digger	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
89E, 90E:					
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
91F, 91G:					
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Umpcoos	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Dystrochrepts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
92G:					
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Umpcoos	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
93G:					
Digger	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Umpcoos	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
94F:					
Dubakella	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Cornutt	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
95G, 96G:					
Dulandy	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bosland	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Floras	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
97E:					
Dulandy	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Guerin	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: large stones, slope.	Severe: small stones, droughty, slope.
Bosland	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
98G:					
Dulandy	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Guerin	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
99E:					
Dumont	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
Acker	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
Kanid	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
100G:					
Dystrochrepts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Rubble land	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: small stones, large stones, droughty.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
101F:					
Dystrochrepts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rubble land	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
102D:					
Edson	Moderate: small stones, percs slowly.	Moderate: small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, large stones.
Barkshanty	Moderate: small stones, percs slowly.	Moderate: small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, large stones.
102E:					
Edson	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Barkshanty	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
103D:					
Edson	Moderate: small stones, percs slowly.	Moderate: small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, large stones.
Barkshanty	Moderate: small stones, percs slowly.	Moderate: small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, large stones.
103E:					
Edson	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Barkshanty	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
104E:					
Eightlar	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: large stones, droughty, slope.
Gravecreek	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope, dusty.	Severe: large stones, slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
104E:					
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: large stones, slope, depth to rock.
105F:					
Eightlar	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, droughty, slope.
Gravecreek	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.
106B:					
Eilertsen	Slight	Slight	Moderate: slope.	Slight	Slight.
Zyzzug	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
107C Ekoms	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
108F, 109F:					
Etelka	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Whobrey	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope.	Severe: slope.
110D:					
Etelka	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Slight	Moderate: slope.
Whobrey	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Moderate: wetness.	Moderate: wetness, slope.
Remote	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight	Moderate: small stones, droughty, slope.
110E:					
Etelka	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
110E:					
Whobrey	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Moderate: wetness, slope.	Severe: slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
111A: Ettersburg	Severe: flooding.	Moderate: percs slowly.	Moderate: small stones, percs slowly.	Slight	Slight.
112A: Evans	Severe: flooding.	Moderate: dusty.	Moderate: flooding, dusty.	Moderate: dusty.	Moderate: flooding.
113F, 113G, 114G:					
Fantz	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Knapke	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
115F:					
Ferrelo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bullards	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
116D:					
Ferrelo	Slight	Slight	Severe: slope.	Slight	Slight.
Gearhart	Severe: too acid.	Severe: too acid.	Severe: slope, too acid.	Slight	Severe: too acid.
116E:					
Ferrelo	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Gearhart	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, too acid.	Moderate: slope.	Severe: too acid, slope.
117F, 118F:					
Floras	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bosland	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Dulandy	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
119A:					
Foehlin	Moderate: small stones, dusty.	Moderate: small stones, dusty.	Severe: small stones.	Moderate: dusty.	Moderate: small stones.
Cove	Severe: flooding, wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
120E, 121E: Frankport	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty, slope.
122F:					
Fritsland	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bravo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cassiday	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
123F:					
Fritsland	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bravo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cassiday	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
124E:					
Gamelake	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
Tincup	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, large stones, droughty.
125F, 125G:					
Gamelake	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Tincup	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
126A: Gauldy	Severe: flooding.	Slight	Moderate: small stones, flooding.	Slight	Moderate: flooding.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
127A:					
Gauldy	Severe: flooding.	Slight	Moderate: small stones, flooding.	Slight	Moderate: flooding.
Willanch	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
128A Gleneden	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Moderate: wetness.	Moderate: wetness.
129E Grassyknob	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
130F Grassyknob	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
131G, 132F:					
Gravecreek	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Eightlar	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, droughty, slope.
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.
133G:					
Gravecreek	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.
Eightlar	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, droughty, slope.
134E:					
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, large stones, droughty.
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
134E:					
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.
135F:					
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
136G, 137G:					
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
138B:					
Grindbrook	Severe: too acid.	Severe: too acid.	Severe: too acid.	Severe: erodes easily.	Severe: too acid.
Wadecreek	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight	Severe: too acid.
139G:					
Grouslous	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Cassiday	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
140F:					
Haplumbrepts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
140F:					
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Cryaquepts	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
141G:					
Haplumbrepts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Rubble land	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: small stones, large stones, droughty.
142E:					
Hazelcamp	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Averlande	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.	Severe: slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.
143B Hebo	Severe: ponding, percs slowly, too acid.	Severe: ponding, too acid, percs slowly.	Severe: ponding, percs slowly.	Severe: ponding.	Severe: too acid, ponding.
144A Heceta	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
145E:					
Honeygrove	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Shivigny	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
146F:					
Honeygrove	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Shivigny	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
147E:					
Honeygrove	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Shivigny	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
148D:					
Hooskanaden	Severe: wetness, percs slowly.	Severe: percs slowly.	Severe: slope, small stones, wetness.	Moderate: wetness.	Moderate: small stones, wetness.
Loneranch	Moderate: small stones, wetness.	Moderate: wetness, small stones.	Severe: slope, small stones.	Slight	Moderate: small stones, large stones.
Millicoma	Severe: too acid.	Severe: too acid.	Severe: slope, small stones, too acid.	Slight	Severe: too acid.
148E:					
Hooskanaden	Severe: slope, wetness, percs slowly.	Severe: slope, percs slowly.	Severe: slope, small stones, wetness.	Moderate: wetness, slope.	Severe: slope.
Loneranch	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Millicoma	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, small stones, too acid.	Moderate: slope.	Severe: too acid, slope.
149E:					
Hooskanaden	Severe: slope, wetness, percs slowly.	Severe: slope, percs slowly.	Severe: slope, wetness.	Moderate: wetness, slope.	Severe: slope.
Loneranch	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Reinhart	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.	Severe: slope, depth to rock.
150F:					
Hooskanaden	Severe: slope, wetness, percs slowly.	Severe: slope, percs slowly.	Severe: slope, wetness.	Severe: slope.	Severe: slope.
Loneranch	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
150F:					
Reinhart	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: slope, depth to rock.
151D Horseprairie	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
151E Horseprairie	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
152E:					
Houstenader	Severe: slope, wetness.	Severe: slope.	Severe: slope, small stones, wetness.	Moderate: wetness, slope.	Severe: slope.
Carpenterville	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: wetness, slope.	Severe: slope.
Huntley	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: slope, depth to rock.
153A Huffling	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
154G:					
Jayar	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Althouse	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Woodseye	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
155F:					
Jayar	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Althouse	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
156G:					
Jayar	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
156G:					
Skymor	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Althouse	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
157E:					
Josephine	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
Pollard	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, dusty.	Severe: slope.
Speaker	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
158F, 159F:					
Kanid	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Acker	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
160F, 160G:					
Kanid	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Atring	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
161A:					
Kirkendall	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
Quosatana	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
162A Klooqueh	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
162B Klooqueh	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
163F:					
Knapke	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Fantz	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
164A Langlois	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
165D:					
Loeb	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
Macklyn	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Moderate: depth to rock.
165E:					
Loeb	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Macklyn	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
166E:					
Loeb	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Macklyn	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Vondergreen	Severe: slope, wetness, too acid.	Severe: slope, too acid.	Severe: slope, wetness, too acid.	Moderate: wetness, slope.	Severe: too acid, slope.
167A Logsden	Severe: flooding.	Slight	Slight	Slight	Slight.
168A:					
Logsden	Severe: flooding.	Slight	Slight	Slight	Slight.
Euchre	Severe: wetness, too acid.	Severe: too acid.	Severe: wetness, too acid.	Moderate: wetness.	Severe: too acid.
169F:					
Loneranch	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Hooskanaden	Severe: slope, wetness, percs slowly.	Severe: slope, percs slowly.	Severe: slope, small stones, wetness.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
169F:					
Millicoma	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, small stones, too acid.	Severe: slope.	Severe: too acid, slope.
170F:					
Loneranch	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Hooskanaden	Severe: slope, wetness, percs slowly.	Severe: slope, percs slowly.	Severe: slope, wetness.	Severe: slope.	Severe: slope.
Reinhart	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: slope, depth to rock.
171B:					
McCurdy	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Slight	Slight.
Wintley	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Slight.
172C Meda	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight	Moderate: small stones, droughty, slope.
173F, 174F:					
Milbury	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, large stones, slope.
Remote	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Umpcoos	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
175F, 175G, 176F, 176G:					
Milbury	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, large stones, slope.
Umpcoos	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
175F, 175G, 176F, 176G:					
Dystrochrepts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
177G:					
Milbury	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: large stones, slope.
Umpcoos	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
178F, 178G, 179G:					
Millicoma	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, small stones, too acid.	Severe: slope.	Severe: too acid, slope.
Whaleshead	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
180F:					
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
Redflat	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
181F:					
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
182F:					
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Redflat	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
183A Nehalem	Severe: flooding.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
184B:					
Nelscott	Moderate: wetness.	Moderate: wetness.	Moderate: slope, wetness, cemented pan.	Slight	Moderate: cemented pan.
Depoe	Severe: ponding, cemented pan.	Severe: ponding, cemented pan.	Severe: ponding, cemented pan.	Severe: ponding.	Severe: ponding, cemented pan.
Bullards	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
185A Nestucca	Severe: flooding, wetness.	Moderate: flooding, wetness, percs slowly.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
186D:					
Orford	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
McDuff	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Moderate: depth to rock.
186E:					
Orford	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
McDuff	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
187B Orthents	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight	Severe: droughty, depth to rock.
188G, 189G:					
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.
Gravecreek	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
188G, 189G:					
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
190F:					
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Gravecreek	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
191E:					
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: large stones, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.
192F:					
Pearsoll	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
193E:					
Perdin	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope, dusty.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.
194F, 194G, 195F, 195G:					
Perdin	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
194F, 194G, 195F, 195G:					
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
196C	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Moderate: dusty.	Moderate: large stones, slope.
Pollard					
196D	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, dusty.	Severe: slope.
Pollard					
197E:					
Pollard	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, dusty.	Severe: slope.
Josephine	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, dusty.	Severe: slope.
Shastacosta	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
198E:					
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Blachly	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
199E:					
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Blachly	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Digger	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
200F, 201F:					
Preacher	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Digger	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Bohannon	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
202D:					
Pyrady	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Slight	Moderate: large stones.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
202D:					
Zalea	Moderate: small stones, percs slowly.	Moderate: small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, depth to rock.
Yorel	Moderate: small stones, percs slowly.	Moderate: small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, depth to rock.
203B Quillamook	Slight	Slight	Moderate: slope.	Slight	Slight.
204E:					
Redflat	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, large stones, droughty.
205F:					
Reedsport	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Whaleshead	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
206G:					
Reedsport	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Whaleshead	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
207E:					
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
208F:					
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Digger	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
209F:					
Remote	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Whobrey	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
210G, 211G:					
Rilea	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Euchrand	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: small stones, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
212G, 213G:					
Rilea	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Stackyards	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
214 Riverwash	Severe: flooding, wetness.	Severe: wetness, too sandy.	Severe: small stones, too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
215G, 216G:					
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Grouslous	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Cassiday	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
217:					
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Orthents	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
218E Rogue	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
219F, 220F Rogue	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
221B:					
Ruch	Moderate: dusty.	Moderate: dusty.	Moderate: slope, small stones, dusty.	Moderate: dusty.	Slight.
Selmac	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, small stones, wetness.	Moderate: wetness, dusty.	Moderate: wetness.
221D:					
Ruch	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Moderate: dusty.	Moderate: slope.
Selmac	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Moderate: wetness, dusty.	Moderate: wetness, slope.
222F:					
Rustybutte	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Sebastian	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
223F:					
Rustybutte	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Sebastian	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
224E:					
Saddlepeak	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Moderate: slope.	Severe: too acid, small stones, droughty.
Threetrees	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
225D:					
Saddlepeak	Severe: small stones, too acid.	Severe: small stones, too acid.	Severe: slope, small stones, too acid.	Slight	Severe: too acid, small stones, droughty.
Threetrees	Severe: small stones.	Severe: small stones.	Severe: slope, small stones.	Slight	Severe: small stones.
225E:					
Saddlepeak	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Moderate: slope.	Severe: too acid, small stones, droughty.
Threetrees	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
226E:					
Saddlepeak	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Moderate: slope.	Severe: too acid, small stones, droughty.
Threetrees	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
227F, 228F:					
Saddlepeak	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope.	Severe: too acid, small stones, droughty.
Threetrees	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Scalerock	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, too acid.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: too acid, small stones, large stones.
229E:					
Sebastian	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, large stones, droughty.
Rustybutte	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.
230E:					
Serpentano	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: slope.
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
231F, 232F:					
Serpentano	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
Mislatnah	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Greggo	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
233F:					
Shastacosta	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Pollard	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
233F:					
Beekman	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
234F:					
Shivigny	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
Honeygrove	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
235F, 236F:					
Sitkum	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Steinmetz	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
237E:					
Skookumhouse	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Hazelcamp	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
238D:					
Skookumhouse	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
Hazelcamp	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Moderate: depth to rock.
Averlande	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, small stones, depth to rock.	Slight	Severe: depth to rock.
238E:					
Skookumhouse	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Hazelcamp	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Averlande	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.	Severe: slope, depth to rock.
239G:					
Skymor	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
239G:					
Jayar	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
240E:					
Snowcamp	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, large stones, droughty.
Cedarcamp	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.	Severe: small stones, slope.
Flycatcher	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, large stones, droughty.
241E:					
Snowcamp	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: droughty, slope.
Cedarcamp	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.
242G:					
Snowcamp	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: droughty, slope.
Flycatcher	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: droughty, slope, depth to rock.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
243F:					
Speaker	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Josephine	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
243F:					
Beekman	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
244G, 245G:					
Stackyards	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rilea	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Euchrand	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: small stones, slope, depth to rock.
246F, 246G, 247F, 247G:					
Stackyards	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rilea	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
248F, 249F:					
Stackyards	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rilea	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
250F, 251F:					
Stackyards	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rilea	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
250F, 251F:					
Yorel	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
252G, 253G:					
Steinmetz	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sitkum	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
254D:					
Svensen	Severe: too acid.	Severe: too acid.	Severe: slope, too acid.	Slight	Severe: too acid.
Reedsport	Moderate: small stones.	Moderate: small stones.	Severe: slope, small stones.	Slight	Moderate: small stones, depth to rock.
254E:					
Svensen	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, too acid.	Moderate: slope.	Severe: too acid, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
255E:					
Swedeheaven	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Quailprairie	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Sankey	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.	Severe: small stones, droughty, slope.
256F:					
Swedeheaven	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Quailprairie	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Sankey	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.	Severe: small stones, droughty, slope.
257A Takilma	Moderate: large stones, small stones, dusty.	Moderate: large stones, small stones, dusty.	Severe: large stones, small stones.	Moderate: large stones, dusty.	Severe: droughty.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
258E------------------ Templeton	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, too acid.	Moderate: slope.	Severe: too acid, slope.
259F------------------ Templeton	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope.	Severe: too acid, slope.
260F, 261G, 262F, 262G, 263G:					
Threetrees----------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Saddlepeak----------	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope, small stones, too acid.	Severe: slope.	Severe: too acid, small stones, droughty.
Scalerock-----------	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, too acid.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: too acid, small stones, large stones.
264F:					
Threetrees-----------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Scalerock------------	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, too acid.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: too acid, small stones, large stones.
Rock outcrop---------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
265F, 265G:					
Tolfork--------------	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, droughty, slope.
Tincup---------------	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, large stones, droughty.
266------------------- Urban land	Variable--------	Variable--------	Variable--------	Variable--------	Variable.
267F:					
Vermisa--------------	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Beekman--------------	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
267F:					
Colestine	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
268D:					
Waldport	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: slope.
Dune land	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty, slope.
269D:					
Waldport	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: slope.
Dune land	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty, slope.
Heceta	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
270E:					
Wedderburn	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Zwagg	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
271F, 271G:					
Wedderburn	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
Zwagg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
272F, 272G:					
Whaleshead	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
273F:					
Whaleshead	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.	Severe: small stones, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.

Table 10.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
273F:					
Millicoma	Severe: slope, too acid.	Severe: slope, too acid.	Severe: slope, small stones, too acid.	Severe: slope.	Severe: too acid, slope.
274A Winchuck	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
274D Winchuck	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
274E Winchuck	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
275G:					
Woodseye	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.	Severe: droughty, slope, depth to rock.
Brandypeak	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, slope.
276A Yachats	Severe: flooding, too acid.	Severe: too acid.	Severe: flooding, too acid.	Moderate: flooding.	Severe: too acid, flooding.
277A Yaquina	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
278E:					
Zalea	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Pyrady	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Yorel	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
279E:					
Zalea	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Yorel	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Rock outcrop	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1B: Abegg	Severe: cutbanks cave.	Moderate: large stones.	Moderate: large stones.	Moderate: slope, large stones.	Moderate: large stones.	Moderate: small stones, large stones.
1D: Abegg	Severe: cutbanks cave.	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope.	Moderate: slope, large stones.	Moderate: small stones, large stones, slope.
2F:						
Acker	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Norling	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
3E, 4F:						
Agness	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sixes	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Goldbeach	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
5F:						
Althouse	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Jayar	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Skymor	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
6F:						
Althouse	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Jayar	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Woodseye	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
7D:						
Aquic Haplohumults----	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Moderate: wetness, slope, frost action.	Severe: droughty.
Cryaquepts-------	Severe: ponding.	Severe: ponding, low strength.	Severe: ponding.	Severe: ponding, low strength.	Severe: low strength, ponding.	Severe: ponding.
8E, 9F, 9G:						
Atring-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Kanid------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Vermisa----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
10F, 11F:						
Atring-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Kanid------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
12G:						
Atring-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Vermisa----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
13G:						
Atring-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Vermisa----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
14G:						
Atring-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Vermisa----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
15A:						
Bagness----------	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Pistolriver------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, droughty, flooding.
16E, 17E:						
Barkshanty-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Nailkeg----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
18A--------------- Bayside	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
19---------------- Beaches	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess salt, wetness, droughty.
20E:						
Bearcamp---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Brandypeak-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
21F:						
Bearcamp---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
21F:						
Brandypeak	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Woodseye	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
22F:						
Beekman	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Colestine	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Orthents	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
23G:						
Beekman	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Orthents	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Colestine	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
24G:						
Beekman	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Vermisa	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
25G:						
Beekman	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Vermisa	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
26A--------------- Bigriver	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
27F, 27G, 28F, 28G:						
Bobsgarden------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rilea-----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Euchrand--------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
29F, 29G:						
Bobsgarden-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
30F, 31F:						
Bobsgarden-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
32E, 33E:						
Bobsgarden-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Yorel------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
34E:						
Bobsgarden-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
34E:						
Rilea-----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
35G:						
Brandypeak-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Bearcamp---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Woodseye---------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
36F:						
Brandypeak-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Bearcamp---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
37A-------------- Brenner	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: too acid, ponding, flooding.
38B:						
Bullards---------	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
Bandon-----------	Severe: cutbanks cave.	Slight---------	Moderate: cemented pan.	Moderate: slope.	Slight---------	Severe: too acid.
Wadecreek--------	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Severe: too acid.
38D:						
Bullards---------	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Bandon-----------	Severe: cutbanks cave.	Moderate: slope.	Moderate: cemented pan, slope.	Severe: slope.	Moderate: slope.	Severe: too acid.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
38D:						
Wadecreek	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Severe: too acid.
39D:						
Bullards	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Ferrelo	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
Hebo	Severe: ponding.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: too acid, ponding.
40E, 41F, 42F:						
Bullgulch	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Hunterscove	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
43D:						
Burnthill	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
Cashner	Severe: cemented pan, cutbanks cave, wetness.	Severe: wetness.	Severe: wetness, cemented pan.	Severe: wetness.	Severe: wetness.	Severe: too acid, wetness.
44E Burnthill	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
45F, 46G:						
Calfranch	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Capeblanco	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Watches	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
47F:						
Calfranch	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
47F:						
Watches----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Capeblanco-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
48G:						
Capeblanco-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Calfranch--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Watches----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
49F:						
Carpenterville---	Severe: depth to rock, large stones, wetness.	Severe: shrink-swell, slope, large stones.	Severe: wetness, depth to rock, slope.	Severe: shrink-swell, slope, large stones.	Severe: shrink-swell, slope, large stones.	Severe: slope.
Houstenader------	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: slope.	Severe: slope.
Huntley----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
50G, 51G:						
Cassiday---------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Grouslous--------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Bravo------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
52G:						
Cedarcamp--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Flycatcher-------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
52G:						
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
53F, 54F:						
Cedarcamp	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Snowcamp	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
Flycatcher	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
55F, 56F:						
Cedarcamp	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Snowcamp	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
57A Central Point	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
58A Chetco	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
59A, 59C:						
Chismore	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: wetness.
Pyburn	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness, too clayey.
60B Chitwood	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Severe: too acid.
61A Clawson	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
62F:						
Colepoint	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
62F:						
Bravo	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cassiday	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
63E, 64F:						
Colepoint	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Nailkeg	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
65A Crofland	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: wetness.
66D:						
Crutchfield	Severe: depth to rock.	Moderate: shrink-swell, depth to rock.	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Moderate: depth to rock, shrink-swell.	Moderate: depth to rock.
Colepoint	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Slight.
66E, 67F, 68F:						
Crutchfield	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Colepoint	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
69D Cunniff	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
69E Cunniff	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
70D:						
Cunniff	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Joeney	Severe: cemented pan, wetness.	Severe: wetness.	Severe: wetness, cemented pan.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness, cemented pan.
71F, 72F, 73F:						
Deadline	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
71F, 72F, 73F:						
Barkshanty-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Nailkeg----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
74F:						
Deadline---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Barkshanty-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
75E, 76E:						
Deadline---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Irma-------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Nailkeg----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
77G, 78G, 79G:						
Deadline---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Nailkeg----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
80F, 81G, 82G:						
Deadline---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Nailkeg----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
83E:						
Desons	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Watches	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Calfranch	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
84G:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Bohannon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
85F:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Bohannon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
86G:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Bohannon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
87F:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
88F:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
89E, 90E:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
91F, 91G:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Dystrochrepts	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
92G:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
93G:						
Digger	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
94F:						
Dubakella--------	Severe: depth to rock, slope.	Severe: shrink-swell, slope.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, slope.	Severe: large stones, slope.
Cornutt----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Pearsoll---------	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
95G, 96G:						
Dulandy----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bosland----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Floras-----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
97E:						
Dulandy----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Guerin-----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
Bosland----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
98G:						
Dulandy----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Guerin-----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
99E:						
Dumont	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Acker	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Kanid	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
100G:						
Dystrochrepts	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Rubble land	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
101F:						
Dystrochrepts	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rubble land	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
102D:						
Edson	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: small stones, large stones.
Barkshanty	Moderate: large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, slope, large stones.	Moderate: shrink-swell, large stones.	Moderate: small stones, large stones.
102E:						
Edson	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Barkshanty	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
103D:						
Edson------------	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: small stones, large stones.
Barkshanty-------	Moderate: large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, slope, large stones.	Moderate: shrink-swell, large stones.	Moderate: small stones, large stones.
103E:						
Edson------------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Barkshanty-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
104E, 105F:						
Eightlar---------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, slope.	Severe: large stones, droughty, slope.
Gravecreek-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Pearsoll---------	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
106B:						
Eilertsen--------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Zyzzug-----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
107C-------------- Ekoms	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Slight.
108F, 109F:						
Etelka-----------	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Remote-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Whobrey----------	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
110D:						
Etelka-----------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
Whobrey----------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: wetness, slope.
Remote-----------	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, droughty, slope.
110E:						
Etelka-----------	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Whobrey----------	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Remote-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
111A-------------- Ettersburg	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: shrink-swell, low strength, flooding.	Slight.
112A-------------- Evans	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
113F, 113G, 114G:						
Fantz------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Knapke-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
115F:						
Ferrelo----------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bullards---------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
116D:						
Ferrelo----------	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
Gearhart---------	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: too acid.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
116E:						
Ferrelo----------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Gearhart---------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, slope.
117F, 118F:						
Floras-----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Bosland----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Dulandy----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
119A:						
Foehlin----------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: small stones.
Cove-------------	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
120E, 121E-------- Frankport	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
122F:						
Fritsland--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bravo------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cassiday---------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
123F:						
Fritsland--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bravo------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cassiday---------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
124E, 125F, 125G:						
Gamelake	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Tincup	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
126A Gauldy	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
127A:						
Gauldy	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Willanch	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding.
128A Gleneden	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: wetness.
129E, 130F Grassyknob	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
131G, 132F:						
Gravecreek	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Eightlar	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, slope.	Severe: large stones, droughty, slope.
Pearsoll	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
133G:						
Gravecreek	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Pearsoll	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
Eightlar	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, slope.	Severe: large stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
134E, 135F:						
Greggo	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
Mislatnah	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
136G, 137G:						
Greggo	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Mislatnah	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
138B:						
Grindbrook	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: low strength.	Severe: too acid.
Wadecreek	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Severe: too acid.
139G:						
Grouslous	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Cassiday	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
140F:						
Haplumbrepts	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
140F:						
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Cryaquepts-------	Severe: ponding.	Severe: ponding, low strength.	Severe: ponding.	Severe: ponding, low strength.	Severe: low strength, ponding.	Severe: ponding.
141G:						
Haplumbrepts-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Rubble land------	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
142E:						
Hazelcamp--------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Averlande--------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
143B-------------- Hebo	Severe: ponding.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: too acid, ponding.
144A-------------- Heceta	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
145E, 146F, 147E:						
Honeygrove-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Shivigny---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
148D:						
Hooskanaden------	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, low strength.	Moderate: small stones, wetness.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
148D:						
Lonerranch	Severe: depth to rock, wetness.	Moderate: wetness, shrink-swell.	Severe: wetness, depth to rock.	Moderate: wetness, shrink-swell, slope.	Moderate: depth to rock, shrink-swell.	Moderate: small stones, large stones.
Millicoma	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Severe: too acid.
148E:						
Hooskanaden	Severe: wetness, slope.	Severe: wetness, shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: wetness, shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Loneranch	Severe: depth to rock, wetness, slope.	Severe: slope.	Severe: wetness, depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Millicoma	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, slope.
149E, 150F:						
Hooskanaden	Severe: wetness, slope.	Severe: wetness, shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: wetness, shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Loneranch	Severe: depth to rock, wetness, slope.	Severe: slope.	Severe: wetness, depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Reinhart	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
151D Horseprairie	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
151E Horseprairie	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
152E:						
Houstenader	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: slope.	Severe: slope.
Carpenterville	Severe: depth to rock, large stones, wetness.	Severe: shrink-swell, slope, large stones.	Severe: wetness, depth to rock, slope.	Severe: shrink-swell, slope, large stones.	Severe: shrink-swell, slope, large stones.	Severe: slope.
Huntley	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
153A------------- Huffling	Severe: ponding.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: ponding.
154G:						
Jayar------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Althouse---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Woodseye---------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
155F:						
Jayar------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Althouse---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
156G:						
Jayar------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Skymor-----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Althouse---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
157E:						
Josephine--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Pollard----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Speaker----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
158F, 159F:						
Kanid------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
158F, 159F:						
Acker	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Atring	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
160F, 160G:						
Kanid	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Atring	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
161A:						
Kirkendall	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Moderate: flooding.
Quosatana	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
162A, 162B Klooqueh	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
163F:						
Knapke	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Fantz	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
164A Langlois	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: ponding, flooding.
165D:						
Loeb	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Macklyn	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
165E:						
Loeb	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
165E:						
Macklyn----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
166E:						
Loeb-------------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Macklyn----------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Vondergreen------	Severe: wetness, slope.	Severe: wetness, shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: wetness, shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: too acid, slope.
167A------------- Logsden	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: low strength, flooding.	Slight.
168A:						
Logsden----------	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: low strength, flooding.	Slight.
Euchre-----------	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: too acid.
169F:						
Loneranch--------	Severe: depth to rock, wetness, slope.	Severe: slope.	Severe: wetness, depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hooskanaden------	Severe: wetness, slope.	Severe: wetness, shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: wetness, shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Millicoma--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, slope.
170F:						
Loneranch--------	Severe: depth to rock, wetness, slope.	Severe: slope.	Severe: wetness, depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hooskanaden------	Severe: wetness, slope.	Severe: wetness, shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: wetness, shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
170F:						
Reinhart	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
171B:						
McCurdy	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Wintley	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
172C: Meda	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, droughty, slope.
173F, 174F:						
Milbury	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, large stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
175F, 175G, 176F, 176G:						
Milbury	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, large stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Dystrochrepts	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
177G:						
Milbury	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
178F, 178G, 179G:						
Millicoma	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, slope.
Whaleshead	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
180F:						
Mislatnah	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Greggo	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
Redflat	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
181F:						
Mislatnah	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Greggo	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
182F:						
Mislatnah	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Redflat	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Greggo	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
183A Nehalem	Slight	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Slight.
184B:						
Nelscott	Severe: cutbanks cave, wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Moderate: shrink-swell, low strength.	Moderate: cemented pan.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
184B:						
Depoe-----------	Severe: cemented pan, cutbanks cave, ponding.	Severe: ponding, cemented pan.	Severe: ponding, cemented pan.	Severe: ponding, cemented pan.	Severe: cemented pan, ponding.	Severe: ponding, cemented pan.
Bullards---------	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
185A------------- Nestucca	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Severe: flooding.
186D:						
Orford----------	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
McDuff----------	Moderate: depth to rock, too clayey.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Moderate: depth to rock.
186E:						
Orford----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
McDuff----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
187B------------- Orthents	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: droughty, depth to rock.
188G, 189G:						
Pearsoll---------	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
Gravecreek-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
190F:						
Pearsoll---------	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
190F:						
Gravecreek	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
191E, 192F:						
Pearsoll	Severe: depth to rock, large stones, slope.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, slope, shrink-swell.	Severe: shrink-swell, slope, depth to rock.	Severe: depth to rock, shrink-swell, slope.	Severe: large stones, slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
193E, 194F, 194G, 195F, 195G:						
Perdin	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
196C Pollard	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: large stones, slope.
196D Pollard	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
197E:						
Pollard	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Josephine	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Shastacosta	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
198E:						
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Blachly	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
199E:						
Preacher	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
199E:						
Blachly----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Digger-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
200F, 201F:						
Preacher---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Digger-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bohannon---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
202D:						
Pyrady-----------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: large stones.
Zalea------------	Severe: depth to rock.	Moderate: shrink-swell, depth to rock.	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Moderate: depth to rock, shrink-swell.	Moderate: small stones, depth to rock.
Yorel------------	Severe: depth to rock.	Moderate: shrink-swell, depth to rock.	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Moderate: depth to rock, shrink-swell.	Moderate: small stones, depth to rock.
203B-------------- Quillamook	Severe: cutbanks cave, excess humus.	Severe: low strength.	Slight---------	Severe: low strength.	Moderate: low strength.	Slight.
204E:						
Redflat----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Mislatnah--------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Greggo-----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
205F:						
Reedsport--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Whaleshead-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
206G:						
Reedsport--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
206G:						
Whaleshead-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
207E, 208F:						
Remote-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Digger-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
209F:						
Remote-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Whobrey----------	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
210G, 211G:						
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Euchrand---------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
212G, 213G:						
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Stackyards-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
212G, 213G:						
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
214--------------- Riverwash	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, droughty.
215G, 216G:						
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Grouslous--------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Cassiday---------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
217:						
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Orthents---------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
218E, 219F, 220F-- Rogue	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
221B:						
Ruch-------------	Slight---------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
Selmac-----------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: wetness.
221D:						
Ruch-------------	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope.
Selmac-----------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: wetness, slope.
222F:						
Rustybutte-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
222F:						
Sebastian--------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty.
223F:						
Rustybutte-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sebastian--------	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: small stones, large stones, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
224E:						
Saddlepeak-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, small stones, droughty.
Threetrees-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
225D:						
Saddlepeak-------	Moderate: large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, slope, large stones.	Moderate: shrink-swell, frost action.	Severe: too acid, small stones, droughty.
Threetrees-------	Severe: depth to rock.	Moderate: shrink-swell, depth to rock.	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Moderate: depth to rock, shrink-swell.	Severe: small stones.
225E:						
Saddlepeak-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, small stones, droughty.
Threetrees-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
226E:						
Saddlepeak-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, small stones, droughty.
Threetrees-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
226E:						
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
227F, 228F:						
Saddlepeak-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, small stones, droughty.
Threetrees-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Scalerock--------	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: too acid, small stones, large stones.
229E:						
Sebastian--------	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: small stones, large stones, droughty.
Rustybutte-------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
230E:						
Serpentano-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Mislatnah--------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
231F, 232F:						
Serpentano-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Mislatnah--------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Greggo-----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
233F:						
Shastacosta------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
233F:						
Pollard----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Beekman----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
234F:						
Shivigny---------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Honeygrove-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
235F, 236F:						
Sitkum-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Steinmetz--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
237E:						
Skookumhouse-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Hazelcamp--------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
238D:						
Skookumhouse-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Hazelcamp--------	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Averlande--------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
238E:						
Skookumhouse-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Hazelcamp--------	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Averlande--------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
239G:						
Skymor	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Jayar	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
240E:						
Snowcamp	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
Cedarcamp	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Flycatcher	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, large stones, droughty.
241E:						
Snowcamp	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Cedarcamp	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
242G:						
Snowcamp	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Flycatcher	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
243F:						
Speaker	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
243F:						
Josephine--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Beekman----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
244G, 245G:						
Stackyards-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Euchrand---------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope, depth to rock.
246F, 246G, 247F, 247G:						
Stackyards------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Rilea-----------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
248F, 249F:						
Stackyards-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
250F, 251F:						
Stackyards-------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
250F, 251F:						
Rilea------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Yorel------------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
252G, 253G:						
Steinmetz--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sitkum-----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
254D:						
Svensen----------	Slight---------	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Severe: too acid.
Reedsport--------	Moderate: depth to rock.	Slight---------	Moderate: depth to rock.	Moderate: slope.	Slight---------	Moderate: small stones, depth to rock.
254E:						
Svensen----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, slope.
Reedsport--------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
255E, 256F:						
Swedeheaven------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Quailprairie-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sankey-----------	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
257A------------- Takilma	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Severe: droughty.
258E, 259F-------- Templeton	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: too acid, slope.
260F, 261G, 262F, 262G, 263G:						
Threetrees------	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Saddlepeak------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, small stones, droughty.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
260F, 261G, 262F, 262G, 263G:						
Scalerock	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: too acid, small stones, large stones.
264F:						
Threetrees	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Scalerock	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: too acid, small stones, large stones.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
265F, 265G:						
Tolfork	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
Tincup	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.
266 Urban land	Variable	Variable	Variable	Variable	Variable	Variable.
267F:						
Vermisa	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
Beekman	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Colestine	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
268D:						
Waldport	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Dune land	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
269D:						
Waldport	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
269D:						
Dune land	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Heceta	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
270E, 271F, 271G:						
Wedderburn	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Zwagg	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
272F, 272G:						
Whaleshead	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
273F:						
Whaleshead	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Reedsport	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Millicoma	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too acid, slope.
274A Winchuck	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
274D Winchuck	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
274E Winchuck	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
275G:						
Woodseye	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, droughty, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
275G:						
Brandypeak	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
276A: Yachats	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: too acid, flooding.
277A: Yaquina	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
278E:						
Zalea	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Pyrady	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Yorel	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
279E:						
Zalea	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Yorel	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.

Table 12.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1B------------------ Abegg	Moderate: percs slowly, large stones.	Severe: seepage.	Severe: seepage.	Slight-----------	Poor: small stones.
1D------------------ Abegg	Moderate: percs slowly, slope, large stones.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Poor: small stones.
2F:					
Acker--------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Norling------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
3E, 4F:					
Agness-------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Sixes--------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Goldbeach----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
5F:					
Althouse-----------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Jayar--------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Skymor-------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
6F:					
Althouse-----------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Jayar--------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
6F:					
Woodseye-----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
7D:					
Aquic Haplohumults	Severe: depth to rock, wetness.	Severe: depth to rock, slope, wetness.	Severe: depth to rock, wetness.	Severe: depth to rock, wetness.	Poor: depth to rock.
Cryaquepts---------	Severe: depth to rock, ponding.	Severe: depth to rock, ponding.	Severe: depth to rock, ponding.	Severe: depth to rock, ponding.	Poor: depth to rock, hard to pack.
8E, 9F, 9G:					
Atring-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Kanid--------------	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Vermisa------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
10F, 11F:					
Atring-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Kanid--------------	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
12G:					
Atring-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Vermisa------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
13G:					
Atring	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Vermisa	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
14G:					
Atring	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Vermisa	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
15A:					
Bagness	Severe: flooding, percs slowly.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Fair: too clayey.
Pistolriver	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, small stones.
16E, 17E:					
Barkshanty	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Nailkeg	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
18A: Bayside	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
19: Beaches	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
20E:					
Bearcamp	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: seepage, small stones, slope.
Brandypeak	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
21F:					
Bearcamp	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: seepage, small stones, slope.
Brandypeak	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Woodseye	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
22F:					
Beekman	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Colestine	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Orthents	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
23G:					
Beekman	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Orthents	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Colestine	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
24G:					
Beekman	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
24G:					
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Vermisa	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
25G:					
Beekman	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Vermisa	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
26A Bigriver	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding, seepage.	Fair: too sandy.
27F, 27G, 28F, 28G:					
Bobsgarden	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rilea	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Euchrand	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
29F, 29G:					
Bobsgarden	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rilea	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
30F, 31F:					
Bobsgarden	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
30F, 31F:					
Rilea	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
32E, 33E:					
Bobsgarden	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rilea	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Yorel	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
34E:					
Bobsgarden	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rilea	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
35G:					
Brandypeak	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Bearcamp	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: seepage, small stones, slope.
Woodseye	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
36F:					
Brandypeak	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
36F:					
Bearcamp	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: seepage, small stones, slope.
37A: Brenner	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too acid.	Severe: flooding, ponding.	Poor: ponding, too acid.
38B:					
Bullards	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Slight	Fair: small stones, thin layer.
Bandon	Severe: cemented pan.	Severe: seepage, cemented pan.	Severe: seepage, too acid.	Severe: cemented pan.	Poor: cemented pan.
Wadecreek	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: too clayey, too acid.	Moderate: wetness.	Poor: too clayey, too acid.
38D:					
Bullards	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Fair: small stones, slope, thin layer.
Bandon	Severe: cemented pan.	Severe: seepage, cemented pan, slope.	Severe: seepage, too acid.	Severe: cemented pan.	Poor: cemented pan.
Wadecreek	Severe: wetness, percs slowly.	Severe: slope.	Severe: too clayey, too acid.	Moderate: wetness, slope.	Poor: too clayey, too acid.
39D:					
Bullards	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Fair: small stones, slope, thin layer.
Ferrelo	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: slope, thin layer.
Hebo	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey, too acid.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
40E, 41F, 42F:					
Bullgulch	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
Hunterscove	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
43D:					
Burnthill	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Slight	Fair: too clayey.
Cashner	Severe: cemented pan, wetness.	Severe: seepage, cemented pan, wetness.	Severe: cemented pan, seepage, wetness.	Severe: cemented pan, seepage, wetness.	Poor: cemented pan, wetness, too acid.
44E Burnthill	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
45F, 46G:					
Calfranch	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Capeblanco	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Watches	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
47F:					
Calfranch	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Watches	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Capeblanco	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
48G:					
Capeblanco	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Calfranch	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Watches	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
49F:					
Carpenterville	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, wetness, slope.	Severe: depth to rock, wetness, slope.	Poor: depth to rock, too clayey, small stones.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
49F:					
Houstenader--------	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope.	Severe: wetness, slope.	Poor: slope, wetness.
Huntley------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
50G, 51G:					
Cassiday-----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Grouslous----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Bravo--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
52G:					
Cedarcamp----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Flycatcher---------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
53F, 54F:					
Cedarcamp----------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Snowcamp-----------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Flycatcher---------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
55F, 56F:					
Cedarcamp----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
55F, 56F:					
Snowcamp	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
57A Central Point	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Good.
58A Chetco	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness, thin layer.
59A:					
Chismore	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey.
Pyburn	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
59C:					
Chismore	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey.
Pyburn	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
60B Chitwood	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey, too acid.	Severe: wetness.	Poor: too clayey, wetness, too acid.
61A Clawson	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: wetness.
62F:					
Colepoint	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Bravo	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Cassiday	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
63E, 64F:					
Colepoint	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Nailkeg	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
65A: Crofland	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
66D:					
Crutchfield	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, small stones.
Colepoint	Severe: percs slowly.	Severe: slope.	Severe: depth to rock.	Moderate: depth to rock.	Fair: depth to rock, too clayey.
66E, 67F, 68F:					
Crutchfield	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Colepoint	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
69D: Cunniff	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight	Poor: too clayey.
69E: Cunniff	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
70D:					
Cunniff	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight	Poor: too clayey.
Joeney	Severe: cemented pan, wetness, percs slowly.	Severe: cemented pan, wetness.	Severe: wetness.	Severe: cemented pan, wetness.	Poor: cemented pan, wetness.
71F, 72F, 73F:					
Deadline	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Barkshanty	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Nailkeg	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
74F:					
Deadline	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Barkshanty	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
75E, 76E:					
Deadline	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Irma	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Nailkeg	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
77G, 78G, 79G:					
Deadline	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Nailkeg	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
80F, 81G, 82G:					
Deadline	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Nailkeg	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
83E:					
Desons	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Watches	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
83E:					
Calfranch	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
84G, 85F, 86G:					
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Preacher	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: hard to pack, slope.
Bohannon	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
87F:					
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
88F:					
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
89E, 90E:					
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
91F, 91G:					
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Dystrochrepts	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
92G, 93G:					
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
94F:					
Dubakella	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, small stones.
Cornutt	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Pearsoll	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
95G, 96G:					
Dulandy	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Bosland	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Floras	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
97E:					
Dulandy	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Guerin	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Bosland	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
98G:					
Dulandy	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Guerin	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
99E:					
Dumont	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Acker	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Kanid	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
100G:					
Dystrochrepts	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Rubble land	Severe: poor filter, large stones.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Poor: seepage, small stones, slope.
101F:					
Dystrochrepts	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
101F:					
Rubble land	Severe: poor filter, large stones.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Poor: seepage, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
102D:					
Edson	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack, small stones.
Barkshanty	Severe: percs slowly.	Severe: slope.	Moderate: too clayey, large stones.	Slight	Poor: small stones.
102E:					
Edson	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Barkshanty	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
103D:					
Edson	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack, small stones.
Barkshanty	Severe: percs slowly.	Severe: slope.	Moderate: too clayey, large stones.	Slight	Poor: small stones.
103E:					
Edson	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Barkshanty	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
104E, 105F:					
Eightlar	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Gravecreek	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
104E, 105F:					
Pearsoll	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
106B:					
Eilertsen	Moderate: percs slowly.	Moderate: seepage, slope.	Severe: too acid.	Slight	Fair: too clayey, thin layer.
Zyzzug	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness, thin layer.
107C Ekoms	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey, small stones.
108F, 109F:					
Etelka	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Whobrey	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
110D:					
Etelka	Severe: wetness, percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
Whobrey	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
Remote	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Poor: small stones.
110E:					
Etelka	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Whobrey	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
111A---------------- Ettersburg	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Moderate: flooding.	Fair: too clayey, small stones, thin layer.
112A---------------- Evans	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
113F, 113G, 114G:					
Fantz---------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Knapke--------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
115F:					
Ferrelo-------------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Bullards------------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: slope.
116D:					
Ferrelo-------------	Slight-----------	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: thin layer.
Gearhart------------	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
116E:					
Ferrelo-------------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Gearhart------------	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
117F, 118F:					
Floras--------------	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Bosland-------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Dulandy-------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
119A:					
Foehlin	Severe: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey, small stones.
Cove	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
120E, 121E: Frankport	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
122F, 123F:					
Fritsland	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Bravo	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Cassiday	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
124E, 125F, 125G:					
Gamelake	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Tincup	Severe: depth to rock, slope, large stones.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, seepage, small stones.
126A: Gauldy	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding, seepage.	Poor: thin layer.
127A:					
Gauldy	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding, seepage.	Poor: thin layer.
Willanch	Severe: flooding, ponding.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: ponding.
128A: Gleneden	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
129E, 130F: Grassyknob	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
131G, 132F:					
Gravecreek	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Eightlar	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Pearsoll	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
133G:					
Gravecreek	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Pearsoll	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Eightlar	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
134E, 135F:					
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
136G, 137G:					
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
138B:					
Grindbrook	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: too clayey, too acid.	Moderate: wetness.	Poor: too clayey, too acid.
Wadecreek	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: too clayey, too acid.	Moderate: wetness.	Poor: too clayey, too acid.
139G:					
Grouslous	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Cassiday	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
140F:					
Haplumbrepts	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Cryaquepts	Severe: depth to rock, ponding.	Severe: depth to rock, ponding.	Severe: depth to rock, ponding.	Severe: depth to rock, ponding.	Poor: depth to rock, hard to pack.
141G:					
Haplumbrepts	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Rubble land	Severe: poor filter, large stones.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Poor: seepage, small stones, slope.
142E:					
Hazelcamp	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
Averlande	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
142E:					
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
143B---------------- Hebo	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey, too acid.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
144A---------------- Heceta	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
145E, 146F, 147E:					
Honeygrove---------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
Shivigny-----------	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: large stones, slope.
148D:					
Hooskanaden--------	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
Loneranch----------	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, wetness.	Severe: depth to rock, wetness.	Severe: depth to rock, wetness.	Poor: depth to rock, small stones.
Millicoma----------	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: depth to rock, small stones.
148E:					
Hooskanaden--------	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: wetness, slope.	Poor: too clayey, hard to pack, slope.
Loneranch----------	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, wetness.	Severe: depth to rock, wetness, slope.	Severe: depth to rock, wetness, slope.	Poor: depth to rock, small stones, slope.
Millicoma----------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
149E, 150F:					
Hooskanaden--------	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: wetness, slope.	Poor: too clayey, hard to pack, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
149E, 150F:					
Loneranch	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, wetness.	Severe: depth to rock, wetness, slope.	Severe: depth to rock, wetness, slope.	Poor: depth to rock, small stones, slope.
Reinhart	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
151D Horseprairie	Severe: percs slowly.	Severe: seepage, slope.	Slight	Slight	Good.
151E Horseprairie	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
152E:					
Houstenader	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope.	Severe: wetness, slope.	Poor: slope, wetness.
Carpenterville	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, wetness, slope.	Severe: depth to rock, wetness, slope.	Poor: depth to rock, too clayey, small stones.
Huntley	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
153A Huffling	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey.	Severe: ponding.	Poor: too clayey, ponding.
154G:					
Jayar	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Althouse	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Woodseye	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
155F:					
Jayar	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
155F:					
Althouse-----------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
156G:					
Jayar--------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Skymor-------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Althouse-----------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
157E:					
Josephine----------	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Pollard------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Speaker------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
158F, 159F:					
Kanid--------------	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Acker--------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Atring-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
160F, 160G:					
Kanid--------------	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Atring-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
161A:					
Kirkendall	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Fair: too clayey.
Quosatana	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
162A Klooqueh	Severe: percs slowly.	Slight	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
162B Klooqueh	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
163F:					
Knapke	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Fantz	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
164A Langlois	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
165D:					
Loeb	Severe: percs slowly.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock.	Poor: too clayey.
Macklyn	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey.
165E:					
Loeb	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
Macklyn	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
166E:					
Loeb	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
166E:					
Macklyn	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
Vondergreen	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: depth to rock, wetness, slope.	Severe: wetness, slope.	Poor: too clayey, hard to pack, small stones.
167A: Logsden	Moderate: flooding, percs slowly.	Severe: seepage.	Severe: seepage, too acid.	Moderate: flooding.	Fair: too clayey, thin layer.
168A:					
Logsden	Moderate: flooding, percs slowly.	Severe: seepage.	Severe: seepage, too acid.	Moderate: flooding.	Fair: too clayey, thin layer.
Euchre	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: seepage, wetness, too acid.	Severe: seepage, wetness.	Poor: seepage, wetness.
169F:					
Loneranch	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, wetness.	Severe: depth to rock, wetness, slope.	Severe: depth to rock, wetness, slope.	Poor: depth to rock, small stones, slope.
Hooskanaden	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: wetness, slope.	Poor: too clayey, hard to pack, slope.
Millicoma	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
170F:					
Loneranch	Severe: depth to rock, wetness, percs slowly.	Severe: depth to rock, slope, wetness.	Severe: depth to rock, wetness, slope.	Severe: depth to rock, wetness, slope.	Poor: depth to rock, small stones, slope.
Hooskanaden	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: wetness, slope.	Poor: too clayey, hard to pack, slope.
Reinhart	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
171B:					
McCurdy	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
171B:					
Wintley	Severe: percs slowly.	Moderate: seepage, slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
172C Meda	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Poor: seepage, small stones.
173F, 174F:					
Milbury	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
175F, 175G, 176F, 176G:					
Milbury	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Dystrochrepts	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
177G:					
Milbury	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
178F, 178G, 179G:					
Millicoma	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
178F, 178G, 179G:					
Whaleshead	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Reedsport	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
180F:					
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Redflat	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
181F:					
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
182F:					
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Redflat	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
183A: Nehalem	Severe: percs slowly.	Moderate: seepage.	Moderate: flooding, too clayey.	Moderate: flooding.	Fair: too clayey.
184B:					
Nelscott	Severe: cemented pan, wetness.	Severe: seepage, cemented pan.	Severe: seepage.	Severe: cemented pan.	Poor: cemented pan.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
184B:					
Depoe	Severe: cemented pan, ponding.	Severe: seepage, cemented pan.	Severe: cemented pan, seepage, ponding.	Severe: cemented pan, ponding.	Poor: cemented pan, seepage, too sandy.
Bullards	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Slight	Fair: small stones, thin layer.
185A Nestucca	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
186D:					
Orford	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
McDuff	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
186E:					
Orford	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
McDuff	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
187B Orthents	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock.
188G, 189G:					
Pearsoll	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Gravecreek	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
190F:					
Pearsoll	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
190F:					
Gravecreek---------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
191E, 192F:					
Pearsoll-----------	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
193E, 194F, 194G, 195F, 195G:					
Perdin------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, small stones.
Rock outcrop------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
196C---------------- Pollard	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
196D---------------- Pollard	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
197E:					
Pollard------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Josephine----------	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Shastacosta--------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
198E:					
Preacher-----------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: hard to pack, slope.
Blachly------------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
199E:					
Preacher-----------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: hard to pack, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
199E:					
Blachly	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
200F, 201F:					
Preacher	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: hard to pack, slope.
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Bohannon	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
202D:					
Pyrady	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
Zalea	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock.
Yorel	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock.
203B Quillamook	Moderate: percs slowly.	Moderate: seepage, slope, excess humus.	Severe: excess humus.	Slight	Poor: hard to pack.
204E:					
Redflat	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
205F:					
Reedsport	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
205F:					
Whaleshead	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
206G:					
Reedsport	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Whaleshead	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
207E, 208F:					
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Digger	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
209F:					
Remote	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Whobrey	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
210G, 211G:					
Rilea	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Euchrand	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
212G, 213G:					
Rilea	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Stackyards	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
214 Riverwash	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: too sandy, small stones, wetness.
215G, 216G:					
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Grouslous	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Cassiday	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
217:					
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Orthents	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
218E, 219F, 220F Rogue	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: small stones, slope.
221B:					
Ruch	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight	Fair: too clayey.
Selmac	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
221D:					
Ruch	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
221D:					
Selmac	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
222F:					
Rustybutte	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Sebastian	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
223F:					
Rustybutte	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Sebastian	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
224E:					
Saddlepeak	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too acid.	Severe: slope.	Poor: seepage, small stones, slope.
Threetrees	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
225D:					
Saddlepeak	Severe: percs slowly.	Severe: slope.	Severe: too acid.	Slight	Poor: seepage, small stones.
Threetrees	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, large stones.	Severe: depth to rock.	Poor: depth to rock, small stones.
225E:					
Saddlepeak	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too acid.	Severe: slope.	Poor: seepage, small stones, slope.
Threetrees	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
226E:					
Saddlepeak---------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too acid.	Severe: slope.	Poor: seepage, small stones, slope.
Threetrees---------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
227F, 228F:					
Saddlepeak---------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too acid.	Severe: slope.	Poor: seepage, small stones, slope.
Threetrees---------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Scalerock----------	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
229E:					
Sebastian----------	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rustybutte---------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
230E:					
Serpentano---------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
Mislatnah----------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
231F, 232F:					
Serpentano---------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
231F, 232F:					
Mislatnah	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Greggo	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
233F:					
Shastacosta	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Pollard	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Beekman	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
234F:					
Shivigny	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: large stones, slope.
Honeygrove	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
235F, 236F:					
Sitkum	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, slope.
Steinmetz	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
237E:					
Skookumhouse	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
Hazelcamp	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
238D:					
Skookumhouse	Severe: percs slowly.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock.	Poor: too clayey.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
238D:					
Hazelcamp	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey.
Averlande	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, small stones.
238E:					
Skookumhouse	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
Hazelcamp	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
Averlande	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
239G:					
Skymor	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Jayar	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
240E:					
Snowcamp	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Cedarcamp	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: small stones, slope.
Flycatcher	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
241E:					
Snowcamp	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
241E:					
Cedarcamp----------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
242G:					
Snowcamp-----------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Flycatcher---------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
243F:					
Speaker------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Josephine----------	Severe: percs slowly, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Beekman------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
244G, 245G:					
Stackyards---------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.
Rilea--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Euchrand-----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
246F, 246G, 247F, 247G:					
Stackyards--------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
246F, 246G, 247F, 247G:					
Rilea-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
248F, 249F:					
Stackyards---------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.
Rilea--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
250F, 251F:					
Stackyards---------	Severe: percs slowly, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope.	Poor: small stones, slope.
Rilea--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Yorel--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
252G, 253G:					
Steinmetz----------	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Sitkum-------------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, slope.
254D:					
Svensen------------	Moderate: depth to rock.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Poor: too acid.
Reedsport----------	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
254E:					
Svensen	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: slope, too acid.
Reedsport	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
255E, 256F:					
Swedeheaven	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Quailprairie	Severe: percs slowly, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
Sankey	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
257A Takilma	Severe: poor filter.	Severe: seepage, large stones.	Severe: seepage, large stones.	Severe: seepage.	Poor: seepage, small stones.
258E, 259F Templeton	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too acid.	Severe: slope.	Poor: slope, too acid.
260F, 261G, 262F, 262G, 263G:					
Threetrees	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Saddlepeak	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too acid.	Severe: slope.	Poor: seepage, small stones, slope.
Scalerock	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
264F:					
Threetrees	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Scalerock	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
264F:					
Rock outcrop	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
265F, 265G:					
Tolfork	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Tincup	Severe: depth to rock, slope, large stones.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, seepage, small stones.
266 Urban land	Variable	Variable	Variable	Variable	Variable.
267F:					
Vermisa	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
Beekman	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Colestine	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
268D:					
Waldport	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: too sandy, slope.
Dune land	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
269D:					
Waldport	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: too sandy, slope.
Dune land	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
Heceta	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
270E, 271F, 271G:					
Wedderburn---------	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
Zwagg--------------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
272F, 272G:					
Whaleshead---------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Reedsport----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
273F:					
Whaleshead---------	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Reedsport----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Millicoma----------	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
274A---------------- Winchuck	Severe: percs slowly.	Moderate: seepage.	Severe: too clayey.	Slight-----------	Poor: too clayey, hard to pack.
274D---------------- Winchuck	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
274E---------------- Winchuck	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
275G:					
Woodseye-----------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Brandypeak---------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, small stones.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
276A---------------- Yachats	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Poor: too sandy, too acid.
277A---------------- Yaquina	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
278E:					
Zalea--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Pyrady-------------	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope, too clayey.	Severe: wetness, slope.	Poor: too clayey, hard to pack, slope.
Yorel--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
279E:					
Zalea--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Yorel--------------	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.
Rock outcrop-------	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, slope.

Table 13.--Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
1B, 1D: Abegg	Fair: large stones.	Probable	Probable	Poor: small stones, area reclaim.
2F:				
Acker	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Norling	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
3E:				
Agness	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Sixes	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Goldbeach	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
4F:				
Agness	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Sixes	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Goldbeach	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
5F:				
Althouse	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Jayar	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Skymor	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
6F:				
Althouse	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Jayar	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Woodseye	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
7D:				
Aquic Haplohumults	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Cryaquepts	Poor: depth to rock, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
8E:				
Atring	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Kanid	Fair: depth to rock, thin layer, slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Vermisa	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
9F, 9G:				
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Kanid	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
10F, 11F:				
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
10F, 11F:				
Kanid	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
12G:				
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
13G:				
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
14G:				
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
15A:				
Bagness	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Pistolriver	Fair: wetness.	Probable	Probable	Poor: too sandy, small stones, area reclaim.
16E, 17E:				
Barkshanty	Fair: shrink-swell, large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Nailkeg	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
16E, 17E:				
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
18A: Bayside	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
19: Beaches	Poor: wetness.	Probable	Improbable: too sandy.	Poor: area reclaim, too sandy, excess salt.
20E:				
Bearcamp	Fair: depth to rock, thin layer, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
Brandypeak	Poor: depth to rock.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
21F:				
Bearcamp	Poor: slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
Brandypeak	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Woodseye	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
22F:				
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Colestine	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Orthents	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
23G:				
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Orthents	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Colestine	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
24G:				
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
25G:				
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
26A Bigriver	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
27F, 27G, 28F, 28G:				
Bobsgarden	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Euchrand	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
29F, 29G, 30F, 31F:				
Bobsgarden	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
32E, 33E:				
Bobsgarden	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
32E, 33E:				
Rilea	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Yorel	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
34E:				
Bobsgarden	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rilea	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
35G:				
Brandypeak	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Bearcamp	Poor: slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
Woodseye	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
36F:				
Brandypeak	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Bearcamp	Poor: slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
37A Brenner	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, too acid.
38B, 38D:				
Bullards	Good	Probable	Improbable: too sandy.	Poor: small stones.
Bandon	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Wadecreek	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
39D:				
Bullards	Good	Probable	Improbable: too sandy.	Poor: small stones.
Ferrelo	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
Hebo	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
40E:				
Bullgulch	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Hunterscove	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
41F, 42F:				
Bullgulch	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Hunterscove	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
43D:				
Burnthill	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Cashner	Poor: cemented pan, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, too acid.
44E Burnthill	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
45F, 46G:				
Calfranch	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Capeblanco	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Watches	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
47F:				
Calfranch	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Watches	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Capeblanco	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
48G:				
Capeblanco	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Calfranch	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Watches	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
49F:				
Carpenterville	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: too clayey, small stones, slope.
Houstenader	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Huntley	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
50G, 51G:				
Cassiday	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Grouslous	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Bravo	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
52G:				
Cedarcamp	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Flycatcher	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
53F, 54F:				
Cedarcamp	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Snowcamp	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Flycatcher	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
55F, 56F:				
Cedarcamp	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Snowcamp	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
57A Central Point	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, area reclaim.
58A Chetco	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
59A, 59C:				
Chismore	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Pyburn	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
60B------------------- Chitwood	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
61A------------------- Clawson	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
62F:				
Colepoint------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Bravo----------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Cassiday-------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
63E:				
Colepoint------------	Fair: depth to rock, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Nailkeg--------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
64F:				
Colepoint------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Nailkeg--------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
65A------------------- Crofland	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
66D:				
Crutchfield----------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Colepoint------------	Fair: depth to rock, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
66E:				
Crutchfield----------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Colepoint------------	Fair: depth to rock, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
67F, 68F:				
Crutchfield	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Colepoint	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
69D: Cunniff	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
69E: Cunniff	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
70D:				
Cunniff	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Joeney	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: cemented pan, wetness.
71F, 72F, 73F:				
Deadline	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Barkshanty	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Nailkeg	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
74F:				
Deadline	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Barkshanty	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
75E, 76E:				
Deadline	Fair: depth to rock, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
75E, 76E:				
Irma	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Nailkeg	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
77G, 78G, 79G:				
Deadline	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Nailkeg	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
80F, 81G, 82G:				
Deadline	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Nailkeg	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
83E:				
Desons	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Watches	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Calfranch	Fair: large stones, slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
84G, 85F, 86G:				
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Preacher	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Bohannon	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
87F:				
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Remote	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
88F:				
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Remote	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Umpcoos	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
89E, 90E:				
Digger	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Remote	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
91F, 91G:				
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Umpcoos	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Dystrochrepts	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
92G, 93G:				
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Umpcoos	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
92G, 93G:				
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
94F:				
Dubakella	Poor: depth to rock, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Cornutt	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
95G, 96G:				
Dulandy	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Bosland	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Floras	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
97E:				
Dulandy	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Guerin	Poor: depth to rock.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Bosland	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
98G:				
Dulandy	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Guerin	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
99E:				
Dumont	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Acker	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Kanid	Fair: depth to rock, thin layer, slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
100G:				
Dystrochrepts	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Rubble land	Poor: large stones, slope.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: area reclaim, small stones, slope.
101F:				
Dystrochrepts	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Rubble land	Poor: large stones, slope.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: area reclaim, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
102D:				
Edson	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Barkshanty	Fair: shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
102E:				
Edson	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Barkshanty	Fair: shrink-swell, large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
103D:				
Edson	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Barkshanty	Fair: shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
103E:				
Edson	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Barkshanty	Fair: shrink-swell, large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
104E:				
Eightlar	Poor: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Gravecreek	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
105F:				
Eightlar	Poor: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Gravecreek	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
106B:				
Eilertsen	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Zyzzug	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
107C Ekoms	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
108F, 109F:				
Etelka	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Remote	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Whobrey	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
110D:				
Etelka	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Whobrey	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Remote	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
110E:				
Etelka	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Whobrey	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Remote	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
111A Ettersburg	Good	Probable	Probable	Poor: small stones, area reclaim.
112A Evans	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
113F, 113G, 114G:				
Fantz	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Knapke	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
115F:				
Ferrelo	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Bullards	Poor: slope.	Probable	Improbable: too sandy.	Poor: small stones, slope.
116D:				
Ferrelo	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Gearhart	Good	Probable	Improbable: too sandy.	Poor: too sandy.
116E:				
Ferrelo	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Gearhart	Fair: slope.	Probable	Improbable: too sandy.	Poor: too sandy, slope.
117F, 118F:				
Floras	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Bosland	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Dulandy	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
119A:				
Foehlin	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Cove	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
120E, 121E: Frankport	Fair: slope.	Probable	Improbable: too sandy.	Poor: too sandy, slope.
122F, 123F:				
Fritsland	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Bravo	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Cassiday	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
124E:				
Gamelake	Fair: slope.	Probable	Probable	Poor: small stones, area reclaim, slope.
Tincup	Poor: depth to rock, large stones.	Improbable: large stones.	Improbable: large stones.	Poor: small stones, slope.
125F, 125G:				
Gamelake	Poor: slope.	Probable	Probable	Poor: small stones, area reclaim, slope.
Tincup	Poor: depth to rock, large stones, slope.	Improbable: large stones.	Improbable: large stones.	Poor: small stones, slope.
126A Gauldy	Good	Probable	Probable	Poor: small stones, area reclaim.
127A:				
Gauldy	Good	Probable	Probable	Poor: small stones, area reclaim.
Willanch	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
128A Gleneden	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
129E Grassyknob	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, slope.
130F Grassyknob	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, slope.
131G, 132F:				
Gravecreek	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Eightlar	Poor: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
133G:				
Gravecreek	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
Eightlar	Poor: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
134E:				
Greggo	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Mislatnah	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
135F:				
Greggo	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Mislatnah	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
136G, 137G:				
Greggo	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Mislatnah	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
138B:				
Grindbrook	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
138B:				
Wadecreek-----------	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
139G:				
Grouslous-----------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Cassiday------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
140F:				
Haplumbrepts---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Rock outcrop---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Cryaquepts----------	Poor: depth to rock, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
141G:				
Haplumbrepts---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Rock outcrop---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Rubble land----------	Poor: large stones, slope.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: area reclaim, small stones, slope.
142E:				
Hazelcamp-----------	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Averlande-----------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop---------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
143B------------------ Hebo	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
144A------------------ Heceta	Poor: wetness.	Probable------------	Improbable: too sandy.	Poor: too sandy, wetness.
145E:				
Honeygrove-----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Shivigny-------------	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
146F:				
Honeygrove-----------	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Shivigny-------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
147E:				
Honeygrove-----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Shivigny-------------	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
148D:				
Hooskanaden----------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Loneranch------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Millicoma------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, too acid.
148E:				
Hooskanaden----------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Loneranch------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
148E:				
Millicoma------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, too acid, slope.
149E:				
Hooskanaden----------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Loneranch------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Reinhart-------------	Poor: depth to rock.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
150F:				
Hooskanaden----------	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Loneranch------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Reinhart-------------	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
151D------------------ Horseprairie	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
151E------------------ Horseprairie	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
152E:				
Houstenader----------	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Carpenterville-------	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: too clayey, small stones, slope.
Huntley--------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
153A------------------ Huffling	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
154G:				
Jayar----------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Althouse-------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Woodseye-------------	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
155F:				
Jayar----------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Althouse-------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
156G:				
Jayar----------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Skymor---------------	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Althouse-------------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
157E:				
Josephine------------	Fair: depth to rock, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Pollard--------------	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Speaker--------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
158F, 159F:				
Kanid	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Acker	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
160F, 160G:				
Kanid	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Atring	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
161A:				
Kirkendall	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Quosatana	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
162A, 162B Klooqueh	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
163F:				
Knapke	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Fantz	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
164A Langlois	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
165D:				
Loeb	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
Macklyn	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
165E:				
Loeb	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Macklyn	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
166E:				
Loeb	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Macklyn	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Vondergreen	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
167A Logsden	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
168A:				
Logsden	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Euchre	Fair: wetness.	Probable	Probable	Poor: too acid.
169F:				
Lonerանch	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Hooskanaden	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Millicoma	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, too acid, slope.
170F:				
Loneranch	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Hooskanaden	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
170F:				
Reinhart	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
171B:				
McCurdy	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Wintley	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, area reclaim.
172C Meda	Good	Probable	Probable	Poor: small stones, area reclaim.
173F, 174F:				
Milbury	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Remote	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Umpcoos	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
175F, 175G, 176F, 176G:				
Milbury	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Umpcoos	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Dystrochrepts	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
177G:				
Milbury	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Umpcoos	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
178F, 178G, 179G:				
Millicoma	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, too acid, slope.
Whaleshead	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Reedsport	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
180F:				
Mislatnah	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Greggo	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Redflat	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
181F:				
Mislatnah	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Greggo	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
182F:				
Mislatnah	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Redflat	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Greggo	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
183A Nehalem	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
184B:				
Nelscott	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: cemented pan, small stones.
Depoe	Poor: cemented pan, wetness.	Probable	Improbable: too sandy.	Poor: cemented pan, wetness.
Bullards	Good	Probable	Improbable: too sandy.	Poor: small stones.
185A Nestucca	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
186D:				
Orford	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
McDuff	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
186E:				
Orford	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
McDuff	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid, slope.
187B Orthents	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
188G, 189G:				
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
Gravecreek	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
190F:				
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Gravecreek	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
191E:				
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
192F:				
Pearsoll	Poor: depth to rock, shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, too clayey, small stones.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
193E:				
Perdin	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
194F, 194G, 195F, 195G:				
Perdin	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
196C Pollard	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
196D Pollard	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
197E:				
Pollard	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Josephine	Fair: depth to rock, shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
197E:				
Shastacosta	Fair: shrink-swell, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
198E:				
Preacher	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Blachly	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
199E:				
Preacher	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Blachly	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Digger	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
200F, 201F:				
Preacher	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Bohannon	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
202D:				
Pyrady	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
Zalea	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Yorel	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
203B: Quillamook	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
204E:				
Redflat	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Mislatnah	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
204E:				
Greggo	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
205F:				
Reedsport	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Whaleshead	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
206G:				
Reedsport	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Whaleshead	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
207E:				
Remote	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Digger	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
208F:				
Remote	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Digger	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
209F:				
Remote	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
209F:				
Whobrey	Poor: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
210G, 211G:				
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Euchrand	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
212G, 213G:				
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Stackyards	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
214 Riverwash	Poor: wetness.	Probable	Probable	Poor: too sandy, small stones, area reclaim.
215G, 216G:				
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Grouslous	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Cassiday	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
217:				
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
217:				
Orthents	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
218E Rogue	Fair: depth to rock, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
219F, 220F Rogue	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
221B:				
Ruch	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, area reclaim.
Selmac	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
221D:				
Ruch	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, area reclaim, slope.
Selmac	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
222F:				
Rustybutte	Poor: depth to rock, slope.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: small stones, slope.
Sebastian	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, small stones, slope.
223F:				
Rustybutte	Poor: depth to rock, slope.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: small stones, slope.
Sebastian	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
224E:				
Saddlepeak	Fair: shrink-swell, large stones, slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
224E:				
Threetrees	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
225D:				
Saddlepeak	Fair: shrink-swell, large stones.	Improbable: small stones.	Probable	Poor: small stones, area reclaim.
Threetrees	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones.
225E:				
Saddlepeak	Fair: shrink-swell, large stones, slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Threetrees	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
226E:				
Saddlepeak	Fair: shrink-swell, large stones, slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Threetrees	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
227F, 228F:				
Saddlepeak	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Threetrees	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Scalerock	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, small stones, slope.
229E:				
Sebastian	Poor: depth to rock, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, small stones, slope.
Rustybutte	Poor: depth to rock.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
229E:				
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
230E:				
Serpentano	Fair: depth to rock, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Mislatnah	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
231F, 232F:				
Serpentano	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Mislatnah	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Greggo	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
233F:				
Shastacosta	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Pollard	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
234F:				
Shivigny	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Honeygrove	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
235F, 236F:				
Sitkum	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Steinmetz	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
237E:				
Skookumhouse---------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, area reclaim, slope.
Hazelcamp-----------	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
238D:				
Skookumhouse---------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, area reclaim.
Hazelcamp-----------	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
Averlande-----------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
238E:				
Skookumhouse---------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, area reclaim, slope.
Hazelcamp-----------	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Averlande-----------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
239G:				
Skymor--------------	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Rock outcrop---------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Jayar----------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
240E:				
Snowcamp------------	Poor: depth to rock, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Cedarcamp-----------	Fair: large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
240E:				
Flycatcher	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
241E:				
Snowcamp	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Cedarcamp	Fair: large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
242G:				
Snowcamp	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Flycatcher	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
243F:				
Speaker	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Josephine	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
244G, 245G:				
Stackyards	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Euchrand	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
246F, 246G, 247F, 247G, 248F, 249F:				
Stackyards	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
250F, 251F:				
Stackyards	Poor: slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, area reclaim, slope.
Rilea	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Yorel	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
252G, 253G:				
Steinmetz	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Sitkum	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
254D:				
Svensen	Fair: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid.
Reedsport	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
254E:				
Svensen	Fair: depth to rock, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid, slope.
Reedsport	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
255E:				
Swedeheaven	Poor: depth to rock.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
255E:				
Quailprairie----------	Fair: shrink-swell, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Sankey----------------	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
256F:				
Swedeheaven-----------	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Quailprairie----------	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Sankey----------------	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
257A------------------ Takilma	Fair: large stones.	Improbable: small stones.	Probable-------------	Poor: small stones, area reclaim.
258E------------------ Templeton	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid, slope.
259F------------------ Templeton	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid, slope.
260F, 261G, 262F, 262G, 263G:				
Threetrees----------	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Saddlepeak----------	Poor: slope.	Improbable: small stones.	Probable-------------	Poor: small stones, area reclaim, slope.
Scalerock-----------	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, small stones, slope.
264F:				
Threetrees-----------	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Scalerock------------	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
264F:				
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
265F, 265G:				
Tolfork	Poor: slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
Tincup	Poor: depth to rock, large stones, slope.	Improbable: large stones.	Improbable: large stones.	Poor: small stones, slope.
266 Urban land	Variable	Variable	Variable	Variable.
267F:				
Vermisa	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Beekman	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
Colestine	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
268D:				
Waldport	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, slope.
Dune land	Fair: slope.	Probable	Improbable: too sandy.	Poor: too sandy, slope.
269D:				
Waldport	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, slope.
Dune land	Fair: slope.	Probable	Improbable: too sandy.	Poor: too sandy, slope.
Heceta	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
270E:				
Wedderburn	Fair: depth to rock, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
270E:				
Zwagg	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
271F, 271G:				
Wedderburn	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Zwagg	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
272F, 272G:				
Whaleshead	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Reedsport	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
273F:				
Whaleshead	Poor: slope.	Improbable: small stones.	Probable	Poor: small stones, area reclaim, slope.
Reedsport	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Millicoma	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, too acid, slope.
274A, 274D Winchuck	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
274E Winchuck	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
275G:				
Woodseye	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Rock outcrop	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Brandypeak	Poor: depth to rock, slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, slope.
276A Yachats	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
277A: Yaquina	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
278E:				
Zalea	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Pyrady	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Yorel	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
279E:				
Zalea	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Yorel	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

Table 14.--Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
1B: Abegg	Severe: seepage.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Large stones	Large stones, droughty.
1D: Abegg	Severe: seepage, slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
2F:						
Acker	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope	Slope	Slope.
Norling	Severe: slope.	Severe: piping.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
3E, 4F:						
Agness	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
Sixes	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Goldbeach	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
5F:						
Althouse	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Jayar	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Skymor	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
6F:						
Althouse	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Jayar	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Woodseye	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
7D:						
Aquic Haplohumults----	Severe: slope.	Severe: thin layer, wetness.	Depth to rock, slope.	Slope, wetness, droughty.	Slope, depth to rock, wetness.	Slope, droughty, depth to rock.
Cryaquepts-------	Moderate: depth to rock.	Severe: ponding.	Ponding, depth to rock, frost action.	Ponding, droughty.	Depth to rock, ponding.	Wetness, droughty.
8E, 9F, 9G:						
Atring-----------	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Kanid------------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Vermisa----------	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
10F, 11F:						
Atring-----------	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Kanid------------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
12G:						
Atring-----------	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Vermisa----------	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
13G:						
Atring-----------	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Vermisa----------	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
14G:						
Atring	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Vermisa	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
15A:						
Bagness	Slight	Moderate: piping.	Deep to water	Flooding	Favorable	Favorable.
Pistolriver	Severe: seepage.	Severe: seepage, wetness.	Flooding, large stones, cutbanks cave.	Wetness, droughty, soil blowing.	Wetness, too sandy, soil blowing.	Wetness, droughty.
16E, 17E:						
Barkshanty	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Nailkeg	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
18A: Bayside	Moderate: seepage.	Severe: wetness.	Percs slowly, flooding.	Wetness, percs slowly, flooding.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
19: Beaches	Severe: seepage.	Severe: seepage, piping, wetness.	Flooding, slope, cutbanks cave.	Slope, wetness, droughty.	Wetness, too sandy.	Wetness, excess salt.
20E:						
Bearcamp	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Brandypeak	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
21F:						
Bearcamp	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Brandypeak	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
21F:						
Woodseye	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
22F:						
Beekman	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Colestine	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Orthents	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
23G:						
Beekman	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Orthents	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Colestine	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
24G:						
Beekman	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Vermisa	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
25G:						
Beekman	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Vermisa	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
26A Bigriver	Severe: seepage.	Severe: piping.	Deep to water	Flooding	Too sandy	Favorable.
27F, 27G, 28F, 28G:						
Bobsgarden	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
27F, 27G, 28F, 28G:						
Rilea	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Euchrand	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
29F, 29G:						
Bobsgarden	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
30F, 31F:						
Bobsgarden	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
32E, 33E:						
Bobsgarden	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Yorel	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
34E:						
Bobsgarden	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
35G:						
Brandypeak	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
35G:						
Bearcamp---------	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Woodseye---------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
36F:						
Brandypeak-------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Bearcamp---------	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
37A-------------- Brenner	Slight---------	Severe: thin layer, ponding.	Ponding, flooding, too acid.	Ponding, percs slowly, flooding.	Ponding--------	Wetness.
38B:						
Bullards---------	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, soil blowing.	Soil blowing---	Droughty.
Bandon-----------	Severe: seepage.	Severe: piping.	Deep to water	Slope, soil blowing, cemented pan.	Cemented pan, soil blowing.	Cemented pan.
Wadecreek--------	Moderate: seepage, slope.	Moderate: thin layer, wetness.	Percs slowly, slope, too acid.	Slope, wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
38D:						
Bullards---------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, soil blowing.	Slope, soil blowing.	Slope, droughty.
Bandon-----------	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, soil blowing, cemented pan.	Slope, cemented pan, soil blowing.	Slope, cemented pan.
Wadecreek--------	Severe: slope.	Moderate: thin layer, wetness.	Percs slowly, slope, too acid.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Slope, percs slowly.
39D:						
Bullards---------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, soil blowing.	Slope, soil blowing.	Slope, droughty.
Ferrelo----------	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Slope----------	Slope.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
39D:						
Hebo	Moderate: slope.	Severe: ponding.	Ponding, percs slowly, slope.	Slope, ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
40E, 41F, 42F:						
Bullgulch	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Hunterscove	Severe: slope.	Severe: thin layer.	Deep to water	Slope, percs slowly, depth to rock.	Slope, depth to rock, percs slowly.	Slope, depth to rock, percs slowly.
43D:						
Burnthill	Moderate: slope.	Moderate: piping.	Deep to water	Slope	Favorable	Favorable.
Cashner	Severe: seepage.	Severe: seepage, piping, wetness.	Cemented pan, slope, cutbanks cave.	Slope, wetness, droughty.	Cemented pan, wetness, too sandy.	Wetness, droughty, cemented pan.
44E Burnthill	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
45F, 46G:						
Calfranch	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Capeblanco	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Watches	Severe: slope.	Moderate: piping.	Deep to water	Slope, droughty.	Slope	Slope, droughty.
47F:						
Calfranch	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Watches	Severe: slope.	Moderate: piping.	Deep to water	Slope, droughty.	Slope	Slope, droughty.
Capeblanco	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
48G:						
Capeblanco	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Calfranch	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Watches	Severe: slope.	Moderate: piping.	Deep to water	Slope, droughty.	Slope	Slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
49F:						
Carpenterville	Severe: slope.	Severe: large stones, wetness.	Percs slowly, depth to rock, large stones.	Slope, large stones, wetness.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Houstenader	Severe: slope.	Severe: piping, wetness.	Slope	Slope, wetness, percs slowly.	Slope, wetness.	Wetness, slope.
Huntley	Severe: depth to rock, slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
50G, 51G:						
Cassiday	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Grouslous	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Bravo	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
52G:						
Cedarcamp	Severe: slope.	Moderate: piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Flycatcher	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
53F, 54F:						
Cedarcamp	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Snowcamp	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Flycatcher	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
55F, 56F:						
Cedarcamp	Severe: slope.	Moderate: piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Snowcamp	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
55F, 56F:						
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
57A: Central Point	Severe: seepage.	Severe: piping.	Deep to water	Droughty, soil blowing.	Soil blowing	Droughty.
58A: Chetco	Slight	Severe: wetness.	Percs slowly, flooding.	Wetness, percs slowly, flooding.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
59A:						
Chismore	Slight	Severe: wetness.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
Pyburn	Slight	Severe: wetness.	Percs slowly	Wetness, slow intake.	Wetness, percs slowly.	Wetness, percs slowly.
59C:						
Chismore	Moderate: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
Pyburn	Moderate: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, slow intake.	Wetness, percs slowly.	Wetness, percs slowly.
60B: Chitwood	Moderate: slope.	Severe: wetness.	Percs slowly, slope, too acid.	Slope, wetness, percs slowly.	Erodes easily, wetness.	Wetness, erodes easily.
61A: Clawson	Severe: seepage.	Severe: piping, wetness.	Cutbanks cave	Wetness, droughty, soil blowing.	Wetness, too sandy, soil blowing.	Wetness, droughty.
62F:						
Colepoint	Severe: slope.	Severe: thin layer.	Deep to water	Slope	Slope	Slope.
Bravo	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Cassiday	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
63E, 64F:						
Colepoint	Severe: slope.	Severe: thin layer.	Deep to water	Slope	Slope	Slope.
Nailkeg	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
65A: Crofland	Slight	Severe: wetness.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
66D:						
Crutchfield	Moderate: depth to rock, slope.	Moderate: thin layer, piping.	Deep to water	Slope, depth to rock.	Depth to rock	Depth to rock.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
66D:						
Colepoint	Moderate: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope	Favorable	Favorable.
66E, 67F, 68F:						
Crutchfield	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Colepoint	Severe: slope.	Severe: thin layer.	Deep to water	Slope	Slope	Slope.
69D Cunniff	Moderate: slope.	Slight	Deep to water	Slope, percs slowly.	Percs slowly	Percs slowly.
69E Cunniff	Severe: slope.	Slight	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
70D:						
Cunniff	Moderate: slope.	Slight	Deep to water	Slope, percs slowly.	Percs slowly	Percs slowly.
Joeney	Severe: cemented pan.	Severe: wetness.	Cemented pan, slope.	Slope, wetness, droughty.	Cemented pan, wetness.	Wetness, droughty, cemented pan.
71F, 72F, 73F:						
Deadline	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Barkshanty	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Nailkeg	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
74F:						
Deadline	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Barkshanty	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
75E, 76E:						
Deadline	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Irma	Severe: slope.	Moderate: piping.	Deep to water	Slope, droughty.	Slope	Slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
75E, 76E:						
Nailkeg----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
77G, 78G, 79G:						
Deadline---------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Nailkeg----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
80F, 81G, 82G:						
Deadline---------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Nailkeg----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
83E:						
Desons-----------	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Watches----------	Severe: slope.	Moderate: piping.	Deep to water	Slope, droughty.	Slope----------	Slope, droughty.
Calfranch--------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
84G:						
Digger-----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.
Preacher---------	Severe: seepage, slope.	Severe: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
Bohannon---------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
85F:						
Digger-----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Preacher---------	Severe: seepage, slope.	Severe: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
85F:						
Bohannon	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
86G:						
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.
Preacher	Severe: seepage, slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
Bohannon	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
87F:						
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Remote	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
88F:						
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Remote	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
89E, 90E:						
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.
Remote	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
91F, 91G:						
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
91F, 91G:						
Umpcoos----------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Dystrochrepts----	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
92G:						
Digger-----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Umpcoos----------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
93G:						
Digger-----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.
Umpcoos----------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
94F:						
Dubakella--------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Cornutt----------	Severe: slope.	Moderate: thin layer, hard to pack, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, percs slowly.	Large stones, slope, droughty.
Pearsoll---------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
95G, 96G:						
Dulandy----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Bosland----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Floras-----------	Severe: slope.	Moderate: thin layer, hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
97E:						
Dulandy----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Guerin-----------	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Bosland----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
98G:						
Dulandy----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Guerin-----------	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
99E:						
Dumont-----------	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Acker------------	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope----------	Slope----------	Slope.
Kanid------------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
100G:						
Dystrochrepts----	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Rubble land------	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
101F:						
Dystrochrepts----	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Rubble land------	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
102D:						
Edson------------	Moderate: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Percs slowly---	Percs slowly.
Barkshanty-------	Moderate: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Large stones---	Large stones, droughty.
102E:						
Edson------------	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Barkshanty-------	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
103D:						
Edson------------	Moderate: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Percs slowly---	Percs slowly.
Barkshanty-------	Moderate: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Large stones---	Large stones, droughty.
103E:						
Edson------------	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Barkshanty-------	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
104E, 105F:						
Eightlar---------	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, large stones, droughty.	Slope, large stones, percs slowly.	Large stones, slope, droughty.
Gravecreek-------	Severe: slope.	Moderate: thin layer, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Pearsoll---------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
106B:						
Eilertsen--------	Moderate: seepage, slope.	Moderate: thin layer, piping.	Deep to water	Slope, erodes easily, too acid.	Erodes easily	Erodes easily.
Zyzzug-----------	Moderate: seepage.	Severe: wetness.	Favorable------	Wetness--------	Erodes easily, wetness.	Wetness, erodes easily.
107C-------------- Ekoms	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope----------	Favorable------	Favorable.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
108F, 109F:						
Etelka	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, erodes easily, wetness.	Slope, erodes easily, percs slowly.
Remote	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Whobrey	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Slope, percs slowly.
110D, 110E:						
Etelka	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, erodes easily, wetness.	Slope, erodes easily, percs slowly.
Whobrey	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Slope, percs slowly.
Remote	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
111A Ettersburg	Severe: seepage.	Severe: thin layer.	Deep to water	Favorable	Favorable	Favorable.
112A Evans	Moderate: seepage.	Severe: piping.	Deep to water	Flooding	Erodes easily	Erodes easily.
113F, 113G, 114G:						
Fantz	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Knapke	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
115F:						
Ferrelo	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
Bullards	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, soil blowing.	Slope, soil blowing.	Slope, droughty.
116D:						
Ferrelo	Severe: seepage.	Severe: piping.	Deep to water	Slope	Favorable	Favorable.
Gearhart	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty.	Too sandy, soil blowing.	Droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
116E:						
Ferrelo	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
Gearhart	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Slope, droughty.	Slope, too sandy, soil blowing.	Slope, droughty.
117F, 118F:						
Floras	Severe: slope.	Moderate: thin layer, hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Bosland	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Dulandy	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
119A:						
Foehlin	Slight	Severe: piping.	Deep to water	Favorable	Favorable	Favorable.
Cove	Slight	Severe: wetness.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
120E, 121E Frankport	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
122F, 123F:						
Fritsland	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
Bravo	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Cassiday	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
124E, 125F, 125G:						
Gamelake	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty.	Slope	Slope, droughty.
Tincup	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
126A Gauldy	Severe: seepage.	Severe: seepage, piping.	Deep to water	Flooding	Favorable	Favorable.
127A:						
Gauldy	Severe: seepage.	Severe: seepage, piping.	Deep to water	Flooding	Favorable	Favorable.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
127A:						
Willanch	Severe: seepage.	Severe: piping, ponding.	Ponding, flooding, cutbanks cave.	Ponding, flooding.	Ponding, too sandy.	Wetness.
128A Gleneden	Slight	Moderate: hard to pack, wetness.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
129E, 130F Grassyknob	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
131G, 132F:						
Gravecreek	Severe: slope.	Moderate: thin layer, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Eightlar	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, large stones, droughty.	Slope, large stones, percs slowly.	Large stones, slope, droughty.
Pearsoll	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
133G:						
Gravecreek	Severe: slope.	Moderate: thin layer, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Pearsoll	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Eightlar	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, large stones, droughty.	Slope, large stones, percs slowly.	Large stones, slope, droughty.
134E, 135F:						
Greggo	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Mislatnah	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
136G, 137G:						
Greggo	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
136G, 137G:						
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Mislatnah--------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
138B:						
Grindbrook-------	Moderate: seepage, slope.	Moderate: wetness.	Percs slowly, slope, too acid.	Slope, wetness, percs slowly.	Erodes easily, wetness.	Erodes easily, percs slowly.
Wadecreek--------	Moderate: seepage, slope.	Moderate: thin layer, wetness.	Percs slowly, slope, too acid.	Slope, wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
139G:						
Grouslous--------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Cassiday---------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
140F:						
Haplumbrepts-----	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Cryaquepts-------	Moderate: depth to rock.	Severe: ponding.	Ponding, depth to rock, frost action.	Ponding, droughty.	Depth to rock, ponding.	Wetness, droughty.
141G:						
Haplumbrepts-----	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Rubble land------	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
142E:						
Hazelcamp--------	Severe: slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly, depth to rock.	Slope, depth to rock, percs slowly.	Slope, depth to rock, percs slowly.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
142E:						
Averlande--------	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
143B------------- Hebo	Moderate: slope.	Severe: ponding.	Ponding, percs slowly, slope.	Slope, ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
144A------------- Heceta	Severe: seepage.	Severe: seepage, piping, ponding.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.
145E, 146F, 147E:						
Honeygrove-------	Severe: slope.	Severe: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
Shivigny---------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
148D:						
Hooskanaden------	Moderate: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Loneranch--------	Moderate: depth to rock, slope.	Severe: thin layer.	Depth to rock, slope.	Slope, wetness, depth to rock.	Depth to rock, wetness.	Depth to rock.
Millicoma--------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
148E:						
Hooskanaden------	Severe: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Wetness, slope, percs slowly.
Loneranch--------	Severe: slope.	Severe: thin layer.	Depth to rock, slope.	Slope, wetness, depth to rock.	Slope, depth to rock, wetness.	Slope, depth to rock.
Millicoma--------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
149E, 150F:						
Hooskanaden------	Severe: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Wetness, slope, percs slowly.
Loneranch--------	Severe: slope.	Severe: thin layer.	Depth to rock, slope.	Slope, wetness, depth to rock.	Slope, depth to rock, wetness.	Slope, depth to rock.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
149E, 150F:						
Reinhart	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
151D Horseprairie	Moderate: slope.	Severe: piping.	Deep to water	Slope	Favorable	Favorable.
151E Horseprairie	Severe: slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
152E:						
Houstenader	Severe: slope.	Severe: piping, wetness.	Slope	Slope, wetness, percs slowly.	Slope, wetness.	Wetness, slope.
Carpenterville	Severe: slope.	Severe: large stones, wetness.	Percs slowly, depth to rock, large stones.	Slope, large stones, wetness.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Huntley	Severe: depth to rock, slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
153A Huffling	Slight	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
154G:						
Jayar	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Althouse	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Woodseye	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
155F:						
Jayar	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Althouse	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
156G:						
Jayar	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
156G:						
Skymor	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Althouse	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
157E:						
Josephine	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope	Slope	Slope.
Pollard	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope	Slope	Slope.
Speaker	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
158F, 159F:						
Kanid	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Acker	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope	Slope	Slope.
Atring	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
160F, 160G:						
Kanid	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Atring	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
161A:						
Kirkendall	Moderate: seepage.	Moderate: thin layer, piping, wetness.	Deep to water	Flooding	Erodes easily	Erodes easily.
Quosatana	Slight	Severe: wetness.	Flooding	Wetness, percs slowly, flooding.	Wetness	Wetness.
162A Klooqueh	Slight	Moderate: hard to pack.	Deep to water	Favorable	Favorable	Favorable.
162B Klooqueh	Moderate: slope.	Moderate: hard to pack.	Deep to water	Slope	Favorable	Favorable.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
163F:						
Knapke-----------	Severe: slope.	Moderate: large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Fantz------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
164A------------- Langlois	Slight---------	Severe: ponding.	Ponding, percs slowly, flooding.	Ponding, percs slowly, flooding.	Ponding, percs slowly.	Wetness, percs slowly.
165D:						
Loeb-------------	Moderate: depth to rock, slope.	Moderate: thin layer.	Deep to water	Slope----------	Favorable------	Favorable.
Macklyn----------	Moderate: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Depth to rock	Depth to rock.
165E:						
Loeb-------------	Severe: slope.	Moderate: thin layer.	Deep to water	Slope----------	Slope----------	Slope.
Macklyn----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
166E:						
Loeb-------------	Severe: slope.	Moderate: thin layer.	Deep to water	Slope----------	Slope----------	Slope.
Macklyn----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Vondergreen------	Severe: slope.	Moderate: thin layer, hard to pack, wetness.	Percs slowly, slope, too acid.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Wetness, slope, percs slowly.
167A------------- Logsden	Severe: seepage.	Severe: piping.	Deep to water	Too acid-------	Erodes easily	Erodes easily.
168A:						
Logsden----------	Severe: seepage.	Severe: piping.	Deep to water	Too acid-------	Erodes easily	Erodes easily.
Euchre-----------	Severe: seepage.	Severe: seepage, piping, wetness.	Cutbanks cave, too acid.	Wetness, too acid.	Wetness, too sandy.	Wetness.
169F:						
Loneranch--------	Severe: slope.	Severe: thin layer.	Depth to rock, slope.	Slope, wetness, depth to rock.	Slope, depth to rock, wetness.	Slope, depth to rock.
Hooskanaden------	Severe: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Wetness, slope, percs slowly.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
169F:						
Millicoma	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
170F:						
Loneranch	Severe: slope.	Severe: thin layer.	Depth to rock, slope.	Slope, wetness, depth to rock.	Slope, depth to rock, wetness.	Slope, depth to rock.
Hooskanaden	Severe: slope.	Severe: wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Wetness, slope, percs slowly.
Reinhart	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
171B:						
McCurdy	Moderate: slope.	Moderate: thin layer, wetness.	Slope	Slope, wetness.	Wetness	Favorable.
Wintley	Moderate: seepage, slope.	Moderate: thin layer, hard to pack.	Deep to water	Slope	Favorable	Favorable.
172C Meda	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
173F, 174F:						
Milbury	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Remote	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
175F, 175G, 176F, 176G:						
Milbury	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Umpcoos	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Dystrochrepts	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
177G:						
Milbury	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
177G:						
Umpcoos----------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
178F, 178G, 179G:						
Millicoma--------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Whaleshead-------	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Reedsport--------	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
180F:						
Mislatnah--------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Greggo-----------	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Redflat----------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
181F:						
Mislatnah--------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Greggo-----------	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
182F:						
Mislatnah--------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Redflat----------	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
Greggo-----------	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
183A-------------- Nehalem	Moderate: seepage.	Severe: piping.	Deep to water	Favorable------	Erodes easily	Erodes easily.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
184B:						
Nelscott	Severe: seepage.	Severe: piping.	Cemented pan, slope.	Slope, wetness, cemented pan.	Cemented pan, wetness.	Cemented pan.
Depoe	Severe: seepage, cemented pan.	Severe: seepage, piping, ponding.	Ponding, cemented pan, slope.	Slope, ponding, cemented pan.	Cemented pan, ponding, too sandy.	Wetness, cemented pan.
Bullards	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, soil blowing.	Soil blowing	Droughty.
185A Nestucca	Slight	Severe: wetness.	Flooding	Wetness, percs slowly, flooding.	Wetness	Wetness.
186D:						
Orford	Moderate: slope.	Severe: hard to pack.	Deep to water	Slope	Favorable	Favorable.
McDuff	Moderate: depth to rock, slope.	Severe: hard to pack.	Deep to water	Slope, depth to rock, too acid.	Depth to rock	Depth to rock.
186E:						
Orford	Severe: slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
McDuff	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, depth to rock, too acid.	Slope, depth to rock.	Slope, depth to rock.
187B Orthents	Severe: depth to rock.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Depth to rock	Droughty, depth to rock.
188G, 189G:						
Pearsoll	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Gravecreek	Severe: slope.	Moderate: thin layer, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
190F:						
Pearsoll	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
190F:						
Gravecreek	Severe: slope.	Moderate: thin layer, piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
191E, 192F:						
Pearsoll	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
193E, 194F, 194G, 195F, 195G:						
Perdin	Severe: slope.	Severe: thin layer.	Deep to water	Slope, percs slowly, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
196C, 196D Pollard	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope	Slope	Slope.
197E:						
Pollard	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope	Slope	Slope.
Josephine	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope	Slope	Slope.
Shastacosta	Severe: slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
198E:						
Preacher	Severe: seepage, slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
Blachly	Severe: slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
199E:						
Preacher	Severe: seepage, slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
Blachly	Severe: slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
200F, 201F:						
Preacher	Severe: seepage, slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
Digger	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.
Bohannon	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
202D:						
Pyrady	Moderate: slope.	Moderate: hard to pack, wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
Zalea	Moderate: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Depth to rock	Depth to rock.
Yorel	Moderate: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Depth to rock	Depth to rock.
203B Quillamook	Moderate: seepage, slope.	Severe: excess humus, hard to pack.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
204E:						
Redflat	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
Mislatnah	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Greggo	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
205F:						
Reedsport	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Whaleshead	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
206G:						
Reedsport	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Whaleshead	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
206G:						
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
207E, 208F:						
Remote-----------	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Digger-----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
209F:						
Remote-----------	Severe: slope.	Moderate: seepage, piping, large stones.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
Whobrey----------	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Slope, percs slowly.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
210G, 211G:						
Rilea------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Euchrand---------	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
212G, 213G:						
Rilea------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Stackyards-------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
214--------------- Riverwash	Severe: seepage.	Severe: wetness.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Large stones, wetness, too sandy.	Large stones, wetness, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
215G, 216G:						
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Grouslous	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Cassiday	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
217:						
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Orthents	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
218E, 219F, 220F-- Rogue	Severe: seepage, slope.	Moderate: thin layer, seepage, piping.	Deep to water	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.
221B:						
Ruch	Moderate: slope.	Moderate: piping.	Deep to water	Slope	Erodes easily	Erodes easily.
Selmac	Moderate: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
221D:						
Ruch	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope, erodes easily.	Slope, erodes easily.
Selmac	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Slope, percs slowly.
222F:						
Rustybutte	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Sebastian	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
223F:						
Rustybutte	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Sebastian	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
223F:						
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
224E:						
Saddlepeak	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Threetrees	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
225D:						
Saddlepeak	Moderate: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Large stones	Large stones, droughty.
Threetrees	Moderate: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Large stones, depth to rock.	Large stones, droughty.
225E:						
Saddlepeak	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Threetrees	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
226E:						
Saddlepeak	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Threetrees	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
227F, 228F:						
Saddlepeak	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Threetrees	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Scalerock	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
229E:						
Sebastian	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
229E:						
Rustybutte	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
230E:						
Serpentano	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Mislatnah	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
231F, 232F:						
Serpentano	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Mislatnah	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Greggo	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
233F:						
Shastacosta	Severe: slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Pollard	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope	Slope	Slope.
Beekman	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
234F:						
Shivigny	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Honeygrove	Severe: slope.	Severe: hard to pack.	Deep to water	Slope	Slope	Slope.
235F, 236F:						
Sitkum	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, soil blowing.	Slope, depth to rock, soil blowing.	Slope, droughty, depth to rock.
Steinmetz	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Slope, soil blowing.	Slope, soil blowing.	Slope.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
237E:						
Skookumhouse-----	Severe: slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Hazelcamp--------	Severe: slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly, depth to rock.	Slope, depth to rock, percs slowly.	Slope, depth to rock, percs slowly.
238D:						
Skookumhouse-----	Moderate: depth to rock, slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly.	Percs slowly---	Percs slowly.
Hazelcamp--------	Moderate: depth to rock, slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly, depth to rock.	Depth to rock, percs slowly.	Depth to rock, percs slowly.
Averlande--------	Severe: depth to rock.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Large stones, depth to rock.	Large stones, droughty.
238E:						
Skookumhouse-----	Severe: slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Hazelcamp--------	Severe: slope.	Moderate: thin layer.	Deep to water	Slope, percs slowly, depth to rock.	Slope, depth to rock, percs slowly.	Slope, depth to rock, percs slowly.
Averlande--------	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
239G:						
Skymor-----------	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Jayar------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
240E:						
Snowcamp---------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Cedarcamp--------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Flycatcher-------	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
241E:						
Snowcamp---------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Cedarcamp--------	Severe: slope.	Moderate: piping, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
242G:						
Snowcamp---------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Flycatcher-------	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
243F:						
Speaker----------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Josephine--------	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope----------	Slope----------	Slope.
Beekman----------	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
244G, 245G:						
Stackyards-------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Euchrand---------	Severe: depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
246F, 246G, 247F, 247G:						
Stackyards------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea-----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
246F, 246G, 247F, 247G:						
Rock outcrop----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
248F, 249F:						
Stackyards-------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
250F, 251F:						
Stackyards-------	Severe: slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rilea------------	Severe: slope.	Moderate: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Yorel------------	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
252G, 253G:						
Steinmetz--------	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Slope, soil blowing.	Slope, soil blowing.	Slope.
Sitkum-----------	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, soil blowing.	Slope, depth to rock, soil blowing.	Slope, droughty, depth to rock.
254D:						
Svensen----------	Severe: seepage.	Severe: thin layer.	Deep to water	Slope, too acid.	Favorable------	Favorable.
Reedsport--------	Moderate: seepage, depth to rock, slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Depth to rock	Depth to rock.
254E:						
Svensen----------	Severe: seepage, slope.	Severe: thin layer.	Deep to water	Slope, too acid.	Slope----------	Slope.
Reedsport--------	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
255E, 256F:						
Swedeheaven------	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
255E, 256F:						
Quailprairie-----	Severe: slope.	Moderate: piping.	Deep to water	Slope, percs slowly.	Slope----------	Slope.
Sankey-----------	Severe: depth to rock, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
257A------------- Takilma	Severe: seepage.	Severe: seepage, large stones.	Deep to water	Large stones, droughty.	Large stones---	Large stones, droughty.
258E, 259F-------- Templeton	Severe: slope.	Severe: thin layer.	Deep to water	Slope, too acid.	Slope----------	Slope.
260F, 261G, 262F, 262G, 263G:						
Threetrees-------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Saddlepeak-------	Severe: slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Scalerock--------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
264F:						
Threetrees-------	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Scalerock--------	Severe: depth to rock, slope.	Severe: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop-----	Severe: depth to rock, slope.	Slight---------	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
265F, 265G:						
Tolfork----------	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Tincup-----------	Severe: seepage, slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
266-------------- Urban land	Variable-------	Variable-------	Variable-------	Variable-------	Variable-------	Variable.
267F:						
Vermisa----------	Severe: depth to rock, slope.	Moderate: large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Beekman----------	Severe: slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
267F:						
Colestine	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
268D:						
Waldport	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
Dune land	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Slope, droughty.
269D:						
Waldport	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
Dune land	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Slope, droughty.
Heceta	Severe: seepage.	Severe: seepage, piping, ponding.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.
270E, 271F, 271G:						
Wedderburn	Severe: slope.	Severe: thin layer.	Deep to water	Slope	Slope	Slope.
Zwagg	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
272F, 272G:						
Whaleshead	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Reedsport	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
273F:						
Whaleshead	Severe: slope.	Moderate: thin layer, seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Reedsport	Severe: slope.	Severe: piping.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Millicoma	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
274A Winchuck	Moderate: seepage.	Moderate: hard to pack.	Deep to water	Percs slowly	Percs slowly	Percs slowly.
274D, 274E Winchuck	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.

Table 14.--Water Management--Continued

Soil namd and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
275G:						
Woodseye	Severe: depth to rock, slope.	Severe: seepage.	Deep to water	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Brandypeak	Severe: slope.	Severe: seepage, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
276A: Yachats	Severe: seepage.	Severe: seepage, piping.	Deep to water	Soil blowing, flooding, too acid.	Too sandy, soil blowing.	Favorable.
277A: Yaquina	Severe: seepage.	Severe: seepage, piping, ponding.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.
278E:						
Zalea	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Pyrady	Severe: slope.	Moderate: hard to pack, wetness.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.	Slope, percs slowly.
Yorel	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
279E:						
Zalea	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Yorel	Severe: slope.	Severe: thin layer.	Deep to water	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Rock outcrop	Severe: depth to rock, slope.	Slight	Deep to water	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.

Table 15.--Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
1B, 1D--------- Abegg	0-11	Gravelly loam	GM-GC, SC-SM	A-4	0	0-10	65-85	55-75	45-70	35-50	25-30	5-10
	11-46	Very gravelly loam, extremely gravelly loam, extremely cobbly clay loam.	GC, SC	A-2, A-6	0-15	20-40	50-75	40-65	35-65	25-50	30-40	10-15
	46-60	Extremely gravelly loamy sand, very gravelly sandy loam, extremely cobbly sandy loam.	GM, GW-GM, GP-GM, GM-GC	A-1	0-10	20-40	25-50	15-40	10-30	5-15	20-25	NP-5
2F:												
Acker---------	0-4	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0	65-85	55-75	45-70	35-55	20-30	5-10
	4-9	Gravelly loam, loam.	CL-ML, SC-SM, GM-GC	A-4	0	0-10	70-95	60-85	50-80	35-65	25-30	5-10
	9-47	Gravelly clay loam, clay loam.	CL, SC, GC	A-6, A-7	0	0-5	65-95	55-85	50-85	40-65	35-45	10-20
	47-68	Gravelly clay loam, gravelly loam, very gravelly clay loam.	CL, SC, GC	A-2, A-6	0	0-10	60-85	50-75	40-75	30-55	30-40	10-15
Norling-------	0-4	Very gravelly loam.	GM-GC	A-2	0	0-10	50-55	40-45	35-45	25-35	20-30	5-10
	4-21	Gravelly loam, gravelly clay loam, clay loam.	GM, SM	A-4	0	0-10	65-85	55-75	45-75	35-60	30-35	5-10
	21-28	Very gravelly clay loam, very cobbly clay loam.	GC, GM	A-6	0	10-25	55-60	45-50	40-50	35-40	35-40	10-15
	28-38	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3E, 4F:												
Agness	0-14	Channery silt loam.	GM-GC, CL-ML	A-4	0	0	65-85	55-75	50-70	40-65	25-30	5-10
	14-62	Channery silt loam, channery loam.	CL-ML	A-4	0	0-15	75-85	65-75	55-70	40-65	25-30	5-10
	62-72	Very flaggy silty clay loam, very channery silty clay loam, very flaggy clay loam.	GM, GC, ML, CL	A-6	0-10	25-30	55-75	45-65	40-65	35-65	35-40	10-15
Sixes	0-17	Channery silt loam.	GM-GC, CL-ML	A-4	0	0	65-85	55-75	50-70	40-65	25-30	5-10
	17-32	Channery silt loam, channery loam.	CL-ML, GM-GC	A-4	0	0-5	65-85	55-75	45-70	35-65	25-30	5-10
	32-42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Goldbeach	0-6	Channery silt loam.	GM-GC, CL-ML	A-4	0	0-5	70-85	60-75	55-75	40-65	25-30	5-10
	6-18	Very channery silt loam, extremely channery silt loam, very channery loam.	GM-GC, GC	A-2, A-4	0-10	15-25	35-65	25-55	20-55	15-50	25-30	5-10
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
5F:												
Althouse	0-3	Very gravelly loam.	GM, GM-GC	A-2	0	0-10	45-55	35-45	30-45	25-35	20-25	NP-5
	3-32	Very gravelly loam, extremely gravelly loam.	GM, GM-GC	A-1, A-2	0	10-30	40-55	30-45	25-45	20-35	20-25	NP-5
	32-53	Very gravelly loam, extremely gravelly loam.	GM, GM-GC, GP-GM, GW-GM	A-1	0	10-30	25-40	15-30	10-30	10-25	20-25	NP-5
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Jayar	0-4	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	4-31	Very gravelly loam, extremely gravelly loam, very cobbly loam.	GM-GC	A-1, A-2	0	15-30	35-55	25-45	20-45	15-35	25-30	5-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
5F:												
Skymor	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0-10	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-15	Very gravelly loam, extremely gravelly loam, very gravelly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-20	30-60	20-50	15-50	10-40	25-35	5-10
	15-25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
6F:												
Althouse	0-3	Very gravelly loam.	GM, GM-GC	A-2	0	0-10	45-55	35-45	30-45	25-35	20-25	NP-5
	3-32	Very gravelly loam, extremely gravelly loam.	GM, GM-GC	A-1, A-2	0	10-30	40-55	30-45	25-45	20-35	20-25	NP-5
	32-53	Very gravelly loam, extremely gravelly loam.	GM, GM-GC, GP-GM, GW-GM	A-1	0	10-30	25-40	15-30	10-30	10-25	20-25	NP-5
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Jayar	0-4	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	4-31	Very gravelly loam, extremely gravelly loam, very cobbly loam.	GM-GC	A-1, A-2	0	15-30	35-55	25-45	20-45	15-35	25-30	5-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Woodseye	0-12	Very gravelly loam.	GM	A-1, A-2	0	0-5	25-60	20-50	15-45	10-30	20-35	NP-10
	12-16	Very gravelly sandy loam, very gravelly loam, extremely gravelly loam.	GP-GM, GM	A-1, A-2	0-5	5-25	20-40	15-35	10-30	5-20	20-35	NP-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
7D:												
Aquic Haplohumults	0-12	Clay loam	CL	A-6	0	0	85-100	80-100	70-100	55-80	20-30	10-15
	12-42	Silty clay loam, silty clay, clay loam, extremely gravelly silty clay loam, extremely cobbly clay loam.	CL, GC	A-7, A-2	0	0-40	30-100	20-100	20-100	15-90	40-50	20-30
	42-52	Silty clay loam, silty clay, clay loam, extremely gravelly silty clay loam, extremely cobbly clay loam.	CL, GC	A-6, A-2	0	0-40	30-100	20-100	20-100	15-90	40-50	20-30
	52-72	Silt loam, loam, sandy loam, extremely gravelly loam, extremely cobbly sandy loam.	SM, GC-GM, SC-SM, CL	A-4, A-2	0	0-40	30-100	20-100	15-100	15-80	10-20	5-10
Cryaquepts	0-11	Silty clay loam.	CL, ML, OL	A-6	0	0	100	100	95-100	85-95	35-40	10-15
	11-72	Silty clay, clay, silt loam, loam, very gravelly silty clay, gravelly loam, gravelly silt loam.	GC, CH, ML, GM, CL	A-6, A-7	0	0-15	60-100	55-100	40-100	35-100	15-65	10-40
8E, 9F, 9G:												
Atring	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
8E, 9F, 9G:												
Kanid---------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-47	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GM, GW-GM, GP-GM	A-1, A-2	0	15-30	30-55	20-45	15-45	10-35	30-35	5-10
	47-57	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.										
10F, 11F:												
Atring--------	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Kanid---------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-47	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GM, GW-GM, GP-GM	A-1, A-2	0	15-30	30-55	20-45	15-45	10-35	30-35	5-10
	47-57	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
12G:												
Atring--------	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
12G:												
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
13G:												
Atring--------	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
14G:												
Atring--------	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
15A:												
Bagness-------	0-8	Silt loam-----	ML, CL-ML, CL	A-4	0	0	100	85-100	80-100	65-85	15-25	NP-10
	8-24	Clay loam, loam.	CL	A-6	0	0	100	85-100	75-90	55-75	30-35	10-15
	24-48	Clay loam, silty clay loam, loam.	CL	A-6	0	0	90-100	80-100	70-90	50-80	30-40	10-20
	48-60	Clay loam, silty clay loam, loam.	CL	A-6	0	0	90-100	80-100	70-90	50-80	30-35	10-15
Pistolriver---	0-11	Very fine sandy loam.	SC-SM, CL-ML, SC, CL	A-4	0	0	95-100	85-100	75-95	45-65	20-25	5-10
	11-25	Gravelly very fine sandy loam, gravelly fine sandy loam.	GM, SM, GM-GC, SC-SM	A-4, A-2	0	0-10	60-75	55-70	45-65	25-45	15-20	NP-5
	25-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand.	GP, GM	A-1	0	15-30	25-50	15-40	10-30	0-15	0-15	NP
16E, 17E:												
Barkshanty----	0-5	Channery loam	GM, SM, ML	A-4	0	0-10	70-90	60-80	50-75	35-60	30-35	5-10
	5-13	Channery clay loam, channery loam, very channery clay loam.	GM, SM, ML	A-2, A-4	0	0-15	55-90	45-80	40-75	30-65	30-35	5-10
	13-66	Very channery clay loam, very flaggy clay loam, extremely flaggy clay loam.	GC, GM	A-2, A-6	0-10	15-40	45-70	35-60	30-55	25-45	35-40	10-15
Nailkeg-------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-40	20-40	20-30	5-10
	6-27	Very channery loam, extremely channery loam, very channery clay loam.	GC	A-2, A-6	0	15-20	35-65	25-55	20-50	15-45	30-35	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
18A------------ Bayside	0-28	Silty clay loam.	ML	A-6	0	0	100	90-100	75-85	75-85	35-40	10-15
	28-50	Silty clay----	CL, CH	A-7	0	0	100	100	95-100	90-95	40-55	15-30
	50-60	Sandy clay loam.	CL	A-6	0	0	100	90-100	65-85	65-75	20-25	10-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
19--------------- Beaches	0-6	Sand-----------	SP	A-1, A-3	0	0	100	75-100	5-85	0-5	0-15	NP
	6-80	Coarse sand, sand, fine sand.	SP	A-1, A-3	0	0	100	75-100	5-85	0-5	0-15	NP
20E:												
Bearcamp------	0-12	Very gravelly loam.	GM-GC	A-2	0-10	0-15	40-55	35-45	30-45	25-35	25-30	5-10
	12-39	Very gravelly loam, extremely gravelly loam, very cobbly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-30	30-60	20-50	15-50	10-40	25-35	5-10
	39-47	Extremely gravelly loam, very gravelly loam, extremely cobbly sandy loam.	GM-GC	A-1, A-2	0-10	15-40	20-50	10-40	10-40	5-30	25-30	5-10
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Brandypeak----	0-10	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	25-30	55-75	45-65	40-60	30-45	25-30	5-10
	10-34	Very cobbly loam, extremely cobbly loam, extremely gravelly clay loam.	GM, GM-GC, GP-GM, SC-SM	A-1, A-2, A-4	0-10	25-40	25-65	15-55	10-55	10-45	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
21F:												
Bearcamp------	0-12	Very gravelly loam.	GM-GC	A-2	0-10	0-15	40-55	35-45	30-45	25-35	25-30	5-10
	12-39	Very gravelly loam, extremely gravelly loam, very cobbly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-30	30-60	20-50	15-50	10-40	25-35	5-10
	39-47	Extremely gravelly loam, very gravelly loam, extremely cobbly sandy loam.	GM-GC	A-1, A-2	0-10	15-40	20-50	10-40	10-40	5-30	25-30	5-10
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
21F:												
Brandypeak----	0-10	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	25-30	55-75	45-65	40-60	30-45	25-30	5-10
	10-34	Very cobbly loam, extremely cobbly loam, extremely gravelly clay loam.	GM, GM-GC, GP-GM, SC-SM	A-1, A-2, A-4	0-10	25-40	25-65	15-55	10-55	10-45	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Woodseye------	0-12	Very gravelly loam.	GM	A-1, A-2	0	0-5	25-60	20-50	15-45	10-30	20-35	NP-10
	12-16	Very gravelly sandy loam, very gravelly loam, extremely gravelly loam.	GP-GM, GM	A-1, A-2	0-5	5-25	20-40	15-35	10-30	5-20	20-35	NP-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
22F:												
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Colestine-----	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	5-34	Gravelly loam, gravelly clay loam.	GM, ML, SM	A-4	0	0-10	65-85	55-75	45-75	35-60	30-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Orthents------	0-5	Extremely gravelly sandy loam, extremely cobbly clay loam, very gravelly sandy loam.	GP-GM	A-1, A-2	0-15	0-45	30-45	25-40	20-35	15-30	15-35	NP-10
	5-60	Extremely gravelly loamy sand, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GW-GC, GM, SM, SC, GC	A-2	0-30	0-55	20-45	15-40	10-35	5-30	10-35	10-35

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
23G:												
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Orthents------	0-5	Extremely gravelly sandy loam, extremely cobbly clay loam, very gravelly sandy loam.	GP-GM-	A-1, A-2	0-15	0-45	30-45	25-40	20-35	15-30	15-35	NP-10
	5-60	Extremely gravelly loamy sand, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GW-GC, GM, SM, SC, GC	A-2	0-30	0-55	20-45	15-40	10-35	5-30	10-35	10-35
Colestine-----	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	5-34	Gravelly loam, gravelly clay loam.	GM, ML, SM	A-4	0	0-10	65-85	55-75	45-75	35-60	30-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
24G:												
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
24G:												
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.										
25G:												
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.										
26A------------ Bigriver	0-17	Sandy loam----	SM	A-2, A-4	0	0	100	100	60-70	25-40	15-25	NP-5
	17-60	Stratified loamy sand to silt loam.	SM	A-2, A-4	0	0	100	100	60-75	25-50	15-25	NP-5
27F, 27G, 28F, 28G:												
Bobsgarden---	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-10	65-85	55-75	45-70	35-55	25-35	5-10
	8-25	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2, A-6	0	10-25	40-60	30-50	25-45	20-40	35-40	10-15
	25-68	Very gravelly clay loam, extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2, A-6	0	0-30	25-60	15-50	15-45	10-40	30-40	10-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
27F, 27G, 28F, 28G:												
Rilea--------	0-5	Very gravelly loam.	GM-GC, GM	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Euchrand-----	0-3	Very gravelly loam.	GM-GC	A-2, A-4, A-1	0	0-10	45-60	35-50	30-50	20-40	20-30	5-10
	3-15	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	0-15	30-45	20-35	15-35	10-30	30-35	10-15
	15-25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
29F, 29G:												
Bobsgarden----	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-10	65-85	55-75	45-70	35-55	25-35	5-10
	8-25	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2, A-6	0	10-25	40-60	30-50	25-45	20-40	35-40	10-15
	25-68	Very gravelly clay loam, extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2, A-6	0	0-30	25-60	15-50	15-45	10-40	30-40	10-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
29F, 29G:												
Rilea---------	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	4-22	Very gravelly loam, extremely gravelly loam.	GC	A-2, A-6	0	10-30	35-60	25-50	20-40	15-40	30-40	10-15
	22-31	Extremely gravelly sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-30	20-45	15-40	10-35	10-30	20-30	NP-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
30F, 31F:												
Bobsgarden----	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-10	65-85	55-75	45-70	35-55	25-35	5-10
	8-25	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2, A-6	0	10-25	40-60	30-50	25-45	20-40	35-40	10-15
	25-68	Very gravelly clay loam, extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2, A-6	0	0-30	25-60	15-50	15-45	10-40	30-40	10-15
Rilea---------	0-5	Very gravelly loam.	GM-GC, GM	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
32E, 33E:												
Bobsgarden----	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-10	65-85	55-75	45-70	35-55	25-35	5-10
	8-25	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2, A-6	0	10-25	40-60	30-50	25-45	20-40	35-40	10-15
	25-68	Very gravelly clay loam, extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2, A-6	0	0-30	25-60	15-50	15-45	10-40	30-40	10-15
Rilea---------	0-5	Very gravelly loam.	GM-GC, GM	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Yorel---------	0-6	Gravelly loam	CL-ML, ML, GM, GM-GC	A-4	0	0	70-85	60-75	55-70	40-55	25-35	5-10
	6-31	Gravelly clay loam, gravelly loam.	CL, GC, SC	A-6	0	0	65-85	50-75	45-70	40-60	30-40	10-15
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
34E:												
Bobsgarden----	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-10	65-85	55-75	45-70	35-55	25-35	5-10
	8-25	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2, A-6	0	10-25	40-60	30-50	25-45	20-40	35-40	10-15
	25-68	Very gravelly clay loam, extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2, A-6	0	0-30	25-60	15-50	15-45	10-40	30-40	10-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
34E:												
Rilea---------	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	4-22	Very gravelly loam, extremely gravelly loam.	GC	A-2, A-6	0	10-30	35-60	25-50	20-40	15-40	30-40	10-15
	22-31	Extremely gravelly sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-30	20-45	15-40	10-35	10-30	20-30	NP-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
35G:												
Brandypeak----	0-10	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	25-30	55-75	45-65	40-60	30-45	25-30	5-10
	10-34	Very cobbly loam, extremely cobbly loam, extremely gravelly clay loam.	GM, GM-GC, GP-GM, SC-SM	A-1, A-2, A-4	0-10	25-40	25-65	15-55	10-55	10-45	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bearcamp------	0-12	Very gravelly loam.	GM-GC	A-2	0-10	0-15	40-55	35-45	30-45	25-35	25-30	5-10
	12-39	Very gravelly loam, extremely gravelly loam, very cobbly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-30	30-60	20-50	15-50	10-40	25-35	5-10
	39-47	Extremely gravelly loam, very gravelly loam, extremely cobbly sandy loam.	GM-GC	A-1, A-2	0-10	15-40	20-50	10-40	10-40	5-30	25-30	5-10
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Woodseye------	0-12	Very gravelly loam.	GM	A-1, A-2	0	0-5	25-60	20-50	15-45	10-30	20-35	NP-10
	12-16	Very gravelly sandy loam, very gravelly loam, extremely gravelly loam.	GP-GM, GM	A-1, A-2	0-5	5-25	20-40	15-35	10-30	5-20	20-35	NP-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
36F:												
Brandypeak----	0-10	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	25-30	55-75	45-65	40-60	30-45	25-30	5-10
	10-34	Very cobbly loam, extremely cobbly loam, extremely gravelly clay loam.	GM, GM-GC, GP-GM, SC-SM	A-1, A-2, A-4	0-10	25-40	25-65	15-55	10-55	10-45	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bearcamp------	0-12	Very gravelly loam.	GM-GC	A-2	0-10	0-15	40-55	35-45	30-45	25-35	25-30	5-10
	12-39	Very gravelly loam, extremely gravelly loam, very cobbly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-30	30-60	20-50	15-50	10-40	25-35	5-10
	39-47	Extremely gravelly loam, very gravelly loam, extremely cobbly sandy loam.	GM-GC	A-1, A-2	0-10	15-40	20-50	10-40	10-40	5-30	25-30	5-10
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
37A-----------	0-12	Silt loam-----	ML	A-4	0	0	100	100	90-100	80-90	25-35	NP-5
Brenner	12-34	Silty clay loam, silt loam.	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	34-60	Silty clay loam, silty clay.	MH, ML	A-6, A-7	0	0	100	100	95-100	85-95	35-55	10-20
38B, 38D:												
Bullards------	0-8	Sandy loam----	SM, ML	A-2, A-4	0	0	100	95-100	60-80	30-55	15-25	NP-5
	8-47	Gravelly sandy loam, gravelly loam.	SM	A-2, A-4	0	0	100	50-75	30-60	15-40	15-25	NP-5
	47-60	Loamy fine sand, sand.	SP-SM, SM	A-2, A-3	0	0	100	100	50-75	5-25	0-15	NP
Bandon--------	0-6	Sandy loam----	SM	A-2, A-4	0	0	100	100	60-70	30-40	0-15	NP
	6-34	Sandy loam, loam, gravelly sandy loam.	SM, ML	A-4, A-2	0	0	70-100	60-100	55-90	25-60	0-15	NP
	34-48	Cemented------	---	---	---	---	---	---	---	---	---	---
	48-60	Stratified loam to fine sand.	SM	A-2, A-4	0	0	100	100	80-95	30-50	0-15	NP

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
38B, 38D:												
Wadecreek-----	0-6	Silt loam-----	ML, CL, CL-ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	6-15	Silt loam, silty clay loam.	ML, CL	A-6	0	0	100	100	90-100	75-95	35-40	10-15
	15-47	Silty clay loam, silty clay.	CL	A-7	0	0	90-100	75-100	75-100	70-95	40-50	15-25
	47-60	Silty clay loam, clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	85-100	75-100	70-100	50-95	25-40	5-15
39D:												
Bullards------	0-8	Sandy loam----	SM, ML	A-2, A-4	0	0	100	95-100	60-80	30-55	15-25	NP-5
	8-47	Gravelly sandy loam, gravelly loam.	SM	A-2, A-4	0	0	100	50-75	30-60	15-40	15-25	NP-5
	47-60	Loamy fine sand, sand.	SP-SM, SM	A-2, A-3	0	0	100	100	50-75	5-25	0-15	NP
Ferrelo-------	0-18	Loam----------	ML	A-4	0	0	100	100	85-95	60-75	0-15	NP
	18-41	Loam, fine sandy loam, silt loam.	ML, SM	A-4	0	0	100	90-100	65-95	35-75	0-15	NP
	41-68	Loamy fine sand, fine sandy loam, fine sand.	SM	A-2, A-4	0	0	100	90-100	60-85	20-50	0-15	NP
Hebo----------	0-5	Silty clay loam.	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
	5-46	Silty clay, clay.	CH	A-7	0	0	100	100	90-100	80-95	50-65	25-35
	46-60	Clay loam, silty clay, silty clay loam.	CL	A-7	0	0	90-100	85-100	75-95	60-85	40-50	20-30
40E, 41F, 42F:												
Bullgulch-----	0-22	Silty clay loam.	CL	A-6	0	0	100	100	95-100	85-95	35-40	15-20
	22-59	Silty clay, clay, silty clay loam.	CL	A-7	0	0	100	100	90-100	75-95	40-50	20-30
	59-70	Silty clay loam, clay loam.	CL	A-6	0	0	100	100	90-100	70-95	35-40	15-20
Hunterscove---	0-14	Silty clay loam.	ML	A-7	0	0	100	100	95-100	85-95	40-50	10-15
	14-28	Silty clay, silty clay loam, clay loam.	CL	A-7	0	0	100	100	90-100	80-95	40-50	15-25
	28-38	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
43D:												
Burnthill-----	0-11	Loam---------	CL-ML, CL	A-4	0	0	100	85-100	75-90	55-70	20-30	5-10
	11-43	Loam, clay loam.	CL	A-6	0	0	90-100	85-100	70-90	55-65	30-40	10-15
	43-60	Clay loam, loam.	CL	A-6	0	0	90-100	85-100	70-90	50-60	30-40	10-15
Cashner-------	0-12	Loam---------	CL-ML, CL	A-4	0	0	95-100	85-100	70-95	55-75	20-30	5-10
	12-21	Loam, very fine sandy loam, fine sandy loam.	ML, SM, CL-ML	A-4	0	0	95-100	85-100	60-95	35-75	15-25	NP-5
	21-44	Cemented------	---	---	---	---	---	---	---	---	---	---
	44-60	Loamy fine sand, loamy sand, sandy loam.	SM, SC-SM	A-2, A-4	0	0	100	100	50-80	15-40	10-20	NP-5
44E----------- Burnthill	0-11	Loam---------	CL-ML, CL	A-4	0	0	100	85-100	75-90	55-70	20-30	5-10
	11-43	Loam, clay loam.	CL	A-6	0	0	90-100	85-100	70-90	55-65	30-40	10-15
	43-60	Clay loam, loam.	CL	A-6	0	0	90-100	85-100	70-90	50-60	30-40	10-15
45F, 46G:												
Calfranch-----	0-12	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	12-42	Very channery loam, very channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-45	30-55	20-45	10-40	10-35	20-25	NP-5
	42-67	Very channery loam, extremely channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1	0	25-45	25-45	15-35	10-30	10-25	20-25	NP-5
Capeblanco----	0-8	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	8-35	Very channery clay loam, extremely channery sandy clay loam, extremely flaggy loam.	GM-GC, GP-GM, GP-GC	A-1, A-2	0-10	15-45	25-55	15-45	10-40	10-35	25-35	5-10
	35-45	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
45F, 46G:												
Watches-------	0-16	Channery loam	GM-GC, CL-ML	A-4	0	0-5	65-85	55-75	45-70	35-55	25-30	5-10
	16-49	Channery clay loam, channery loam.	GC, CL	A-6	0	0-5	65-85	55-75	45-75	35-60	30-40	10-15
	49-65	Channery clay loam, very channery clay loam, very channery loam.	GC, CL	A-2, A-6	0	0-15	50-80	40-70	35-65	25-55	30-40	10-15
47F:												
Calfranch-----	0-12	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	12-42	Very channery loam, very channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-45	30-55	20-45	10-40	10-35	20-25	NP-5
	42-67	Very channery loam, extremely channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1	0	25-45	25-45	15-35	10-30	10-25	20-25	NP-5
Watches-------	0-16	Channery loam	GM-GC, CL-ML	A-4	0	0-5	65-85	55-75	45-70	35-55	25-30	5-10
	16-49	Channery clay loam, channery loam.	GC, CL	A-6	0	0-5	65-85	55-75	45-75	35-60	30-40	10-15
	49-65	Channery clay loam, very channery clay loam, very channery loam.	GC, CL	A-2, A-6	0	0-15	50-80	40-70	35-65	25-55	30-40	10-15
Capeblanco----	0-8	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	8-35	Very channery clay loam, extremely channery sandy clay loam, extremely flaggy loam.	GM-GC, GP-GM, GP-GC	A-1, A-2	0-10	15-45	25-55	15-45	10-40	10-35	25-35	5-10
	35-45	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
48G:												
Capeblanco----	0-8	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	8-35	Very channery clay loam, extremely channery sandy clay loam, extremely flaggy loam.	GM-GC, GP-GM, GP-GC	A-1, A-2	0-10	15-45	25-55	15-45	10-40	10-35	25-35	5-10
	35-45	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Calfranch-----	0-12	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	12-42	Very channery loam, very channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-45	30-55	20-45	10-40	10-35	20-25	NP-5
	42-67	Very channery loam, extremely channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1	0	25-45	25-45	15-35	10-30	10-25	20-25	NP-5
Watches-------	0-16	Channery loam	GM-GC, CL-ML	A-4	0	0-5	65-85	55-75	45-70	35-55	25-30	5-10
	16-49	Channery clay loam, channery loam.	GC, CL	A-6	0	0-5	65-85	55-75	45-75	35-60	30-40	10-15
	49-65	Channery clay loam, very channery clay loam, very channery loam.	GC, CL	A-2, A-6	0	0-15	50-80	40-70	35-65	25-55	30-40	10-15
49F:												
Carpenterville	0-6	Gravelly silty clay loam.	ML, CL	A-6	0	0-10	80-95	70-85	70-85	60-80	35-40	10-15
	6-32	Very cobbly silty clay, very cobbly clay, extremely cobbly silty clay.	GC	A-2, A-7	0	30-65	40-65	30-55	30-55	25-50	45-65	20-40
	32-42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
49F:												
Houstenader---	0-11	Gravelly loam	CL, CL-ML	A-4	0	0-10	80-95	70-85	70-80	60-80	25-30	5-10
	11-40	Gravelly silty clay loam, gravelly clay loam.	ML, SM	A-6	0	10-15	75-85	65-75	60-75	45-70	35-40	10-15
	40-60	Very gravelly silty clay, very gravelly clay.	GC	A-2, A-7	0	15-20	50-60	40-50	35-50	30-50	45-65	20-40
Huntley-------	0-3	Gravelly loam	CL, CL-ML	A-4	0	0-10	85-95	75-85	65-80	50-65	25-30	5-10
	3-17	Gravelly clay loam, gravelly silty clay loam.	ML, SC, SM, CL	A-6	0	10-15	75-95	65-85	60-80	45-70	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
50G, 51G:												
Cassiday------	0-8	Very gravelly loam.	GM-GC	A-2	0	10-15	40-55	35-50	30-40	20-35	20-30	5-10
	8-26	Very gravelly clay loam, very gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	10-25	35-55	20-50	15-40	10-35	25-35	10-15
	26-37	Extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2	0	10-30	30-40	20-30	15-25	10-20	25-35	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Grouslous-----	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-1	0	0	35-55	30-50	25-45	20-35	25-35	5-10
	4-16	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	0	25-50	20-40	20-40	15-35	35-40	10-15
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bravo---------	0-9	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-100	70-90	50-70	25-30	5-10
	9-31	Loam, clay loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-15	70-95	65-90	60-80	45-70	30-40	10-15
	31-36	Gravelly loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-10	60-85	55-75	50-65	35-55	30-40	10-15
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
52G:												
Cedarcamp-----	0-6	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-90	60-80	50-75	35-60	20-30	5-10
	6-39	Very bouldery loam, very bouldery clay loam, extremely bouldery loam.	SC, CL	A-6	30-55	15-30	75-95	65-85	55-85	40-70	30-40	10-15
	39-65	Very bouldery loam, very bouldery clay loam, extremely bouldery loam.	GC, CL	A-2, A-6	45-65	15-25	60-80	50-70	40-70	30-55	30-40	10-15
Flycatcher----	0-4	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-85	60-75	50-70	35-55	20-30	5-10
	4-18	Very bouldery clay loam, very bouldery sandy clay loam, extremely bouldery loam.	SC, CL	A-6	30-70	15-30	75-95	65-85	55-80	40-70	30-40	10-15
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
53F, 54F:												
Cedarcamp-----	0-6	Very gravelly loam.	GM-GC	A-2, A-4	0-10	15-25	45-65	35-55	30-55	30-50	20-30	5-10
	6-39	Very cobbly clay loam, extremely cobbly clay loam, extremely cobbly loam.	GC, CL	A-2, A-6	0-15	30-50	45-80	35-70	30-70	25-55	30-40	10-15
	39-65	Extremely cobbly clay loam, extremely cobbly loam, very cobbly clay loam.	GP-GC, GC	A-2, A-6	0-15	35-45	30-60	20-50	15-50	10-40	30-40	10-15
Snowcamp------	0-4	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	30-45	55-75	45-65	40-60	30-50	20-30	5-10
	4-29	Very cobbly clay loam, extremely cobbly clay loam, extremely cobbly loam.	GC, CL	A-2, A-6	0-15	30-60	40-75	30-65	25-65	20-55	30-40	10-15
	29-39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
53F, 54F:												
Flycatcher----	0-4	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	30-45	55-75	45-65	40-60	30-50	20-30	5-10
	4-18	Very gravelly clay loam, very gravelly sandy clay loam, extremely gravelly loam.	GP-GC, GC, SC, SP-SC	A-2, A-6	0-25	15-30	30-65	20-55	15-55	10-45	30-40	10-15
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
55F, 56F:												
Cedarcamp-----	0-6	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-90	60-80	50-75	35-60	20-30	5-10
	6-39	Very bouldery loam, very bouldery clay loam, extremely bouldery loam.	SC, CL	A-6	30-55	15-30	75-95	65-85	55-85	40-70	30-40	10-15
	39-65	Very bouldery loam, very bouldery clay loam, extremely bouldery loam.	GC, CL	A-2, A-6	45-65	15-25	60-80	50-70	40-70	30-55	30-40	10-15
Snowcamp------	0-4	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-85	60-75	50-70	35-55	20-30	5-10
	4-29	Very bouldery clay loam, extremely bouldery clay loam, extremely bouldery loam.	GC, CL	A-2, A-6	30-75	15-25	60-95	50-85	40-80	30-70	30-40	10-15
	29-39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
57A------------ Central Point	0-43	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	95-100	85-100	50-70	25-40	20-30	NP-5
	43-72	Gravelly sandy loam, gravelly loamy sand.	SM	A-1, A-2, A-4	0	0	85-100	55-75	45-70	15-40	15-20	NP-5
58A------------ Chetco	0-8	Silt loam-----	ML	A-4	0	0	100	100	90-100	80-95	30-35	5-10
	8-31	Silty clay loam, silty clay.	CL, CH	A-6, A-7	0	0	100	100	95-100	85-95	35-55	15-30
	31-54	Sandy clay----	CL	A-7	0	0	100	100	70-100	50-75	45-50	20-25
	54-60	Clay loam, clay.	CL, CH	A-7	0	0	100	100	95-100	70-90	45-55	20-30

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
59A, 59C:												
Chismore------	0-9	Silt loam-----	CL	A-6	0	0	100	100	90-100	80-95	25-35	10-15
	9-60	Silty clay loam, silty clay.	CL	A-7	0	0	100	100	95-100	85-95	40-50	20-30
Pyburn--------	0-9	Silty clay----	CL	A-7	0	0	100	100	95-100	90-95	40-50	20-25
	9-33	Clay, silty clay.	CH	A-7	0	0	100	100	90-100	85-95	50-60	25-35
	33-60	Clay, silty clay, clay loam.	CL, CH	A-7	0	0	100	100	90-100	70-95	40-55	20-30
60B------------ Chitwood	0-8	Silt loam-----	ML	A-4	0	0	100	100	90-100	80-95	30-35	5-10
	8-60	Silty clay loam, silty clay.	CL	A-7	0	0	100	100	95-100	85-95	40-50	15-25
61A------------ Clawson	0-5	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	100	100	60-70	30-40	15-25	NP-5
	5-24	Sandy loam, coarse sandy loam.	SM, SC-SM	A-2, A-4	0	0	100	90-100	55-70	25-40	15-25	NP-5
	24-64	Coarse sandy loam, loamy coarse sand, loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	100	90-100	50-90	20-60	15-25	NP-5
62F:												
Colepoint-----	0-6	Loam----------	CL-ML, CL	A-4	0	0	95-100	85-100	75-95	50-75	25-30	5-10
	6-18	Gravelly loam	CL-ML, ML, SM, SC-SM	A-4	0	0	75-85	65-75	55-70	45-55	25-35	5-10
	18-47	Gravelly loam, gravelly clay loam.	CL, GC, SC	A-6	0	0	60-80	50-70	45-70	40-55	30-40	10-15
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bravo---------	0-9	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-100	70-90	50-70	25-30	5-10
	9-31	Loam, clay loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-15	70-95	65-90	60-80	45-70	30-40	10-15
	31-36	Gravelly loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-10	60-85	55-75	50-65	35-55	30-40	10-15
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
62F:												
Cassiday------	0-8	Gravelly loam	GM-GC, SC-SM	A-4	0	0-10	55-80	50-75	45-65	35-50	20-30	5-10
	8-26	Very gravelly clay loam, very gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	10-25	35-55	20-50	15-40	10-35	25-35	10-15
	26-37	Extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2	0	10-30	30-40	20-30	15-25	10-20	25-35	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
63E, 64F:												
Colepoint-----	0-6	Loam----------	CL-ML, CL	A-4	0	0	95-100	85-100	75-95	50-75	25-30	5-10
	6-18	Gravelly loam	CL-ML, ML, SM, SC-SM	A-4	0	0	75-85	65-75	55-70	45-55	25-35	5-10
	18-47	Gravelly loam, gravelly clay loam.	CL, GC, SC	A-6	0	0	60-80	50-70	45-70	40-55	30-40	10-15
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Nailkeg--------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-40	20-40	20-30	5-10
	6-27	Very channery loam, extremely channery loam, very channery clay loam.	GC	A-2, A-6	0	15-20	35-65	25-55	20-50	15-45	30-35	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
65A----------- Crofland	0-14	Silty clay loam.	ML, CL	A-6	0	0	100	100	90-100	85-95	35-40	10-15
	14-46	Silty clay loam, silty clay.	CL, CH	A-7	0	0	80-100	75-100	70-95	65-90	40-60	20-30
	46-60	Silty clay loam, gravelly silty clay loam.	CL, GC, SC	A-6	0	0	60-90	50-85	50-85	45-80	35-40	15-20

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
66D, 66E, 67F, 68F:												
Crutchfield--	0-5	Loam----------	CL-ML, CL	A-4	0	0	95-100	85-100	75-95	50-75	25-30	5-10
	5-16	Loam, clay loam, gravelly loam.	CL, SC	A-6	0	0	75-95	65-85	55-85	40-70	30-35	10-15
	16-38	Gravelly clay loam, gravelly loam.	CL, SC, GC	A-6	0	0-15	70-85	60-75	50-70	40-60	30-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Colepoint----	0-6	Loam----------	CL-ML, CL	A-4	0	0	95-100	85-100	75-95	50-75	25-30	5-10
	6-18	Gravelly loam	CL-ML, ML, SM, SC-SM	A-4	0	0	75-85	65-75	55-70	45-55	25-35	5-10
	18-47	Gravelly loam, gravelly clay loam.	CL, GC, SC	A-6	0	0	60-80	50-70	45-70	40-55	30-40	10-15
	47-57	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
69D, 69E------- Cunniff	0-12	Silty clay loam.	CL	A-6	0	0	95-100	85-100	80-100	75-95	35-40	15-20
	12-65	Silty clay loam, clay loam, silty clay.	CL	A-7	0	0	95-100	85-100	75-100	65-95	40-50	20-30
	65-72	Silty clay loam, clay loam, gravelly silty clay loam.	CL	A-6, A-7	0	0	80-100	70-100	65-100	60-95	35-45	15-20
70D:												
Cunniff-------	0-12	Silty clay loam.	CL	A-6	0	0	95-100	85-100	80-100	75-95	35-40	15-20
	12-65	Silty clay loam, clay loam, silty clay.	CL	A-7	0	0	95-100	85-100	75-100	65-95	40-50	20-30
	65-72	Silty clay loam, clay loam, gravelly silty clay loam.	CL	A-6, A-7	0	0	80-100	70-100	65-100	60-95	35-45	15-20
Joeney--------	0-15	Silt loam-----	CL-ML	A-4	0	0	100	100	90-100	70-90	25-30	5-10
	15-26	Cemented------	---	---	---	---	---	---	---	---	---	---
	26-60	Stratified silty clay loam to loam.	ML	A-7	0	0	100	100	95-100	85-95	40-50	15-20

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
71F, 72F, 73F:												
Deadline------	0-8	Very channery loam.	GM-GC	A-2	0	0-15	45-60	35-50	30-45	20-35	20-30	5-10
	8-57	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2, A-6	0	0-20	25-60	15-50	15-45	10-40	30-35	10-15
	57-67	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Barkshanty----	0-5	Channery loam	GM, SM, ML	A-4	0	0-10	70-90	60-80	50-75	35-60	30-35	5-10
	5-13	Channery clay loam, channery loam, very channery clay loam.	GM, SM, ML	A-2, A-4	0	0-15	55-90	45-80	40-75	30-65	30-35	5-10
	13-66	Very channery clay loam, very flaggy clay loam, extremely flaggy clay loam.	GC, GM	A-2, A-6	0-10	15-40	45-70	35-60	30-55	25-45	35-40	10-15
Nailkeg-------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-40	20-40	20-30	5-10
	6-27	Very channery loam, extremely channery loam, very channery clay loam.	GC	A-2, A-6	0	15-20	35-65	25-55	20-50	15-45	30-35	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
74F:												
Deadline------	0-8	Very channery loam.	GM-GC	A-2	0	0-15	45-60	35-50	30-45	20-35	20-30	5-10
	8-57	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2, A-6	0	0-20	25-60	15-50	15-45	10-40	30-35	10-15
	57-67	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
74F:												
Barkshanty----	0-5	Channery loam	GM, SM, ML	A-4	0	0-10	70-90	60-80	50-75	35-60	30-35	5-10
	5-13	Channery clay loam, channery loam, very channery clay loam.	GM, SM, ML	A-2, A-4	0	0-15	55-90	45-80	40-75	30-65	30-35	5-10
	13-66	Very channery clay loam, very flaggy clay loam, extremely flaggy clay loam.	GC, GM	A-2, A-6	0-10	15-40	45-70	35-60	30-55	25-45	35-40	10-15
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
75E, 76E:												
Deadline------	0-8	Very channery loam.	GM-GC	A-2	0	0-15	45-60	35-50	30-45	20-35	20-30	5-10
	8-57	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2, A-6	0	0-20	25-60	15-50	15-45	10-40	30-35	10-15
	57-67	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Irma----------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	45-60	35-50	30-45	25-40	20-30	5-10
	6-55	Channery loam, channery clay loam.	CL, GC	A-2, A-6	0	0-5	60-85	50-75	45-70	30-60	30-35	10-15
	55-72	Channery loam, channery clay loam, very channery clay loam.	GM-GC, GC	A-2, A-4, A-6	0	0-10	40-70	30-60	25-55	20-50	25-35	5-15
Nailkeg-------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-40	20-40	20-30	5-10
	6-27	Very channery loam, extremely channery loam, very channery clay loam.	GC	A-2, A-6	0	15-20	35-65	25-55	20-50	15-45	30-35	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
77G, 78G, 79G:												
Deadline------	0-8	Very channery loam.	GM-GC	A-2	0	0-15	45-60	35-50	30-45	20-35	20-30	5-10
	8-57	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2, A-6	0	0-20	25-60	15-50	15-45	10-40	30-35	10-15
	57-67	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Nailkeg-------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-40	20-40	20-30	5-10
	6-27	Very channery loam, extremely channery loam, very channery clay loam.	GC	A-2, A-6	0	15-20	35-65	25-55	20-50	15-45	30-35	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
80F, 81G, 82G:												
Deadline------	0-8	Very channery loam.	GM-GC	A-2	0	0-15	45-60	35-50	30-45	20-35	20-30	5-10
	8-57	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2, A-6	0	0-20	25-60	15-50	15-45	10-40	30-35	10-15
	57-67	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Nailkeg-------	0-6	Very channery loam.	GM-GC	A-2, A-4	0	0-10	40-60	30-50	25-40	20-40	20-30	5-10
	6-27	Very channery loam, extremely channery loam, very channery clay loam.	GC	A-2, A-6	0	15-20	35-65	25-55	20-50	15-45	30-35	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
83E:												
Desons--------	0-8	Channery clay loam.	CL, ML, GM, GC	A-6	0	0-10	70-85	60-75	60-75	45-60	35-40	10-15
	8-60	Channery silty clay, channery clay, channery silty clay loam.	CL, CH, GC	A-7	0	0-10	70-85	60-75	55-75	45-70	40-55	15-30
	60-72	Channery silty clay loam, channery silty clay.	CL, GC	A-7	0	0-15	60-80	50-70	45-70	40-70	40-50	15-25
Watches-------	0-16	Channery loam	GM-GC, CL-ML	A-4	0	0-5	65-85	55-75	45-70	35-55	25-30	5-10
	16-49	Channery clay loam, channery loam.	GC, CL	A-6	0	0-5	65-85	55-75	45-75	35-60	30-40	10-15
	49-65	Channery clay loam, very channery clay loam, very channery loam.	GC, CL	A-2, A-6	0	0-15	50-80	40-70	35-65	25-55	30-40	10-15
Calfranch-----	0-12	Very channery loam.	GM-GC	A-2, A-1	0	0-10	40-55	30-45	25-40	20-35	25-30	5-10
	12-42	Very channery loam, very channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-45	30-55	20-45	10-40	10-35	20-25	NP-5
	42-67	Very channery loam, extremely channery sandy loam, extremely flaggy sandy loam.	GM, GM-GC, GP-GM	A-1	0	25-45	25-45	15-35	10-30	10-25	20-25	NP-5
84G:												
Digger--------	0-3	Gravelly loam	SM, GM, ML	A-4	0	0-15	60-85	60-70	50-65	40-60	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
84G:												
Preacher------	0-14	Gravelly loam	SM, ML	A-4	0	0-5	80-85	70-75	60-70	40-55	30-35	5-10
	14-42	Loam, clay loam.	MH, ML	A-7	0	0-5	90-100	80-100	70-100	55-80	45-60	10-20
	42-60	Sandy loam, loam, clay loam.	SM, ML	A-4, A-2, A-5, A-7	0	0-15	85-100	75-100	45-85	30-65	35-50	NP-15
Bohannon------	0-14	Gravelly loam	GM, SM	A-4, A-5	0-10	0-10	70-85	60-80	50-75	35-50	30-45	NP-10
	14-34	Gravelly loam, cobbly loam, cobbly clay loam.	SC-SM, GC, SC, GM-GC	A-4, A-6	0-10	0-20	70-95	60-90	50-85	35-50	25-35	5-15
	34-44	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
85F:												
Digger--------	0-3	Very gravelly loam.	SM, GM	A-4, A-2	0	0-15	35-70	25-60	20-55	15-45	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Preacher------	0-14	Gravelly loam	SM, ML	A-4	0	0-5	80-85	70-75	60-70	40-55	30-35	5-10
	14-42	Loam, clay loam.	MH, ML	A-7	0	0-5	90-100	80-100	70-100	55-80	45-60	10-20
	42-60	Sandy loam, loam, clay loam.	SM, ML	A-4, A-2, A-5, A-7	0	0-15	85-100	75-100	45-85	30-65	35-50	NP-15
Bohannon------	0-14	Gravelly loam	GM, SM	A-4, A-5	0-10	0-10	70-85	60-80	50-75	35-50	30-45	NP-10
	14-34	Gravelly loam, cobbly loam, cobbly clay loam.	SC-SM, GC, SC, GM-GC	A-4, A-6	0-10	0-20	70-95	60-90	50-85	35-50	25-35	5-15
	34-44	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
86G:												
Digger--------	0-3	Gravelly loam	SM, GM, ML	A-4	0	0-15	60-85	60-70	50-65	40-60	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
86G:												
Preacher------	0-14	Gravelly loam	SM, ML	A-4	0	0-5	80-85	70-75	60-70	40-55	30-35	5-10
	14-42	Loam, clay loam.	MH, ML	A-7	0	0-5	90-100	80-100	70-100	55-80	45-60	10-20
	42-60	Sandy loam, loam, clay loam.	SM, ML	A-4, A-2, A-5, A-7	0	0-15	85-100	75-100	45-85	30-65	35-50	NP-15
Bohannon------	0-14	Gravelly loam	GM, SM	A-4, A-5	0-10	0-10	70-85	60-80	50-75	35-50	30-45	NP-10
	14-34	Gravelly loam, cobbly loam, cobbly clay loam.	SC-SM, GC, SC, GM-GC	A-4, A-6	0-10	0-20	70-95	60-90	50-85	35-50	25-35	5-15
	34-44	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
87F:												
Digger--------	0-3	Very gravelly loam.	SM, GM	A-4, A-2	0	0-15	35-70	25-60	20-55	15-45	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Remote--------	0-6	Gravelly loam	SM, GM, ML	A-4	0	0-5	60-80	55-75	45-70	35-55	25-35	NP-10
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
88F:												
Digger--------	0-3	Very gravelly loam.	SM, GM	A-4, A-2	0	0-15	35-70	25-60	20-55	15-45	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
88F:												
Remote	0-6	Very gravelly loam.	GM	A-2	0	0-10	35-50	30-45	25-40	20-30	25-35	NP-5
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15
Umpcoos	0-3	Very gravelly sandy loam.	GM	A-1	0	0-15	30-55	25-50	15-35	10-20	15-20	NP
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
89E, 90E:												
Digger	0-3	Gravelly loam	SM, GM, ML	A-4	0	0-15	60-85	60-70	50-65	40-60	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Remote	0-6	Gravelly loam	SM, GM, ML	A-4	0	0-5	60-80	55-75	45-70	35-55	25-35	NP-10
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
91F, 91G:												
Digger--------	0-3	Very gravelly loam.	SM, GM	A-4, A-2	0	0-15	35-70	25-60	20-55	15-45	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Umpcoos-------	0-3	Very gravelly sandy loam.	GM	A-1	0	0-15	30-55	25-50	15-35	10-20	15-20	NP
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Dystrochrepts	0-8	Extremely stony loam, extremely gravelly loam, very gravelly sandy loam.	GM, GP-GM, GC, SM, SC	A-1, A-2, A-4	0-50	0-40	25-60	20-55	15-50	10-40	15-25	NP-10
	8-24	Extremely stony clay loam, extremely gravelly sandy loam.	GM, SM, GP-GM, GW-GM, GC	A-1, A-2, A-4	15-50	0-40	25-55	20-50	10-45	5-40	15-25	NP-10
	24-34	Bedrock										
92G:												
Digger--------	0-3	Very gravelly loam.	SM, GM	A-4, A-2	0	0-15	35-70	25-60	20-55	15-45	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
92G:												
Umpcoos-------	0-3	Very gravelly sandy loam.	GM	A-1	0	0-15	30-55	25-50	15-35	10-20	15-20	NP
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
93G:												
Digger--------	0-3	Stony loam----	SM, ML	A-4	15-25	0-15	80-85	70-75	60-70	40-55	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Umpcoos-------	0-3	Stony loam----	ML, CL-ML, SM, SC-SM	A-4	10-25	0-15	80-85	70-75	60-70	40-55	20-25	NP-5
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
94F:												
Dubakella-----	0-13	Very cobbly clay loam.	GM, SM, CL	A-4, A-6	0-10	30-40	60-75	55-65	50-65	40-50	35-40	10-15
	13-28	Very cobbly clay, very gravelly clay, very gravelly clay loam.	GC, CL	A-2, A-6, A-7	0-10	15-30	55-65	45-55	40-55	35-50	40-55	15-30
	28-40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cornutt-------	0-11	Cobbly clay loam.	CL, ML	A-6	0	15-30	90-100	80-90	70-90	55-70	35-40	10-15
	11-52	Gravelly clay, cobbly clay, clay.	CH, CL	A-7	0	0-25	80-95	70-85	65-85	50-80	45-60	20-35
	52-62	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
94F:												
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
95G:												
Dulandy-------	0-11	Silt loam-----	ML, CL-ML, CL	A-4	0	0	80-100	75-95	75-95	65-85	20-30	NP-10
	11-37	Gravelly clay loam, very gravelly clay loam, very gravelly silty clay loam.	ML, SM, GM	A-2, A-6	0	15-30	45-70	35-60	30-60	25-55	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bosland-------	0-11	Silt loam-----	CL-ML, CL	A-4	0	0	80-95	75-90	70-85	55-85	20-30	5-10
	11-26	Silty clay loam, clay loam, gravelly silty clay loam.	ML, CL	A-6	0	0-10	65-95	60-90	55-90	50-80	35-40	10-15
	26-39	Gravelly silty clay loam, gravelly clay loam.	ML, CL	A-6	0	0-15	65-80	60-75	55-70	50-65	35-40	10-15
	39-49	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Floras--------	0-9	Silty clay loam.	CL, ML	A-6	0	0	90-100	85-100	80-100	75-95	35-40	10-15
	9-48	Silty clay loam, gravelly silty clay loam, gravelly silty clay.	CL, CH	A-7	0	0-15	65-100	60-95	55-95	50-90	40-55	15-30
	48-58	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
96G:												
Dulandy-------	0-11	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-95	70-90	50-70	25-30	5-10
	11-37	Gravelly clay loam, very gravelly clay loam, very gravelly silty clay loam.	ML, SM, GM	A-2, A-6	0	15-30	45-70	35-60	30-60	25-55	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
96G:												
Bosland-------	0-11	Silt loam-----	CL-ML, CL	A-4	0	0	80-95	75-90	70-85	55-85	20-30	5-10
	11-26	Silty clay loam, clay loam, gravelly silty clay loam.	ML, CL	A-6	0	0-10	65-95	60-90	55-90	50-80	35-40	10-15
	26-39	Gravelly silty clay loam, gravelly clay loam.	ML, CL	A-6	0	0-15	65-80	60-75	55-70	50-65	35-40	10-15
	39-49	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Floras--------	0-9	Silty clay loam.	CL, ML	A-6	0	0	90-100	85-100	80-100	75-95	35-40	10-15
	9-48	Silty clay loam, gravelly silty clay loam, gravelly silty clay.	CL, CH	A-7	0	0-15	65-100	60-95	55-95	50-90	40-55	15-30
	48-58	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
97E:												
Dulandy-------	0-11	Silt loam-----	ML, CL-ML, CL	A-4	0	0	80-100	75-95	75-95	65-85	20-30	NP-10
	11-37	Gravelly clay loam, very gravelly clay loam, very gravelly silty clay loam.	ML, SM, GM	A-2, A-6	0	15-30	45-70	35-60	30-60	25-55	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Guerin--------	0-4	Very gravelly loam.	GM-GC, SC-SM, GC, SC	A-2, A-4, A-1	0	15-30	45-70	35-60	30-55	20-45	20-30	5-10
	4-16	Very cobbly loam, extremely cobbly loam.	GM-GC, GP-GM, GM, GC	A-2, A-1	0	30-50	25-60	15-50	15-45	10-35	25-35	5-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bosland-------	0-11	Silt loam-----	CL-ML, CL	A-4	0	0	80-95	75-90	70-85	55-85	20-30	5-10
	11-26	Silty clay loam, clay loam, gravelly silty clay loam.	ML, CL	A-6	0	0-10	65-95	60-90	55-90	50-80	35-40	10-15
	26-39	Gravelly silty clay loam, gravelly clay loam.	ML, CL	A-6	0	0-15	65-80	60-75	55-70	50-65	35-40	10-15
	39-49	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
98G:												
Dulandy-------	0-11	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-95	70-90	50-70	25-30	5-10
	11-37	Gravelly clay loam, very gravelly clay loam, very gravelly silty clay loam.	ML, SM, GM	A-2, A-6	0	15-30	45-70	35-60	30-60	25-55	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Guerin--------	0-4	Very gravelly loam.	GM-GC, SC-SM, GC, SC	A-2, A-4, A-1	0	15-30	45-70	35-60	30-55	20-45	20-30	5-10
	4-16	Very cobbly loam, extremely cobbly loam.	GM-GC, GP-GM, GM, GC	A-2, A-1	0	30-50	25-60	15-50	15-45	10-35	25-35	5-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
99E:												
Dumont--------	0-5	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	5-61	Silty clay, clay.	CL, CH	A-7	0	0	95-100	85-100	75-95	65-95	45-55	20-30
	61-99	Loam, clay loam.	CL	A-6	0	0	95-100	85-100	70-95	55-80	30-40	10-15
Acker---------	0-4	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0	65-85	55-75	45-70	35-55	20-30	5-10
	4-9	Gravelly loam, loam.	CL-ML, SC-SM, GM-GC	A-4	0	0-10	70-95	60-85	50-80	35-65	25-30	5-10
	9-47	Gravelly clay loam, clay loam.	CL, SC, GC	A-6, A-7	0	0-5	65-95	55-85	50-85	40-65	35-45	10-20
	47-68	Gravelly clay loam, gravelly loam, very gravelly clay loam.	CL, SC, GC	A-2, A-6	0	0-10	60-85	50-75	40-75	30-55	30-40	10-15
Kanid---------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-47	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GM, GW-GM, GP-GM	A-1, A-2	0	15-30	30-55	20-45	15-45	10-35	30-35	5-10
	47-57	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
100G:												
Dystrochrepts	0-8	Extremely stony loam, extremely gravelly loam, very gravelly sandy loam.	GM, GP-GM, GC, SM, SC	A-1, A-2, A-4	0-50	0-40	25-60	20-55	15-50	10-40	15-25	NP-10
	8-24	Extremely stony clay loam, extremely gravelly sandy loam.	GM, SM, GP-GM, GW-GM, GC	A-1, A-2, A-4	15-50	0-40	25-55	20-50	10-45	5-40	15-25	NP-10
	24-34	Bedrock										
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rubble land---	0-60	Fragmental material.	---	---	---	---	---	---	---	---	---	---
101F:												
Dystrochrepts	0-8	Extremely stony loam, extremely gravelly loam, very gravelly sandy loam.	GM, GP-GM, GC, SM, SC	A-1, A-2, A-4	0-50	0-40	25-60	20-55	15-50	10-40	15-25	NP-10
	8-24	Extremely stony clay loam, extremely gravelly sandy loam.	GM, SM, GP-GM, GW-GM, GC	A-1, A-2, A-4	15-50	0-40	25-55	20-50	10-45	5-40	15-25	NP-10
	24-34	Bedrock										
Rubble land---	0-60	Fragmental material.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
102D, 102E, 103D, 103E:												
Edson--------	0-13	Channery clay loam.	CL, GC	A-6	0	0-10	70-90	60-80	55-75	45-65	30-40	10-15
	13-72	Channery silty clay loam, channery silty clay, channery clay.	CL, CH	A-7	0	0-15	70-85	60-75	55-70	50-65	40-55	15-30

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
102D, 102E, 103D, 103E:												
Barkshanty---	0-5	Channery loam	GM, SM, ML	A-4	0	0-10	70-90	60-80	50-75	35-60	30-35	5-10
	5-13	Channery clay loam, channery loam, very channery clay loam.	GM, SM, ML	A-2, A-4	0	0-15	55-90	45-80	40-75	30-65	30-35	5-10
	13-66	Very channery clay loam, very flaggy clay loam, extremely flaggy clay loam.	GC, GM	A-2, A-6	0-10	15-40	45-70	35-60	30-55	25-45	35-40	10-15
104E, 105F:												
Eightlar------	0-13	Very stony clay loam.	GC, SC, CL	A-6, A-7	20-40	15-35	65-80	55-70	50-65	40-55	40-45	15-20
	13-65	Very stony clay, extremely stony clay.	GC, SC, CH	A-2, A-7	20-40	10-35	40-75	30-65	25-60	20-55	60-70	35-45
Gravecreek----	0-4	Very cobbly loam.	GM-GC, GC, SC-SM, SC	A-2, A-4	0-10	20-35	60-70	50-60	40-55	30-45	25-30	5-10
	4-30	Very gravelly clay loam, very cobbly clay loam.	GM, GC	A-2, A-4, A-6	0-10	15-30	55-65	45-55	40-55	35-45	35-40	10-15
	30-40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
106B:												
Eilertsen-----	0-17	Silt loam-----	CL-ML, CL	A-4	0	0	100	100	95-100	75-85	25-30	5-10
	17-42	Silt loam, silty clay loam, loam.	CL	A-6	0	0	100	100	95-100	75-95	30-40	10-20
	42-60	Fine sandy loam, loam, silt loam.	SC-SM, CL-ML, SC, CL	A-4	0	0	100	100	95-100	40-90	20-30	5-10
Zyzzug--------	0-17	Silt loam-----	ML	A-4	0	0	100	100	95-100	75-90	30-35	5-10
	17-42	Silty clay loam, silt loam.	CL	A-6	0	0	100	100	95-100	75-90	30-40	10-15
	42-49	Silty clay loam, silty clay.	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-50	15-25
	49-60	Silt loam, silty clay loam, clay loam.	CL	A-6, A-7	0	0	100	100	95-100	75-90	35-45	15-20

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
107C----------- Ekoms	0-5	Loam----------	CL-ML	A-4	0	0	95-100	85-100	70-95	55-75	25-30	5-10
	5-44	Gravelly loam, gravelly clay loam, clay loam.	CL, SC	A-6	0	0	75-100	65-95	55-95	40-75	30-40	10-15
	44-60	Gravelly loam, very gravelly sandy loam, gravelly sandy clay loam.	SC-SM, GM-GC	A-2, A-4, A-1	0	0-15	50-80	40-70	25-65	15-50	25-30	5-10
108F, 109F:												
Etelka--------	0-8	Silt loam-----	ML	A-4	0	0	95-100	90-100	85-100	65-90	30-40	5-10
	8-20	Silty clay loam, silt loam.	ML	A-7	0	0-5	90-100	85-100	80-100	75-95	40-50	10-15
	20-60	Silty clay, silty clay loam, clay.	MH	A-7	0	0-5	90-100	85-100	80-100	75-95	50-70	15-30
Remote--------	0-6	Gravelly loam	SM, GM, ML	A-4	0	0-5	60-80	55-75	45-70	35-55	25-35	NP-10
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15
Whobrey-------	0-12	Silt loam-----	ML	A-4, A-6	0	0	100	100	95-100	80-90	30-40	5-15
	12-22	Silt loam, silty clay loam.	ML	A-4, A-6	0	0	100	100	95-100	80-95	30-40	5-15
	22-66	Clay, silty clay.	CH	A-7	0	0	100	95-100	85-100	70-95	55-70	35-45
110D, 110E:												
Etelka--------	0-8	Silt loam-----	ML	A-4	0	0	95-100	90-100	85-100	65-90	30-40	5-10
	8-20	Silty clay loam, silt loam.	ML	A-7	0	0-5	90-100	85-100	80-100	75-95	40-50	10-15
	20-60	Silty clay, silty clay loam, clay.	MH	A-7	0	0-5	90-100	85-100	80-100	75-95	50-70	15-30
Whobrey-------	0-12	Silt loam-----	ML	A-4, A-6	0	0	100	100	95-100	80-90	30-40	5-15
	12-22	Silt loam, silty clay loam.	ML	A-4, A-6	0	0	100	100	95-100	80-95	30-40	5-15
	22-66	Clay, silty clay.	CH	A-7	0	0	100	95-100	85-100	70-95	55-70	35-45

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
110D, 110E:												
Remote--------	0-6	Gravelly loam	SM, GM, ML	A-4	0	0-5	60-80	55-75	45-70	35-55	25-35	NP-10
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15
111A----------- Ettersburg	0-17	Loam----------	CL-ML, CL	A-4	0	0	95-100	85-100	75-90	50-65	20-30	5-10
	17-43	Gravelly clay loam, gravelly loam, clay loam.	CL, SC	A-6	0	0-15	75-90	65-85	60-75	45-65	30-40	10-20
	43-60	Stratified very gravelly fine sandy loam to extremely gravelly loamy fine sand.	GM, GP-GM, SM, SP-SM	A-1, A-2	0	0-25	35-65	25-55	20-45	10-30	10-20	NP-5
112A----------- Evans	0-39	Silt loam-----	ML, CL-ML	A-4	0	0	95-100	90-100	80-100	65-90	20-25	NP-5
	39-60	Silt loam, loam, very fine sandy loam.	ML, CL-ML, SC-SM, SM	A-4	0	0	95-100	90-100	75-95	45-80	20-25	NP-5
113F, 113G, 114G:												
Fantz--------	0-16	Very gravelly loam.	GM-GC	A-2	0	0-15	45-55	35-45	30-45	25-35	25-30	5-10
	16-32	Very cobbly loam, extremely cobbly loam.	GM-GC, GP-GC	A-1, A-2, A-4	0	30-55	25-60	15-50	10-50	10-40	25-30	5-10
	32-42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Knapke-------	0-17	Extremely gravelly loam.	GM-GC	A-1, A-2	0-10	10-25	20-35	10-25	5-25	5-20	25-30	5-10
	17-65	Very gravelly loam, extremely gravelly loam.	GM-GC	A-1, A-2	0-10	0-15	20-40	10-30	5-30	5-25	25-30	5-10

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
115F:												
Ferrelo-------	0-18	Loam----------	ML	A-4	0	0	100	100	85-95	60-75	0-15	NP
	18-41	Loam, fine sandy loam, silt loam.	ML, SM	A-4	0	0	100	90-100	65-95	35-75	0-15	NP
	41-68	Loamy fine sand, fine sandy loam, fine sand.	SM	A-2, A-4	0	0	100	90-100	60-85	20-50	0-15	NP
Bullards------	0-8	Sandy loam----	SM, ML	A-2, A-4	0	0	100	95-100	60-80	30-55	15-25	NP-5
	8-47	Gravelly sandy loam, gravelly loam.	SM	A-2, A-4	0	0	100	50-75	30-60	15-40	15-25	NP-5
	47-60	Loamy fine sand, sand.	SP-SM, SM	A-2, A-3	0	0	100	100	50-75	5-25	0-15	NP
116D, 116E:												
Ferrelo-------	0-18	Loam----------	ML	A-4	0	0	100	100	85-95	60-75	0-15	NP
	18-41	Loam, fine sandy loam, silt loam.	ML, SM	A-4	0	0	100	90-100	65-95	35-75	0-15	NP
	41-68	Loamy fine sand, fine sandy loam, fine sand.	SM	A-2, A-4	0	0	100	90-100	60-85	20-50	0-15	NP
Gearhart------	0-12	Fine sandy loam.	SM	A-4	0	0	100	100	70-85	40-50	0-15	NP
	12-23	Sand, fine sand.	SM	A-2	0	0	100	100	65-75	10-30	0-15	NP
	23-60	Sand, fine sand.	SP, SP-SM	A-3, A-2	0	0	100	100	50-60	0-10	0-15	NP
117F:												
Floras--------	0-9	Silty clay loam.	CL, ML	A-6	0	0	90-100	85-100	80-100	75-95	35-40	10-15
	9-48	Silty clay loam, gravelly silty clay loam, gravelly silty clay.	CL, CH	A-7	0	0-15	65-100	60-95	55-95	50-90	40-55	15-30
	48-58	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bosland-------	0-11	Silt loam-----	CL-ML, CL	A-4	0	0	80-95	75-90	70-85	55-85	20-30	5-10
	11-26	Silty clay loam, clay loam, gravelly silty clay loam.	ML, CL	A-6	0	0-10	65-95	60-90	55-90	50-80	35-40	10-15
	26-39	Gravelly silty clay loam, gravelly clay loam.	ML, CL	A-6	0	0-15	65-80	60-75	55-70	50-65	35-40	10-15
	39-49	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
117F:												
Dulandy-------	0-11	Silt loam-----	ML, CL-ML, CL	A-4	0	0	80-100	75-95	75-95	65-85	20-30	NP-10
	11-37	Gravelly clay loam, very gravelly clay loam, very gravelly silty clay loam.	ML, SM, GM	A-2, A-6	0	15-30	45-70	35-60	30-60	25-55	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
118F:												
Floras--------	0-9	Silty clay loam.	CL, ML	A-6	0	0	90-100	85-100	80-100	75-95	35-40	10-15
	9-48	Silty clay loam, gravelly silty clay loam, gravelly silty clay.	CL, CH	A-7	0	0-15	65-100	60-95	55-95	50-90	40-55	15-30
	48-58	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bosland-------	0-11	Silt loam-----	CL-ML, CL	A-4	0	0	80-95	75-90	70-85	55-85	20-30	5-10
	11-26	Silty clay loam, clay loam, gravelly silty clay loam.	ML, CL	A-6	0	0-10	65-95	60-90	55-90	50-80	35-40	10-15
	26-39	Gravelly silty clay loam, gravelly clay loam.	ML, CL	A-6	0	0-15	65-80	60-75	55-70	50-65	35-40	10-15
	39-49	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Dulandy-------	0-11	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-95	70-90	50-70	25-30	5-10
	11-37	Gravelly clay loam, very gravelly clay loam, very gravelly silty clay loam.	ML, SM, GM	A-2, A-6	0	15-30	45-70	35-60	30-60	25-55	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
119A:												
Foehlin-------	0-13	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	13-65	Gravelly clay loam, clay loam.	CL, ML, SC, SM	A-6	0	0-10	70-95	60-85	55-85	40-65	35-40	10-15
Cove----------	0-8	Silty clay loam.	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
	8-60	Silty clay, clay.	CH	A-7	0	0	100	100	90-100	75-95	55-65	30-40

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
120E----------- Frankport	0-4	Sand----------	SP-SM	A-3, A-2	0	0	100	100	50-65	5-10	0-15	NP
	4-9	Sand, coarse sand.	SP, SP-SM	A-3, A-2	0	0	100	100	50-65	0-10	0-15	NP
	9-60	Sand, coarse sand.	SP, SP-SM	A-3, A-2	0	0	100	100	50-65	0-10	0-15	NP
121E----------- Frankport	0-2	Sand----------	SP-SM	A-3, A-2	0	0	100	100	50-65	5-10	0-15	NP
	2-60	Sand, coarse sand.	SP, SP-SM	A-3, A-2	0	0	100	100	50-65	0-10	0-15	NP
122F:												
Fritsland-----	0-8	Silt loam-----	ML	A-4	0	0	90-100	85-100	70-90	65-80	30-40	NP-10
	8-32	Silt loam, loam, clay loam.	ML	A-4, A-6	0	0	85-95	75-90	70-85	50-75	30-40	5-15
	32-48	Gravelly silt loam, gravelly loam, gravelly clay loam.	GM, ML	A-4, A-6	0	0	55-75	50-75	40-70	35-60	30-40	5-15
	48-58	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bravo---------	0-9	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-100	70-90	50-70	25-30	5-10
	9-31	Loam, clay loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-15	70-95	65-90	60-80	45-70	30-40	10-15
	31-36	Gravelly loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-10	60-85	55-75	50-65	35-55	30-40	10-15
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cassiday------	0-8	Gravelly loam	GM-GC, SC-SM	A-4	0	0-10	55-80	50-75	45-65	35-50	20-30	5-10
	8-26	Very gravelly clay loam, very gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	10-25	35-55	20-50	15-40	10-35	25-35	10-15
	26-37	Extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2	0	10-30	30-40	20-30	15-25	10-20	25-35	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
123F:												
Fritsland-----	0-8	Loam----------	ML	A-4	0	0	90-100	85-100	70-90	60-75	20-30	NP-5
	8-32	Silt loam, loam, clay loam.	ML	A-4, A-6	0	0	85-95	75-90	70-85	50-75	30-40	5-15
	32-48	Gravelly silt loam, gravelly loam, gravelly clay loam.	GM, ML	A-4, A-6	0	0	55-75	50-75	40-70	35-60	30-40	5-15
	48-58	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bravo---------	0-9	Loam----------	CL-ML, CL	A-4	0	0	80-100	75-100	70-90	50-70	25-30	5-10
	9-31	Loam, clay loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-15	70-95	65-90	60-80	45-70	30-40	10-15
	31-36	Gravelly loam, gravelly clay loam.	GC, CL, SC	A-6	0	0-10	60-85	55-75	50-65	35-55	30-40	10-15
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cassiday------	0-8	Very gravelly loam.	GM-GC	A-2	0	10-15	40-55	35-50	30-40	20-35	20-30	5-10
	8-26	Very gravelly clay loam, very gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	10-25	35-55	20-50	15-40	10-35	25-35	10-15
	26-37	Extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2	0	10-30	30-40	20-30	15-25	10-20	25-35	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
124E, 125F, 125G:												
Gamelake-----	0-13	Very gravelly loam.	GM, GC, GM-GC	A-2, A-4	0	0-15	45-60	35-50	30-50	25-40	20-30	NP-10
	13-50	Very gravelly loam, very gravelly sandy loam, extremely gravelly coarse sandy loam.	GM, GP-GM, GM-GC	A-1, A-2	0	0-15	30-55	20-45	10-45	5-35	20-30	NP-10
	50-72	Very gravelly sandy loam, extremely gravelly sandy loam, very gravelly coarse sandy loam.	GM, GP-GM, GM-GC	A-1	0	10-15	30-45	20-35	10-25	5-15	15-25	NP-5

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
124E, 125F, 125G:												
Tincup-------	0-7	Very cobbly loam.	GM, SM	A-2, A-4	0	30-45	45-80	40-65	35-55	25-40	20-30	NP-10
	7-28	Extremely cobbly loam, very cobbly loam, extremely cobbly sandy loam.	GP-GM, GM	A-1, A-2	0	45-65	40-65	30-55	15-45	10-35	20-30	NP-10
	28-38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
126A----------- Gauldy	0-12	Loam----------	ML	A-4	0	0	90-100	85-100	75-85	50-65	20-30	NP-5
	12-28	Loam, very fine sandy loam, gravelly loam.	ML, SM	A-4	0	0	80-100	70-95	60-90	40-70	20-30	NP-5
	28-60	Extremely gravelly fine sand, very gravelly fine sand.	SP, SM, GP, GM	A-1	0	0-20	25-85	15-55	10-40	0-15	0-15	NP
127A:												
Gauldy--------	0-12	Loam----------	ML	A-4	0	0	90-100	85-100	75-85	50-65	20-30	NP-5
	12-28	Loam, very fine sandy loam, gravelly loam.	ML, SM	A-4	0	0	80-100	70-95	60-90	40-70	20-30	NP-5
	28-60	Extremely gravelly fine sand, very gravelly fine sand.	SP, SM, GP, GM	A-1	0	0-20	25-85	15-55	10-40	0-15	0-15	NP
Willanch------	0-16	Fine sandy loam.	SM	A-4	0	0	100	100	65-85	35-50	10-20	NP
	16-34	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	90-100	85-100	55-85	30-50	10-20	NP
	34-60	Loamy fine sand, loamy sand.	SM	A-2	0	0	90-100	85-100	55-80	25-35	10-15	NP
128A----------- Gleneden	0-15	Silty clay loam.	CL	A-6, A-7	0	0	95-100	95-100	90-100	80-90	35-45	15-20
	15-32	Clay, silty clay.	CH	A-7	0	0	95-100	95-100	85-100	70-90	50-60	25-35
	32-60	Clay----------	CH	A-7	0	0	95-100	95-100	85-100	70-90	50-60	25-35
129E, 130F----- Grassyknob	0-12	Silt loam-----	CL-ML, CL	A-4	0	0	95-100	85-100	75-95	60-80	20-30	5-10
	12-36	Silty clay loam, clay loam, cobbly clay loam.	ML, CL	A-6	0	0-30	90-100	80-100	70-95	55-75	35-40	10-15
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
131G, 132F:												
Gravecreek----	0-4	Very cobbly loam.	GM-GC, GC, SC-SM, SC	A-2, A-4	0-10	20-35	60-70	50-60	40-55	30-45	25-30	5-10
	4-30	Very gravelly clay loam, very cobbly clay loam.	GM, GC	A-2, A-4, A-6	0-10	15-30	55-65	45-55	40-55	35-45	35-40	10-15
	30-40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Eightlar------	0-13	Very stony clay loam.	GC, SC, CL	A-6, A-7	20-40	15-35	65-80	55-70	50-65	40-55	40-45	15-20
	13-65	Very stony clay, extremely stony clay.	GC, SC, CH	A-2, A-7	20-40	10-35	40-75	30-65	25-60	20-55	60-70	35-45
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
133G:												
Gravecreek----	0-4	Very cobbly loam.	GM-GC, GC, SC-SM, SC	A-2, A-4	0-10	20-35	60-70	50-60	40-55	30-45	25-30	5-10
	4-30	Very gravelly clay loam, very cobbly clay loam.	GM, GC	A-2, A-4, A-6	0-10	15-30	55-65	45-55	40-55	35-45	35-40	10-15
	30-40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Eightlar------	0-13	Very stony clay loam.	GC, SC, CL	A-6, A-7	20-40	15-35	65-80	55-70	50-65	40-55	40-45	15-20
	13-65	Very stony clay, extremely stony clay.	GC, SC, CH	A-2, A-7	20-40	10-35	40-75	30-65	25-60	20-55	60-70	35-45

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
134E, 135F:												
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
136G, 137G:												
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
138B:												
Grindbrook----	0-26	Silt loam-----	ML	A-4	0	0	100	100	95-100	70-90	30-35	5-10
	26-60	Silty clay loam, silty clay, clay.	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-50	15-25
Wadecreek-----	0-6	Silt loam-----	ML, CL, CL-ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	6-15	Silt loam, silty clay loam.	ML, CL	A-6	0	0	100	100	90-100	75-95	35-40	10-15
	15-47	Silty clay loam, silty clay.	CL	A-7	0	0	90-100	75-100	75-100	70-95	40-50	15-25
	47-60	Silty clay loam, clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	85-100	75-100	70-100	50-95	25-40	5-15
139G:												
Grouslous-----	0-4	Very stony loam.	GM, GM-GC, GP-GM	A-2, A-1	25-30	0	30-55	20-45	15-40	10-35	25-35	5-10
	4-16	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	0	25-50	20-40	20-40	15-35	35-40	10-15
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cassiday------	0-8	Very stony loam.	GM-GC	A-2, A-4	25-30	10-15	60-75	50-65	40-60	30-50	25-30	5-10
	8-26	Very gravelly clay loam, very gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	10-25	35-55	20-50	15-40	10-35	25-35	10-15
	26-37	Extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2	0	10-30	30-40	20-30	15-25	10-20	25-35	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
140F:												
Haplumbrepts--	0-9	Extremely gravelly sandy loam, extremely stony clay loam, extremely cobbly loam.	GM, GC, GW-GC, GP-GM	A-2	0-40	0-30	15-50	10-45	10-40	5-35	15-30	10-15
	9-25	Extremely gravelly sandy loam, extremely stony clay loam, extremely cobbly loam.	GC, GM, GP-GM, GW-GC	A-2	0-40	0-30	15-50	10-45	10-40	5-35	20-30	10-15
	25-35	Bedrock										
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cryaquepts----	0-11	Silty clay loam.	CL, ML, OL	A-6	0	0	100	100	95-100	85-95	35-40	10-15
	11-72	Silty clay, clay, silt loam, loam, very gravelly silty clay, gravelly loam, gravelly silt loam.	GC, CH, ML, GM, CL	A-6, A-7	0	0-15	60-100	55-100	40-100	35-100	15-65	10-40
141G:												
Haplumbrepts--	0-9	Extremely gravelly sandy loam, extremely stony clay loam, extremely cobbly loam.	GM, GC, GW-GC, GP-GM	A-2	0-40	0-30	15-50	10-45	10-40	5-35	15-30	10-15
	9-25	Extremely gravelly sandy loam, extremely stony clay loam, extremely cobbly loam.	GC, GM, GP-GM, GW-GC	A-2	0-40	0-30	15-50	10-45	10-40	5-35	20-30	10-15
	25-35	Bedrock										
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rubble land---	0-60	Fragmental material.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
142E:												
Hazelcamp-----	0-12	Silty clay loam.	CL, ML	A-6	0	0	95-100	85-100	80-100	75-95	35-40	10-15
	12-36	Silty clay loam, gravelly silty clay, gravelly clay loam.	CL, GC, SC	A-7	0	0	60-90	55-85	50-85	40-80	40-50	15-25
	36-46	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Averlande-----	0-7	Gravelly loam	SC-SM, GC, GM-GC, SC	A-4	0	0-15	65-80	60-75	50-65	35-50	25-30	5-10
	7-14	Very gravelly clay loam, very gravelly silty clay loam, extremely gravelly clay loam.	GC	A-2	0	0-25	35-50	20-45	20-40	15-30	30-40	10-15
	14-24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
143B----------- Hebo	0-5	Silty clay loam.	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
	5-46	Silty clay, clay.	CH	A-7	0	0	100	100	90-100	80-95	50-65	25-35
	46-60	Clay loam, silty clay, silty clay loam.	CL	A-7	0	0	90-100	85-100	75-95	60-85	40-50	20-30
144A----------- Heceta	0-6	Fine sand-----	SM	A-2	0	0	100	100	65-80	20-30	10-15	NP
	6-60	Sand, fine sand, loamy sand.	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-30	0-15	NP
145E, 146F, 147E:												
Honeygrove---	0-15	Gravelly clay loam.	ML, SM	A-4	0	0	80-100	50-75	45-70	35-55	30-40	5-10
	15-99	Clay, silty clay, gravelly clay.	MH	A-7	0	0-15	70-100	60-100	55-100	50-95	55-70	10-20
Shivigny-----	0-13	Very gravelly loam.	GM, GM-GC	A-2, A-4	0	0-15	35-55	30-50	25-50	20-45	25-35	5-10
	13-41	Very stony clay loam.	CL	A-7	25-55	15-35	70-90	65-85	55-70	50-60	40-45	15-20
	41-78	Very stony clay, very stony silty clay, very stony clay loam.	ML, MH	A-7	25-55	15-35	65-90	60-85	55-80	50-75	40-55	15-25

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
148D, 148E:												
Hooskanaden---	0-15	Gravelly clay loam.	CL, ML	A-6	0	0	80-85	70-75	65-75	50-60	35-40	10-15
	15-35	Silty clay, clay.	CL, CH	A-7	0	0	95-100	85-100	75-100	70-95	45-55	20-30
	35-60	Silty clay, clay.	CH	A-7	0	0	95-100	85-100	75-100	70-90	50-65	25-35
Loneranch-----	0-3	Gravelly clay loam.	CL	A-6	0	0-10	70-80	65-75	60-70	55-65	30-40	10-20
	3-24	Gravelly clay loam.	CL, GC, SC	A-6	0	0-10	60-90	55-85	50-80	40-65	35-40	15-20
	24-27	Very gravelly clay loam, gravelly clay loam.	GC	A-6	0	5-15	55-70	50-65	45-55	35-45	35-40	15-20
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Millicoma-----	0-19	Gravelly loam	ML, OL, GM, SM	A-4	0	0-10	60-75	55-75	50-70	40-60	25-35	NP-10
	19-31	Very gravelly loam, very gravelly sandy loam, extremely gravelly loam.	GM, SM, GM-GC, SC-SM	A-1, A-2	0	0-25	25-65	20-50	15-40	10-25	20-30	NP-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
149E, 150F:												
Hooskanaden---	0-15	Clay loam-----	CL	A-6	0	0	95-100	85-100	80-100	60-80	35-40	15-20
	15-35	Silty clay, clay.	CL, CH	A-7	0	0	95-100	85-100	75-100	70-95	45-55	20-30
	35-60	Silty clay, clay.	CH	A-7	0	0	95-100	85-100	75-100	70-90	50-65	25-35
Loneranch-----	0-3	Gravelly clay loam.	CL	A-6	0	0-10	70-80	65-75	60-70	55-65	30-40	10-20
	3-24	Gravelly clay loam.	CL, GC, SC	A-6	0	0-10	60-90	55-85	50-80	40-65	35-40	15-20
	24-27	Very gravelly clay loam, gravelly clay loam.	GC	A-6	0	5-15	55-70	50-65	45-55	35-45	35-40	15-20
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Reinhart------	0-2	Gravelly clay loam.	ML, GM, SM, CL	A-6	0	0-10	65-80	60-75	55-70	40-55	35-40	10-15
	2-18	Very gravelly clay loam, extremely gravelly clay loam.	GM, GP-GM, GC, GP-GC	A-2	0	10-30	25-60	15-50	15-45	10-35	35-40	10-15
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
151D, 151E-----Horseprairie	0-18	Silt loam-----	ML	A-4	0	0	95-100	85-100	75-95	60-80	25-35	NP-5
	18-61	Silty clay loam, clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	95-100	85-100	70-95	55-95	25-40	5-15
	61-72	Silt clay loam, clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	95-100	85-100	70-95	55-95	25-40	5-15
152E:												
Houstenader---	0-11	Gravelly loam	CL, CL-ML	A-4	0	0-10	80-95	70-85	70-80	60-80	25-30	5-10
	11-40	Gravelly silty clay loam, gravelly clay loam.	ML, SM	A-6	0	10-15	75-85	65-75	60-75	45-70	35-40	10-15
	40-60	Very gravelly silty clay, very gravelly clay.	GC	A-2, A-7	0	15-20	50-60	40-50	35-50	30-50	45-65	20-40
Carpenterville	0-6	Gravelly silty clay loam.	ML, CL	A-6	0	0-10	80-95	70-85	70-85	60-80	35-40	10-15
	6-32	Very cobbly silty clay, very cobbly clay, extremely cobbly silty clay.	GC	A-2, A-7	0	30-65	40-65	30-55	30-55	25-50	45-65	20-40
	32-42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Huntley-------	0-3	Gravelly loam	CL, CL-ML	A-4	0	0-10	85-95	75-85	65-80	50-65	25-30	5-10
	3-17	Gravelly clay loam, gravelly silty clay loam.	ML, SC, SM, CL	A-6	0	10-15	75-95	65-85	60-80	45-70	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
153A-----------Huffling	0-12	Silty clay loam.	CL	A-6	0	0	85-100	80-100	70-90	65-85	35-40	15-20
	12-52	Silty clay loam, clay loam, clay.	CL	A-7	0	0	80-100	75-100	70-90	55-85	40-50	20-25
	52-65	Loam, clay loam.	CL	A-6	0	0	80-95	75-90	65-90	50-70	30-40	10-20
	65-75	Dense material	---	---	---	---	---	---	---	---	---	---
154G:												
Jayar---------	0-4	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	4-31	Very gravelly loam, extremely gravelly loam, very cobbly loam.	GM-GC	A-1, A-2	0	15-30	35-55	25-45	20-45	15-35	25-30	5-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
154G:												
Althouse------	0-3	Very gravelly loam.	GM, GM-GC	A-2	0	0-10	45-55	35-45	30-45	25-35	20-25	NP-5
	3-32	Very gravelly loam, extremely gravelly loam.	GM, GM-GC	A-1, A-2	0	10-30	40-55	30-45	25-45	20-35	20-25	NP-5
	32-53	Very gravelly loam, extremely gravelly loam.	GM, GM-GC, GP-GM, GW-GM	A-1	0	10-30	25-40	15-30	10-30	10-25	20-25	NP-5
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Woodseye------	0-12	Very gravelly loam.	GM	A-1, A-2	0	0-5	25-60	20-50	15-45	10-30	20-35	NP-10
	12-16	Very gravelly sandy loam, very gravelly loam, extremely gravelly loam.	GP-GM, GM	A-1, A-2	0-5	5-25	20-40	15-35	10-30	5-20	20-35	NP-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
155F:												
Jayar---------	0-4	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	4-31	Very gravelly loam, extremely gravelly loam, very cobbly loam.	GM-GC	A-1, A-2	0	15-30	35-55	25-45	20-45	15-35	25-30	5-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Althouse------	0-3	Very gravelly loam.	GM, GM-GC	A-2	0	0-10	45-55	35-45	30-45	25-35	20-25	NP-5
	3-32	Very gravelly loam, extremely gravelly loam.	GM, GM-GC	A-1, A-2	0	10-30	40-55	30-45	25-45	20-35	20-25	NP-5
	32-53	Very gravelly loam, extremely gravelly loam.	GM, GM-GC, GP-GM, GW-GM	A-1	0	10-30	25-40	15-30	10-30	10-25	20-25	NP-5
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
156G:												
Jayar---------	0-4	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	4-31	Very gravelly loam, extremely gravelly loam, very cobbly loam.	GM-GC	A-1, A-2	0	15-30	35-55	25-45	20-45	15-35	25-30	5-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Skymor--------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0-10	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-15	Very gravelly loam, extremely gravelly loam, very gravelly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-20	30-60	20-50	15-50	10-40	25-35	5-10
	15-25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Althouse------	0-3	Very gravelly loam.	GM, GM-GC	A-2	0	0-10	45-55	35-45	30-45	25-35	20-25	NP-5
	3-32	Very gravelly loam, extremely gravelly loam.	GM, GM-GC	A-1, A-2	0	10-30	40-55	30-45	25-45	20-35	20-25	NP-5
	32-53	Very gravelly loam, extremely gravelly loam.	GM, GM-GC, GP-GM, GW-GM	A-1	0	10-30	25-40	15-30	10-30	10-25	20-25	NP-5
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
157E:												
Josephine-----	0-15	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	15-58	Gravelly clay loam, clay loam.	CL, GC, SC, ML	A-6	0	0	65-95	55-85	50-85	40-65	35-40	10-15
	58-68	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Pollard-------	0-10	Gravelly loam	ML, SM	A-4	0	0-15	85-95	75-85	65-80	45-65	30-35	5-10
	10-69	Clay, silty clay, clay loam.	CL, CH	A-7	0	0-10	95-100	90-100	80-100	65-95	40-55	15-30

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
157E:												
Speaker-------	0-13	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	65-85	55-75	45-70	35-55	25-30	5-10
	13-35	Gravelly clay loam, clay loam, gravelly loam.	CL, GC, SC, ML	A-6	0	0-10	65-95	55-85	45-85	35-65	35-40	10-15
	35-45	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
158F, 159F:												
Kanid---------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-47	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GM, GW-GM, GP-GM	A-1, A-2	0	15-30	30-55	20-45	15-45	10-35	30-35	5-10
	47-57	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Acker---------	0-4	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0	65-85	55-75	45-70	35-55	20-30	5-10
	4-9	Gravelly loam, loam.	CL-ML, SC-SM, GM-GC	A-4	0	0-10	70-95	60-85	50-80	35-65	25-30	5-10
	9-47	Gravelly clay loam, clay loam.	CL, SC, GC	A-6, A-7	0	0-5	65-95	55-85	50-85	40-65	35-45	10-20
	47-68	Gravelly clay loam, gravelly loam, very gravelly clay loam.	CL, SC, GC	A-2, A-6	0	0-10	60-85	50-75	40-75	30-55	30-40	10-15
Atring--------	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
160F, 160G:												
Kanid---------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-47	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GM, GW-GM, GP-GM	A-1, A-2	0	15-30	30-55	20-45	15-45	10-35	30-35	5-10
	47-57	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
160F, 160G:												
Atring--------	0-7	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	7-37	Very gravelly clay loam, very gravelly loam.	GM, GM-GC	A-2, A-4	0	15-20	45-65	35-55	30-55	25-45	25-35	5-10
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
161A:												
Kirkendall----	0-6	Silt loam-----	ML, CL-ML, CL	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	6-37	Silt loam, silty clay loam.	CL	A-6, A-7	0	0	100	100	95-100	75-95	25-45	10-20
	37-60	Silt loam, silty clay loam, loam.	CL, CL-ML	A-6, A-7, A-4	0	0	100	100	95-100	75-95	20-45	5-20
Quosatana-----	0-14	Silt loam-----	ML	A-4	0	0	100	100	95-100	75-90	30-40	5-10
	14-49	Silty clay loam, silt loam.	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
	49-60	Silty clay loam, silty clay, loam.	CL	A-6, A-7	0	0	100	100	85-100	60-95	30-50	10-25
162A, 162B----- Klooqueh	0-19	Silty clay loam.	CL	A-6	0	0	100	100	95-100	85-95	35-40	15-20
	19-60	Silty clay loam, silty clay, clay.	CL, CH	A-7	0	0	95-100	85-100	75-100	65-95	40-55	20-30
163F:												
Knapke--------	0-17	Extremely gravelly loam.	GM-GC	A-1, A-2	0-10	10-25	20-35	10-25	5-25	5-20	25-30	5-10
	17-65	Very gravelly loam, extremely gravelly loam.	GM-GC	A-1, A-2	0-10	0-15	20-40	10-30	5-30	5-25	25-30	5-10
Fantz---------	0-16	Very gravelly loam.	GM-GC	A-2	0	0-15	45-55	35-45	30-45	25-35	25-30	5-10
	16-32	Very cobbly loam, extremely cobbly loam.	GM-GC, GP-GC	A-1, A-2, A-4	0	30-55	25-60	15-50	10-50	10-40	25-30	5-10
	32-42	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
164A----------- Langlois	0-10	Silty clay loam.	CL	A-6	0	0	100	100	95-100	85-95	35-40	15-20
	10-28	Silty clay loam, silty clay.	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	28-60	Clay, silty clay.	CH	A-7	0	0	100	100	90-100	75-95	50-60	25-30

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
165D, 165E:												
Loeb----------	0-10	Silt loam-----	ML, CL-ML, CL	A-4	0	0	95-100	85-100	75-100	60-90	25-35	5-10
	10-46	Silty clay loam, silty clay, gravelly clay.	CL	A-7	0	0-10	80-100	70-100	65-100	55-95	40-50	15-25
	46-56	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Macklyn-------	0-12	Silt loam-----	CL-ML, CL	A-4	0	0	95-100	85-100	75-100	60-90	25-30	5-10
	12-22	Silty clay loam.	ML, CL	A-6	0	0	90-100	80-100	75-100	70-95	35-40	10-15
	22-37	Silty clay, gravelly silty clay loam, gravelly clay.	CL, ML	A-7	0	0	70-100	60-95	55-95	50-90	40-50	15-20
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
166E:												
Loeb----------	0-10	Silt loam-----	ML, CL-ML, CL	A-4	0	0	95-100	85-100	75-100	60-90	25-35	5-10
	10-46	Silty clay loam, silty clay, gravelly clay.	CL	A-7	0	0-10	80-100	70-100	65-100	55-95	40-50	15-25
	46-56	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Macklyn-------	0-12	Silt loam-----	CL-ML, CL	A-4	0	0	95-100	85-100	75-100	60-90	25-30	5-10
	12-22	Silty clay loam.	ML, CL	A-6	0	0	90-100	80-100	75-100	70-95	35-40	10-15
	22-37	Silty clay, gravelly silty clay loam, gravelly clay.	CL, ML	A-7	0	0	70-100	60-95	55-95	50-90	40-50	15-20
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vondergreen---	0-9	Silt loam-----	CL	A-6	0	0	90-100	85-100	75-95	60-90	25-35	10-15
	9-16	Silty clay loam, silt loam.	CL	A-6	0	0	90-100	85-100	75-95	60-90	35-40	15-20
	16-53	Silty clay, gravelly silty clay, silty clay loam.	CL, CH, GC, SC	A-7	0	0-10	65-95	55-85	50-80	45-75	40-55	20-30
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
167A----------- Logsden	0-17	Silt loam-----	ML, CL-ML, CL	A-4	0	0	90-100	90-100	80-100	75-85	25-35	5-10
	17-44	Silt loam, silty clay loam.	ML	A-4	0	0	90-100	90-100	80-100	75-85	30-40	5-10
	44-60	Loamy sand, fine sandy loam, loam.	SM, CL-ML, ML, SC-SM	A-2, A-4	0	0	90-100	90-100	60-90	30-70	20-30	NP-10
168A:												
Logsden-------	0-17	Silt loam-----	ML, CL-ML, CL	A-4	0	0	90-100	90-100	80-100	75-85	25-35	5-10
	17-44	Silt loam, silty clay loam.	ML	A-4	0	0	90-100	90-100	80-100	75-85	30-40	5-10
	44-60	Loamy sand, fine sandy loam, loam.	SM, CL-ML, ML, SC-SM	A-2, A-4	0	0	90-100	90-100	60-90	30-70	20-30	NP-10
Euchre--------	0-18	Silt loam-----	MH, OH	A-5	0	0	85-100	80-100	70-100	55-90	50-60	NP-5
	18-31	Clay loam, silty clay loam.	CL	A-6	0	0	85-100	80-100	70-100	55-95	25-35	10-15
	31-51	Fine sandy loam, clay loam.	SM, SC-SM, CL, ML	A-4, A-6	0	0	85-100	80-100	55-95	35-75	15-35	NP-15
	51-60	Sandy loam, loamy sand, gravelly loamy sand.	SM, SP-SM, GM, GP-GM	A-1, A-2	0	0	60-100	50-100	25-65	10-35	0-15	NP
169F:												
Loneranch-----	0-3	Gravelly clay loam.	CL	A-6	0	0-10	70-80	65-75	60-70	55-65	30-40	10-20
	3-24	Gravelly clay loam.	CL, GC, SC	A-6	0	0-10	60-90	55-85	50-80	40-65	35-40	15-20
	24-27	Very gravelly clay loam, gravelly clay loam.	GC	A-6	0	5-15	55-70	50-65	45-55	35-45	35-40	15-20
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Hooskanaden---	0-15	Gravelly clay loam.	CL, ML	A-6	0	0	80-85	70-75	65-75	50-60	35-40	10-15
	15-35	Silty clay, clay.	CL, CH	A-7	0	0	95-100	85-100	75-100	70-95	45-55	20-30
	35-60	Silty clay, clay.	CH	A-7	0	0	95-100	85-100	75-100	70-90	50-65	25-35
Millicoma-----	0-19	Gravelly loam	ML, OL, GM, SM	A-4	0	0-10	60-75	55-75	50-70	40-60	25-35	NP-10
	19-31	Very gravelly loam, very gravelly sandy loam, extremely gravelly loam.	GM, SM, GM-GC, SC-SM	A-1, A-2	0	0-25	25-65	20-50	15-40	10-25	20-30	NP-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
170F:												
Lonerанch-----	0-3	Gravelly clay loam.	CL	A-6	0	0-10	70-80	65-75	60-70	55-65	30-40	10-20
	3-24	Gravelly clay loam.	CL, GC, SC	A-6	0	0-10	60-90	55-85	50-80	40-65	35-40	15-20
	24-27	Very gravelly clay loam, gravelly clay loam.	GC	A-6	0	5-15	55-70	50-65	45-55	35-45	35-40	15-20
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Hooskanaden---	0-15	Clay loam-----	CL	A-6	0	0	95-100	85-100	80-100	60-80	35-40	15-20
	15-35	Silty clay, clay.	CL, CH	A-7	0	0	95-100	85-100	75-100	70-95	45-55	20-30
	35-60	Silty clay, clay.	CH	A-7	0	0	95-100	85-100	75-100	70-90	50-65	25-35
Reinhart------	0-2	Gravelly clay loam.	ML, GM, SM, CL	A-6	0	0-10	65-80	60-75	55-70	40-55	35-40	10-15
	2-18	Very gravelly clay loam, extremely gravelly clay loam.	GM, GP-GM, GC, GP-GC	A-2	0	10-30	25-60	15-50	15-45	10-35	35-40	10-15
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
171B:												
McCurdy-------	0-6	Silt loam-----	ML	A-4	0	0	100	90-100	80-100	60-90	30-35	5-10
	6-46	Silty clay loam, silty clay.	CL	A-6, A-7	0	0	95-100	90-100	90-100	80-95	35-45	15-25
	46-60	Silty clay loam, silty clay, clay.	MH	A-7	0	0	85-100	75-100	70-100	60-95	50-60	20-25
Wintley-------	0-5	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	100	85-100	80-100	70-90	25-35	5-15
	5-43	Silty clay loam, silty clay, clay.	CL, CH	A-7	0	0	90-100	75-100	70-100	60-95	40-55	20-30
	43-60	Very gravelly loam, very gravelly sandy loam, gravelly loam.	GM, SM	A-1, A-2, A-4	0	0-10	40-65	30-60	25-55	15-40	20-30	NP-5
172C----------- Meda	0-8	Gravelly loam	GM, SM, ML	A-4	0	0	55-80	50-75	40-70	35-55	25-40	NP-10
	8-28	Gravelly clay loam, gravelly loam, clay loam.	ML, GM, SM	A-2, A-4	0	0-25	55-80	50-75	40-70	25-55	30-40	NP-10
	28-60	Very gravelly sandy loam, very gravelly loam, gravelly sandy loam.	GP-GM, GM, SM, SP-SM	A-1, A-2	0	0-25	25-75	20-70	10-60	10-35	15-20	NP-5

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
173F, 174F:												
Milbury-------	0-13	Very gravelly loam.	GM, GM-GC	A-1, A-2	0-10	0-35	40-55	30-45	25-45	20-35	20-30	NP-10
	13-36	Very cobbly loam, very gravelly loam, very gravelly sandy loam.	GM-GC, GM	A-4, A-2, A-1	0	10-35	55-65	35-50	25-45	10-40	20-30	NP-10
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Remote--------	0-6	Very gravelly loam.	GM	A-2	0	0-10	35-50	30-45	25-40	20-30	25-35	NP-5
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15
Umpcoos-------	0-3	Very gravelly sandy loam.	GM	A-1	0	0-15	30-55	25-50	15-35	10-20	---	NP
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
175F, 175G, 176F, 176G:												
Milbury------	0-13	Very gravelly loam.	GM, GM-GC	A-1, A-2	0-10	0-35	40-55	30-45	25-45	20-35	20-30	NP-10
	13-36	Very cobbly loam, very gravelly loam, very gravelly sandy loam.	GM-GC, GM	A-4, A-2, A-1	0	10-35	55-65	35-50	25-45	10-40	20-30	NP-10
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Umpcoos------	0-3	Very gravelly sandy loam.	GM	A-1	0	0-15	30-55	25-50	15-35	10-20	15-20	NP
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
175F, 175G, 176F, 176G:												
Dystrochrepts	0-8	Extremely stony loam, extremely gravelly loam, very gravelly sandy loam.	GM, GP-GM, GC, SM, SC	A-1, A-2, A-4	0-50	0-40	25-60	20-55	15-50	10-40	15-25	NP-10
	8-24	Extremely stony clay loam, extremely gravelly sandy loam.	GM, SM, GP-GM, GW-GM, GC	A-1, A-2, A-4	15-50	0-40	25-55	20-50	10-45	5-40	15-25	NP-10
	24-34	Bedrock										
177G:												
Milbury-------	0-13	Stony loam----	GM, GM-GC, SM, SC-SM	A-4	10-25	0-35	70-75	60-65	50-60	35-50	20-30	NP-10
	13-36	Very cobbly loam, very gravelly loam, very gravelly sandy loam.	GM-GC, GM	A-4, A-2, A-1	0	10-35	55-65	35-50	25-45	10-40	20-30	NP-10
	36-46	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Umpcoos-------	0-3	Stony loam----	ML, CL-ML, SM, SC-SM	A-4	10-25	0-15	80-85	70-75	60-70	40-55	20-25	NP-5
	3-13	Very gravelly sandy loam, extremely gravelly loam, very cobbly loam.	GM	A-1, A-2, A-4	0	10-40	40-75	35-60	25-55	15-50	20-25	NP-5
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
178F, 178G, 179G:												
Millicoma----	0-19	Gravelly loam	ML, OL, GM, SM	A-4	0	0-10	60-75	55-75	50-70	40-60	25-35	NP-10
	19-31	Very gravelly loam, very gravelly sandy loam, extremely gravelly loam.	GM, SM, GM-GC, SC-SM	A-1, A-2	0	0-25	25-65	20-50	15-40	10-25	20-30	NP-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
178F, 178G, 179G:												
Whaleshead---	0-3	Very gravelly loam.	GM-GC, GM, GC	A-2, A-4	0	10-15	45-60	35-55	30-50	25-40	25-35	5-10
	3-47	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	10-30	35-60	25-55	20-45	20-35	35-40	10-15
	47-60	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	15-30	30-40	20-35	15-30	10-25	35-45	10-20
Reedsport----	0-8	Gravelly loam	GM, SM	A-4	0	0	60-85	55-75	50-65	35-50	20-35	NP-10
	8-37	Loam, clay loam, gravelly loam.	GM, ML, SM	A-4, A-6, A-7	0	0-10	65-100	60-95	50-90	45-70	30-45	5-15
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
180F:												
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
180F:												
Redflat-------	0-7	Gravelly loam	CL-ML, ML, SC-SM, SM	A-4	0	0-10	75-95	65-85	60-80	45-70	25-35	5-10
	7-38	Gravelly silty clay loam, cobbly silty clay loam, gravelly clay loam.	CL, ML	A-6	0	0-15	75-95	65-85	60-85	50-75	35-40	10-15
	38-60	Gravelly silty clay loam, cobbly silty clay loam, gravelly clay loam.	CL, ML	A-6, A-7	0	0-30	70-95	60-85	55-85	50-80	35-45	10-20
181F:												
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
182F:												
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
182F:												
Redflat-------	0-7	Gravelly loam	CL-ML, ML, SC-SM, SM	A-4	0	0-10	75-95	65-85	60-80	45-70	25-35	5-10
	7-38	Gravelly silty clay loam, cobbly silty clay loam, gravelly clay loam.	CL, ML	A-6	0	0-15	75-95	65-85	60-85	50-75	35-40	10-15
	38-60	Gravelly silty clay loam, cobbly silty clay loam, gravelly clay loam.	CL, ML	A-6, A-7	0	0-30	70-95	60-85	55-85	50-80	35-45	10-20
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
183A----------- Nehalem	0-18	Silt loam-----	ML, CL-ML	A-4	0	0	100	100	90-100	70-90	25-35	5-10
	18-42	Silt loam, silty clay loam.	CL	A-6, A-7	0	0	100	100	90-100	75-95	30-45	10-20
	42-60	Silty clay loam, silt loam, loam.	CL, CL-ML	A-6, A-4	0	0-5	85-100	80-100	80-95	60-90	25-40	5-15
184B:												
Nelscott------	0-19	Loam----------	ML	A-4	0	0	95-100	95-100	85-95	65-75	30-40	NP-5
	19-32	Clay loam, loam, silty clay loam.	ML	A-7, A-4	0	0	90-100	85-100	75-95	60-85	35-45	5-15
	32-36	Fine sand, loamy fine sand.	SM	A-2	0	0	95-100	95-100	65-80	20-35	0-15	NP
	36-51	Cemented------	---	---	---	---	---	---	---	---	---	---
	51-72	Stratified fine sand to silt loam.	SM, ML	A-2, A-4	0	0	95-100	95-100	65-95	30-75	0-15	NP
Depoe---------	0-3	Loam----------	CL-ML, CL	A-4	0	0	95-100	95-100	85-95	65-75	20-30	5-10
	3-9	Sandy loam, loam, silt loam.	CL-ML, SC-SM, SC, CL	A-4	0	0	95-100	90-100	60-95	35-80	20-30	5-10
	9-44	Cemented------	---	---	---	---	---	---	---	---	---	---
	44-60	Fine sand, loamy fine sand, sand.	SM, SP-SM	A-2	0	0	95-100	95-100	60-80	10-35	0-15	NP

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
184B:												
Bullards------	0-8	Sandy loam----	SM, ML	A-2, A-4	0	0	100	95-100	60-80	30-55	15-25	NP-5
	8-47	Gravelly sandy loam, gravelly loam.	SM	A-2, A-4	0	0	100	50-75	30-60	15-40	15-25	NP-5
	47-60	Loamy fine sand, sand.	SP-SM, SM	A-2, A-3	0	0	100	100	50-75	5-25	0-15	NP
185A----------- Nestucca	0-18	Silt loam-----	CL-ML, CL	A-4	0	0	100	100	90-100	75-95	20-30	5-10
	18-43	Silty clay loam, silt loam.	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-20
	43-60	Silty clay, clay loam, loam.	CL	A-7, A-6	0	0	100	95-100	85-100	65-95	30-50	10-25
186D, 186E:												
Orford--------	0-18	Silty clay loam.	ML	A-7	0	0	100	100	95-100	85-95	40-50	10-15
	18-67	Clay, silty clay, silty clay loam.	MH	A-7	0	0	85-100	75-100	70-100	55-95	50-55	15-20
McDuff--------	0-22	Silty clay loam.	ML, CL	A-6	0	0-5	90-100	85-100	85-100	75-95	35-40	10-15
	22-37	Silty clay, clay.	MH	A-7	0	0	100	85-100	85-100	80-95	50-60	20-25
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
187B----------- Orthents	0-5	Extremely gravelly sandy loam, extremely cobbly clay loam, very gravelly sandy loam.	GP-GM	A-1, A-2	0-15	0-45	30-45	25-40	20-35	15-30	15-35	NP-10
	5-60	Extremely gravelly loamy sand, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GW-GC, GM, SM, SC, GC	A-2	0-30	0-55	20-45	15-40	10-35	5-30	10-35	10-35
188G, 189G:												
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
188G, 189G:												
Gravecreek----	0-4	Very cobbly loam.	GM-GC, GC, SC-SM, SC	A-2, A-4	0-10	20-35	60-70	50-60	40-55	30-45	25-30	5-10
	4-30	Very gravelly clay loam, very cobbly clay loam.	GM, GC	A-2, A-4, A-6	0-10	15-30	55-65	45-55	40-55	35-45	35-40	10-15
	30-40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
190F:												
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Gravecreek----	0-4	Very cobbly loam.	GM-GC, GC, SC-SM, SC	A-2, A-4	0-10	20-35	60-70	50-60	40-55	30-45	25-30	5-10
	4-30	Very gravelly clay loam, very cobbly clay loam.	GM, GC	A-2, A-4, A-6	0-10	15-30	55-65	45-55	40-55	35-45	35-40	10-15
	30-40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
191E, 192F:												
Pearsoll------	0-4	Very cobbly clay loam.	GM, GC	A-6, A-7	0-10	30-35	60-75	50-65	45-65	40-50	35-45	10-20
	4-16	Very cobbly clay, extremely cobbly clay.	GC, CL, CH, SC	A-2, A-7	0-10	30-65	45-75	35-65	30-65	25-60	45-65	20-40
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
193E, 194F, 194G, 195F, 195G:												
Perdin-------	0-5	Cobbly loam---	ML, SM	A-4	0	15-30	80-100	70-90	60-85	40-70	30-35	5-10
	5-23	Gravelly clay loam, gravelly clay.	CL, GC	A-7	0	0-15	70-85	60-75	55-75	45-70	40-50	15-25
	23-33	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
196C, 196D-----Pollard	0-10	Loam----------	ML	A-4	0	0-15	95-100	90-95	75-90	55-70	30-35	5-10
	10-69	Clay, silty clay, clay loam.	CL, CH	A-7	0	0-10	95-100	90-100	80-100	65-95	40-55	15-30
197E:												
Pollard-------	0-10	Gravelly loam	ML, SM	A-4	0	0-15	85-95	75-85	65-80	45-65	30-35	5-10
	10-69	Clay, silty clay, clay loam.	CL, CH	A-7	0	0-10	95-100	90-100	80-100	65-95	40-55	15-30
Josephine-----	0-15	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	15-58	Gravelly clay loam, clay loam.	CL, GC, SC, ML	A-6	0	0	65-95	55-85	50-85	40-65	35-40	10-15
	58-68	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Shastacosta---	0-10	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	10-41	Very gravelly loam, very gravelly clay loam, extremely cobbly clay loam.	GC	A-2	0	10-35	35-50	25-40	20-40	15-35	30-35	10-15
	41-72	Very cobbly clay, very gravelly clay, extremely gravelly clay.	GC	A-2, A-7	0	15-30	35-60	25-50	20-50	20-50	50-60	25-35
198E:												
Preacher------	0-6	Clay loam-----	MH	A-7	0	0-5	95-100	90-100	80-100	70-85	50-60	10-20
	6-42	Loam, clay loam.	MH, ML	A-7	0	0-5	90-100	80-100	70-100	55-80	45-60	10-20
	42-60	Sandy loam, loam, clay loam.	SM, ML	A-4, A-2, A-5, A-7	0	0-15	85-100	75-100	45-85	30-65	35-50	NP-15
Blachly-------	0-7	Silty clay loam.	MH	A-5, A-7	0	0	100	95-100	95-100	85-95	50-65	5-15
	7-38	Silty clay, clay.	MH	A-7	0	0	85-100	75-100	65-100	50-90	50-65	10-20
	38-67	Silty clay, clay, silty clay loam.	MH	A-7	0	0	85-100	75-100	65-100	50-90	50-65	10-20
199E:												
Preacher------	0-6	Clay loam-----	MH	A-7	0	0-5	95-100	90-100	80-100	70-85	50-60	10-20
	6-42	Loam, clay loam.	MH, ML	A-7	0	0-5	90-100	80-100	70-100	55-80	45-60	10-20
	42-60	Sandy loam, loam, clay loam.	SM, ML	A-4, A-2, A-5, A-7	0	0-15	85-100	75-100	45-85	30-65	35-50	NP-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
199E:												
Blachly-------	0-7	Silty clay loam.	MH	A-5, A-7	0	0	100	95-100	95-100	85-95	50-65	5-15
	7-38	Silty clay, clay.	MH	A-7	0	0	85-100	75-100	65-100	50-90	50-65	10-20
	38-67	Silty clay, clay, silty clay loam.	MH	A-7	0	0	85-100	75-100	65-100	50-90	50-65	10-20
Digger--------	0-3	Gravelly loam	SM, GM, ML	A-4	0	0-15	60-85	60-70	50-65	40-60	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
200F, 201F:												
Preacher------	0-14	Gravelly loam	SM, ML	A-4	0	0-5	80-85	70-75	60-70	40-55	30-35	5-10
	14-42	Loam, clay loam.	MH, ML	A-7	0	0-5	90-100	80-100	70-100	55-80	45-60	10-20
	42-60	Sandy loam, loam, clay loam.	SM, ML	A-4, A-2, A-5, A-7	0	0-15	85-100	75-100	45-85	30-65	35-50	NP-15
Digger--------	0-3	Gravelly loam	SM, GM, ML	A-4	0	0-15	60-85	60-70	50-65	40-60	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bohannon------	0-14	Gravelly loam	GM, SM	A-4, A-5	0-10	0-10	70-85	60-80	50-75	35-50	30-45	NP-10
	14-34	Gravelly loam, cobbly loam, cobbly clay loam.	SC-SM, GC, SC, GM-GC	A-4, A-6	0-10	0-20	70-95	60-90	50-85	35-50	25-35	5-15
	34-44	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
202D:												
Pyrady--------	0-6	Clay loam-----	CL, ML	A-6	0	0-10	95-100	85-95	75-95	60-75	35-40	10-15
	6-21	Gravelly clay loam, clay loam, gravelly clay.	CL	A-7	0	0-10	75-95	65-85	60-85	50-80	40-50	15-25
	21-43	Gravelly silty clay loam, gravelly silty clay, gravelly clay.	CL, CH	A-7	0	0-10	75-85	65-75	60-75	50-70	40-55	15-30
	43-66	Gravelly silty clay, gravelly clay.	CH	A-7	0	0-15	85-95	75-85	70-85	55-80	50-65	25-40
Zalea---------	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0	65-85	55-75	55-65	40-55	25-35	5-10
	8-34	Gravelly clay loam.	CL, ML, GC, GM	A-6	0	0-5	65-85	55-75	50-70	40-60	35-40	10-15
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Yorel---------	0-6	Gravelly loam	CL-ML, ML, GM, GM-GC	A-4	0	0	70-85	60-75	55-70	40-55	25-35	5-10
	6-31	Gravelly clay loam, gravelly loam.	CL, GC, SC	A-6	0	0	65-85	50-75	45-70	40-60	30-40	10-15
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
203B----------- Quillamook	0-28	Silt loam-----	MH, OH	A-5	0	0	100	100	90-100	70-90	50-60	NP-5
	28-56	Silt loam, silty clay loam.	MH, ML	A-5, A-7	0	0	100	100	90-100	80-95	40-60	5-20
	56-60	Loamy sand----	SM	A-2	0	0	100	100	50-75	15-30	0-15	NP
204E:												
Redflat-------	0-7	Gravelly loam	CL-ML, ML, SC-SM, SM	A-4	0	0-10	75-95	65-85	60-80	45-70	25-35	5-10
	7-38	Gravelly silty clay loam, cobbly silty clay loam, gravelly clay loam.	CL, ML	A-6	0	0-15	75-95	65-85	60-85	50-75	35-40	10-15
	38-60	Gravelly silty clay loam, cobbly silty clay loam, gravelly clay loam.	CL, ML	A-6, A-7	0	0-30	70-95	60-85	55-85	50-80	35-45	10-20

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
204E:												
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
205F:												
Reedsport-----	0-8	Gravelly loam	GM, SM	A-4	0	0	60-85	55-75	50-65	35-50	20-35	NP-10
	8-37	Loam, clay loam, gravelly loam.	GM, ML, SM	A-4, A-6, A-7	0	0-10	65-100	60-95	50-90	45-70	30-45	5-15
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Whaleshead----	0-3	Very gravelly loam.	GM-GC, GM, GC	A-2, A-4	0	10-15	45-60	35-55	30-50	25-40	25-35	5-10
	3-47	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	10-30	35-60	25-55	20-45	20-35	35-40	10-15
	47-60	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	15-30	30-40	20-35	15-30	10-25	35-45	10-20
206G:												
Reedsport-----	0-8	Gravelly loam	GM, SM	A-4	0	0	60-85	55-75	50-65	35-50	20-35	NP-10
	8-37	Loam, clay loam, gravelly loam.	GM, ML, SM	A-4, A-6, A-7	0	0-10	65-100	60-95	50-90	45-70	30-45	5-15
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
206G:												
Whaleshead----	0-3	Very gravelly loam.	GM-GC, GM, GC	A-2, A-4	0	10-15	45-60	35-55	30-50	25-40	25-35	5-10
	3-47	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	10-30	35-60	25-55	20-45	20-35	35-40	10-15
	47-60	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	15-30	30-40	20-35	15-30	10-25	35-45	10-20
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
207E, 208F:												
Remote--------	0-6	Gravelly loam	SM, GM, ML	A-4	0	0-5	60-80	55-75	45-70	35-55	25-35	NP-10
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15
Digger--------	0-3	Very gravelly loam.	SM, GM	A-4, A-2	0	0-15	35-70	25-60	20-55	15-45	30-40	NP-10
	3-16	Gravelly loam, very gravelly loam.	SM, GM, ML	A-4, A-2	0	0-25	45-85	35-75	30-70	25-60	30-40	NP-10
	16-31	Very gravelly loam, very cobbly loam, very gravelly silt loam.	GM, SM	A-4, A-2	0-5	10-35	35-85	30-75	25-65	20-50	35-40	5-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
209F:												
Remote--------	0-6	Gravelly loam	SM, GM, ML	A-4	0	0-5	60-80	55-75	45-70	35-55	25-35	NP-10
	6-14	Gravelly clay loam, gravelly loam.	SM, GM, ML	A-4, A-6	0	5-10	65-85	60-80	55-80	40-60	30-40	5-15
	14-69	Very gravelly clay loam, extremely gravelly loam, very gravelly loam.	GM	A-4, A-2, A-6	0	5-20	35-60	30-55	25-55	20-45	30-40	5-15

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
209F:												
Whobrey-------	0-12	Silt loam-----	ML	A-4, A-6	0	0	100	100	95-100	80-90	30-40	5-15
	12-22	Silt loam, silty clay loam.	ML	A-4, A-6	0	0	100	100	95-100	80-95	30-40	5-15
	22-66	Clay, silty clay.	CH	A-7	0	0	100	95-100	85-100	70-95	55-70	35-45
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
210G, 211G:												
Rilea---------	0-5	Very gravelly loam.	GM-GC, GM	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Euchrand------	0-3	Very gravelly loam.	GM-GC	A-2, A-4, A-1	0	0-10	45-60	35-50	30-50	20-40	20-30	5-10
	3-15	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	0-15	30-45	20-35	15-35	10-30	30-35	10-15
	15-25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
212G, 213G:												
Rilea---------	0-5	Very gravelly loam.	GM-GC, GM	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Stackyards----	0-10	Extremely gravelly loam.	GM-GC	A-2, A-1	0	10-25	30-45	20-35	20-30	15-25	20-30	5-10
	10-44	Extremely cobbly loam, extremely cobbly clay loam, extremely gravelly loam.	SC, GC, GP-GC, SP-SC	A-2, A-6, A-1	0-10	40-55	25-65	15-55	15-50	10-45	25-40	5-15
	44-54	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
214------------ Riverwash	0-6	Gravelly sand	GP, GP-GM, GW, GW-GM	A-1	---	0-5	50-80	50-75	15-45	0-10	---	NP
	6-60	Stratified gravelly sand to extremely gravelly coarse sand.	GP, SP, GW, SW	A-1	---	0-25	25-55	25-50	10-30	0-5	---	NP
215G, 216G:												
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Grouslous-----	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-1	0	0	35-55	30-50	25-45	20-35	25-35	5-10
	4-16	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	0	25-50	20-40	20-40	15-35	35-40	10-15
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
215G, 216G:												
Cassiday------	0-8	Very gravelly loam.	GM-GC	A-2	0	10-15	40-55	35-50	30-40	20-35	20-30	5-10
	8-26	Very gravelly clay loam, very gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	10-25	35-55	20-50	15-40	10-35	25-35	10-15
	26-37	Extremely gravelly clay loam, extremely gravelly loam.	GC, GP-GC	A-2	0	10-30	30-40	20-30	15-25	10-20	25-35	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
217:												
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Orthents------	0-5	Extremely gravelly sandy loam, extremely cobbly clay loam, very gravelly sandy loam.	GP-GM	A-1, A-2	0-15	0-45	30-45	25-40	20-35	15-30	15-35	NP-10
	5-60	Extremely gravelly loamy sand, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GW-GC, GM, SM, SC, GC	A-2	0-30	0-55	20-45	15-40	10-35	5-30	10-35	10-35
218E, 219F,												
220F---------- Rogue	0-5	Cobbly coarse sandy loam.	SM, SC-SM	A-2	0-5	15-25	90-100	80-90	45-65	25-35	15-25	NP-5
	5-30	Cobbly coarse sandy loam, gravelly coarse sandy loam.	SM, SC-SM	A-1, A-2	0-5	10-25	80-95	70-85	40-60	20-30	20-25	NP-5
	30-50	Coarse sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam.	SM	A-1, A-2	0	0	70-95	60-85	30-65	15-30	15-20	NP-5
	50-60	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
221B, 221D:												
Ruch----------	0-8	Loam----------	ML, CL-ML, CL	A-4	0	0	95-100	85-100	70-95	55-75	20-30	NP-10
	8-72	Loam, clay loam.	CL	A-6	0	0-10	95-100	90-95	75-95	55-75	30-40	10-15
Selmac--------	0-5	Loam----------	ML	A-4	0	0	95-100	85-95	70-90	55-70	30-35	5-10
	5-16	Clay loam, gravelly clay loam.	ML, SM, CL	A-6	0	0-15	75-95	65-85	60-85	45-65	35-40	10-15
	16-99	Clay, silty clay.	CH	A-7	0	0	95-100	95-100	85-100	75-95	60-75	35-50
222F:												
Rustybutte----	0-8	Gravelly clay loam.	SM, ML, CL, SC	A-6	0-5	0-15	75-85	65-75	60-75	45-60	35-40	10-15
	8-28	Very cobbly clay loam, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GM, GC	A-2, A-6	0-10	30-55	30-75	20-65	15-60	10-50	35-40	10-15
	28-38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Sebastian-----	0-3	Very gravelly loam.	GM-GC	A-2, A-4	0-10	15-25	45-60	35-50	30-50	25-40	25-30	5-10
	3-14	Very cobbly loam, very cobbly clay loam, extremely cobbly clay loam.	GC, CL	A-2, A-6	10-25	30-55	35-80	25-70	20-65	15-55	30-40	10-15
	14-24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
223F:												
Rustybutte----	0-8	Gravelly clay loam.	SM, ML, CL, SC	A-6	0-5	0-15	75-85	65-75	60-75	45-60	35-40	10-15
	8-28	Very cobbly clay loam, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GM, GC	A-2, A-6	0-10	30-55	30-75	20-65	15-60	10-50	35-40	10-15
	28-38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Sebastian-----	0-3	Very cobbly loam.	GM-GC	A-2, A-4	10-15	30-45	50-70	40-60	35-55	25-45	25-30	5-10
	3-14	Very cobbly loam, very cobbly clay loam, extremely cobbly clay loam.	GC, CL	A-2, A-6	10-25	30-55	35-80	25-70	20-65	15-55	30-40	10-15
	14-24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
223F:												
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
224E, 225D, 225E:												
Saddlepeak---	0-8	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	25-40	30-35	5-10
	8-68	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC, GP-GC, GP-GM	A-2	0-15	10-35	25-60	15-50	15-45	10-35	35-40	10-15
Threetrees---	0-13	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	30-40	30-35	5-10
	13-37	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC	A-2, A-6	0-10	25-55	30-75	20-65	20-60	15-50	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
226E:												
Saddlepeak----	0-8	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	25-40	30-35	5-10
	8-68	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC, GP-GC, GP-GM	A-2	0-15	10-35	25-60	15-50	15-45	10-35	35-40	10-15
Threetrees----	0-13	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	30-40	30-35	5-10
	13-37	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC	A-2, A-6	0-10	25-55	30-75	20-65	20-60	15-50	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
227F, 228F:												
Saddlepeak----	0-8	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	25-40	30-35	5-10
	8-68	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC, GP-GC, GP-GM	A-2	0-15	10-35	25-60	15-50	15-45	10-35	35-40	10-15
Threetrees----	0-13	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	30-40	30-35	5-10
	13-37	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC	A-2, A-6	0-10	25-55	30-75	20-65	20-60	15-50	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Scalerock-----	0-4	Very channery loam.	GM	A-2	0-15	15-35	35-55	25-45	20-40	15-35	30-35	5-10
	4-13	Very flaggy clay loam, extremely flaggy clay loam.	GM, GC, SM, SC	A-2, A-6	0-10	40-65	40-70	30-55	25-50	20-45	35-40	10-15
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
229E:												
Sebastian-----	0-3	Very cobbly loam.	GM-GC	A-2, A-4	10-15	30-45	50-70	40-60	35-55	25-45	25-30	5-10
	3-14	Very cobbly loam, very cobbly clay loam, extremely cobbly clay loam.	GC, CL	A-2, A-6	10-25	30-55	35-80	25-70	20-65	15-55	30-40	10-15
	14-24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rustybutte----	0-8	Gravelly clay loam.	SM, ML, CL, SC	A-6	0-5	0-15	75-85	65-75	60-75	45-60	35-40	10-15
	8-28	Very cobbly clay loam, very gravelly clay loam, extremely cobbly clay loam.	GP-GM, GM, GC	A-2, A-6	0-10	30-55	30-75	20-65	15-60	10-50	35-40	10-15
	28-38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
230E:												
Serpentano----	0-6	Very stony loam.	GM	A-2, A-4	10-25	5-15	60-75	55-70	40-65	30-50	30-35	5-10
	6-26	Very gravelly loam, very gravelly clay loam, very cobbly loam.	GM	A-2, A-4	0-10	15-25	40-65	35-60	30-60	20-45	30-35	5-10
	26-53	Extremely gravelly loam, very cobbly loam, very gravelly clay loam.	GM	A-2, A-4	0-10	15-30	30-65	25-60	20-60	15-45	30-35	5-10
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
231F, 232F:												
Serpentano----	0-6	Very stony loam.	GM	A-2, A-4	10-25	5-15	60-75	55-70	40-65	30-50	30-35	5-10
	6-26	Very gravelly loam, very gravelly clay loam, very cobbly loam.	GM	A-2, A-4	0-10	15-25	40-65	35-60	30-60	20-45	30-35	5-10
	26-53	Extremely gravelly loam, very cobbly loam, very gravelly clay loam.	GM	A-2, A-4	0-10	15-30	30-65	25-60	20-60	15-45	30-35	5-10
	53-63	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Mislatnah-----	0-2	Cobbly clay loam.	ML, CL	A-6	0	5-15	90-100	85-100	75-95	60-80	35-40	10-15
	2-19	Cobbly clay loam, very cobbly clay loam.	ML, CL, GM, GC	A-2, A-6	0	15-30	50-100	40-90	35-90	30-70	35-40	10-15
	19-38	Very cobbly clay loam, extremely cobbly clay loam.	GM, GC	A-2, A-6	0	40-45	35-70	25-60	25-55	15-45	35-40	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
231F, 232F:												
Greggo--------	0-4	Very cobbly clay loam.	GM, GC	A-2	0	30-40	50-60	40-50	35-45	25-35	35-40	10-15
	4-17	Very gravelly clay loam, extremely gravelly clay loam, extremely cobbly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	30-45	20-45	10-35	10-20	10-15	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
233F:												
Shastacosta---	0-10	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	10-41	Very gravelly loam, very gravelly clay loam, extremely cobbly clay loam.	GC	A-2	0	10-35	35-50	25-40	20-40	15-35	30-35	10-15
	41-72	Very cobbly clay, very gravelly clay, extremely gravelly clay.	GC	A-2, A-7	0	15-30	35-60	25-50	20-50	20-50	50-60	25-35
Pollard-------	0-10	Gravelly loam	ML, SM	A-4	0	0-15	85-95	75-85	65-80	45-65	30-35	5-10
	10-69	Clay, silty clay, clay loam.	CL, CH	A-7	0	0-10	95-100	90-100	80-100	65-95	40-55	15-30
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
234F:												
Shivigny------	0-13	Very gravelly loam.	GM, GM-GC	A-2, A-4	0	0-15	35-55	30-50	25-50	20-45	25-35	5-10
	13-41	Very stony clay loam.	CL	A-7	25-55	15-35	70-90	65-85	55-70	50-60	40-45	15-20
	41-78	Very stony clay, very stony silty clay, very stony clay loam.	ML, MH	A-7	25-55	15-35	65-90	60-85	55-80	50-75	40-55	15-25

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
234F:												
Honeygrove----	0-15	Gravelly clay loam.	ML, SM	A-4	0	0	80-100	50-75	45-70	35-55	30-40	5-10
	15-99	Clay, silty clay, gravelly clay.	MH	A-7	0	0-15	70-100	60-100	55-100	50-95	55-70	10-20
235F, 236F:												
Sitkum--------	0-10	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	95-100	85-100	50-70	25-40	20-25	NP-5
	10-34	Sandy loam, loam, gravelly sandy loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	80-100	70-100	40-95	20-75	20-25	NP-5
	34-44	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Steinmetz-----	0-12	Sandy loam----	SM, SC-SM	A-2, A-4	0	0-5	95-100	85-100	50-70	25-40	20-25	NP-5
	12-65	Sandy loam, gravelly sandy loam.	SM, SC-SM	A-1, A-2, A-4	0	0-10	70-100	60-100	35-70	15-40	20-25	NP-5
237E:												
Skookumhouse--	0-11	Clay loam-----	CL, ML	A-6	0	0	90-100	85-100	70-95	55-85	35-40	10-15
	11-38	Silty clay, silty clay loam, clay loam.	CL	A-7	0	0	80-100	75-90	65-90	50-90	40-50	15-25
	38-52	Silty clay, gravelly clay loam, silty clay loam.	CL, GC, SC	A-7	0	0-15	65-95	60-90	55-90	40-80	40-50	15-25
	52-62	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Hazelcamp-----	0-12	Silty clay loam.	CL, ML	A-6	0	0	95-100	85-100	80-100	75-95	35-40	10-15
	12-36	Silty clay loam, gravelly silty clay, gravelly clay loam.	CL, GC, SC	A-7	0	0	60-90	55-85	50-85	40-80	40-50	15-25
	36-46	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
238D, 238E:												
Skookumhouse--	0-11	Clay loam-----	CL, ML	A-6	0	0	90-100	85-100	70-95	55-85	35-40	10-15
	11-38	Silty clay, silty clay loam, clay loam.	CL	A-7	0	0	80-100	75-90	65-90	50-90	40-50	15-25
	38-52	Silty clay, gravelly clay loam, silty clay loam.	CL, GC, SC	A-7	0	0-15	65-95	60-90	55-90	40-80	40-50	15-25
	52-62	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
238D, 238E:												
Hazelcamp-----	0-12	Silty clay loam.	CL, ML	A-6	0	0	95-100	85-100	80-100	75-95	35-40	10-15
	12-36	Silty clay loam, gravelly silty clay, gravelly clay loam.	CL, GC, SC	A-7	0	0	60-90	55-85	50-85	40-80	40-50	15-25
	36-46	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Averlande-----	0-7	Gravelly loam	SC-SM, GC, GM-GC, SC	A-4	0	0-15	65-80	60-75	50-65	35-50	25-30	5-10
	7-14	Very gravelly clay loam, very gravelly silty clay loam, extremely gravelly clay loam.	GC	A-2	0	0-25	35-50	20-45	20-40	15-30	30-40	10-15
	14-24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
239G:												
Skymor--------	0-5	Very gravelly loam.	GM-GC	A-1, A-2	0-10	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	5-15	Very gravelly loam, extremely gravelly loam, very gravelly clay loam.	GM, GM-GC, GP-GM	A-1, A-2, A-4	0-10	10-20	30-60	20-50	15-50	10-40	25-35	5-10
	15-25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Jayar---------	0-4	Very gravelly loam.	GM-GC	A-1, A-2	0	0-10	40-55	30-45	25-45	20-35	25-30	5-10
	4-31	Very gravelly loam, extremely gravelly loam, very cobbly loam.	GM-GC	A-1, A-2	0	15-30	35-55	25-45	20-45	15-35	25-30	5-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
240E:												
Snowcamp------	0-4	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	30-45	55-75	45-65	40-60	30-50	20-30	5-10
	4-29	Very cobbly clay loam, extremely cobbly clay loam, extremely cobbly loam.	GC, CL	A-2, A-6	0-15	30-60	40-75	30-65	25-65	20-55	30-40	10-15
	29-39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cedarcamp-----	0-6	Very gravelly loam.	GM-GC	A-2, A-4	0-10	15-25	45-65	35-55	30-55	30-50	20-30	5-10
	6-39	Very cobbly clay loam, extremely cobbly clay loam, extremely cobbly loam.	GC, CL	A-2, A-6	0-15	30-50	45-80	35-70	30-70	25-55	30-40	10-15
	39-65	Extremely cobbly clay loam, extremely cobbly loam, very cobbly clay loam.	GP-GC, GC	A-2, A-6	0-15	35-45	30-60	20-50	15-50	10-40	30-40	10-15
Flycatcher----	0-4	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	30-45	55-75	45-65	40-60	30-50	20-30	5-10
	4-18	Very gravelly clay loam, very gravelly sandy clay loam, extremely gravelly loam.	GP-GC, GC, SC, SP-SC	A-2, A-6	0-25	15-30	30-65	20-55	15-55	10-45	30-40	10-15
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
241E:												
Snowcamp------	0-4	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-85	60-75	50-70	35-55	20-30	5-10
	4-29	Very bouldery clay loam, extremely bouldery clay loam, extremely bouldery loam.	GC, CL	A-2, A-6	30-75	15-25	60-95	50-85	40-80	30-70	30-40	10-15
	29-39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
241E:												
Cedarcamp-----	0-6	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-90	60-80	50-75	35-60	20-30	5-10
	6-39	Very bouldery loam, very bouldery clay loam, extremely bouldery loam.	SC, CL	A-6	30-55	15-30	75-95	65-85	55-85	40-70	30-40	10-15
	39-65	Very bouldery loam, very bouldery clay loam, extremely bouldery loam.	GC, CL	A-2, A-6	45-65	15-25	60-80	50-70	40-70	30-55	30-40	10-15
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
242G:												
Snowcamp------	0-4	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-85	60-75	50-70	35-55	20-30	5-10
	4-29	Very bouldery clay loam, extremely bouldery clay loam, extremely bouldery loam.	GC, CL	A-2, A-6	30-75	15-25	60-95	50-85	40-80	30-70	30-40	10-15
	29-39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Flycatcher----	0-4	Very bouldery loam.	SC-SM, CL-ML	A-4	30-50	10-15	70-85	60-75	50-70	35-55	20-30	5-10
	4-18	Very bouldery clay loam, very bouldery sandy clay loam, extremely bouldery loam.	SC, CL	A-6	30-70	15-30	75-95	65-85	55-80	40-70	30-40	10-15
	18-28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
243F:												
Speaker-------	0-13	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	65-85	55-75	45-70	35-55	25-30	5-10
	13-35	Gravelly clay loam, clay loam, gravelly loam.	CL, GC, SC, ML	A-6	0	0-10	65-95	55-85	45-85	35-65	35-40	10-15
	35-45	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
243F:												
Josephine-----	0-15	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	15-58	Gravelly clay loam, clay loam.	CL, GC, SC, ML	A-6	0	0	65-95	55-85	50-85	40-65	35-40	10-15
	58-68	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
244G, 245G:												
Stackyards----	0-10	Extremely gravelly loam.	GM-GC	A-2, A-1	0	10-25	30-45	20-35	20-30	15-25	20-30	5-10
	10-44	Extremely cobbly loam, extremely cobbly clay loam, extremely gravelly loam.	SC, GC, GP-GC, SP-SC	A-2, A-6, A-1	0-10	40-55	25-65	15-55	15-50	10-45	25-40	5-15
	44-54	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rilea---------	0-5	Very gravelly loam.	GM-GC, GM	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
244G, 245G:												
Euchrand------	0-3	Very gravelly loam.	GM-GC	A-2, A-4, A-1	0	0-10	45-60	35-50	30-50	20-40	20-30	5-10
	3-15	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, GP-GC	A-2	0	0-15	30-45	20-35	15-35	10-30	30-35	10-15
	15-25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
246F, 246G, 247F, 247G:												
Stackyards---	0-10	Extremely gravelly loam.	GM-GC	A-2, A-1	0	10-25	30-45	20-35	20-30	15-25	20-30	5-10
	10-44	Extremely cobbly loam, extremely cobbly clay loam, extremely gravelly loam.	SC, GC, GP-GC, SP-SC	A-2, A-6, A-1	0-10	40-55	25-65	15-55	15-50	10-45	25-40	5-15
	44-54	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rilea--------	0-4	Very gravelly loam.	GM, GM-GC	A-2, A-4, A-1	0	10-25	40-60	35-50	30-50	20-40	25-35	5-10
	4-22	Very gravelly loam, extremely gravelly loam.	GC	A-2, A-6	0	10-30	35-60	25-50	20-40	15-40	30-40	10-15
	22-31	Extremely gravelly sandy loam.	GM, GM-GC, GP-GM	A-1, A-2	0	15-30	20-45	15-40	10-35	10-30	20-30	NP-10
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
248F, 249F:												
Stackyards----	0-10	Extremely gravelly loam.	GM-GC	A-2, A-1	0	10-25	30-45	20-35	20-30	15-25	20-30	5-10
	10-44	Extremely cobbly loam, extremely cobbly clay loam, extremely gravelly loam.	SC, GC, GP-GC, SP-SC	A-2, A-6, A-1	0-10	40-55	25-65	15-55	15-50	10-45	25-40	5-15
	44-54	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
248F, 249F:												
Rilea---------	0-5	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-15	65-80	55-70	45-65	35-55	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
250F, 251F:												
Stackyards----	0-10	Extremely gravelly loam.	GM-GC	A-2, A-1	0	10-25	30-45	20-35	20-30	15-25	20-30	5-10
	10-44	Extremely cobbly loam, extremely cobbly clay loam, extremely gravelly loam.	SC, GC, GP-GC, SP-SC	A-2, A-6, A-1	0-10	40-55	25-65	15-55	15-50	10-45	25-40	5-15
	44-54	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rilea---------	0-5	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-15	65-80	55-70	45-65	35-55	25-35	5-10
	5-28	Very gravelly loam, extremely gravelly loam, extremely gravelly clay loam.	GC, SC	A-2, A-6	0	10-30	35-65	25-55	20-50	15-40	30-40	10-15
	28-38	Very gravelly clay loam, very gravelly loam, extremely gravelly loam.	GC, GP-GC	A-2	0	15-30	20-45	15-40	15-35	10-30	30-35	10-15
	38-48	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
250F, 251F:												
Yorel---------	0-6	Gravelly loam	CL-ML, ML, GM, GM-GC	A-4	0	0	70-85	60-75	55-70	40-55	25-35	5-10
	6-31	Gravelly clay loam, gravelly loam.	CL, GC, SC	A-6	0	0	65-85	50-75	45-70	40-60	30-40	10-15
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
252G, 253G:												
Steinmetz-----	0-12	Sandy loam----	SM, SC-SM	A-2, A-4	0	0-5	95-100	85-100	50-70	25-40	20-25	NP-5
	12-65	Sandy loam, gravelly sandy loam.	SM, SC-SM	A-1, A-2, A-4	0	0-10	70-100	60-100	35-70	15-40	20-25	NP-5
Sitkum--------	0-10	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	95-100	85-100	50-70	25-40	20-25	NP-5
	10-34	Sandy loam, loam, gravelly sandy loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	80-100	70-100	40-95	20-75	20-25	NP-5
	34-44	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
254D, 254E:												
Svensen-------	0-13	Loam----------	CL-ML	A-4	0	0	95-100	85-100	85-95	50-75	20-30	5-10
	13-48	Loam, clay loam.	CL	A-6	0	0	95-100	85-100	80-95	50-75	30-40	10-15
	48-54	Fine sandy loam, loam, sandy loam.	CL-ML, SC-SM, SC, CL	A-4, A-6	0	0	90-100	75-100	50-90	35-65	20-35	5-15
	54-64	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Reedsport-----	0-8	Gravelly loam	GM, SM	A-4	0	0	60-85	55-75	50-65	35-50	20-35	NP-10
	8-37	Loam, clay loam, gravelly loam.	GM, ML, SM	A-4, A-6, A-7	0	0-10	65-100	60-95	50-90	45-70	30-45	5-15
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
255E, 256F:												
Swedeheaven---	0-13	Gravelly loam	CL-ML, GM-GC	A-4	0	0-5	65-85	55-75	45-70	35-55	25-35	5-10
	13-27	Very gravelly clay loam, extremely gravelly clay loam.	GP-GM, GP-GC, GM, GC	A-2, A-6	0	0-20	25-55	20-45	15-40	10-40	35-40	10-15
	27-37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
255E, 256F:												
Quailprairie--	0-11	Gravelly loam	CL-ML, GM-GC	A-4	0	0-5	65-85	55-75	45-70	35-55	25-35	5-10
	11-53	Gravelly loam, gravelly clay loam.	CL, GC, SC	A-6	0-10	0-10	65-85	60-75	50-70	35-60	30-40	10-15
	53-67	Very gravelly silty clay, extremely gravelly silty clay, very gravelly clay.	GC	A-2, A-7	0-10	10-20	45-60	35-50	30-50	25-50	45-55	20-30
Sankey--------	0-4	Very gravelly sandy clay loam.	GM, SM	A-2, A-4	0-5	5-15	55-75	45-65	35-60	25-40	30-35	5-10
	4-17	Very cobbly sandy clay loam, extremely cobbly sandy clay loam, extremely cobbly clay loam.	GC, SM, GM, SC	A-2, A-6	0-10	25-45	30-75	20-65	15-60	15-50	35-40	10-15
	17-27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
257A----------- Takilma	0-5	Cobbly loam---	CL-ML, SC-SM	A-4	0	20-30	80-90	70-80	60-75	40-60	20-30	5-10
	5-16	Very cobbly loam, extremely cobbly loam, very gravelly loam.	GM-GC, SC-SM	A-2, A-4	0	20-40	55-75	45-65	40-60	30-45	25-30	5-10
	16-72	Extremely cobbly sandy loam, very cobbly sandy loam, extremely cobbly loam.	GM, GM-GC, GW-GM, GP-GM	A-1, A-2	0	35-50	25-55	15-45	10-40	5-35	20-25	NP-5
258E, 259F----- Templeton	0-17	Silt loam-----	ML, OL	A-5	0	0	100	100	95-100	75-90	40-50	5-10
	17-47	Silty clay loam, silt loam.	CL	A-6, A-7	0	0	100	100	95-100	75-95	35-50	15-30
	47-57	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification Unified	Classification AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
260F, 261G, 262F, 262G, 263G:												
Threetrees---	0-13	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	30-40	30-35	5-10
	13-37	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC	A-2, A-6	0-10	25-55	30-75	20-65	20-60	15-50	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Saddlepeak---	0-8	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	25-40	30-35	5-10
	8-68	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC, GP-GC, GP-GM	A-2	0-15	10-35	25-60	15-50	15-45	10-35	35-40	10-15
Scalerock----	0-4	Very channery loam.	GM	A-2	0-15	15-35	35-55	25-45	20-40	15-35	30-35	5-10
	4-13	Very flaggy clay loam, extremely flaggy clay loam.	GM, GC, SM, SC	A-2, A-6	0-10	40-65	40-70	30-55	25-50	20-45	35-40	10-15
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
264F:												
Threetrees----	0-13	Very channery loam.	GM	A-2, A-4	0-10	10-15	50-65	40-55	35-50	30-40	30-35	5-10
	13-37	Very channery clay loam, extremely channery clay loam, very flaggy clay loam.	GM, GC	A-2, A-6	0-10	25-55	30-75	20-65	20-60	15-50	35-40	10-15
	37-47	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Scalerock-----	0-4	Very channery loam.	GM	A-2	0-15	15-35	35-55	25-45	20-40	15-35	30-35	5-10
	4-13	Very flaggy clay loam, extremely flaggy clay loam.	GM, GC, SM, SC	A-2, A-6	0-10	40-65	40-70	30-55	25-50	20-45	35-40	10-15
	13-23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
265F, 265G:												
Tolfork-------	0-9	Very gravelly coarse sandy loam.	GM, GP-GM	A-1, A-2	0	10-20	45-60	35-50	20-35	10-20	20-30	NP-10
	9-30	Extremely gravelly sandy loam, extremely gravelly loam, very gravelly loam.	GM, GP-GM	A-1, A-2	0	15-30	35-50	25-40	15-40	10-30	20-30	NP-10
	30-50	Extremely gravelly sandy loam, very gravelly sandy loam, extremely cobbly sandy loam.	GP-GM, GM	A-1	0	40-55	20-60	10-50	5-35	5-20	20-25	NP-5
	50-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Tincup--------	0-7	Very cobbly loam.	GM, SM	A-2, A-4	0	30-45	45-80	40-65	35-55	25-40	20-30	NP-10
	7-28	Extremely cobbly loam, very cobbly loam, extremely cobbly sandy loam.	GP-GM, GM	A-1, A-2	0	45-65	40-65	30-55	15-45	10-35	20-30	NP-10
	28-38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
266------------ Urban land	0-6	Variable------	---	---	---	---	---	---	---	---	---	---
267F:												
Vermisa-------	0-3	Very gravelly loam.	GM	A-1	0	0-10	40-55	30-45	25-45	20-35	20-30	NP-5
	3-12	Very gravelly loam, extremely gravelly loam.	GP-GC, GC	A-1, A-2	0	0-35	30-55	20-45	15-45	10-35	25-30	5-10
	12-22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Beekman-------	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-65	35-55	25-30	5-10
	5-34	Very gravelly loam, very gravelly clay loam, extremely gravelly loam.	GM-GC, GM, GP-GM	A-1, A-2	0	0-10	30-55	20-45	15-40	10-35	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
267F:												
Colestine-----	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0	65-85	55-75	45-70	35-55	25-30	5-10
	5-34	Gravelly loam, gravelly clay loam.	GM, ML, SM	A-4	0	0-10	65-85	55-75	45-75	35-60	30-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
268D:												
Waldport------	0-2	Fine sand-----	SM	A-2	0	0	100	100	70-80	20-30	10-15	NP
	2-60	Fine sand-----	SM	A-2	0	0	100	100	70-80	20-30	10-15	NP
Dune land-----	0-6	Fine sand-----	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-15	NP
	6-60	Sand, fine sand.	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-15	NP
269D:												
Waldport------	0-2	Fine sand-----	SM	A-2	0	0	100	100	70-80	20-30	10-15	NP
	2-60	Fine sand-----	SM	A-2	0	0	100	100	70-80	20-30	0-15	NP
Dune land-----	0-6	Fine sand-----	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-15	NP
	6-60	Sand, fine sand.	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-15	NP
Heceta--------	0-6	Fine sand-----	SM	A-2	0	0	100	100	65-80	20-30	10-15	NP
	6-60	Sand, fine sand, loamy sand.	SP-SM, SM	A-3, A-2	0	0	100	100	50-80	5-30	0-15	NP
270E, 271F, 271G:												
Wedderburn---	0-26	Gravelly loam	ML, CL-ML, CL	A-4	0	0	65-85	60-75	55-65	50-60	25-35	5-10
	26-46	Gravelly clay loam, gravelly silty clay loam.	SM, GM, GC, SC	A-6	0	0	55-75	50-70	40-60	35-50	35-40	10-15
	46-56	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Zwagg--------	0-21	Loam----------	ML, CL, CL-ML	A-4	0	0	80-95	75-90	70-85	60-70	20-30	NP-10
	21-25	Very gravelly loam, gravelly loam.	GM, GC, GM-GC	A-2, A-4, A-1	0	0	30-60	25-55	20-45	15-40	20-30	NP-10
	25-35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
272F, 272G:												
Whaleshead----	0-3	Very gravelly loam.	GM-GC, GM, GC	A-2, A-4	0	10-15	45-60	35-55	30-50	25-40	25-35	5-10
	3-47	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	10-30	35-60	25-55	20-45	20-35	35-40	10-15
	47-60	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	15-30	30-40	20-35	15-30	10-25	35-45	10-20
Reedsport-----	0-8	Gravelly loam	GM, SM	A-4	0	0	60-85	55-75	50-65	35-50	20-35	NP-10
	8-37	Loam, clay loam, gravelly loam.	GM, ML, SM	A-4, A-6, A-7	0	0-10	65-100	60-95	50-90	45-70	30-45	5-15
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
273F:												
Whaleshead----	0-3	Very gravelly loam.	GM-GC, GM, GC	A-2, A-4	0	10-15	45-60	35-55	30-50	25-40	25-35	5-10
	3-47	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC	A-2	0	10-30	35-60	25-55	20-45	20-35	35-40	10-15
	47-60	Very gravelly clay loam, extremely gravelly clay loam.	GM, GC, GP-GM, GP-GC	A-2	0	15-30	30-40	20-35	15-30	10-25	35-45	10-20
Reedsport-----	0-8	Gravelly loam	GM, SM	A-4	0	0	60-85	55-75	50-65	35-50	20-35	NP-10
	8-37	Loam, clay loam, gravelly loam.	GM, ML, SM	A-4, A-6, A-7	0	0-10	65-100	60-95	50-90	45-70	30-45	5-15
	37-47	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Millicoma-----	0-19	Gravelly loam	ML, OL, GM, SM	A-4	0	0-10	60-75	55-75	50-70	40-60	25-35	NP-10
	19-31	Very gravelly loam, very gravelly sandy loam, extremely gravelly loam.	GM, SM, GM-GC, SC-SM	A-1, A-2	0	0-25	25-65	20-50	15-40	10-25	20-30	NP-10
	31-41	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
274A, 274D, 274E----------: Winchuck	0-8	Silt loam-----	CL-ML, CL	A-4	0	0	100	100	90-100	75-90	25-30	5-10
	8-34	Silty clay loam, silty clay, clay.	CL, CH	A-7	0	0	100	100	90-100	80-95	40-65	15-35
	34-46	Silty clay loam, clay loam.	CL	A-7	0	0	100	100	90-100	75-95	40-45	15-20
	46-60	Gravelly sandy clay loam, very gravelly sandy clay loam.	GC	A-2, A-6	0	0	35-65	30-60	25-55	20-45	30-40	10-20
275G:												
Woodseye------	0-12	Very gravelly loam.	GM	A-1, A-2	0	0-5	25-60	20-50	15-45	10-30	20-35	NP-10
	12-16	Very gravelly sandy loam, very gravelly loam, extremely gravelly loam.	GP-GM, GM	A-1, A-2	0-5	5-25	20-40	15-35	10-30	5-20	20-35	NP-10
	16-26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Brandypeak----	0-10	Very cobbly loam.	GM-GC, SC-SM	A-2, A-4	0-10	25-30	55-75	45-65	40-60	30-45	25-30	5-10
	10-34	Very cobbly loam, extremely cobbly loam, extremely gravelly clay loam.	GM, GM-GC, GP-GM, SC-SM	A-1, A-2, A-4	0-10	25-40	25-65	15-55	10-55	10-45	25-35	5-10
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
276A-----------: Yachats	0-15	Very fine sandy loam.	ML	A-4	0	0	100	100	85-90	50-65	20-30	NP-5
	15-28	Fine sandy loam, loam.	SM, ML	A-4	0	0	100	100	75-90	45-70	20-30	NP-5
	28-42	Fine sandy loam.	SM	A-4	0	0	100	100	70-80	40-50	---	NP
	42-60	Loamy fine sand, sand.	SM	A-2	0	0	100	100	50-75	15-30	---	NP
277A-----------: Yaquina	0-4	Loamy fine sand.	SM	A-2	0	0	100	100	75-80	15-25	10-15	NP
	4-26	Fine sand, sand.	SM, SP, SP-SM	A-2, A-3	0	0	100	100	75-80	0-15	0-15	NP
	26-60	Fine sand, sand.	SM, SP, SP-SM	A-2, A-3	0	0	100	100	75-80	0-15	0-15	NP

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
278E:												
Zalea---------	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0	65-85	55-75	55-65	40-55	25-35	5-10
	8-34	Gravelly clay loam.	CL, ML, GC, GM	A-6	0	0-5	65-85	55-75	50-70	40-60	35-40	10-15
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Pyrady--------	0-6	Clay loam-----	CL, ML	A-6	0	0-10	95-100	85-95	75-95	60-75	35-40	10-15
	6-21	Gravelly clay loam, clay loam, gravelly clay.	CL	A-7	0	0-10	75-95	65-85	60-85	50-80	40-50	15-25
	21-43	Gravelly silty clay loam, gravelly silty clay, gravelly clay.	CL, CH	A-7	0	0-10	75-85	65-75	60-75	50-70	40-55	15-30
	43-66	Gravelly silty clay, gravelly clay.	CH	A-7	0	0-15	85-95	75-85	70-85	55-80	50-65	25-40
Yorel---------	0-6	Gravelly loam	CL-ML, ML, GM, GM-GC	A-4	0	0	70-85	60-75	55-70	40-55	25-35	5-10
	6-31	Gravelly clay loam, gravelly loam.	CL, GC, SC	A-6	0	0	65-85	50-75	45-70	40-60	30-40	10-15
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
279E:												
Zalea---------	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0	65-85	55-75	55-65	40-55	25-35	5-10
	8-34	Gravelly clay loam.	CL, ML, GC, GM	A-6	0	0-5	65-85	55-75	50-70	40-60	35-40	10-15
	34-44	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Yorel---------	0-6	Gravelly loam	CL-ML, ML, GM, GM-GC	A-4	0	0	70-85	60-75	55-70	40-55	25-35	5-10
	6-31	Gravelly clay loam, gravelly loam.	CL, GC, SC	A-6	0	0	65-85	50-75	45-70	40-60	30-40	10-15
	31-41	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

Table 16.--Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
1B, 1D-----------	0-11	15-20	1.35-1.55	0.6-2.0	0.10-0.15	5.1-6.5	Low----------	0.15	3	8	1-3
Abegg	11-46	25-35	1.30-1.55	0.6-2.0	0.06-0.13	5.1-6.5	Low----------	0.10			
	46-60	10-18	1.45-1.70	2.0-6.0	0.03-0.08	5.1-6.5	Low----------	0.10			
2F:											
Acker-----------	0-4	15-25	1.20-1.30	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	5	7	4-8
	4-9	20-25	1.30-1.40	0.6-2.0	0.10-0.16	5.1-6.5	Low----------	0.28			
	9-47	30-40	1.30-1.50	0.2-0.6	0.11-0.19	5.1-6.5	Moderate-----	0.24			
	47-68	25-35	1.25-1.45	0.2-0.6	0.10-0.17	4.5-6.0	Moderate-----	0.20			
Norling---------	0-4	15-25	1.20-1.30	0.6-2.0	0.08-0.12	5.1-6.0	Low----------	0.17	3	8	3-6
	4-21	20-30	1.30-1.45	0.2-0.6	0.09-0.16	4.5-6.0	Low----------	0.28			
	21-28	27-35	1.30-1.45	0.2-0.6	0.09-0.13	4.5-6.0	Moderate-----	0.20			
	28-38	---	---	---	---	---	-------------	----			
3E, 4F:											
Agness----------	0-14	15-25	1.20-1.35	0.6-2.0	0.12-0.17	4.5-5.0	Low----------	0.28	5	6	8-10
	14-62	18-25	1.25-1.35	0.6-2.0	0.11-0.17	4.5-5.0	Low----------	0.28			
	62-72	27-35	1.30-1.50	0.2-0.6	0.08-0.13	4.5-5.0	Moderate-----	0.20			
Sixes-----------	0-17	15-25	1.20-1.35	0.6-2.0	0.12-0.17	4.5-5.0	Low----------	0.28	2	6	7-10
	17-32	18-25	1.25-1.35	0.6-2.0	0.11-0.17	4.5-5.0	Low----------	0.28			
	32-42	---	---	---	---	---	-------------	----			
Goldbeach-------	0-6	15-25	1.20-1.35	0.6-2.0	0.11-0.17	4.5-5.0	Low----------	0.28	1	6	7-10
	6-18	18-25	1.25-1.35	0.6-2.0	0.05-0.11	4.5-5.0	Low----------	0.24			
	18-28	---	---	---	---	---	-------------	----			
5F:											
Althouse--------	0-3	10-18	1.35-1.40	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	4	7	4-9
	3-32	10-18	1.35-1.45	0.6-2.0	0.06-0.11	6.1-6.5	Low----------	0.20			
	32-53	10-18	1.35-1.50	0.6-2.0	0.04-0.09	6.1-6.5	Low----------	0.20			
	53-63	---	---	---	---	---	-------------	----			
Jayar-----------	0-4	15-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	2	7	3-6
	4-31	18-25	1.30-1.50	0.6-2.0	0.07-0.11	5.6-6.5	Low----------	0.17			
	31-41	---	---	---	---	---	-------------	----			
Skymor----------	0-5	18-25	1.35-1.50	0.6-2.0	0.08-0.12	5.1-6.0	Low----------	0.15	1	8	1-2
	5-15	18-30	1.30-1.50	0.6-2.0	0.06-0.10	5.1-6.0	Low----------	0.17			
	15-25	---	---	---	---	---	-------------	----			
6F:											
Althouse--------	0-3	10-18	1.35-1.40	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	4	7	4-9
	3-32	10-18	1.35-1.45	0.6-2.0	0.06-0.11	6.1-6.5	Low----------	0.20			
	32-53	10-18	1.35-1.50	0.6-2.0	0.04-0.09	6.1-6.5	Low----------	0.20			
	53-63	---	---	---	---	---	-------------	----			
Jayar-----------	0-4	15-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	2	7	3-6
	4-31	18-25	1.30-1.50	0.6-2.0	0.07-0.11	5.6-6.5	Low----------	0.17			
	31-41	---	---	---	---	---	-------------	----			
Woodseye--------	0-12	12-25	1.40-1.50	0.6-2.0	0.05-0.10	5.6-6.5	Low----------	0.20	1	8	1-4
	12-16	12-27	1.35-1.50	0.6-2.0	0.03-0.07	5.1-6.5	Low----------	0.24			
	16-26	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
7D:											
Aquic Haplohumults---	0-12	27-35	1.30-1.50	0.2-0.6	0.16-0.21	5.6-7.3	Moderate-----	0.28	---	---	6-12
	12-42	35-55	1.30-1.50	0.06-0.2	0.07-0.20	5.6-7.3	High---------	0.24			2-4
	42-52	35-55	1.30-1.50	0.06-0.2	0.07-0.20	5.6-7.3	High---------	0.24			0-2
	52-72	12-25	1.30-1.40	0.6-2	0.07-0.21	5.6-7.3	High---------	0.24			0-1
Cryaquepts------	0-11	27-35	1.30-1.50	0.2-0.6	0.19-0.21	5.1-6.5	Moderate-----	0.28	---	7	8-12
	11-72	10-60	1.30-1.50	0.06-0.6	0.19-0.21	5.1-6.5	Moderate-----	0.24			0-6
8E, 9F, 9G:											
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
Kanid-----------	0-5	18-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-7.3	Low----------	0.10	4	8	2-4
	5-47	22-30	1.30-1.55	2.0-6.0	0.05-0.11	5.6-7.3	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			
10F, 11F:											
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Kanid-----------	0-5	18-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-7.3	Low----------	0.10	4	8	2-4
	5-47	22-30	1.30-1.55	2.0-6.0	0.05-0.11	5.6-7.3	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
12G:											
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			
13G:											
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			
14G:											
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
14G:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
15A:											
Bagness---------	0-8	5-15	1.10-1.30	0.6-2.0	0.17-0.21	4.5-5.0	Low----------	0.32	5	5	6-10
	8-24	20-30	1.30-1.40	0.2-0.6	0.16-0.21	4.5-5.5	Moderate-----	0.28			
	24-48	25-35	1.20-1.40	0.2-0.6	0.15-0.21	5.1-6.0	Moderate-----	0.28			
	48-60	20-30	1.20-1.40	0.2-0.6	0.14-0.21	5.1-6.0	Moderate-----	0.37			
Pistolriver-----	0-11	10-15	1.20-1.30	0.6-2.0	0.13-0.17	5.6-6.5	Low----------	0.32	3	3	4-8
	11-25	5-10	1.30-1.40	2.0-6.0	0.06-0.11	5.6-6.5	Low----------	0.32			
	25-60	0-5	1.50-1.60	>20	0.03-0.07	6.1-7.3	Low----------	0.05			
16E, 17E:											
Barkshanty------	0-5	20-25	1.35-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	7	4-6
	5-13	20-30	1.35-1.55	0.6-2.0	0.08-0.17	4.5-5.5	Low----------	0.24			
	13-66	30-35	1.35-1.55	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.20			
Nailkeg---------	0-6	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	7	1-2
	6-27	20-30	1.35-1.55	0.6-2.0	0.05-0.13	4.5-5.5	Moderate-----	0.24			
	27-37	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
18A-------------- Bayside	0-28	27-35	1.10-1.25	0.6-2.0	0.18-0.20	5.6-6.0	Low----------	0.32	5	7	4-8
	28-50	35-50	1.20-1.35	0.06-0.2	0.17-0.20	5.1-5.5	Moderate-----	0.37			
	50-60	20-30	1.25-1.35	0.6-2.0	0.18-0.20	5.6-6.0	Low----------	0.20			
19--------------- Beaches	0-6	0-1	1.35-1.85	6.0-20	0.03-0.05	5.1-7.8	Low----------	0.05	5	1	0-.1
	6-80	0-1	1.35-1.85	6.0-20	0.03-0.05	5.1-7.8	Low----------	0.05			
20E:											
Bearcamp--------	0-12	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.10	3	8	6-10
	12-39	20-30	1.30-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.15			
	39-47	15-25	1.45-1.60	0.6-2.0	0.04-0.05	5.1-6.0	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
Brandypeak------	0-10	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.15	2	8	6-10
	10-34	20-30	1.30-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.15			
	34-44	---	---	---	---	---	-------------	----			
21F:											
Bearcamp--------	0-12	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.10	3	8	6-10
	12-39	20-30	1.30-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.15			
	39-47	15-25	1.45-1.60	0.6-2.0	0.04-0.05	5.1-6.0	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
Brandypeak------	0-10	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.15	2	8	6-10
	10-34	20-30	1.30-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.15			
	34-44	---	---	---	---	---	-------------	----			
Woodseye--------	0-12	12-25	1.40-1.50	0.6-2.0	0.05-0.10	5.6-6.5	Low----------	0.20	1	8	1-4
	12-16	12-27	1.35-1.50	0.6-2.0	0.03-0.07	5.1-6.5	Low----------	0.24			
	16-26	---	---	---	---	---	-------------	----			
22F:											
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	2	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
Colestine-------	0-5	18-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-7.3	Low----------	0.28	2	7	2-4
	5-34	22-30	1.30-1.50	0.6-2.0	0.10-0.16	5.6-7.3	Low----------	0.24			
	34-44	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodibility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
22F:											
Orthents--------	0-5	5-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05	---	8	.5-1
	5-60	3-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05			
23G:											
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	---	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
Orthents--------	0-5	5-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05	2	8	.5-1
	5-60	3-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05			
Colestine-------	0-5	18-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-7.3	Low----------	0.28	2	7	2-4
	5-34	22-30	1.30-1.50	0.6-2.0	0.10-0.16	5.6-7.3	Low----------	0.24			
	34-44	---	---	---	---	---	-------------	----			
24G:											
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	2	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			
25G:											
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	2	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			
26A-------------- Bigriver	0-17	5-15	1.45-1.55	2.0-6.0	0.10-0.13	5.6-6.5	Low----------	0.24	5	8	1-3
	17-60	5-18	1.45-1.60	2.0-6.0	0.10-0.14	5.6-6.5	Low----------	0.24			
27F, 27G, 28F, 28G:											
Bobsgarden-----	0-8	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-5.5	Low----------	0.15	5	7	4-8
	8-25	27-35	1.30-1.50	0.2-0.6	0.07-0.15	5.1-5.5	Moderate-----	0.17			
	25-68	20-35	1.30-1.50	0.2-0.6	0.05-0.13	5.1-5.5	Moderate-----	0.20			
Rilea----------	0-5	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.17	2	8	4-6
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Euchrand-------	0-3	10-20	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.0	Low----------	0.10	1	8	2-4
	3-15	20-30	1.30-1.50	0.2-0.6	0.06-0.10	4.5-5.0	Moderate-----	0.20			
	15-25	---	---	---	---	---	-------------	----			
29F, 29G:											
Bobsgarden------	0-8	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-5.5	Low----------	0.15	5	7	4-8
	8-25	27-35	1.30-1.50	0.2-0.6	0.07-0.15	5.1-5.5	Moderate-----	0.17			
	25-68	20-35	1.30-1.50	0.2-0.6	0.05-0.13	5.1-5.5	Moderate-----	0.20			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodibility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
29F, 29G:											
Rilea-----------	0-4	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.10	2	8	1-3
	4-22	20-35	1.35-1.50	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.17			
	22-31	10-20	1.50-1.70	2.0-6.0	0.02-0.05	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
30F, 31F:											
Bobsgarden------	0-8	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-5.5	Low----------	0.15	5	7	4-8
	8-25	27-35	1.30-1.50	0.2-0.6	0.07-0.15	5.1-5.5	Moderate-----	0.17			
	25-68	20-35	1.30-1.50	0.2-0.6	0.05-0.13	5.1-5.5	Moderate-----	0.20			
Rilea-----------	0-5	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.17	2	8	4-6
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			---
32E, 33E:											
Bobsgarden------	0-8	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-5.5	Low----------	0.15	5	7	4-8
	8-25	27-35	1.30-1.50	0.2-0.6	0.07-0.15	5.1-5.5	Moderate-----	0.17			
	25-68	20-35	1.30-1.50	0.2-0.6	0.05-0.13	5.1-5.5	Moderate-----	0.20			
Rilea-----------	0-5	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.17	2	8	4-6
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Yorel-----------	0-6	18-25	1.35-1.50	0.6-2.0	0.12-0.15	4.5-5.0	Low----------	0.17	2	7	3-5
	6-31	25-35	1.30-1.50	0.2-0.6	0.10-0.14	4.5-5.0	Moderate-----	0.24			
	31-41	---	---	---	---	---	-------------	----			
34E:											
Bobsgarden------	0-8	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-5.5	Low----------	0.15	5	7	4-8
	8-25	27-35	1.30-1.50	0.2-0.6	0.07-0.15	5.1-5.5	Moderate-----	0.17			
	25-68	20-35	1.30-1.50	0.2-0.6	0.05-0.13	5.1-5.5	Moderate-----	0.20			
Rilea-----------	0-4	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.10	2	8	1-3
	4-22	20-35	1.35-1.50	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.17			
	22-31	10-20	1.50-1.70	2.0-6.0	0.02-0.05	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
35G:											
Brandypeak------	0-10	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.15	2	8	6-10
	10-34	20-30	1.30-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.15			
	34-44	---	---	---	---	---	-------------	----			
Bearcamp--------	0-12	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.10	3	8	6-10
	12-39	20-30	1.30-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.15			
	39-47	15-25	1.45-1.60	0.6-2.0	0.04-0.05	5.1-6.0	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
Woodseye--------	0-12	12-25	1.40-1.50	0.6-2.0	0.05-0.10	5.6-6.5	Low----------	0.20	1	8	1-4
	12-16	12-27	1.35-1.50	0.6-2.0	0.03-0.07	5.1-6.5	Low----------	0.24			
	16-26	---	---	---	---	---	-------------	----			
36F:											
Brandypeak------	0-10	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.15	2	8	6-10
	10-34	20-30	1.30-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.15			
	34-44	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
36F:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Bearcamp--------	0-12	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.10	3	8	6-10
	12-39	20-30	1.30-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.15			
	39-47	15-25	1.45-1.60	0.6-2.0	0.04-0.05	5.1-6.0	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
37A------------- Brenner	0-12	20-27	0.90-1.20	0.6-2.0	0.19-0.21	3.5-5.5	Low----------	0.32	5	6	5-10
	12-34	18-30	1.10-1.30	0.2-0.6	0.19-0.21	3.5-5.5	Moderate-----	0.24			
	34-60	27-50	1.10-1.30	0.06-0.2	0.15-0.17	3.5-6.5	Moderate-----	0.24			
38B, 38D:											
Bullards--------	0-8	8-18	1.20-1.40	0.6-2.0	0.11-0.13	4.5-5.5	Low----------	0.20	5	3	4-7
	8-47	8-18	1.20-1.40	0.6-2.0	0.06-0.10	4.5-5.5	Low----------	0.17			
	47-60	2-5	1.60-1.80	2.0-6.0	0.05-0.07	5.6-6.0	Low----------	0.24			
Bandon----------	0-6	5-12	1.20-1.50	0.6-2.0	0.11-0.13	3.5-5.5	Low----------	0.28	3	3	3-5
	6-34	5-15	1.20-1.50	0.6-2.0	0.12-0.17	5.1-6.0	Low----------	0.24			
	34-48	---	---	---	---	---	-------------	----			
	48-60	5-18	1.30-1.50	2.0-6.0	0.0-0.0	5.1-6.0	Low----------	0.15			
Wadecreek-------	0-6	18-25	0.95-1.10	0.6-2.0	0.21-0.23	3.5-5.5	Low----------	0.32	5	6	7-10
	6-15	25-35	1.10-1.20	0.6-2.0	0.19-0.21	3.5-5.5	Low----------	0.32			
	15-47	35-50	1.20-1.30	0.06-0.2	0.16-0.19	3.5-5.5	Moderate-----	0.28			
	47-60	15-35	1.20-1.35	0.6-2.0	0.16-0.20	3.5-5.5	Low----------	0.32			
39D:											
Bullards--------	0-8	8-18	1.20-1.40	0.6-2.0	0.11-0.13	4.5-5.5	Low----------	0.20	5	3	4-7
	8-47	8-18	1.20-1.40	0.6-2.0	0.06-0.10	4.5-5.5	Low----------	0.17			
	47-60	2-5	1.60-1.80	2.0-6.0	0.05-0.07	5.6-6.0	Low----------	0.24			
Ferrelo---------	0-18	10-18	1.10-1.30	0.6-2.0	0.11-0.18	5.1-6.0	Low----------	0.24	5	4	5-8
	18-41	10-18	1.20-1.40	2.0-6.0	0.12-0.17	5.6-6.0	Low----------	0.24			
	41-68	2-10	1.40-1.60	2.0-6.0	0.08-0.13	5.6-6.0	Low----------	0.20			
Hebo------------	0-5	27-35	1.20-1.35	0.2-0.6	0.19-0.21	3.5-5.0	Moderate-----	0.28	5	7	7-12
	5-46	40-60	1.35-1.45	0.01-0.06	0.14-0.17	3.5-5.0	High---------	0.24			
	46-60	35-45	1.30-1.40	0.06-0.2	0.13-0.21	3.5-5.0	Moderate-----	0.32			
40E, 41F, 42F:											
Bullgulch-------	0-22	27-35	1.10-1.20	0.2-0.6	0.19-0.21	4.5-5.5	Moderate-----	0.24	5	7	4-8
	22-59	35-45	1.20-1.40	0.06-0.2	0.15-0.20	4.5-5.5	High---------	0.32			
	59-70	27-35	1.10-1.30	0.2-0.6	0.16-0.21	4.5-5.5	Moderate-----	0.32			
Hunterscove-----	0-14	27-35	1.20-1.30	0.6-2.0	0.19-0.21	4.5-5.5	Moderate-----	0.20	3	7	4-8
	14-28	35-45	1.30-1.50	0.06-0.2	0.16-0.19	4.5-5.5	High---------	0.24			
	28-38	---	---	---	---	---	-------------	----			
43D:											
Burnthill-------	0-11	10-20	0.90-1.00	0.6-2.0	0.15-0.18	4.5-5.0	Low----------	0.20	5	5	8-10
	11-43	25-35	1.10-1.30	0.2-0.6	0.11-0.19	4.5-5.0	Moderate-----	0.28			
	43-60	25-35	1.30-1.50	0.2-0.6	0.08-0.18	4.5-5.0	Moderate-----	0.32			
Cashner---------	0-12	10-20	1.35-1.50	0.6-2.0	0.14-0.18	3.5-4.4	Low----------	0.24	2	5	2-5
	12-21	5-15	1.30-1.65	2.0-6.0	0.11-0.17	3.5-5.0	Low----------	0.24			
	21-44	---	---	---	---	---	-------------	----			
	44-60	0-10	1.20-1.65	6.0-20	0.0-0.0	3.5-5.0	Low----------	0.17			
44E------------- Burnthill	0-11	10-20	0.90-1.00	0.6-2.0	0.15-0.18	4.5-5.0	Low----------	0.20	5	5	8-10
	11-43	25-35	1.10-1.30	0.2-0.6	0.11-0.19	4.5-5.0	Moderate-----	0.28			
	43-60	25-35	1.30-1.50	0.2-0.6	0.08-0.18	4.5-5.0	Moderate-----	0.32			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
45F, 46G:											
Calfranch-------	0-12	15-25	1.35-1.50	0.6-2.0	0.07-0.11	5.1-6.0	Low----------	0.17	5	7	8-15
	12-42	10-20	1.45-1.55	2.0-6.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	42-67	10-20	1.45-1.55	2.0-6.0	0.03-0.08	4.5-5.5	Low----------	0.24			
Capeblanco------	0-8	15-25	1.35-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.17	2	8	8-15
	8-35	20-30	1.45-1.60	0.6-2.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	35-45	---	---	---	---	---	-------------	----			
Watches---------	0-16	15-25	1.35-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	6	8-15
	16-49	25-35	1.30-1.55	0.2-0.6	0.08-0.17	4.5-5.5	Moderate-----	0.24			
	49-65	25-35	1.30-1.55	0.2-0.6	0.06-0.14	4.5-5.5	Moderate-----	0.24			
47F:											
Calfranch-------	0-12	15-25	1.35-1.50	0.6-2.0	0.07-0.11	5.1-6.0	Low----------	0.17	5	7	8-15
	12-42	10-20	1.45-1.55	2.0-6.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	42-67	10-20	1.45-1.55	2.0-6.0	0.03-0.08	4.5-5.5	Low----------	0.24			
Watches---------	0-16	15-25	1.35-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	6	8-15
	16-49	25-35	1.30-1.55	0.2-0.6	0.08-0.17	4.5-5.5	Moderate-----	0.24			
	49-65	25-35	1.30-1.55	0.2-0.6	0.06-0.14	4.5-5.5	Moderate-----	0.24			
Capeblanco------	0-8	15-25	1.35-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.17	2	8	8-15
	8-35	20-30	1.45-1.60	0.6-2.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	35-45	---	---	---	---	---	-------------	----			
48G:											
Capeblanco------	0-8	15-25	1.35-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.17	2	8	8-15
	8-35	20-30	1.45-1.60	0.6-2.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	35-45	---	---	---	---	---	-------------	----			
Calfranch-------	0-12	15-25	1.35-1.50	0.6-2.0	0.07-0.11	5.1-6.0	Low----------	0.17	5	7	8-15
	12-42	10-20	1.45-1.55	2.0-6.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	42-67	10-20	1.45-1.55	2.0-6.0	0.03-0.08	4.5-5.5	Low----------	0.24			
Watches---------	0-16	15-25	1.35-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	6	8-15
	16-49	25-35	1.30-1.55	0.2-0.6	0.08-0.17	4.5-5.5	Moderate-----	0.24			
	49-65	25-35	1.30-1.55	0.2-0.6	0.06-0.14	4.5-5.5	Moderate-----	0.24			
49F:											
Carpenterville--	0-6	27-35	1.20-1.30	0.2-0.6	0.13-0.16	5.6-6.5	Moderate-----	0.24	2	8	4-8
	6-32	40-60	1.30-1.50	0.06-0.2	0.04-0.09	5.1-6.5	High---------	0.15			
	32-42	---	---	---	---	---	-------------	----			
Houstenader-----	0-11	18-25	1.20-1.30	0.2-0.6	0.13-0.16	5.6-6.5	Low----------	0.17	5	7	4-8
	11-40	27-35	1.20-1.40	0.2-0.6	0.12-0.16	6.1-7.3	Moderate-----	0.20			
	40-60	40-60	1.30-1.50	0.01-0.06	0.07-0.11	6.1-7.3	High---------	0.15			
Huntley---------	0-3	18-25	1.10-1.30	0.6-2.0	0.12-0.16	5.1-6.5	Low----------	0.17	1	7	4-8
	3-17	27-35	1.20-1.40	0.2-0.6	0.13-0.18	5.1-6.5	Moderate-----	0.20			
	17-27	---	---	---	---	---	-------------	----			
50G, 51G:											
Cassiday--------	0-8	15-25	1.10-1.30	0.6-2.0	0.10-0.13	4.5-5.0	Low----------	0.15	2	8	2-4
	8-26	18-35	1.20-1.40	0.6-2.0	0.08-0.11	4.5-5.0	Low----------	0.17			
	26-37	18-35	1.20-1.40	0.6-2.0	0.06-0.09	4.5-5.0	Low----------	0.17			
	37-47	---	---	---	---	---	-------------	----			
Grouslous-------	0-4	18-27	1.10-1.30	0.6-2.0	0.07-0.11	4.5-5.0	Low----------	0.17	1	8	1-3
	4-16	27-35	1.30-1.40	0.2-0.6	0.06-0.12	4.5-5.0	Moderate-----	0.20			
	16-26	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
50G, 51G:											
Bravo-----------	0-9	15-25	1.10-1.30	0.6-2.0	0.13-0.18	4.5-5.0	Low----------	0.20	2	5	3-5
	9-31	20-35	1.20-1.40	0.2-0.6	0.11-0.20	4.5-5.0	Moderate-----	0.24			
	31-36	25-35	1.30-1.40	0.2-0.6	0.10-0.18	4.5-5.0	Moderate-----	0.24			
	36-46	---	---	---	---	---	-------------	----			
52G:											
Cedarcamp-------	0-6	15-25	1.30-1.50	0.6-2.0	0.06-0.12	6.1-7.3	Low----------	0.15	5	8	4-10
	6-39	20-35	1.25-1.50	0.2-0.6	0.06-0.14	6.1-7.3	Low----------	0.28			
	39-65	20-35	1.30-1.55	0.2-0.6	0.04-0.11	6.1-7.3	Low----------	0.28			
Flycatcher------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.15	1	8	4-10
	4-18	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.20			
	18-28	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
53F, 54F:											
Cedarcamp-------	0-6	15-25	1.30-1.50	0.6-2.0	0.06-0.12	6.1-7.3	Low----------	0.15	5	8	4-10
	6-39	20-35	1.25-1.50	0.2-0.6	0.06-0.14	6.1-7.3	Low----------	0.28			
	39-65	20-35	1.30-1.55	0.2-0.6	0.04-0.11	6.1-7.3	Low----------	0.28			
Snowcamp--------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.20	2	8	4-10
	4-29	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.20			
	29-39	---	---	---	---	---	-------------	----			
Flycatcher------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.15	1	8	4-10
	4-18	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.20			
	18-28	---	---	---	---	---	-------------	----			
55F, 56F:											
Cedarcamp-------	0-6	15-25	1.30-1.50	0.6-2.0	0.06-0.12	6.1-7.3	Low----------	0.15	5	8	4-10
	6-39	20-35	1.25-1.50	0.2-0.6	0.06-0.14	6.1-7.3	Low----------	0.28			
	39-65	20-35	1.30-1.55	0.2-0.6	0.04-0.11	6.1-7.3	Low----------	0.28			
Snowcamp--------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.20	2	8	4-10
	4-29	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.28			
	29-39	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
57A-------------- Central Point	0-43	12-18	1.50-1.70	2.0-6.0	0.08-0.11	5.6-6.5	Low----------	0.10	5	3	1-3
	43-72	8-13	1.40-1.70	2.0-6.0	0.06-0.11	6.6-7.3	Low----------	0.17			
58A-------------- Chetco	0-8	20-27	1.10-1.25	0.6-2.0	0.19-0.20	5.1-6.5	Low----------	0.32	5	6	5-10
	8-31	27-50	1.20-1.35	0.06-0.2	0.17-0.21	5.6-6.5	Moderate-----	0.37			
	31-54	35-40	1.25-1.35	0.06-0.2	0.15-0.17	5.6-6.5	High---------	0.15			
	54-60	35-50	1.30-1.35	0.01-0.06	0.14-0.20	5.6-6.5	High---------	0.37			
59A, 59C:											
Chismore--------	0-9	18-27	1.10-1.25	0.2-0.6	0.19-0.21	4.5-5.5	Moderate-----	0.32	5	6	4-8
	9-60	35-45	1.20-1.45	0.06-0.2	0.15-0.18	4.5-5.0	High---------	0.32			
Pyburn----------	0-9	40-50	1.20-1.30	0.06-0.2	0.15-0.17	4.5-6.0	High---------	0.28	5	4	5-10
	9-33	50-70	1.25-1.40	0.00-0.06	0.14-0.17	4.5-6.0	High---------	0.32			
	33-60	35-50	1.20-1.35	0.06-0.2	0.14-0.21	4.5-6.0	High---------	0.32			
60B-------------- Chitwood	0-8	20-27	1.10-1.25	0.2-0.6	0.19-0.21	3.5-5.5	Low----------	0.32	5	6	4-8
	8-60	35-45	1.20-1.45	0.06-0.2	0.15-0.18	3.5-5.0	Moderate-----	0.37			
61A-------------- Clawson	0-5	8-18	1.40-1.60	2.0-6.0	0.11-0.13	6.1-7.3	Low----------	0.28	5	3	1-3
	5-24	8-18	1.40-1.60	2.0-6.0	0.10-0.13	6.1-7.3	Low----------	0.32			
	24-64	8-18	1.40-1.65	2.0-6.0	0.07-0.14	6.1-7.3	Low----------	0.32			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
62F:											
Colepoint-------	0-6	15-20	1.10-1.30	0.6-2.0	0.13-0.16	4.5-5.5	Low----------	0.24	3	5	5-10
	6-18	15-25	1.10-1.30	0.6-2.0	0.11-0.15	4.5-5.5	Low----------	0.20			
	18-47	25-35	1.30-1.40	0.2-0.6	0.10-0.17	4.5-5.5	Moderate-----	0.20			
	47-57	---	---	---	---	---	-------------	----			
Bravo-----------	0-9	15-25	1.10-1.30	0.6-2.0	0.13-0.18	4.5-5.0	Low----------	0.20	2	5	3-5
	9-31	20-35	1.20-1.40	0.2-0.6	0.11-0.20	4.5-5.0	Moderate-----	0.24			
	31-36	25-35	1.30-1.40	0.2-0.6	0.10-0.18	4.5-5.0	Moderate-----	0.24			
	36-46	---	---	---	---	---	-------------	----			
Cassiday--------	0-8	15-25	1.10-1.30	0.6-2.0	0.13-0.15	4.5-5.0	Low----------	0.17	2	7	2-4
	8-26	18-35	1.20-1.40	0.6-2.0	0.08-0.11	4.5-5.0	Low----------	0.17			
	26-37	18-35	1.20-1.40	0.6-2.0	0.06-0.09	4.5-5.0	Low----------	0.17			
	37-47	---	---	---	---	---	-------------	----			
63E, 64F:											
Colepoint-------	0-6	15-20	1.10-1.30	0.6-2.0	0.13-0.16	4.5-5.5	Low----------	0.24	3	5	5-10
	6-18	15-25	1.10-1.30	0.6-2.0	0.11-0.15	4.5-5.5	Low----------	0.20			
	18-47	25-35	1.30-1.40	0.2-0.6	0.10-0.17	4.5-5.5	Moderate-----	0.20			
	47-57	---	---	---	---	---	-------------	----			
Nailkeg---------	0-6	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	7	1-2
	6-27	20-30	1.35-1.55	0.6-2.0	0.05-0.13	4.5-5.5	Moderate-----	0.24			
	27-37	---	---	---	---	---	-------------	----			
65A------------- Crofland	0-14	27-35	1.20-1.40	0.6-2.0	0.19-0.21	4.5-5.0	Moderate-----	0.28	5	7	2-4
	14-46	35-50	1.30-1.35	0.06-0.2	0.13-0.19	4.5-5.0	High---------	0.28			
	46-60	30-35	1.20-1.40	0.2-0.6	0.11-0.19	4.5-5.5	Moderate-----	0.32			
66D, 66E, 67F, 68F:											
Crutchfield----	0-5	15-20	1.10-1.30	0.6-2.0	0.13-0.16	4.5-5.5	Low----------	0.24	2	5	5-10
	5-16	20-30	1.20-1.40	0.2-0.6	0.12-0.17	4.5-5.5	Moderate-----	0.20			
	16-38	25-35	1.30-1.40	0.2-0.6	0.10-0.17	4.5-5.5	Moderate-----	0.20			
	38-48	---	---	---	---	---	-------------	----			
Colepoint------	0-6	15-20	1.10-1.30	0.6-2.0	0.13-0.16	4.5-5.5	Low----------	0.24	3	5	5-10
	6-18	15-25	1.10-1.30	0.6-2.0	0.11-0.15	4.5-5.5	Low----------	0.20			
	18-47	25-35	1.30-1.40	0.2-0.6	0.10-0.17	4.5-5.5	Moderate-----	0.20			
	47-57	---	---	---	---	---	-------------	----			
69D, 69E--------- Cunniff	0-12	27-35	1.10-1.30	0.2-0.6	0.17-0.21	4.5-5.5	Moderate-----	0.24	5	7	5-8
	12-65	35-45	1.35-1.45	0.06-0.2	0.13-0.20	4.5-5.5	High---------	0.24			
	65-72	30-40	1.30-1.50	0.2-0.6	0.14-0.21	4.5-5.5	Moderate-----	0.28			
70D:											
Cunniff---------	0-12	27-35	1.10-1.30	0.2-0.6	0.17-0.21	4.5-5.5	Moderate-----	0.24	5	7	5-8
	12-65	35-45	1.35-1.45	0.06-0.2	0.13-0.20	4.5-5.5	High---------	0.24			
	65-72	30-40	1.30-1.50	0.2-0.6	0.14-0.21	4.5-5.5	Moderate-----	0.28			
Joeney----------	0-15	15-25	0.90-1.10	0.6-2.0	0.19-0.21	4.5-5.0	Low----------	0.28	2	5	2-5
	15-26	---	---	---	---	---	-------------	----			
	26-60	27-35	1.20-1.40	0.2-0.6	0.0-0.0	4.5-5.0	Moderate-----	0.32			
71F, 72F, 73F:											
Deadline--------	0-8	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	3	7	3-5
	8-57	20-30	1.35-1.55	0.6-2.0	0.04-0.12	4.5-5.5	Moderate-----	0.24			
	57-67	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
71F, 72F, 73F:											
Barkshanty------	0-5	20-25	1.35-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	7	4-6
	5-13	20-30	1.35-1.55	0.6-2.0	0.08-0.17	4.5-5.5	Low----------	0.24			
	13-66	30-35	1.35-1.55	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.20			
Nailkeg---------	0-6	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	7	1-2
	6-27	20-30	1.35-1.55	0.6-2.0	0.05-0.13	4.5-5.5	Moderate-----	0.24			
	27-37	---	---	---	---	---	-------------	----			
74F:											
Deadline--------	0-8	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	3	7	3-5
	8-57	20-30	1.35-1.55	0.6-2.0	0.04-0.12	4.5-5.5	Moderate-----	0.24			
	57-67	---	---	---	---	---	-------------	----			
Barkshanty------	0-5	20-25	1.35-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	7	4-6
	5-13	20-30	1.35-1.55	0.6-2.0	0.08-0.17	4.5-5.5	Low----------	0.24			
	13-66	30-35	1.35-1.55	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.20			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
75E, 76E:											
Deadline--------	0-8	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	3	7	3-5
	8-57	20-30	1.35-1.55	0.6-2.0	0.04-0.12	4.5-5.5	Moderate-----	0.24			
	57-67	---	---	---	---	---	-------------	----			
Irma------------	0-6	10-25	1.35-1.45	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.28	5	8	3-5
	6-55	20-30	1.35-1.55	0.6-2.0	0.09-0.16	4.5-5.5	Moderate-----	0.28			
	55-72	15-30	1.35-1.55	0.6-2.0	0.06-0.14	4.5-5.5	Low----------	0.20			
Nailkeg---------	0-6	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	7	1-2
	6-27	20-30	1.35-1.55	0.6-2.0	0.05-0.13	4.5-5.5	Moderate-----	0.24			
	27-37	---	---	---	---	---	-------------	----			
77G, 78G, 79G:											
Deadline--------	0-8	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	3	7	3-5
	8-57	20-30	1.35-1.55	0.6-2.0	0.04-0.12	4.5-5.5	Moderate-----	0.24			
	57-67	---	---	---	---	---	-------------	----			
Nailkeg---------	0-6	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	7	1-2
	6-27	20-30	1.35-1.55	0.6-2.0	0.05-0.13	4.5-5.5	Moderate-----	0.24			
	27-37	---	---	---	---	---	-------------	----			
80F, 81G, 82G:											
Deadline--------	0-8	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	3	7	3-5
	8-57	20-30	1.35-1.55	0.6-2.0	0.04-0.12	4.5-5.5	Moderate-----	0.24			
	57-67	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Nailkeg---------	0-6	10-25	1.35-1.45	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	7	1-2
	6-27	20-30	1.35-1.55	0.6-2.0	0.05-0.13	4.5-5.5	Moderate-----	0.24			
	27-37	---	---	---	---	---	-------------	----			
83E:											
Desons----------	0-8	27-35	1.25-1.50	0.2-0.6	0.12-0.17	4.5-5.5	Moderate-----	0.28	5	5	8-10
	8-60	35-50	1.30-1.55	0.06-0.2	0.10-0.16	4.5-5.5	High---------	0.20			
	60-72	35-45	1.30-1.55	0.06-0.2	0.08-0.15	4.5-5.5	High---------	0.24			
Watches---------	0-16	15-25	1.35-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	6	8-15
	16-49	25-35	1.30-1.55	0.2-0.6	0.08-0.17	4.5-5.5	Moderate-----	0.24			
	49-65	25-35	1.30-1.55	0.2-0.6	0.06-0.14	4.5-5.5	Moderate-----	0.24			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
83E:											
Calfranch-------	0-12	15-25	1.35-1.50	0.6-2.0	0.07-0.11	5.1-6.0	Low----------	0.17	5	7	8-15
	12-42	10-20	1.45-1.55	2.0-6.0	0.04-0.09	4.5-5.5	Low----------	0.20			
	42-67	10-20	1.45-1.55	2.0-6.0	0.03-0.08	4.5-5.5	Low----------	0.24			
84G:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.10-0.14	5.1-6.5	Low----------	0.15	3	6	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Preacher--------	0-14	20-25	0.90-1.00	2.0-6.0	0.17-0.20	4.5-5.5	Low----------	0.15	5	7	3-8
	14-42	25-35	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Moderate-----	0.24			
	42-60	7-30	1.20-1.30	2.0-6.0	0.10-0.17	4.5-5.0	Low----------	0.32			
Bohannon--------	0-14	15-25	0.85-0.95	2.0-6.0	0.15-0.20	4.5-6.0	Low----------	0.10	3	7	4-6
	14-34	18-30	1.00-1.30	2.0-6.0	0.09-0.15	4.5-6.0	Low----------	0.17			
	34-44	---	---	---	---	---	-------------	----			
85F:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.07-0.10	5.1-6.0	Low----------	0.10	3	8	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Preacher--------	0-14	20-25	0.90-1.00	2.0-6.0	0.17-0.20	4.5-5.5	Low----------	0.15	5	7	3-8
	14-42	25-35	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Moderate-----	0.24			
	42-60	7-30	1.20-1.30	2.0-6.0	0.10-0.17	4.5-5.0	Low----------	0.32			
Bohannon--------	0-14	15-25	0.85-0.95	2.0-6.0	0.15-0.20	4.5-6.0	Low----------	0.10	3	7	4-6
	14-34	18-30	1.00-1.30	2.0-6.0	0.09-0.15	4.5-6.0	Low----------	0.17			
	34-44	---	---	---	---	---	-------------	----			
86G:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.10-0.14	5.1-6.5	Low----------	0.15	3	6	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Preacher--------	0-14	20-25	0.90-1.00	2.0-6.0	0.17-0.20	4.5-5.5	Low----------	0.15	5	7	3-8
	14-42	25-35	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Moderate-----	0.24			
	42-60	7-30	1.20-1.30	2.0-6.0	0.10-0.17	4.5-5.0	Low----------	0.32			
Bohannon--------	0-14	15-25	0.85-0.95	2.0-6.0	0.15-0.20	4.5-6.0	Low----------	0.10	3	7	4-6
	14-34	18-30	1.00-1.30	2.0-6.0	0.09-0.15	4.5-6.0	Low----------	0.17			
	34-44	---	---	---	---	---	-------------	----			
87F:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.07-0.10	5.1-6.0	Low----------	0.10	3	8	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Remote----------	0-6	15-25	1.30-1.50	0.6-2.0	0.10-0.13	5.1-6.5	Low----------	0.20	3	7	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
88F:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.07-0.10	5.1-6.0	Low----------	0.10	3	8	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Remote----------	0-6	15-25	1.20-1.30	0.6-2.0	0.09-0.12	5.1-6.5	Low----------	0.17	5	8	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
Umpcoos---------	0-3	2-10	1.00-1.20	2.0-6.0	0.04-0.06	4.5-6.0	Low----------	0.17	1	8	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
89E, 90E:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.10-0.14	5.1-6.5	Low----------	0.15	3	6	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Remote----------	0-6	15-25	1.30-1.50	0.6-2.0	0.10-0.13	5.1-6.5	Low----------	0.20	3	7	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
91F, 91G:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.07-0.10	5.1-6.0	Low----------	0.10	3	8	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Umpcoos---------	0-3	2-10	1.00-1.20	2.0-6.0	0.04-0.06	4.5-6.0	Low----------	0.17	1	8	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
Dystrochrepts---	0-8	15-25	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.17	---	7	1-2
	8-24	10-30	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.20			
	24-34	---	---	---	---	---	-------------	----			
92G:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.07-0.10	5.1-6.0	Low----------	0.10	3	8	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Umpcoos---------	0-3	2-10	1.00-1.20	2.0-6.0	0.04-0.06	4.5-6.0	Low----------	0.17	1	8	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
93G:											
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.10-0.14	5.1-6.0	Low----------	0.15	3	6	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Umpcoos---------	0-3	15-20	1.00-1.20	2.0-6.0	0.09-0.12	4.5-6.0	Low----------	0.24	1	6	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
94F:											
Dubakella-------	0-13	27-35	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	2	8	2-6
	13-28	35-50	1.35-1.55	0.06-0.2	0.06-0.1	6.1-7.3	High---------	0.28			
	28-40	---	---	---	---	---	-------------	----			
Cornutt---------	0-11	27-35	1.35-1.45	0.2-0.6	0.12-0.18	5.6-6.5	Moderate-----	0.28	4	7	2-6
	11-52	40-55	1.35-1.50	0.06-0.2	0.09-0.14	6.1-6.5	High---------	0.20			
	52-62	---	---	---	---	---	-------------	----			
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			
95G:											
Dulandy---------	0-11	15-25	1.10-1.30	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.32	2	6	4-8
	11-37	27-35	1.20-1.40	0.6-2.0	0.06-0.13	4.5-5.5	Moderate-----	0.24			
	37-47	---	---	---	---	---	-------------	----			
Bosland---------	0-11	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.0	Low----------	0.28	2	6	6-10
	11-26	27-35	1.20-1.40	0.2-0.6	0.12-0.20	4.5-5.0	Moderate-----	0.20			
	26-39	27-35	1.20-1.40	0.2-0.6	0.11-0.16	4.5-5.0	Moderate-----	0.20			
	39-49	---	---	---	---	---	-------------	----			
Floras----------	0-9	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.24	4	7	4-8
	9-48	35-50	1.30-1.50	0.06-0.2	0.13-0.18	4.5-5.0	High---------	0.24			
	48-58	---	---	---	---	---	-------------	----			
96G:											
Dulandy---------	0-11	15-25	1.10-1.30	0.6-2.0	0.13-0.17	4.5-5.5	Low----------	0.28	2	6	4-8
	11-37	27-35	1.20-1.40	0.6-2.0	0.06-0.13	4.5-5.5	Moderate-----	0.24			
	37-47	---	---	---	---	---	-------------	----			
Bosland---------	0-11	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.0	Low----------	0.28	2	6	6-10
	11-26	27-35	1.20-1.40	0.2-0.6	0.12-0.20	4.5-5.0	Moderate-----	0.20			
	26-39	27-35	1.20-1.40	0.2-0.6	0.11-0.16	4.5-5.0	Moderate-----	0.20			
	39-49	---	---	---	---	---	-------------	----			
Floras----------	0-9	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.24	4	7	4-8
	9-48	35-50	1.30-1.50	0.06-0.2	0.13-0.18	4.5-5.0	High---------	0.24			
	48-58	---	---	---	---	---	-------------	----			
97E:											
Dulandy---------	0-11	15-25	1.10-1.30	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.32	2	6	4-8
	11-37	27-35	1.20-1.40	0.6-2.0	0.06-0.13	4.5-5.5	Moderate-----	0.24			
	37-47	---	---	---	---	---	-------------	----			
Guerin----------	0-4	10-20	1.10-1.30	0.6-2.0	0.07-0.11	5.1-5.5	Low----------	0.20	1	7	4-8
	4-16	15-25	1.10-1.30	0.6-2.0	0.04-0.10	5.1-5.5	Low----------	0.20			
	16-26	---	---	---	---	---	-------------	----			
Bosland---------	0-11	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.0	Low----------	0.28	2	6	6-10
	11-26	27-35	1.20-1.40	0.2-0.6	0.12-0.20	4.5-5.0	Moderate-----	0.20			
	26-39	27-35	1.20-1.40	0.2-0.6	0.11-0.16	4.5-5.0	Moderate-----	0.20			
	39-49	---	---	---	---	---	-------------	----			
98G:											
Dulandy---------	0-11	15-25	1.10-1.30	0.6-2.0	0.13-0.17	4.5-5.5	Low----------	0.28	2	6	4-8
	11-37	27-35	1.20-1.40	0.6-2.0	0.06-0.13	4.5-5.5	Moderate-----	0.24			
	37-47	---	---	---	---	---	-------------	----			
Guerin----------	0-4	10-20	1.10-1.30	0.6-2.0	0.07-0.11	5.1-5.5	Low----------	0.20	1	7	4-8
	4-16	15-25	1.10-1.30	0.6-2.0	0.04-0.10	5.1-5.5	Low----------	0.20			
	16-26	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
98G:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
99E:											
Dumont----------	0-5	20-25	1.20-1.30	0.2-0.6	0.10-0.15	5.6-6.0	Low----------	0.20	5	7	4-8
	5-61	40-50	1.35-1.50	0.2-0.6	0.12-0.17	5.1-6.0	Moderate-----	0.32			
	61-99	20-35	1.30-1.45	0.2-0.6	0.15-0.21	4.5-5.5	Moderate-----	0.28			
Acker-----------	0-4	15-25	1.20-1.30	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	5	7	4-8
	4-9	20-25	1.30-1.40	0.6-2.0	0.10-0.16	5.1-6.5	Low----------	0.28			
	9-47	30-40	1.30-1.50	0.2-0.6	0.11-0.19	5.1-6.5	Moderate-----	0.24			
	47-68	25-35	1.25-1.45	0.2-0.6	0.10-0.17	4.5-6.0	Moderate-----	0.20			
Kanid-----------	0-5	18-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-7.3	Low----------	0.10	4	8	2-4
	5-47	22-30	1.30-1.55	2.0-6.0	0.05-0.11	5.6-7.3	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
100G:											
Dystrochrepts---	0-8	15-25	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.17	---	7	1-2
	8-24	10-30	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.20			
	24-34	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Rubble land-----	0-60	---	---	---	---	---	-------------	----			
101F:											
Dystrochrepts---	0-8	15-25	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.17	---	7	1-2
	8-24	10-30	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.20			
	24-34	---	---	---	---	---	-------------	----			
Rubble land-----	0-60	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
102D, 102E, 103D, 103E:											
Edson----------	0-13	27-35	1.30-1.45	0.2-0.6	0.13-0.18	4.5-5.5	Moderate-----	0.15	5	7	4-6
	13-72	35-50	1.30-1.40	0.06-0.2	0.09-0.17	4.5-5.5	High---------	0.24			
Barkshanty-----	0-5	20-25	1.35-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	7	4-6
	5-13	20-30	1.35-1.55	0.6-2.0	0.08-0.17	4.5-5.5	Low----------	0.24			
	13-66	30-35	1.35-1.55	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.20			
104E, 105F:											
Eightlar--------	0-13	35-40	1.35-1.55	0.2-0.6	0.05-0.12	6.1-6.5	Moderate-----	0.20	3	6	3-5
	13-65	55-65	1.45-1.55	0.01-0.06	0.04-0.10	6.6-7.3	High---------	0.17			
Gravecreek------	0-4	15-25	1.35-1.50	0.6-2.0	0.07-0.12	6.1-7.3	Low----------	0.17	2	8	1-4
	4-30	27-35	1.30-1.55	0.2-0.6	0.06-0.11	6.1-7.3	Moderate-----	0.05			
	30-40	---	---	---	---	---	-------------	----			
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			
106B:											
Eilertsen-------	0-17	12-20	1.10-1.30	0.6-2.0	0.18-0.22	4.5-6.5	Low----------	0.37	5	5	2-5
	17-42	18-35	1.20-1.30	0.6-2.0	0.19-0.21	4.5-5.5	Moderate-----	0.32			
	42-60	10-25	1.20-1.30	0.6-2.0	0.15-0.21	3.5-5.5	Low----------	0.37			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodibility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
106B:											
Zyzzug----------	0-17	20-27	1.10-1.25	0.6-2.0	0.19-0.21	4.5-6.0	Low----------	0.32	5	6	4-8
	17-42	25-35	1.20-1.30	0.6-2.0	0.17-0.20	4.5-6.0	Moderate-----	0.32			
	42-49	30-45	1.25-1.45	0.2-0.6	0.15-0.21	4.5-6.0	High---------	0.37			
	49-60	25-40	1.30-1.40	0.2-0.6	0.19-0.21	4.5-5.5	Moderate-----	0.37			
107C------------ Ekoms	0-5	20-25	1.35-1.50	0.6-2.0	0.14-0.18	5.1-6.0	Low----------	0.28	5	6	10-15
	5-44	25-35	1.30-1.55	0.2-0.6	0.13-0.19	5.1-6.0	Moderate-----	0.24			
	44-60	15-25	1.40-1.65	0.6-2.0	0.06-0.14	5.1-6.0	Low----------	0.20			
108F, 109F:											
Etelka----------	0-8	20-25	0.90-1.00	0.6-2.0	0.20-0.23	5.1-5.5	Low----------	0.32	5	6	2-5
	8-20	25-40	1.20-1.40	0.2-0.6	0.19-0.21	5.1-5.5	Moderate-----	0.37			
	20-60	35-60	1.30-1.50	0.06-0.2	0.15-0.17	5.1-5.5	High---------	0.37			
Remote----------	0-6	15-25	1.30-1.50	0.6-2.0	0.10-0.13	5.1-6.5	Low----------	0.20	3	7	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
Whobrey---------	0-12	20-25	0.90-1.00	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32	5	6	2-5
	12-22	20-30	1.10-1.30	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32			
	22-66	50-65	1.30-1.50	0.01-0.06	0.10-0.12	6.6-8.4	High---------	0.20			
110D, 110E:											
Etelka----------	0-8	20-25	0.90-1.00	0.6-2.0	0.20-0.23	5.1-5.5	Low----------	0.32	5	6	2-5
	8-20	25-40	1.20-1.40	0.2-0.6	0.19-0.21	5.1-5.5	Moderate-----	0.37			
	20-60	35-60	1.30-1.50	0.06-0.2	0.15-0.17	5.1-5.5	High---------	0.37			
Whobrey---------	0-12	20-25	0.90-1.00	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32	5	6	2-5
	12-22	20-30	1.10-1.30	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32			
	22-66	50-65	1.30-1.50	0.01-0.06	0.10-0.12	6.6-8.4	High---------	0.20			
Remote----------	0-6	15-25	1.30-1.50	0.6-2.0	0.10-0.13	5.1-6.5	Low----------	0.20	3	7	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
111A------------ Ettersburg	0-17	10-20	1.10-1.30	0.6-2.0	0.14-0.18	5.1-5.5	Low----------	0.32	4	5	8-10
	17-43	25-35	1.30-1.40	0.2-0.6	0.12-0.18	5.1-5.5	Moderate-----	0.28			
	43-60	5-10	1.40-1.60	6.0-20	0.02-0.09	5.6-6.0	Low----------	0.24			
112A------------ Evans	0-39	12-18	1.25-1.35	0.6-2.0	0.19-0.21	6.1-6.5	Low----------	0.32	5	5	2-5
	39-60	10-18	1.35-1.55	0.6-2.0	0.13-0.21	6.1-6.5	Low----------	0.43			
113F, 113G, 114G:											
Fantz-----------	0-16	18-22	1.35-1.50	0.6-2.0	0.06-0.12	6.1-6.5	Low----------	0.15	2	7	2-4
	16-32	18-25	1.30-1.50	0.6-2.0	0.04-0.10	6.1-7.3	Low----------	0.24			
	32-42	---	---	---	---	---	-------------	----			
Knapke----------	0-17	18-22	1.35-1.50	0.6-2.0	0.04-0.08	6.1-6.5	Low----------	0.10	5	8	2-4
	17-65	18-25	1.30-1.50	0.6-2.0	0.04-0.09	6.1-7.3	Low----------	0.10			
115F:											
Ferrelo---------	0-18	10-18	1.10-1.30	0.6-2.0	0.11-0.18	5.1-6.0	Low----------	0.24	5	4	5-8
	18-41	10-18	1.20-1.40	2.0-6.0	0.12-0.17	5.6-6.0	Low----------	0.24			
	41-68	2-10	1.40-1.60	2.0-6.0	0.08-0.13	5.6-6.0	Low----------	0.20			
Bullards--------	0-8	8-18	1.20-1.40	0.6-2.0	0.11-0.13	4.5-5.5	Low----------	0.20	5	3	4-7
	8-47	8-18	1.20-1.40	0.6-2.0	0.06-0.10	4.5-5.5	Low----------	0.17			
	47-60	2-5	1.60-1.80	2.0-6.0	0.05-0.07	5.6-6.0	Low----------	0.24			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
116D, 116E:											
Ferrelo---------	0-18	10-18	1.10-1.30	0.6-2.0	0.11-0.18	5.1-6.0	Low----------	0.24	5	4	5-8
	18-41	10-18	1.20-1.40	2.0-6.0	0.12-0.17	5.6-6.0	Low----------	0.24			
	41-68	2-10	1.40-1.60	2.0-6.0	0.08-0.13	5.6-6.0	Low----------	0.20			
Gearhart--------	0-12	10-15	1.45-1.60	2.0-6.0	0.10-0.20	3.5-5.0	Low----------	0.17	2	3	5-12
	12-23	3-5	1.55-1.70	>20	0.06-0.08	4.5-5.5	Low----------	0.20			
	23-60	3-5	1.55-1.70	>20	0.05-0.07	4.5-5.5	Low----------	0.15			
117F:											
Floras----------	0-9	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.24	4	7	4-8
	9-48	35-50	1.30-1.50	0.06-0.2	0.13-0.18	4.5-5.0	High---------	0.24			
	48-58	---	---	---	---	---	-------------	----			
Bosland---------	0-11	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.0	Low----------	0.28	2	6	6-10
	11-26	27-35	1.20-1.40	0.2-0.6	0.12-0.20	4.5-5.0	Moderate-----	0.20			
	26-39	27-35	1.20-1.40	0.2-0.6	0.11-0.16	4.5-5.0	Moderate-----	0.20			
	39-49	---	---	---	---	---	-------------	----			
Dulandy---------	0-11	15-25	1.10-1.30	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.32	2	6	4-8
	11-37	27-35	1.20-1.40	0.6-2.0	0.06-0.13	4.5-5.5	Moderate-----	0.24			
	37-47	---	---	---	---	---	-------------	----			
118F:											
Floras----------	0-9	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.24	4	7	4-8
	9-48	35-50	1.30-1.50	0.06-0.2	0.13-0.18	4.5-5.0	High---------	0.24			
	48-58	---	---	---	---	---	-------------	----			
Bosland---------	0-11	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.0	Low----------	0.28	2	6	6-10
	11-26	27-35	1.20-1.40	0.2-0.6	0.12-0.20	4.5-5.0	Moderate-----	0.20			
	26-39	27-35	1.20-1.40	0.2-0.6	0.11-0.16	4.5-5.0	Moderate-----	0.20			
	39-49	---	---	---	---	---	-------------	----			
Dulandy---------	0-11	15-25	1.10-1.30	0.6-2.0	0.13-0.17	4.5-5.5	Low----------	0.28	2	6	4-8
	11-37	27-35	1.20-1.40	0.6-2.0	0.06-0.13	4.5-5.5	Moderate-----	0.24			
	37-47	---	---	---	---	---	-------------	----			
119A:											
Foehlin---------	0-13	20-25	1.35-1.50	0.6-2.0	0.10-0.15	6.1-6.5	Low----------	0.20	5	7	1-3
	13-65	27-35	1.30-1.55	0.2-0.6	0.12-0.19	6.1-6.5	Moderate-----	0.28			
Cove------------	0-8	30-40	1.35-1.50	0.2-0.6	0.19-0.21	5.6-6.5	Moderate-----	0.28	5	7	2-6
	8-60	50-60	1.45-1.55	0.01-0.06	0.14-0.17	6.1-7.3	High---------	0.17			
120E------------- Frankport	0-4	1-5	1.50-1.60	>20	0.05-0.06	4.5-5.5	Low----------	0.05	5	1	1-5
	4-9	0-5	1.50-1.60	>20	0.04-0.06	4.5-5.5	Low----------	0.05			
	9-60	0-5	1.50-1.60	>20	0.04-0.05	5.1-6.0	Low----------	0.02			
121E------------- Frankport	0-2	1-5	1.50-1.60	>20	0.05-0.06	4.5-5.5	Low----------	0.05	5	1	1-2
	2-60	0-5	1.50-1.60	>20	0.04-0.05	5.1-6.0	Low----------	0.02			
122F:											
Fritsland-------	0-8	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.20	3	6	3-5
	8-32	20-35	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28			
	32-48	20-35	1.10-1.30	0.6-2.0	0.13-0.17	4.5-5.5	Low----------	0.28			
	48-58	---	---	---	---	---	-------------	----			
Bravo-----------	0-9	15-25	1.10-1.30	0.6-2.0	0.13-0.18	4.5-5.0	Low----------	0.20	2	5	3-5
	9-31	20-35	1.20-1.40	0.2-0.6	0.11-0.20	4.5-5.0	Moderate-----	0.24			
	31-36	25-35	1.30-1.40	0.2-0.6	0.10-0.18	4.5-5.0	Moderate-----	0.24			
	36-46	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi- bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
122F:											
Cassiday--------	0-8	15-25	1.10-1.30	0.6-2.0	0.13-0.15	4.5-5.0	Low----------	0.17	2	7	2-4
	8-26	18-35	1.20-1.40	0.6-2.0	0.08-0.11	4.5-5.0	Low----------	0.17			
	26-37	18-35	1.20-1.40	0.6-2.0	0.06-0.09	4.5-5.0	Low----------	0.17			
	37-47	---	---	---	---	---	-------------	----			
123F:											
Fritsland-------	0-8	15-25	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.17	3	6	3-5
	8-32	20-35	1.10-1.30	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28			
	32-48	20-35	1.10-1.30	0.6-2.0	0.13-0.17	4.5-5.5	Low----------	0.28			
	48-58	---	---	---	---	---	-------------	----			
Bravo-----------	0-9	15-25	1.10-1.30	0.6-2.0	0.13-0.18	4.5-5.0	Low----------	0.20	2	5	3-5
	9-31	20-35	1.20-1.40	0.2-0.6	0.11-0.20	4.5-5.0	Moderate-----	0.24			
	31-36	25-35	1.30-1.40	0.2-0.6	0.10-0.18	4.5-5.0	Moderate-----	0.24			
	36-46	---	---	---	---	---	-------------	----			
Cassiday--------	0-8	15-25	1.10-1.30	0.6-2.0	0.10-0.13	4.5-5.0	Low----------	0.15	2	8	2-4
	8-26	18-35	1.20-1.40	0.6-2.0	0.08-0.11	4.5-5.0	Low----------	0.17			
	26-37	18-35	1.20-1.40	0.6-2.0	0.06-0.09	4.5-5.0	Low----------	0.17			
	37-47	---	---	---	---	---	-------------	----			
124E, 125F, 125G:											
Gamelake--------	0-13	10-25	1.35-1.50	2.0-6.0	0.07-0.12	4.5-5.5	Low----------	0.17	5	7	8-15
	13-50	10-20	1.40-1.60	2.0-6.0	0.05-0.09	4.5-5.5	Low----------	0.17			
	50-72	5-15	1.50-1.70	2.0-6.0	0.04-0.07	4.5-5.5	Low----------	0.17			
Tincup----------	0-7	10-20	1.35-1.50	2.0-6.0	0.05-0.12	5.1-6.0	Low----------	0.17	2	7	6-8
	7-28	10-20	1.45-1.65	2.0-6.0	0.03-0.09	5.1-6.0	Low----------	0.15			
	28-38	---	---	---	---	---	-------------	----			
126A------------- Gauldy	0-12	15-18	1.15-1.20	2.0-6.0	0.15-0.18	5.1-5.5	Low----------	0.20	3	5	3-5
	12-28	15-18	1.20-1.30	2.0-6.0	0.13-0.17	5.1-5.5	Low----------	0.32			
	28-60	0-5	1.60-1.80	>20	0.03-0.05	4.5-5.5	Low----------	0.05			
127A:											
Gauldy----------	0-12	15-18	1.15-1.20	2.0-6.0	0.15-0.18	5.1-5.5	Low----------	0.20	3	5	3-5
	12-28	15-18	1.20-1.30	2.0-6.0	0.13-0.17	5.1-5.5	Low----------	0.32			
	28-60	0-5	1.60-1.80	>20	0.03-0.05	4.5-5.5	Low----------	0.05			
Willanch--------	0-16	5-10	1.30-1.40	2.0-6.0	0.13-0.15	5.6-6.5	Low----------	0.15	5	4	2-5
	16-34	5-10	1.30-1.40	2.0-6.0	0.12-0.14	5.6-6.0	Low----------	0.15			
	34-60	0-5	1.40-1.45	2.0-6.0	0.09-0.12	5.6-6.0	Low----------	0.20			
128A------------- Gleneden	0-15	27-35	0.95-1.10	0.6-2.0	0.19-0.22	4.5-5.5	Low----------	0.24	5	7	5-10
	15-32	40-50	1.00-1.20	0.01-0.06	0.13-0.16	4.5-5.5	High---------	0.28			
	32-60	50-60	1.30-1.40	0.01-0.06	0.12-0.15	4.5-5.5	High---------	0.20			
129E, 130F------- Grassyknob	0-12	15-25	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Low----------	0.28	2	6	8-12
	12-36	27-35	1.30-1.50	0.2-0.6	0.11-0.21	4.5-5.5	Moderate-----	0.28			
	36-46	---	---	---	---	---	-------------	----			
131G, 132F:											
Gravecreek------	0-4	15-25	1.35-1.50	0.6-2.0	0.07-0.12	6.1-7.3	Low----------	0.17	2	8	1-4
	4-30	27-35	1.30-1.55	0.2-0.6	0.06-0.11	6.1-7.3	Moderate-----	0.05			
	30-40	---	---	---	---	---	-------------	----			
Eightlar--------	0-13	35-40	1.35-1.55	0.2-0.6	0.05-0.12	6.1-6.5	Moderate-----	0.20	3	6	3-5
	13-65	55-65	1.45-1.55	0.01-0.06	0.04-0.10	6.6-7.3	High---------	0.17			
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
133G:											
Gravecreek------	0-4	15-25	1.35-1.50	0.6-2.0	0.07-0.12	6.1-7.3	Low----------	0.17	2	8	1-4
	4-30	27-35	1.30-1.55	0.2-0.6	0.06-0.11	6.1-7.3	Moderate-----	0.05			
	30-40	---	---	---	---	---	-------------	----			
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			
Eightlar--------	0-13	35-40	1.35-1.55	0.2-0.6	0.05-0.12	6.1-6.5	Moderate-----	0.20	3	6	3-5
	13-65	55-65	1.45-1.55	0.01-0.06	0.04-0.10	6.6-7.3	High---------	0.17			
134E, 135F:											
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
136G, 137G:											
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
138B:											
Grindbrook------	0-26	20-27	1.10-1.20	0.6-2.0	0.15-0.19	3.5-4.4	Low----------	0.37	5	6	8-12
	26-60	30-45	1.25-1.35	0.06-0.2	0.13-0.16	3.5-5.0	Moderate-----	0.28			
Wadecreek-------	0-6	18-25	0.95-1.10	0.6-2.0	0.21-0.23	3.5-5.5	Low----------	0.32	5	6	7-10
	6-15	25-35	1.10-1.20	0.6-2.0	0.19-0.21	3.5-5.5	Low----------	0.32			
	15-47	35-50	1.20-1.30	0.06-0.2	0.16-0.19	3.5-5.5	Moderate-----	0.28			
	47-60	15-35	1.20-1.35	0.6-2.0	0.16-0.20	3.5-5.5	Low----------	0.32			
139G:											
Grouslous-------	0-4	18-27	1.10-1.30	0.6-2.0	0.06-0.10	4.5-5.0	Low----------	0.17	1	8	1-3
	4-16	27-35	1.30-1.40	0.2-0.6	0.06-0.12	4.5-5.0	Moderate-----	0.20			
	16-26	---	---	---	---	---	-------------	----			
Cassiday--------	0-8	15-25	1.10-1.30	0.6-2.0	0.10-0.13	4.5-5.0	Low----------	0.10	2	8	2-4
	8-26	18-35	1.20-1.40	0.6-2.0	0.08-0.11	4.5-5.0	Low----------	0.17			
	26-37	18-35	1.20-1.40	0.6-2.0	0.06-0.09	4.5-5.0	Low----------	0.17			
	37-47	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
140F:											
Haplumbrepts----	0-9	15-35	1.10-1.45	0.6-2.0	0.10-0.13	5.1-5.5	Low----------	0.24	---	8	3-5
	9-25	20-35	1.10-1.45	0.6-2.0	0.10-0.13	5.1-7.3	Low----------	0.28			
	25-35	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
140F:											
Cryaquepts------	0-11	27-35	1.30-1.50	0.2-0.6	0.19-0.21	5.1-6.5	Moderate-----	0.28	---	7	8-12
	11-72	10-60	1.30-1.50	0.6-2.0	0.19-0.21	5.1-6.5	Moderate-----	0.28			
141G:											
Haplumbrepts----	0-9	15-35	1.10-1.45	0.6-2.0	0.10-0.13	5.1-5.5	Low----------	0.24	---	8	3-5
	9-25	20-35	1.10-1.45	0.6-2.0	0.10-0.13	5.1-7.3	Low----------	0.28			
	25-35	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Rubble land-----	0-60	---	---	---	---	---	-------------	----			
142E:											
Hazelcamp-------	0-12	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.20	3	7	3-5
	12-36	35-45	1.30-1.50	0.06-0.2	0.11-0.17	4.5-5.0	High---------	0.20			
	36-46	---	---	---	---	---	-------------	----			
Averlande-------	0-7	15-25	1.20-1.40	0.6-2.0	0.09-0.14	4.5-5.0	Low----------	0.17	1	7	2-4
	7-14	27-35	1.20-1.40	0.2-0.6	0.05-0.12	4.5-5.0	Moderate-----	0.20			
	14-24	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
143B------------ Hebo	0-5	27-35	1.20-1.35	0.2-0.6	0.19-0.21	3.5-5.0	Moderate-----	0.28	5	7	7-12
	5-46	40-60	1.35-1.45	0.01-0.06	0.14-0.17	3.5-5.0	High---------	0.24			
	46-60	35-45	1.30-1.40	0.06-0.2	0.13-0.21	3.5-5.0	Moderate-----	0.32			
144A------------ Heceta	0-6	3-10	1.20-1.40	6.0-20	0.05-0.07	5.6-6.5	Low----------	0.10	5	2	1-4
	6-60	3-15	1.30-1.60	6.0-20	0.05-0.07	5.6-7.3	Low----------	0.10			
145E, 146F, 147E:											
Honeygrove------	0-15	30-40	1.15-1.35	0.6-2.0	0.12-0.14	4.5-6.5	Low----------	0.10	5	7	5-8
	15-99	50-60	1.20-1.40	0.2-0.6	0.09-0.16	4.5-6.5	Moderate-----	0.20			
Shivigny--------	0-13	18-27	1.20-1.35	2.0-6.0	0.07-0.12	5.6-6.5	Low----------	0.15	5	8	5-8
	13-41	35-40	1.30-1.40	0.2-0.6	0.10-0.11	5.1-6.0	Moderate-----	0.10			
	41-78	35-50	1.30-1.45	0.2-0.6	0.07-0.10	4.5-5.5	Moderate-----	0.10			
148D, 148E:											
Hooskanaden-----	0-15	27-35	0.90-1.00	0.2-0.6	0.14-0.17	4.5-5.5	Moderate-----	0.17	5	7	8-12
	15-35	40-50	1.20-1.40	0.06-0.2	0.13-0.17	4.5-5.5	High---------	0.24			
	35-60	40-60	1.20-1.40	0.01-0.06	0.12-0.16	5.1-6.0	High---------	0.32			
Loneranch-------	0-3	27-35	0.90-1.00	0.2-0.6	0.13-0.18	5.1-5.5	Moderate-----	0.17	2	7	7-10
	3-24	30-35	0.90-1.10	0.2-0.6	0.12-0.18	5.1-5.5	Moderate-----	0.17			
	24-27	30-35	1.20-1.30	0.2-0.6	0.10-0.13	5.1-5.5	Moderate-----	0.20			
	27-37	---	---	---	---	---	-------------	----			
Millicoma-------	0-19	10-25	1.10-1.20	0.6-2.0	0.10-0.15	3.5-5.0	Low----------	0.20	3	7	8-15
	19-31	10-25	1.10-1.20	2.0-6.0	0.04-0.12	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
149E, 150F:											
Hooskanaden-----	0-15	27-35	0.90-1.00	0.2-0.6	0.17-0.21	4.5-5.5	Moderate-----	0.20	5	6	8-12
	15-35	40-50	1.20-1.40	0.06-0.2	0.13-0.17	4.5-5.5	High---------	0.24			
	35-60	40-60	1.20-1.40	0.01-0.06	0.12-0.16	5.1-6.0	High---------	0.32			
Loneranch-------	0-3	27-35	0.90-1.00	0.2-0.6	0.13-0.18	5.1-5.5	Moderate-----	0.17	2	7	7-10
	3-24	30-35	0.90-1.10	0.2-0.6	0.12-0.18	5.1-5.5	Moderate-----	0.17			
	24-27	30-35	1.20-1.30	0.2-0.6	0.10-0.13	5.1-5.5	Moderate-----	0.20			
	27-37	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
149E, 150F:											
Reinhart--------	0-2	27-35	0.90-1.00	0.2-0.6	0.13-0.18	4.5-5.5	Moderate-----	0.15	1	7	10-15
	2-18	30-35	0.90-1.00	0.2-0.6	0.05-0.12	4.5-5.5	Moderate-----	0.15			
	18-28	---	---	---	---	---	-------------	----			
151D, 151E------- Horseprairie	0-18	10-18	0.85-0.95	2.0-6.0	0.25-0.35	5.6-6.0	Low----------	0.20	5	5	5-10
	18-61	18-35	0.90-1.20	0.2-0.6	0.20-0.25	5.1-6.5	Moderate-----	0.32			
	61-72	18-35	1.20-1.40	0.2-0.6	0.20-0.25	5.1-6.5	Moderate-----	0.32			
152E:											
Houstenader-----	0-11	18-25	1.20-1.30	0.2-0.6	0.13-0.16	5.6-6.5	Low----------	0.17	5	7	4-8
	11-40	27-35	1.20-1.40	0.2-0.6	0.12-0.16	6.1-7.3	Moderate-----	0.20			
	40-60	40-60	1.30-1.50	0.01-0.06	0.07-0.11	6.1-7.3	High---------	0.15			
Carpenterville--	0-6	27-35	1.20-1.30	0.2-0.6	0.13-0.16	5.6-6.5	Moderate-----	0.24	2	8	4-8
	6-32	40-60	1.30-1.50	0.06-0.2	0.04-0.09	5.1-6.5	High---------	0.15			
	32-42	---	---	---	---	---	-------------	----			
Huntley---------	0-3	18-25	1.10-1.30	0.6-2.0	0.12-0.16	5.1-6.5	Low----------	0.17	1	7	4-8
	3-17	27-35	1.20-1.40	0.2-0.6	0.13-0.18	5.1-6.5	Moderate-----	0.20			
	17-27	---	---	---	---	---	-------------	----			
153A------------ Huffling	0-12	27-35	1.20-1.30	0.2-0.6	0.16-0.21	5.1-6.0	Moderate-----	0.28	5	7	5-10
	12-52	35-45	1.20-1.40	0.06-0.2	0.13-0.21	4.5-5.5	High---------	0.28			
	52-65	25-35	1.20-1.40	0.2-0.6	0.15-0.20	4.5-5.0	Moderate-----	0.32			
	65-75	---	---	---	---	---	-------------	----			
154G:											
Jayar-----------	0-4	15-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	2	7	3-6
	4-31	18-25	1.30-1.50	0.6-2.0	0.07-0.11	5.6-6.5	Low----------	0.17			
	31-41	---	---	---	---	---	-------------	----			
Althouse--------	0-3	10-18	1.35-1.40	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	4	7	4-9
	3-32	10-18	1.35-1.45	0.6-2.0	0.06-0.11	6.1-6.5	Low----------	0.20			
	32-53	10-18	1.35-1.50	0.6-2.0	0.04-0.09	6.1-6.5	Low----------	0.20			
	53-63	---	---	---	---	---	-------------	----			
Woodseye--------	0-12	12-25	1.40-1.50	0.6-2.0	0.05-0.10	5.6-6.5	Low----------	0.20	1	8	1-4
	12-16	12-27	1.35-1.50	0.6-2.0	0.03-0.07	5.1-6.5	Low----------	0.24			
	16-26	---	---	---	---	---	-------------	----			
155F:											
Jayar-----------	0-4	15-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	2	7	3-6
	4-31	18-25	1.30-1.50	0.6-2.0	0.07-0.11	5.6-6.5	Low----------	0.17			
	31-41	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Althouse--------	0-3	10-18	1.35-1.40	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	4	7	4-9
	3-32	10-18	1.35-1.45	0.6-2.0	0.06-0.11	6.1-6.5	Low----------	0.20			
	32-53	10-18	1.35-1.50	0.6-2.0	0.04-0.09	6.1-6.5	Low----------	0.20			
	53-63	---	---	---	---	---	-------------	----			
156G:											
Jayar-----------	0-4	15-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	2	7	3-6
	4-31	18-25	1.30-1.50	0.6-2.0	0.07-0.11	5.6-6.5	Low----------	0.17			
	31-41	---	---	---	---	---	-------------	----			
Skymor----------	0-5	18-25	1.35-1.50	0.6-2.0	0.08-0.12	5.1-6.0	Low----------	0.15	1	8	1-2
	5-15	18-30	1.30-1.50	0.6-2.0	0.06-0.10	5.1-6.0	Low----------	0.17			
	15-25	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
156G:											
Althouse--------	0-3	10-18	1.35-1.40	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	4	7	4-9
	3-32	10-18	1.35-1.45	0.6-2.0	0.06-0.11	6.1-6.5	Low----------	0.20			
	32-53	10-18	1.35-1.50	0.6-2.0	0.04-0.09	6.1-6.5	Low----------	0.20			
	53-63	---	---	---	---	---	-------------	----			
157E:											
Josephine-------	0-15	18-25	1.35-1.50	0.6-2.0	0.10-0.15	5.1-6.5	Low----------	0.20	4	7	2-4
	15-58	27-35	1.30-1.55	0.2-0.6	0.12-0.19	5.1-5.5	Moderate-----	0.28			
	58-68	---	---	---	---	---	-------------	----			
Pollard---------	0-10	20-25	1.35-1.50	0.6-2.0	0.11-0.13	5.6-6.5	Low----------	0.20	5	7	2-4
	10-69	35-50	1.35-1.55	0.2-0.6	0.11-0.21	5.1-6.5	Moderate-----	0.32			
Speaker---------	0-13	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-6.5	Low----------	0.20	3	7	2-4
	13-35	25-35	1.30-1.55	0.2-0.6	0.09-0.19	5.1-5.5	Moderate-----	0.32			
	35-45	---	---	---	---	---	-------------	----			
158F, 159F:											
Kanid-----------	0-5	18-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-7.3	Low----------	0.10	4	8	2-4
	5-47	22-30	1.30-1.55	2.0-6.0	0.05-0.11	5.6-7.3	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
Acker-----------	0-4	15-25	1.20-1.30	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	5	7	4-8
	4-9	20-25	1.30-1.40	0.6-2.0	0.10-0.16	5.1-6.5	Low----------	0.28			
	9-47	30-40	1.30-1.50	0.2-0.6	0.11-0.19	5.1-6.5	Moderate-----	0.24			
	47-68	25-35	1.25-1.45	0.2-0.6	0.10-0.17	4.5-6.0	Moderate-----	0.20			
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
160F, 160G:											
Kanid-----------	0-5	18-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-7.3	Low----------	0.10	4	8	2-4
	5-47	22-30	1.30-1.55	2.0-6.0	0.05-0.11	5.6-7.3	Low----------	0.10			
	47-57	---	---	---	---	---	-------------	----			
Atring----------	0-7	15-25	1.35-1.50	2.0-6.0	0.07-0.11	6.1-6.5	Low----------	0.10	3	8	2-4
	7-37	15-30	1.30-1.55	2.0-6.0	0.07-0.12	5.1-6.0	Low----------	0.10			
	37-47	---	---	---	---	---	-------------	----			
161A:											
Kirkendall------	0-6	15-25	1.10-1.20	0.6-2.0	0.19-0.21	4.5-6.5	Low----------	0.32	5	6	5-10
	6-37	20-35	1.20-1.30	0.6-2.0	0.19-0.21	4.5-6.5	Moderate-----	0.37			
	37-60	15-35	1.25-1.35	0.2-0.6	0.16-0.21	4.5-6.5	Moderate-----	0.37			
Quosatana-------	0-14	20-27	1.10-1.25	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32	5	6	4-8
	14-49	25-35	1.25-1.40	0.2-0.6	0.19-0.21	5.1-6.5	Moderate-----	0.32			
	49-60	25-45	1.35-1.45	0.06-0.2	0.15-0.21	4.5-6.5	Moderate-----	0.37			
162A, 162B------- Klooqueh	0-19	27-35	1.20-1.30	0.2-0.6	0.19-0.21	4.5-5.0	Moderate-----	0.28	5	7	5-10
	19-60	35-50	1.20-1.40	0.2-0.6	0.13-0.21	4.5-5.5	High---------	0.24			
163F:											
Knapke----------	0-17	18-22	1.35-1.50	0.6-2.0	0.04-0.08	6.1-6.5	Low----------	0.10	5	8	2-4
	17-65	18-25	1.30-1.50	0.6-2.0	0.04-0.09	6.1-7.3	Low----------	0.10			
Fantz-----------	0-16	18-22	1.35-1.50	0.6-2.0	0.06-0.12	6.1-6.5	Low----------	0.15	2	7	2-4
	16-32	18-25	1.30-1.50	0.6-2.0	0.04-0.10	6.1-7.3	Low----------	0.24			
	32-42	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
164A------------	0-10	27-40	1.20-1.30	0.2-0.6	0.19-0.21	5.1-6.0	Moderate-----	0.24	5	7	5-8
Langlois	10-28	35-45	1.10-1.25	0.2-0.6	0.19-0.21	5.1-6.0	High---------	0.24			
	28-60	40-55	1.25-1.35	0.06-0.2	0.14-0.17	5.6-6.0	High---------	0.24			
165D, 165E:											
Loeb-----------	0-10	15-25	1.10-1.20	0.6-2.0	0.17-0.21	4.5-5.0	Low----------	0.32	4	6	5-10
	10-46	35-45	1.20-1.40	0.2-0.6	0.11-0.21	4.5-5.0	High---------	0.28			
	46-56	---	---	---	---	---	-------------	----			
Macklyn---------	0-12	15-25	1.10-1.30	0.6-2.0	0.17-0.21	4.5-5.0	Low----------	0.32	3	6	5-10
	12-22	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.32			
	22-37	35-45	1.20-1.40	0.2-0.6	0.10-0.20	4.5-5.0	High---------	0.28			
	37-47	---	---	---	---	---	-------------	----			
166E:											
Loeb-----------	0-10	15-25	1.10-1.20	0.6-2.0	0.17-0.21	4.5-5.0	Low----------	0.32	4	6	5-10
	10-46	35-45	1.20-1.40	0.2-0.6	0.11-0.21	4.5-5.0	High---------	0.28			
	46-56	---	---	---	---	---	-------------	----			
Macklyn---------	0-12	15-25	1.10-1.30	0.6-2.0	0.17-0.21	4.5-5.0	Low----------	0.32	3	6	5-10
	12-22	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.32			
	22-37	35-45	1.20-1.40	0.2-0.6	0.10-0.20	4.5-5.0	High---------	0.28			
	37-47	---	---	---	---	---	-------------	----			
Vondergreen-----	0-9	15-25	1.10-1.30	0.6-2.0	0.17-0.21	3.5-5.0	Low----------	0.32	4	6	3-5
	9-16	25-35	1.20-1.30	0.2-0.6	0.17-0.21	3.5-5.0	Moderate-----	0.32			
	16-53	35-50	1.20-1.40	0.06-0.2	0.09-0.18	3.5-5.0	High---------	0.28			
	53-63	---	---	---	---	---	-------------	----			
167A------------	0-17	18-25	0.95-1.20	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.32	5	6	5-12
Logsden	17-44	20-35	1.10-1.30	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.37			
	44-60	5-20	1.20-1.35	0.6-6.0	0.10-0.20	3.5-5.5	Low----------	0.37			
168A:											
Logsden---------	0-17	18-25	0.95-1.20	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.32	5	6	5-12
	17-44	20-35	1.10-1.30	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.37			
	44-60	5-20	1.20-1.35	0.6-6.0	0.10-0.20	3.5-5.5	Low----------	0.37			
Euchre----------	0-18	12-25	0.75-0.85	0.6-2.0	0.35-0.45	3.5-5.0	Low----------	0.24	5	6	10-15
	18-31	27-35	1.20-1.30	0.2-0.6	0.19-0.21	3.5-5.0	Low----------	0.32			
	31-51	10-35	1.25-1.35	0.2-2.0	0.13-0.20	3.5-5.0	Low----------	0.32			
	51-60	3-10	1.30-1.40	2.0-6.0	0.05-0.13	4.5-5.5	Low----------	0.17			
169F:											
Loneranch-------	0-3	27-35	0.90-1.00	0.2-0.6	0.13-0.18	5.1-5.5	Moderate-----	0.17	2	7	7-10
	3-24	30-35	0.90-1.10	0.2-0.6	0.12-0.18	5.1-5.5	Moderate-----	0.17			
	24-27	30-35	1.20-1.30	0.2-0.6	0.10-0.13	5.1-5.5	Moderate-----	0.20			
	27-37	---	---	---	---	---	-------------	----			
Hooskanaden-----	0-15	27-35	0.90-1.00	0.2-0.6	0.14-0.17	4.5-5.5	Moderate-----	0.17	5	7	8-12
	15-35	40-50	1.20-1.40	0.06-0.2	0.13-0.17	4.5-5.5	High---------	0.24			
	35-60	40-60	1.20-1.40	0.01-0.06	0.12-0.16	5.1-6.0	High---------	0.32			
Millicoma-------	0-19	10-25	1.10-1.20	0.6-2.0	0.10-0.15	3.5-5.0	Low----------	0.20	3	7	8-15
	19-31	10-25	1.10-1.20	2.0-6.0	0.04-0.12	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
170F:											
Loneranch-------	0-3	27-35	0.90-1.00	0.2-0.6	0.13-0.18	5.1-5.5	Moderate-----	0.17	2	7	7-10
	3-24	30-35	0.90-1.10	0.2-0.6	0.12-0.18	5.1-5.5	Moderate-----	0.17			
	24-27	30-35	1.20-1.30	0.2-0.6	0.10-0.13	5.1-5.5	Moderate-----	0.20			
	27-37	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
170F:											
Hooskanaden-----	0-15	27-35	0.90-1.00	0.2-0.6	0.17-0.21	4.5-5.5	Moderate-----	0.20	5	6	8-12
	15-35	40-50	1.20-1.40	0.06-0.2	0.13-0.17	4.5-5.5	High---------	0.24			
	35-60	40-60	1.20-1.40	0.01-0.06	0.12-0.16	5.1-6.0	High---------	0.32			
Reinhart--------	0-2	27-35	0.90-1.00	0.2-0.6	0.13-0.18	4.5-5.5	Moderate-----	0.15	1	7	10-15
	2-18	30-35	0.90-1.00	0.2-0.6	0.05-0.12	4.5-5.5	Moderate-----	0.15			
	18-28	---	---	---	---	---	-------------	----			
171B:											
McCurdy---------	0-6	20-27	1.10-1.25	0.6-2.0	0.20-0.23	4.5-5.5	Low----------	0.28	5	6	3-5
	6-46	35-50	1.20-1.30	0.2-0.6	0.19-0.21	4.5-5.5	High---------	0.28			
	46-60	35-50	1.20-1.35	0.2-0.6	0.15-0.17	4.5-5.5	High---------	0.32			
Wintley---------	0-5	20-27	1.10-1.25	0.6-2.0	0.19-0.21	4.5-5.5	Low----------	0.32	4	6	3-6
	5-43	35-50	1.20-1.45	0.2-0.6	0.15-0.17	4.5-5.5	High---------	0.28			
	43-60	10-20	1.15-1.30	0.6-2.0	0.07-0.10	4.5-5.5	Low----------	0.10			
172C------------ Meda	0-8	20-25	1.30-1.35	0.6-2.0	0.14-0.17	4.5-6.0	Low----------	0.20	5	7	1-5
	8-28	20-35	1.30-1.35	0.6-2.0	0.08-0.14	4.5-6.0	Low----------	0.24			
	28-60	3-15	1.25-1.30	6.0-20	0.07-0.10	4.5-6.0	Low----------	0.10			
173F, 174F:											
Milbury---------	0-13	10-18	1.10-1.30	2.0-6.0	0.07-0.12	4.5-5.5	Low----------	0.20	2	7	2-5
	13-36	10-18	1.10-1.30	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.15			
	36-46	---	---	---	---	---	-------------	----			
Remote----------	0-6	15-25	1.20-1.30	0.6-2.0	0.09-0.12	5.1-6.5	Low----------	0.17	5	8	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
Umpcoos---------	0-3	2-10	1.00-1.20	2.0-6.0	0.04-0.06	4.5-6.0	Low----------	0.17	1	8	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
175F, 175G, 176F, 176G:											
Milbury--------	0-13	10-18	1.10-1.30	2.0-6.0	0.07-0.12	4.5-5.5	Low----------	0.20	2	7	2-5
	13-36	10-18	1.10-1.30	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.15			
	36-46	---	---	---	---	---	-------------	----			
Umpcoos--------	0-3	2-10	1.00-1.20	2.0-6.0	0.04-0.06	4.5-6.0	Low----------	0.17	1	8	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
Dystrochrepts--	0-8	15-25	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.17	---	7	1-2
	8-24	10-30	1.10-1.45	0.2-0.6	0.07-0.11	5.1-6.5	Low----------	0.20			
	24-34	---	---	---	---	---	-------------	----			
177G:											
Milbury---------	0-13	10-18	1.10-1.30	2.0-6.0	0.09-0.13	4.5-5.5	Low----------	0.24	2	6	2-5
	13-36	10-18	1.10-1.30	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.15			
	36-46	---	---	---	---	---	-------------	----			
Umpcoos---------	0-3	15-20	1.00-1.20	2.0-6.0	0.09-0.12	4.5-6.0	Low----------	0.24	1	6	1-3
	3-13	2-15	1.00-1.20	2.0-6.0	0.04-0.10	4.5-6.0	Low----------	0.15			
	13-23	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
178F, 178G, 179G:											
Millicoma-------	0-19	10-25	1.10-1.20	0.6-2.0	0.10-0.15	3.5-5.0	Low----------	0.20	3	7	8-15
	19-31	10-25	1.10-1.20	2.0-6.0	0.04-0.12	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
Whaleshead------	0-3	18-27	1.10-1.30	0.6-2.0	0.07-0.11	5.6-6.0	Low----------	0.17	5	8	5-10
	3-47	27-35	1.30-1.40	0.2-0.6	0.06-0.11	5.6-6.0	Moderate-----	0.20			
	47-60	30-40	1.30-1.40	0.2-0.6	0.05-0.10	5.1-6.0	Moderate-----	0.20			
Reedsport-------	0-8	10-25	0.70-1.00	0.6-2.0	0.11-0.15	5.6-6.0	Low----------	0.15	3	7	5-12
	8-37	20-35	1.00-1.30	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.24			
	37-47	---	---	---	---	---	-------------	----			
180F:											
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
Redflat---------	0-7	15-27	1.35-1.50	0.6-2.0	0.10-0.16	5.6-7.3	Low----------	0.20	5	7	3-5
	7-38	27-35	1.30-1.40	0.2-0.6	0.12-0.19	6.1-7.3	Moderate-----	0.24			
	38-60	30-40	1.30-1.45	0.2-0.6	0.10-0.19	6.1-7.3	Moderate-----	0.24			
181F:											
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
182F:											
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
Redflat---------	0-7	15-27	1.35-1.50	0.6-2.0	0.10-0.16	5.6-7.3	Low----------	0.20	5	7	3-5
	7-38	27-35	1.30-1.40	0.2-0.6	0.12-0.19	6.1-7.3	Moderate-----	0.24			
	38-60	30-40	1.30-1.45	0.2-0.6	0.10-0.19	6.1-7.3	Moderate-----	0.24			
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
183A------------ Nehalem	0-18	15-25	1.10-1.20	0.6-2.0	0.19-0.21	4.5-6.0	Low----------	0.32	5	6	5-10
	18-42	20-35	1.20-1.30	0.6-2.0	0.19-0.21	4.5-5.5	Moderate-----	0.37			
	42-60	20-35	1.25-1.35	0.2-0.6	0.19-0.21	4.5-5.0	Low----------	0.37			
184B:											
Nelscott--------	0-19	15-25	0.90-1.20	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.28	3	6	5-10
	19-32	18-30	1.00-1.30	0.6-2.0	0.19-0.22	4.5-5.5	Moderate-----	0.32			
	32-36	1-5	1.10-1.30	0.6-2.0	0.05-0.08	5.1-6.0	Low----------	0.15			
	36-51	---	---	---	---	---	-------------	----			
	51-72	1-10	1.10-1.30	2.0-6.0	0.0-0.0	5.1-6.0	Low----------	0.17			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
184B:											
Depoe-----------	0-3	15-27	0.90-1.20	0.6-2.0	0.15-0.18	4.5-5.5	Low----------	0.24	1	5	5-10
	3-9	15-27	1.10-1.30	0.6-2.0	0.14-0.19	4.5-5.5	Low----------	0.28			
	9-44	---	---	---	---	---	-------------	----			
	44-60	1-5	1.50-1.70	2.0-6.0	0.0-0.0	5.1-6.0	Low----------	0.15			
Bullards--------	0-8	8-18	1.20-1.40	0.6-2.0	0.11-0.13	4.5-5.5	Low----------	0.20	5	3	4-7
	8-47	8-18	1.20-1.40	0.6-2.0	0.06-0.10	4.5-5.5	Low----------	0.17			
	47-60	2-5	1.60-1.80	2.0-6.0	0.05-0.07	5.6-6.0	Low----------	0.24			
185A------------ Nestucca	0-18	18-27	1.10-1.25	0.6-2.0	0.19-0.21	4.5-5.5	Low----------	0.28	5	6	4-8
	18-43	25-35	1.25-1.40	0.2-0.6	0.19-0.21	4.5-5.5	Moderate-----	0.32			
	43-60	20-45	1.35-1.45	0.06-0.6	0.15-0.17	4.5-5.5	Moderate-----	0.28			
186D, 186E:											
Orford----------	0-18	27-35	1.10-1.15	0.6-2.0	0.19-0.21	4.5-6.0	Moderate-----	0.20	5	7	5-10
	18-67	35-45	1.15-1.40	0.2-0.6	0.15-0.17	4.5-5.5	Moderate-----	0.28			
McDuff----------	0-22	27-35	0.95-1.10	0.6-2.0	0.19-0.21	4.5-5.5	Moderate-----	0.24	3	7	4-6
	22-37	40-60	0.95-1.10	0.2-0.6	0.11-0.13	3.5-5.0	Moderate-----	0.28			
	37-47	---	---	---	---	---	-------------	----			
187B------------ Orthents	0-5	5-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05	---	8	.5-1
	5-60	3-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05			
188G, 189G:											
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			
Gravecreek------	0-4	15-25	1.35-1.50	0.6-2.0	0.07-0.12	6.1-7.3	Low----------	0.17	2	8	1-4
	4-30	27-35	1.30-1.55	0.2-0.6	0.06-0.11	6.1-7.3	Moderate-----	0.05			
	30-40	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
190F:											
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Gravecreek------	0-4	15-25	1.35-1.50	0.6-2.0	0.07-0.12	6.1-7.3	Low----------	0.17	2	8	1-4
	4-30	27-35	1.30-1.55	0.2-0.6	0.06-0.11	6.1-7.3	Moderate-----	0.05			
	30-40	---	---	---	---	---	-------------	----			
191E, 192F:											
Pearsoll--------	0-4	30-40	1.30-1.50	0.2-0.6	0.08-0.11	6.1-7.3	Moderate-----	0.20	1	8	1-4
	4-16	40-60	1.35-1.55	0.06-0.2	0.04-0.07	6.1-7.3	High---------	0.17			
	16-26	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
193E, 194F, 194G, 195F, 195G:											
Perdin---------	0-5	20-25	1.30-1.50	0.6-2.0	0.10-0.15	6.1-6.5	Low----------	0.24	3	7	4-7
	5-23	35-45	1.35-1.55	0.06-0.2	0.10-0.18	6.6-7.3	High---------	0.28			
	23-33	---	---	---	---	---	-------------	----			
Rock outcrop---	0-60	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
196C, 196D------- Pollard	0-10	20-25	1.35-1.50	0.6-2.0	0.13-0.17	5.6-6.0	Low----------	0.24	5	6	2-4
	10-69	35-50	1.35-1.55	0.2-0.6	0.11-0.21	5.1-6.5	Moderate-----	0.32			
197E:											
Pollard---------	0-10	20-25	1.35-1.50	0.6-2.0	0.11-0.13	5.6-6.5	Low----------	0.20	5	7	2-4
	10-69	35-50	1.35-1.55	0.2-0.6	0.11-0.21	5.1-6.5	Moderate-----	0.32			
Josephine-------	0-15	18-25	1.35-1.50	0.6-2.0	0.10-0.15	5.1-6.5	Low----------	0.20	4	7	2-4
	15-58	27-35	1.30-1.55	0.2-0.6	0.12-0.19	5.1-5.5	Moderate-----	0.28			
	58-68	---	---	---	---	---	-------------	----			
Shastacosta-----	0-10	15-20	1.35-1.45	0.6-2.0	0.07-0.12	5.6-6.0	Low----------	0.10	5	7	2-4
	10-41	25-30	1.30-1.50	0.2-0.6	0.05-0.12	5.1-6.0	Moderate-----	0.20			
	41-72	45-55	1.35-1.40	0.06-0.2	0.05-0.10	4.5-5.5	High---------	0.17			
198E:											
Preacher--------	0-6	27-35	0.90-1.00	2.0-6.0	0.19-0.22	4.5-5.5	Moderate-----	0.15	5	7	3-8
	6-42	25-35	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Moderate-----	0.24			
	42-60	7-30	1.20-1.30	2.0-6.0	0.10-0.17	4.5-5.0	Low----------	0.32			
Blachly---------	0-7	27-40	1.10-1.20	0.6-2.0	0.17-0.21	4.5-6.0	Low----------	0.17	5	7	3-6
	7-38	40-50	1.10-1.30	0.2-0.6	0.11-0.13	4.5-6.0	Moderate-----	0.24			
	38-67	35-45	1.10-1.30	0.2-0.6	0.14-0.20	4.5-6.0	Moderate-----	0.24			
199E:											
Preacher--------	0-6	27-35	0.90-1.00	2.0-6.0	0.19-0.22	4.5-5.5	Moderate-----	0.15	5	7	3-8
	6-42	25-35	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Moderate-----	0.24			
	42-60	7-30	1.20-1.30	2.0-6.0	0.10-0.17	4.5-5.0	Low----------	0.32			
Blachly---------	0-7	27-40	1.10-1.20	0.6-2.0	0.17-0.21	4.5-6.0	Low----------	0.17	5	7	3-6
	7-38	40-50	1.10-1.30	0.2-0.6	0.11-0.13	4.5-6.0	Moderate-----	0.24			
	38-67	35-45	1.10-1.30	0.2-0.6	0.14-0.20	4.5-6.0	Moderate-----	0.24			
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.10-0.14	5.1-6.5	Low----------	0.15	3	6	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
200F, 201F:											
Preacher--------	0-14	20-25	0.90-1.00	2.0-6.0	0.17-0.20	4.5-5.5	Low----------	0.15	5	7	3-8
	14-42	25-35	1.10-1.30	0.6-2.0	0.16-0.21	4.5-5.5	Moderate-----	0.24			
	42-60	7-30	1.20-1.30	2.0-6.0	0.10-0.17	4.5-5.0	Low----------	0.32			
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.10-0.14	5.1-6.5	Low----------	0.15	3	6	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Bohannon--------	0-14	15-25	0.85-0.95	2.0-6.0	0.15-0.20	4.5-6.0	Low----------	0.10	3	7	4-6
	14-34	18-30	1.00-1.30	2.0-6.0	0.09-0.15	4.5-6.0	Low----------	0.17			
	34-44	---	---	---	---	---	-------------	----			
202D:											
Pyrady----------	0-6	27-35	1.30-1.50	0.2-0.6	0.16-0.20	4.5-5.0	Moderate-----	0.20	5	6	4-6
	6-21	35-45	1.30-1.50	0.06-0.2	0.10-0.18	4.5-5.0	High---------	0.20			
	21-43	35-50	1.35-1.50	0.06-0.2	0.10-0.18	4.5-5.0	High---------	0.20			
	43-66	45-60	1.40-1.50	0.06-0.2	0.10-0.15	4.5-5.0	High---------	0.24			
Zalea-----------	0-8	18-25	1.35-1.50	0.6-2.0	0.11-0.15	4.5-5.0	Low----------	0.17	2	7	3-6
	8-34	30-35	1.30-1.50	0.2-0.6	0.12-0.16	4.5-5.0	Moderate-----	0.20			
	34-44	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
202D:											
Yorel-----------	0-6	18-25	1.35-1.50	0.6-2.0	0.12-0.15	4.5-5.0	Low----------	0.17	2	7	3-5
	6-31	25-35	1.30-1.50	0.2-0.6	0.10-0.14	4.5-5.0	Moderate-----	0.24			
	31-41	---	---	---	---	---	-------------	----			
203B------------ Quillamook	0-28	15-25	0.50-0.85	0.6-2.0	0.35-0.45	4.5-5.0	Low----------	0.37	5	6	15-25
	28-56	18-30	0.75-0.85	0.6-2.0	0.30-0.40	4.5-5.0	Low----------	0.32			
	56-60	5-10	1.35-1.45	0.6-2.0	0.06-0.08	4.5-5.0	Low----------	0.15			
204E:											
Redflat---------	0-7	15-27	1.35-1.50	0.6-2.0	0.10-0.16	5.6-7.3	Low----------	0.20	5	7	3-5
	7-38	27-35	1.30-1.40	0.2-0.6	0.12-0.19	6.1-7.3	Moderate-----	0.24			
	38-60	30-40	1.30-1.45	0.2-0.6	0.10-0.19	6.1-7.3	Moderate-----	0.24			
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
205F:											
Reedsport-------	0-8	10-25	0.70-1.00	0.6-2.0	0.11-0.15	5.6-6.0	Low----------	0.15	3	7	5-12
	8-37	20-35	1.00-1.30	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.24			
	37-47	---	---	---	---	---	-------------	----			
Whaleshead------	0-3	18-27	1.10-1.30	0.6-2.0	0.07-0.11	5.6-6.0	Low----------	0.17	5	8	5-10
	3-47	27-35	1.30-1.40	0.2-0.6	0.06-0.11	5.6-6.0	Moderate-----	0.20			
	47-60	30-40	1.30-1.40	0.2-0.6	0.05-0.10	5.1-6.0	Moderate-----	0.20			
206G:											
Reedsport-------	0-8	10-25	0.70-1.00	0.6-2.0	0.11-0.15	5.6-6.0	Low----------	0.15	3	7	5-12
	8-37	20-35	1.00-1.30	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.24			
	37-47	---	---	---	---	---	-------------	----			
Whaleshead------	0-3	18-27	1.10-1.30	0.6-2.0	0.07-0.11	5.6-6.0	Low----------	0.17	5	8	5-10
	3-47	27-35	1.30-1.40	0.2-0.6	0.06-0.11	5.6-6.0	Moderate-----	0.20			
	47-60	30-40	1.30-1.40	0.2-0.6	0.05-0.10	5.1-6.0	Moderate-----	0.20			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
207E, 208F:											
Remote----------	0-6	15-25	1.30-1.50	0.6-2.0	0.10-0.13	5.1-6.5	Low----------	0.20	3	7	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
Digger----------	0-3	15-25	0.90-1.10	2.0-6.0	0.07-0.10	5.1-6.0	Low----------	0.10	3	8	3-5
	3-16	15-25	0.95-1.10	2.0-6.0	0.10-0.12	5.1-6.0	Low----------	0.15			
	16-31	15-25	1.00-1.40	2.0-6.0	0.10-0.12	4.5-6.0	Low----------	0.05			
	31-41	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
209F:											
Remote----------	0-6	15-25	1.30-1.50	0.6-2.0	0.10-0.13	5.1-6.5	Low----------	0.20	3	7	2-5
	6-14	22-33	1.30-1.50	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
	14-69	22-33	1.30-1.50	0.6-2.0	0.08-0.11	4.5-5.5	Low----------	0.10			
Whobrey---------	0-12	20-25	0.90-1.00	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32	5	6	2-5
	12-22	20-30	1.10-1.30	0.6-2.0	0.19-0.21	5.1-6.0	Low----------	0.32			
	22-66	50-65	1.30-1.50	0.01-0.06	0.10-0.12	6.6-8.4	High---------	0.20			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
209F:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
210G, 211G:											
Rilea-----------	0-5	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.17	2	8	4-6
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Euchrand--------	0-3	10-20	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.0	Low----------	0.10	1	8	2-4
	3-15	20-30	1.30-1.50	0.2-0.6	0.06-0.10	4.5-5.0	Moderate-----	0.20			
	15-25	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
212G, 213G:											
Rilea-----------	0-5	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.17	2	8	4-6
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Stackyards------	0-10	10-20	1.35-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low----------	0.10	3	8	8-10
	10-44	15-35	1.30-1.50	0.2-2.0	0.04-0.10	5.1-6.0	Moderate-----	0.17			
	44-54	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
214-------------- Riverwash	0-6	0-1	---	>6.0	0.03-0.04	---	Low----------	----	---	8	<.1
	6-60	0-1	---	>6.0	0.02-0.03	---	Low----------	----			
215G, 216G:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Grouslous-------	0-4	18-27	1.10-1.30	0.6-2.0	0.07-0.11	4.5-5.0	Low----------	0.17	1	8	1-3
	4-16	27-35	1.30-1.40	0.2-0.6	0.06-0.12	4.5-5.0	Moderate-----	0.20			
	16-26	---	---	---	---	---	-------------	----			
Cassiday--------	0-8	15-25	1.10-1.30	0.6-2.0	0.10-0.13	4.5-5.0	Low----------	0.15	2	8	2-4
	8-26	18-35	1.20-1.40	0.6-2.0	0.08-0.11	4.5-5.0	Low----------	0.17			
	26-37	18-35	1.20-1.40	0.6-2.0	0.06-0.09	4.5-5.0	Low----------	0.17			
	37-47	---	---	---	---	---	-------------	----			
217:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Orthents--------	0-5	5-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05	---	8	.5-1
	5-60	3-35	1.15-1.40	2.0-20	0.01-0.07	4.5-7.3	Low----------	0.05			
218E, 219F, 220F Rogue	0-5	5-15	1.40-1.60	2.0-6.0	0.08-0.11	6.1-7.3	Low----------	0.17	4	4	3-8
	5-30	10-15	1.45-1.60	2.0-6.0	0.07-0.11	6.1-7.3	Low----------	0.28			
	30-50	5-10	1.45-1.65	2.0-6.0	0.05-0.10	5.1-6.0	Low----------	0.32			
	50-60	---	---	---	---	---	-------------	----			
221B, 221D:											
Ruch------------	0-8	12-20	1.30-1.50	0.6-2.0	0.14-0.18	6.1-7.3	Low----------	0.24	5	5	1-3
	8-72	25-35	1.30-1.55	0.2-0.6	0.12-0.19	5.6-6.5	Moderate-----	0.37			
Selmac----------	0-5	22-25	1.35-1.50	0.6-2.0	0.14-0.17	5.1-6.0	Low----------	0.24	3	6	1-3
	5-16	27-35	1.30-1.55	0.2-0.6	0.12-0.19	5.1-6.0	Moderate-----	0.28			
	16-99	55-70	1.30-1.50	0.01-0.06	0.12-0.17	5.6-6.5	High---------	0.28			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
222F:											
Rustybutte------	0-8	27-30	1.25-1.50	0.2-0.6	0.12-0.17	5.6-7.3	Low----------	0.24	2	5	8-15
	8-28	27-35	1.30-1.55	0.2-0.6	0.04-0.13	5.6-7.3	Moderate-----	0.10			
	28-38	---	---	---	---	---	-------------	----			
Sebastian-------	0-3	18-25	1.35-1.50	0.6-2.0	0.06-0.10	5.6-7.3	Low----------	0.10	1	8	8-12
	3-14	25-35	1.30-1.50	0.2-0.6	0.04-0.08	5.6-7.3	Moderate-----	0.10			
	14-24	---	---	---	---	---	-------------	----			
223F:											
Rustybutte------	0-8	27-30	1.25-1.50	0.2-0.6	0.12-0.17	5.6-7.3	Low----------	0.24	2	5	8-15
	8-28	27-35	1.30-1.55	0.2-0.6	0.04-0.13	5.6-7.3	Moderate-----	0.10			
	28-38	---	---	---	---	---	-------------	----			
Sebastian-------	0-3	18-25	1.35-1.50	0.6-2.0	0.06-0.10	5.6-7.3	Low----------	0.10	1	8	8-12
	3-14	25-35	1.30-1.50	0.2-0.6	0.04-0.08	5.6-7.3	Moderate-----	0.10			
	14-24	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
224E, 225D, 225E:											
Saddlepeak------	0-8	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	5	8	4-8
	8-68	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
Threetrees------	0-13	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	2	8	4-7
	13-37	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
	37-47	---	---	---	---	---	-------------	----			
226E:											
Saddlepeak------	0-8	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	5	8	4-8
	8-68	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
Threetrees------	0-13	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	2	8	4-7
	13-37	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
	37-47	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
227F, 228F:											
Saddlepeak------	0-8	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	5	8	4-8
	8-68	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
Threetrees------	0-13	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	2	8	4-7
	13-37	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
	37-47	---	---	---	---	---	-------------	----			
Scalerock-------	0-4	20-25	1.35-1.50	0.6-2.0	0.04-0.10	3.5-5.0	Low----------	0.15	1	8	4-6
	4-13	27-35	1.30-1.50	0.2-0.6	0.04-0.11	4.5-5.5	Moderate-----	0.17			
	13-23	---	---	---	---	---	-------------	----			
229E:											
Sebastian-------	0-3	18-25	1.35-1.50	0.6-2.0	0.06-0.10	5.6-7.3	Low----------	0.10	1	8	8-12
	3-14	25-35	1.30-1.50	0.2-0.6	0.04-0.08	5.6-7.3	Moderate-----	0.10			
	14-24	---	---	---	---	---	-------------	----			
Rustybutte------	0-8	27-30	1.25-1.50	0.2-0.6	0.12-0.17	5.6-7.3	Low----------	0.24	2	5	8-15
	8-28	27-35	1.30-1.55	0.2-0.6	0.04-0.13	5.6-7.3	Moderate-----	0.10			
	28-38	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
230E:											
Serpentano------	0-6	22-27	1.20-1.50	0.6-2.0	0.13-0.15	6.1-7.3	Low----------	0.17	4	8	1-3
	6-26	22-32	1.30-1.50	0.6-2.0	0.10-0.13	6.1-7.3	Low----------	0.10			
	26-53	22-32	1.30-1.50	0.6-2.0	0.07-0.11	6.1-7.3	Low----------	0.10			
	53-63	---	---	---	---	---	-------------	----			
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
231F, 232F:											
Serpentano------	0-6	22-27	1.20-1.50	0.6-2.0	0.13-0.15	6.1-7.3	Low----------	0.17	4	8	1-3
	6-26	22-32	1.30-1.50	0.6-2.0	0.10-0.13	6.1-7.3	Low----------	0.10			
	26-53	22-32	1.30-1.50	0.6-2.0	0.07-0.11	6.1-7.3	Low----------	0.10			
	53-63	---	---	---	---	---	-------------	----			
Mislatnah-------	0-2	27-30	1.30-1.50	0.2-0.6	0.14-0.18	5.6-6.5	Moderate-----	0.20	2	7	2-4
	2-19	27-35	1.35-1.50	0.2-0.6	0.11-0.18	5.6-7.3	Moderate-----	0.24			
	19-38	27-35	1.35-1.50	0.2-0.6	0.04-0.10	5.6-7.3	Moderate-----	0.24			
	38-48	---	---	---	---	---	-------------	----			
Greggo----------	0-4	27-30	1.30-1.50	0.6-2.0	0.06-0.09	6.1-6.5	Moderate-----	0.15	1	8	1-3
	4-17	30-35	1.30-1.50	0.6-2.0	0.04-0.07	6.1-7.3	Moderate-----	0.15			
	17-27	---	---	---	---	---	-------------	----			
233F:											
Shastacosta-----	0-10	15-20	1.35-1.45	0.6-2.0	0.07-0.12	5.6-6.0	Low----------	0.10	5	7	2-4
	10-41	25-30	1.30-1.50	0.2-0.6	0.05-0.12	5.1-6.0	Moderate-----	0.20			
	41-72	45-55	1.35-1.40	0.06-0.2	0.05-0.10	4.5-5.5	High---------	0.17			
Pollard---------	0-10	20-25	1.35-1.50	0.6-2.0	0.11-0.13	5.6-6.5	Low----------	0.20	5	7	2-4
	10-69	35-50	1.35-1.55	0.2-0.6	0.11-0.21	5.1-6.5	Moderate-----	0.32			
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	2	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
234F:											
Shivigny--------	0-13	18-27	1.20-1.35	2.0-6.0	0.07-0.12	5.6-6.5	Low----------	0.15	5	8	5-8
	13-41	35-40	1.30-1.40	0.2-0.6	0.10-0.11	5.1-6.0	Moderate-----	0.10			
	41-78	35-50	1.30-1.45	0.2-0.6	0.07-0.10	4.5-5.5	Moderate-----	0.10			
Honeygrove------	0-15	30-40	1.15-1.35	0.6-2.0	0.12-0.14	4.5-6.5	Low----------	0.10	5	7	5-8
	15-99	50-60	1.20-1.40	0.2-0.6	0.09-0.16	4.5-6.5	Moderate-----	0.20			
235F, 236F:											
Sitkum----------	0-10	12-18	1.35-1.40	2.0-6.0	0.11-0.14	6.1-7.3	Low----------	0.28	3	3	2-4
	10-34	12-18	1.35-1.50	2.0-6.0	0.09-0.18	5.6-6.5	Low----------	0.28			
	34-44	---	---	---	---	---	-------------	----			
Steinmetz-------	0-12	10-15	1.35-1.40	2.0-6.0	0.11-0.15	5.1-6.5	Low----------	0.24	5	3	3-5
	12-65	12-18	1.35-1.50	2.0-6.0	0.10-0.18	4.5-6.0	Low----------	0.24			
237E:											
Skookumhouse----	0-11	27-35	1.10-1.30	0.6-2.0	0.15-0.17	4.5-5.0	Moderate-----	0.17	4	6	3-5
	11-38	35-45	1.20-1.40	0.06-0.2	0.15-0.17	4.5-5.0	High---------	0.20			
	38-52	35-45	1.20-1.40	0.06-0.2	0.11-0.13	4.5-5.0	High---------	0.20			
	52-62	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
237E:											
Hazelcamp-------	0-12	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.20	3	7	3-5
	12-36	35-45	1.30-1.50	0.06-0.2	0.11-0.17	4.5-5.0	High---------	0.20			
	36-46	---	---	---	---	---	-------------	----			
238D, 238E:											
Skookumhouse----	0-11	27-35	1.10-1.30	0.6-2.0	0.15-0.17	4.5-5.0	Moderate-----	0.17	4	6	3-5
	11-38	35-45	1.20-1.40	0.06-0.2	0.15-0.17	4.5-5.0	High---------	0.20			
	38-52	35-45	1.20-1.40	0.06-0.2	0.11-0.13	4.5-5.0	High---------	0.20			
	52-62	---	---	---	---	---	-------------	----			
Hazelcamp-------	0-12	27-35	1.20-1.30	0.2-0.6	0.16-0.21	4.5-5.0	Moderate-----	0.20	3	7	3-5
	12-36	35-45	1.30-1.50	0.06-0.2	0.11-0.17	4.5-5.0	High---------	0.20			
	36-46	---	---	---	---	---	-------------	----			
Averlande-------	0-7	15-25	1.20-1.40	0.6-2.0	0.09-0.14	4.5-5.0	Low----------	0.17	1	7	2-4
	7-14	27-35	1.20-1.40	0.2-0.6	0.05-0.12	4.5-5.0	Moderate-----	0.20			
	14-24	---	---	---	---	---	-------------	----			
239G:											
Skymor----------	0-5	18-25	1.35-1.50	0.6-2.0	0.08-0.12	5.1-6.0	Low----------	0.15	1	8	1-2
	5-15	18-30	1.30-1.50	0.6-2.0	0.06-0.10	5.1-6.0	Low----------	0.17			
	15-25	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Jayar-----------	0-4	15-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-6.5	Low----------	0.15	2	7	3-6
	4-31	18-25	1.30-1.50	0.6-2.0	0.07-0.11	5.6-6.5	Low----------	0.17			
	31-41	---	---	---	---	---	-------------	----			
240E:											
Snowcamp--------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.20	2	8	4-10
	4-29	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.20			
	29-39	---	---	---	---	---	-------------	----			
Cedarcamp-------	0-6	15-25	1.30-1.50	0.6-2.0	0.06-0.12	6.1-7.3	Low----------	0.15	5	8	4-10
	6-39	20-35	1.25-1.50	0.2-0.6	0.06-0.14	6.1-7.3	Low----------	0.28			
	39-65	20-35	1.30-1.55	0.2-0.6	0.04-0.11	6.1-7.3	Low----------	0.28			
Flycatcher------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.15	1	8	4-10
	4-18	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.20			
	18-28	---	---	---	---	---	-------------	----			
241E:											
Snowcamp--------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.20	2	8	4-10
	4-29	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.28			
	29-39	---	---	---	---	---	-------------	----			
Cedarcamp-------	0-6	15-25	1.30-1.50	0.6-2.0	0.06-0.12	6.1-7.3	Low----------	0.15	5	8	4-10
	6-39	20-35	1.25-1.50	0.2-0.6	0.06-0.14	6.1-7.3	Low----------	0.28			
	39-65	20-35	1.30-1.55	0.2-0.6	0.04-0.11	6.1-7.3	Low----------	0.28			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
242G:											
Snowcamp--------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.20	2	8	4-10
	4-29	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.28			
	29-39	---	---	---	---	---	-------------	----			
Flycatcher------	0-4	15-25	1.30-1.50	0.6-2.0	0.05-0.12	6.1-7.3	Low----------	0.15	1	8	4-10
	4-18	20-35	1.25-1.50	0.2-0.6	0.04-0.14	6.1-7.3	Low----------	0.20			
	18-28	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
242G:											
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
243F:											
Speaker---------	0-13	18-25	1.35-1.50	0.6-2.0	0.09-0.15	5.1-6.5	Low----------	0.20	3	7	2-4
	13-35	25-35	1.30-1.55	0.2-0.6	0.09-0.19	5.1-5.5	Moderate-----	0.32			
	35-45	---	---	---	---	---	-------------	----			
Josephine-------	0-15	18-25	1.35-1.50	0.6-2.0	0.10-0.15	5.1-6.5	Low----------	0.20	4	7	2-4
	15-58	27-35	1.30-1.55	0.2-0.6	0.12-0.19	5.1-5.5	Moderate-----	0.28			
	58-68	---	---	---	---	---	-------------	----			
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	2	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
244G, 245G:											
Stackyards------	0-10	10-20	1.35-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low----------	0.10	3	8	8-10
	10-44	15-35	1.30-1.50	0.2-2.0	0.04-0.10	5.1-6.0	Moderate-----	0.17			
	44-54	---	---	---	---	---	-------------	----			
Rilea-----------	0-5	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.17	2	8	4-6
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Euchrand--------	0-3	10-20	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.0	Low----------	0.10	1	8	2-4
	3-15	20-30	1.30-1.50	0.2-0.6	0.06-0.10	4.5-5.0	Moderate-----	0.20			
	15-25	---	---	---	---	---	-------------	----			
246F, 246G, 247F, 247G:											
Stackyards-----	0-10	10-20	1.35-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low----------	0.10	3	8	8-10
	10-44	15-35	1.30-1.50	0.2-2.0	0.04-0.10	5.1-6.0	Moderate-----	0.17			
	44-54	---	---	---	---	---	-------------	----			
Rilea----------	0-4	18-25	1.35-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.10	2	8	1-3
	4-22	20-35	1.35-1.50	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.17			
	22-31	10-20	1.50-1.70	2.0-6.0	0.02-0.05	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
Rock outcrop---	0-60	---	---	---	---	---	-------------	----			
248F, 249F:											
Stackyards------	0-10	10-20	1.35-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low----------	0.10	3	8	8-10
	10-44	15-35	1.30-1.50	0.2-2.0	0.04-0.10	5.1-6.0	Moderate-----	0.17			
	44-54	---	---	---	---	---	-------------	----			
Rilea-----------	0-5	18-25	1.35-1.50	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.20	2	7	4-8
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate-----	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.15			
	38-48	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
250F, 251F:											
Stackyards------	0-10	10-20	1.35-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low----------	0.10	3	8	8-10
	10-44	15-35	1.30-1.50	0.2-2.0	0.04-0.10	5.1-6.0	Moderate-----	0.17			
	44-54	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
250F, 251F:											
Rilea	0-5	18-25	1.35-1.50	0.6-2.0	0.10-0.14	4.5-5.5	Low	0.20	2	7	4-8
	5-28	20-35	1.30-1.50	0.2-0.6	0.05-0.13	4.5-5.5	Moderate	0.15			
	28-38	20-30	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate	0.15			
	38-48	---	---	---	---	---	---	----			
Yorel	0-6	18-25	1.35-1.50	0.6-2.0	0.12-0.15	4.5-5.0	Low	0.17	2	7	3-5
	6-31	25-35	1.30-1.50	0.2-0.6	0.10-0.14	4.5-5.0	Moderate	0.24			
	31-41	---	---	---	---	---	---	----			
252G, 253G:											
Steinmetz	0-12	10-15	1.35-1.40	2.0-6.0	0.11-0.15	5.1-6.5	Low	0.24	5	3	3-5
	12-65	12-18	1.35-1.50	2.0-6.0	0.10-0.18	4.5-6.0	Low	0.24			
Sitkum	0-10	12-18	1.35-1.40	2.0-6.0	0.11-0.14	6.1-7.3	Low	0.28	3	3	2-4
	10-34	12-18	1.35-1.50	2.0-6.0	0.09-0.18	5.6-6.5	Low	0.28			
	34-44	---	---	---	---	---	---	----			
254D, 254E:											
Svensen	0-13	15-20	1.10-1.40	2.0-6.0	0.16-0.18	3.5-5.5	Low	0.28	4	5	4-6
	13-48	20-30	1.35-1.45	2.0-6.0	0.16-0.18	3.5-5.0	Low	0.28			
	48-54	15-25	1.35-1.60	2.0-6.0	0.13-0.15	3.5-5.0	Low	0.37			
	54-64	---	---	---	---	---	---	----			
Reedsport	0-8	10-25	0.70-1.00	0.6-2.0	0.11-0.15	5.6-6.0	Low	0.15	3	7	5-12
	8-37	20-35	1.00-1.30	0.6-2.0	0.12-0.17	4.5-5.5	Low	0.24			
	37-47	---	---	---	---	---	---	----			
255E, 256F:											
Swedeheaven	0-13	15-25	1.40-1.50	0.6-2.0	0.09-0.16	4.5-5.0	Low	0.15	2	6	5-10
	13-27	27-35	1.35-1.50	0.2-0.6	0.04-0.13	4.5-5.5	Moderate	0.20			
	27-37	---	---	---	---	---	---	----			
Quailprairie	0-11	15-25	1.40-1.50	0.6-2.0	0.10-0.15	4.5-5.0	Low	0.20	4	6	5-10
	11-53	20-35	1.35-1.50	0.2-0.6	0.11-0.16	4.5-5.0	Moderate	0.20			
	53-67	40-50	1.35-1.40	0.06-0.2	0.06-0.11	4.5-5.0	High	0.24			
Sankey	0-4	20-25	1.55-1.65	0.6-2.0	0.07-0.12	4.5-5.0	Low	0.15	1	7	4-7
	4-17	27-35	1.35-1.65	0.2-0.6	0.04-0.10	4.5-5.5	Moderate	0.17			
	17-27	---	---	---	---	---	---	----			
257A Takilma	0-5	15-20	1.35-1.50	2.0-6.0	0.09-0.13	6.1-6.5	Low	0.17	5	6	2-4
	5-16	18-25	1.30-1.55	2.0-6.0	0.07-0.11	6.1-6.5	Low	0.17			
	16-72	10-18	1.35-1.70	6.0-20	0.03-0.08	6.6-7.3	Low	0.20			
258E, 259F Templeton	0-17	18-27	0.85-0.95	0.6-2.0	0.25-0.35	3.5-5.5	Low	0.32	4	6	10-15
	17-47	25-35	0.90-1.10	0.6-2.0	0.20-0.25	3.5-5.0	Moderate	0.20			
	47-57	---	---	---	---	---	---	----			
260F, 261G, 262F, 262G, 263G:											
Threetrees	0-13	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low	0.15	2	8	4-7
	13-37	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate	0.17			
	37-47	---	---	---	---	---	---	----			
Saddlepeak	0-8	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low	0.15	5	8	4-8
	8-68	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate	0.17			
Scalerock	0-4	20-25	1.35-1.50	0.6-2.0	0.04-0.10	3.5-5.0	Low	0.15	1	8	4-6
	4-13	27-35	1.30-1.50	0.2-0.6	0.04-0.11	4.5-5.5	Moderate	0.17			
	13-23	---	---	---	---	---	---	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
264F:											
Threetrees------	0-13	20-25	1.35-1.50	0.6-2.0	0.08-0.12	3.5-5.0	Low----------	0.15	2	8	4-7
	13-37	27-35	1.30-1.50	0.2-0.6	0.04-0.10	4.5-5.5	Moderate-----	0.17			
	37-47	---	---	---	---	---	-------------	----			
Scalerock-------	0-4	20-25	1.35-1.50	0.6-2.0	0.04-0.10	3.5-5.0	Low----------	0.15	1	8	4-6
	4-13	27-35	1.30-1.50	0.2-0.6	0.04-0.11	4.5-5.5	Moderate-----	0.17			
	13-23	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
265F, 265G:											
Tolfork---------	0-9	10-20	1.45-1.65	2.0-6.0	0.04-0.07	5.1-5.5	Low----------	0.10	3	5	8-15
	9-30	10-20	1.40-1.60	2.0-6.0	0.03-0.09	5.1-5.5	Low----------	0.10			
	30-50	10-15	1.50-1.70	2.0-6.0	0.03-0.05	5.1-5.5	Low----------	0.10			
	50-60	---	---	---	---	---	-------------	----			
Tincup----------	0-7	10-20	1.35-1.50	2.0-6.0	0.05-0.12	5.1-6.0	Low----------	0.17	2	7	6-8
	7-28	10-20	1.45-1.65	2.0-6.0	0.03-0.09	5.1-6.0	Low----------	0.15			
	28-38	---	---	---	---	---	-------------	----			
266-------------- Urban land	0-6	---	---	---	---	---	-------------	----	---	---	---
267F:											
Vermisa---------	0-3	10-20	1.35-1.50	2.0-6.0	0.07-0.11	6.6-7.3	Low----------	0.10	1	8	1-3
	3-12	18-25	1.30-1.55	2.0-6.0	0.04-0.12	6.1-6.5	Low----------	0.10			
	12-22	---	---	---	---	---	-------------	----			
Beekman---------	0-5	15-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-6.5	Low----------	0.20	2	6	1-3
	5-34	18-30	1.30-1.50	0.6-2.0	0.06-0.12	5.6-6.5	Low----------	0.10			
	34-44	---	---	---	---	---	-------------	----			
Colestine-------	0-5	18-25	1.35-1.50	0.6-2.0	0.10-0.15	5.6-7.3	Low----------	0.28	2	7	2-4
	5-34	22-30	1.30-1.50	0.6-2.0	0.10-0.16	5.6-7.3	Low----------	0.24			
	34-44	---	---	---	---	---	-------------	----			
268D:											
Waldport--------	0-2	1-5	1.40-1.60	>20	0.05-0.07	4.5-6.0	Low----------	0.17	5	1	1-5
	2-60	1-5	1.40-1.60	>20	0.05-0.07	4.5-6.0	Low----------	0.17			
Dune land-------	0-6	0-1	1.50-1.60	>6.0	0.04-0.05	7.4-8.4	Low----------	0.15	5	1	<.1
	6-60	0-1	1.50-1.60	>6.0	0.03-0.05	7.4-8.4	Low----------	0.10			
269D:											
Waldport--------	0-2	1-5	1.40-1.60	>20	0.05-0.07	4.5-6.0	Low----------	0.17	5	1	1-5
	2-60	1-5	1.40-1.60	>20	0.05-0.07	4.5-6.0	Low----------	0.17			
Dune land-------	0-6	0-1	1.50-1.60	>6.0	0.04-0.05	7.4-8.4	Low----------	0.15	5	1	<.1
	6-60	0-1	1.50-1.60	>6.0	0.03-0.05	7.4-8.4	Low----------	0.10			
Heceta----------	0-6	3-10	1.20-1.40	6.0-20	0.05-0.07	5.6-6.5	Low----------	0.10	5	2	1-4
	6-60	3-15	1.30-1.60	6.0-20	0.05-0.07	5.6-7.3	Low----------	0.10			
270E, 271F, 271G:											
Wedderburn------	0-26	15-27	1.10-1.30	0.6-2.0	0.11-0.16	5.1-6.0	Low----------	0.17	3	7	3-8
	26-46	27-35	1.20-1.30	0.6-2.0	0.11-0.16	5.1-6.0	Low----------	0.20			
	46-56	---	---	---	---	---	-------------	----			
Zwagg-----------	0-21	12-18	1.10-1.20	0.6-2.0	0.13-0.17	4.5-5.0	Low----------	0.28	2	5	4-8
	21-25	12-18	1.10-1.30	0.6-2.0	0.07-0.13	4.5-5.0	Low----------	0.20			
	25-35	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
272F, 272G:											
Whaleshead------	0-3	18-27	1.10-1.30	0.6-2.0	0.07-0.11	5.6-6.0	Low----------	0.17	5	8	5-10
	3-47	27-35	1.30-1.40	0.2-0.6	0.06-0.11	5.6-6.0	Moderate-----	0.20			
	47-60	30-40	1.30-1.40	0.2-0.6	0.05-0.10	5.1-6.0	Moderate-----	0.20			
Reedsport-------	0-8	10-25	0.70-1.00	0.6-2.0	0.11-0.15	5.6-6.0	Low----------	0.15	3	7	5-12
	8-37	20-35	1.00-1.30	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.24			
	37-47	---	---	---	---	---	-------------	----			
273F:											
Whaleshead------	0-3	18-27	1.10-1.30	0.6-2.0	0.07-0.11	5.6-6.0	Low----------	0.17	5	8	5-10
	3-47	27-35	1.30-1.40	0.2-0.6	0.06-0.11	5.6-6.0	Moderate-----	0.20			
	47-60	30-40	1.30-1.40	0.2-0.6	0.05-0.10	5.1-6.0	Moderate-----	0.20			
Reedsport-------	0-8	10-25	0.70-1.00	0.6-2.0	0.11-0.15	5.6-6.0	Low----------	0.15	3	7	5-12
	8-37	20-35	1.00-1.30	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.24			
	37-47	---	---	---	---	---	-------------	----			
Millicoma-------	0-19	10-25	1.10-1.20	0.6-2.0	0.10-0.15	3.5-5.0	Low----------	0.20	3	7	8-15
	19-31	10-25	1.10-1.20	2.0-6.0	0.04-0.12	4.5-5.5	Low----------	0.10			
	31-41	---	---	---	---	---	-------------	----			
274A, 274D, 274E Winchuck	0-8	20-25	1.00-1.20	0.6-2.0	0.19-0.21	4.5-5.5	Low----------	0.32	4	6	4-8
	8-34	35-60	1.10-1.35	0.06-0.2	0.14-0.21	4.5-5.5	High---------	0.28			
	34-46	35-40	1.10-1.30	0.6-2.0	0.19-0.21	4.5-5.5	Moderate-----	0.28			
	46-60	20-35	1.10-1.30	0.2-0.6	0.10-0.14	4.5-5.5	Moderate-----	0.20			
275G:											
Woodseye--------	0-12	12-25	1.40-1.50	0.6-2.0	0.05-0.10	5.6-6.5	Low----------	0.20	1	8	1-4
	12-16	12-27	1.35-1.50	0.6-2.0	0.03-0.07	5.1-6.5	Low----------	0.24			
	16-26	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			
Brandypeak------	0-10	18-25	1.35-1.50	0.6-2.0	0.08-0.12	4.5-5.0	Low----------	0.15	2	8	6-10
	10-34	20-30	1.30-1.50	0.6-2.0	0.07-0.11	4.5-5.5	Low----------	0.15			
	34-44	---	---	---	---	---	-------------	----			
276A------------- Yachats	0-15	5-15	1.20-1.30	2.0-6.0	0.15-0.17	3.5-5.5	Low----------	0.32	5	3	5-10
	15-28	5-15	1.25-1.35	2.0-6.0	0.14-0.17	3.5-5.5	Low----------	0.24			
	28-42	5-10	1.30-1.40	2.0-6.0	0.09-0.13	3.5-5.5	Low----------	0.20			
	42-60	5-10	1.30-1.40	2.0-6.0	0.09-0.10	3.5-5.5	Low----------	0.20			
277A------------- Yaquina	0-4	1-5	1.30-1.60	2.0-6.0	0.08-0.10	4.5-5.5	Low----------	0.17	5	2	2-5
	4-26	1-2	1.30-1.60	2.0-6.0	0.05-0.07	4.5-6.0	Low----------	0.17			
	26-60	1-2	1.30-1.60	6.0-20	0.05-0.07	5.1-6.0	Low----------	0.17			
278E:											
Zalea-----------	0-8	18-25	1.35-1.50	0.6-2.0	0.11-0.15	4.5-5.0	Low----------	0.17	2	7	3-6
	8-34	30-35	1.30-1.50	0.2-0.6	0.12-0.16	4.5-5.0	Moderate-----	0.20			
	34-44	---	---	---	---	---	-------------	----			
Pyrady----------	0-6	27-35	1.30-1.50	0.2-0.6	0.16-0.20	4.5-5.0	Moderate-----	0.20	5	6	4-6
	6-21	35-45	1.30-1.50	0.06-0.2	0.10-0.18	4.5-5.0	High---------	0.20			
	21-43	35-50	1.35-1.50	0.06-0.2	0.10-0.18	4.5-5.0	High---------	0.20			
	43-66	45-60	1.40-1.50	0.06-0.2	0.10-0.15	4.5-5.0	High---------	0.24			
Yorel-----------	0-6	18-25	1.35-1.50	0.6-2.0	0.12-0.15	4.5-5.0	Low----------	0.17	2	7	3-5
	6-31	25-35	1.30-1.50	0.2-0.6	0.10-0.14	4.5-5.0	Moderate-----	0.24			
	31-41	---	---	---	---	---	-------------	----			

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors Kw	Erosion factors T	Wind erodi-bility group	Organic matter
	In	*Pct*	*G/cc*	*In/hr*	*In/in*	*pH*					*Pct*
279E:											
Zalea-----------	0-8	18-25	1.35-1.50	0.6-2.0	0.11-0.15	4.5-5.0	Low----------	0.17	2	7	3-6
	8-34	30-35	1.30-1.50	0.2-0.6	0.12-0.16	4.5-5.0	Moderate-----	0.20			
	34-44	---	---	---	---	---	-------------	----			
Yorel-----------	0-6	18-25	1.35-1.50	0.6-2.0	0.12-0.15	4.5-5.0	Low----------	0.17	2	7	3-5
	6-31	25-35	1.30-1.50	0.2-0.6	0.10-0.14	4.5-5.0	Moderate-----	0.24			
	31-41	---	---	---	---	---	-------------	----			
Rock outcrop----	0-60	---	---	---	---	---	-------------	----			

Table 17.--Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
1B, 1D------------------ Abegg	B	None------------	---	---	>6.0	---	---
2F:							
Acker------------------	B	None------------	---	---	>6.0	---	---
Norling----------------	C	None------------	---	---	>6.0	---	---
3E, 4F:							
Agness-----------------	B	None------------	---	---	>6.0	---	---
Sixes------------------	B	None------------	---	---	>6.0	---	---
Goldbeach--------------	C	None------------	---	---	>6.0	---	---
5F:							
Althouse---------------	B	None------------	---	---	>6.0	---	---
Jayar------------------	B	None------------	---	---	>6.0	---	---
Skymor-----------------	C	None------------	---	---	>6.0	---	---
6F:							
Althouse---------------	B	None------------	---	---	>6.0	---	---
Jayar------------------	B	None------------	---	---	>6.0	---	---
Woodseye---------------	D	None------------	---	---	>6.0	---	---
7D:							
Aquic Haplohumults-----	D	None------------	---	---	1.5-2.0	Apparent	Oct-Jun
Cryaquepts-------------	D	None------------	---	---	+.5-0.5	Apparent	Oct-Jun
8E, 9F, 9G:							
Atring-----------------	B	None------------	---	---	>6.0	---	---
Kanid------------------	B	None------------	---	---	>6.0	---	---
Vermisa----------------	D	None------------	---	---	>6.0	---	---
10F, 11F:							
Atring-----------------	B	None------------	---	---	>6.0	---	---
Rock outcrop-----------	D	None------------	---	---	>6.0	---	---
Kanid------------------	B	None------------	---	---	>6.0	---	---
12G:							
Atring-----------------	B	None------------	---	---	>6.0	---	---
Rock outcrop-----------	D	None------------	---	---	>6.0	---	---
Vermisa----------------	D	None------------	---	---	>6.0	---	---
13G:							
Atring-----------------	B	None------------	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
13G:							
Vermisa	D	None	---	---	>6.0	---	---
14G:							
Atring	B	None	---	---	>6.0	---	---
Vermisa	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
15A:							
Bagness	B	Occasional	Brief	Nov-Apr	>6.0	---	---
Pistolriver	B	Occasional	Brief	Nov-Apr	1.0-2.0	Apparent	Nov-Apr
16E, 17E:							
Barkshanty	B	None	---	---	>6.0	---	---
Nailkeg	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
18A Bayside	D	Occasional	Brief	Nov-Apr	0-0.5	Apparent	Nov-Apr
19 Beaches	D	Frequent	Very brief	Jan-Dec	0-6.0	Apparent	Jan-Dec
20E:							
Bearcamp	B	None	---	---	>6.0	---	---
Brandypeak	B	None	---	---	>6.0	---	---
21F:							
Bearcamp	B	None	---	---	>6.0	---	---
Brandypeak	B	None	---	---	>6.0	---	---
Woodseye	D	None	---	---	>6.0	---	---
22F:							
Beekman	C	None	---	---	>6.0	---	---
Colestine	C	None	---	---	>6.0	---	---
Orthents	A/D	None	---	---	>6.0	---	---
23G:							
Beekman	C	None	---	---	>6.0	---	---
Orthents	A/D	None	---	---	>6.0	---	---
Colestine	C	None	---	---	>6.0	---	---
24G:							
Beekman	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Vermisa	D	None	---	---	>6.0	---	---
25G:							
Beekman	C	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
25G:							
Vermisa	D	None	---	---	>6.0	---	---
26A	B	Frequent	Brief	Dec-Apr	>6.0	---	---
Bigriver							
27F, 27G, 28F, 28G:							
Bobsgarden	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
Euchrand	D	None	---	---	>6.0	---	---
29F, 29G, 30F, 31F:							
Bobsgarden	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
32E, 33E:							
Bobsgarden	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
Yorel	B	None	---	---	>6.0	---	---
34E:							
Bobsgarden	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
35G:							
Brandypeak	B	None	---	---	>6.0	---	---
Bearcamp	B	None	---	---	>6.0	---	---
Woodseye	D	None	---	---	>6.0	---	---
36F:							
Brandypeak	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Bearcamp	B	None	---	---	>6.0	---	---
37A	D	Frequent	Brief	Dec-Apr	+.5-1.0	Apparent	Dec-Apr
Brenner							
38B, 38D:							
Bullards	B	None	---	---	>6.0	---	---
Bandon	C	None	---	---	>6.0	---	---
Wadecreek	C	None	---	---	2.0-3.0	Perched	Nov-May
39D:							
Bullards	B	None	---	---	>6.0	---	---
Ferrelo	B	None	---	---	>6.0	---	---
Hebo	D	None	---	---	+.5-1.0	Perched	Nov-Jun

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
40E, 41F, 42F:							
Bullgulch	C	None	---	---	>6.0	---	---
Hunterscove	C	None	---	---	>6.0	---	---
43D:							
Burnthill	B	None	---	---	>6.0	---	---
Cashner	C	None	---	---	0.5-1.5	Perched	Nov-Apr
44E Burnthill	B	None	---	---	>6.0	---	---
45F, 46G:							
Calfranch	B	None	---	---	>6.0	---	---
Capeblanco	B	None	---	---	>6.0	---	---
Watches	B	None	---	---	>6.0	---	---
47F:							
Calfranch	B	None	---	---	>6.0	---	---
Watches	B	None	---	---	>6.0	---	---
Capeblanco	B	None	---	---	>6.0	---	---
48G:							
Capeblanco	B	None	---	---	>6.0	---	---
Calfranch	B	None	---	---	>6.0	---	---
Watches	B	None	---	---	>6.0	---	---
49F:							
Carpenterville	D	None	---	---	1.5-3.0	Apparent	Nov-Apr
Houstenader	D	None	---	---	1.0-4.0	Apparent	Nov-Apr
Huntley	D	None	---	---	>6.0	---	---
50G, 51G:							
Cassiday	C	None	---	---	>6.0	---	---
Grouslous	D	None	---	---	>6.0	---	---
Bravo	B	None	---	---	>6.0	---	---
52G:							
Cedarcamp	B	None	---	---	>6.0	---	---
Flycatcher	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
53F, 54F:							
Cedarcamp	B	None	---	---	>6.0	---	---
Snowcamp	B	None	---	---	>6.0	---	---
Flycatcher	C	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
55F, 56F:							
Cedarcamp	B	None	---	---	>6.0	---	---
Snowcamp	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
57A Central Point	B	None	---	---	>6.0	---	---
58A Chetco	D	Frequent	Long	Oct-May	0-1.5	Apparent	Oct-May
59A, 59C:							
Chismore	D	None	---	---	1.5-2.5	Apparent	Nov-Mar
Pyburn	D	None	---	---	0-0.5	Apparent	Oct-May
60B Chitwood	D	None	---	---	1.0-3.0	Apparent	Nov-May
61A Clawson	D	None	---	---	1.0-3.0	Apparent	Nov-Jun
62F:							
Colepoint	B	None	---	---	>6.0	---	---
Bravo	B	None	---	---	>6.0	---	---
Cassiday	C	None	---	---	>6.0	---	---
63E, 64F:							
Colepoint	B	None	---	---	>6.0	---	---
Nailkeg	B	None	---	---	>6.0	---	---
65A Crofland	C	None	---	---	1.5-3.0	Apparent	Dec-Apr
66D, 66E, 67F, 68F:							
Crutchfield	B	None	---	---	>6.0	---	---
Colepoint	B	None	---	---	>6.0	---	---
69D, 69E Cunniff	C	None	---	---	>6.0	---	---
70D:							
Cunniff	C	None	---	---	>6.0	---	---
Joeney	D	None	---	---	0-1.5	Perched	Nov-Mar
71F, 72F, 73F:							
Deadline	B	None	---	---	>6.0	---	---
Barkshanty	B	None	---	---	>6.0	---	---
Nailkeg	B	None	---	---	>6.0	---	---
74F:							
Deadline	B	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
74F:							
Barkshanty	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
75E, 76E:							
Deadline	B	None	---	---	>6.0	---	---
Irma	B	None	---	---	>6.0	---	---
Nailkeg	B	None	---	---	>6.0	---	---
77G, 78G, 79G:							
Deadline	B	None	---	---	>6.0	---	---
Nailkeg	B	None	---	---	>6.0	---	---
80F, 81G, 82G:							
Deadline	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Nailkeg	B	None	---	---	>6.0	---	---
83E:							
Desons	C	None	---	---	>6.0	---	---
Watches	B	None	---	---	>6.0	---	---
Calfranch	B	None	---	---	>6.0	---	---
84G, 85F, 86G:							
Digger	C	None	---	---	>6.0	---	---
Preacher	B	None	---	---	>6.0	---	---
Bohannon	C	None	---	---	>6.0	---	---
87F:							
Digger	C	None	---	---	>6.0	---	---
Remote	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
88F:							
Digger	C	None	---	---	>6.0	---	---
Remote	B	None	---	---	>6.0	---	---
Umpcoos	D	None	---	---	>6.0	---	---
89E, 90E:							
Digger	C	None	---	---	>6.0	---	---
Remote	B	None	---	---	>6.0	---	---
91F, 91G:							
Digger	C	None	---	---	>6.0	---	---
Umpcoos	D	None	---	---	>6.0	---	---
Dystrochrepts	B	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
92G, 93G:							
Digger	C	None	---	---	>6.0	---	---
Umpcoos	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
94F:							
Dubakella	C	None	---	---	>6.0	---	---
Cornutt	C	None	---	---	>6.0	---	---
Pearsoll	D	None	---	---	>6.0	---	---
95G, 96G:							
Dulandy	B	None	---	---	>6.0	---	---
Bosland	C	None	---	---	>6.0	---	---
Floras	C	None	---	---	>6.0	---	---
97E:							
Dulandy	B	None	---	---	>6.0	---	---
Guerin	D	None	---	---	>6.0	---	---
Bosland	C	None	---	---	>6.0	---	---
98G:							
Dulandy	B	None	---	---	>6.0	---	---
Guerin	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
99E:							
Dumont	D	None	---	---	>6.0	---	---
Acker	B	None	---	---	>6.0	---	---
Kanid	B	None	---	---	>6.0	---	---
100G:							
Dystrochrepts	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Rubble land	A	None	---	---	>6.0	---	---
101F:							
Dystrochrepts	B	None	---	---	>6.0	---	---
Rubble land	A	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
102D, 102E, 103D, 103E:							
Edson	C	None	---	---	>6.0	---	---
Barkshanty	B	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
104E, 105F:							
Eightlar	D	None	---	---	>6.0	---	---
Gravecreek	C	None	---	---	>6.0	---	---
Pearsoll	D	None	---	---	>6.0	---	---
106B:							
Eilertsen	B	None	---	---	>6.0	---	---
Zyzzug	D	Rare	---	---	0-1.5	Apparent	Nov-Apr
107C Ekoms	B	None	---	---	>6.0	---	---
108F, 109F:							
Etelka	C	None	---	---	2.0-3.0	Perched	Dec-Mar
Remote	B	None	---	---	>6.0	---	---
Whobrey	C	None	---	---	1.5-2.5	Perched	Dec-Mar
110D, 110E:							
Etelka	C	None	---	---	2.0-3.0	Perched	Dec-Mar
Whobrey	C	None	---	---	1.5-2.5	Perched	Dec-Mar
Remote	B	None	---	---	>6.0	---	---
111A Ettersburg	B	Rare	---	---	>6.0	---	---
112A Evans	B	Occasional	Brief	Dec-Mar	>6.0	---	---
113F, 113G, 114G:							
Fantz	B	None	---	---	>6.0	---	---
Knapke	B	None	---	---	>6.0	---	---
115F:							
Ferrelo	B	None	---	---	>6.0	---	---
Bullards	B	None	---	---	>6.0	---	---
116D, 116E:							
Ferrelo	B	None	---	---	>6.0	---	---
Gearhart	A	None	---	---	>6.0	---	---
117F, 118F:							
Floras	C	None	---	---	>6.0	---	---
Bosland	C	None	---	---	>6.0	---	---
Dulandy	B	None	---	---	>6.0	---	---
119A:							
Foehlin	B	None	---	---	>6.0	---	---
Cove	D	Rare	---	---	0-1.0	Perched	Dec-Jun

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
120E, 121E-------------- Frankport	A	None------------	---	---	>6.0	---	---
122F, 123F:							
Fritsland--------------	B	None------------	---	---	>6.0	---	---
Bravo------------------	B	None------------	---	---	>6.0	---	---
Cassiday---------------	C	None------------	---	---	>6.0	---	---
124E, 125F, 125G:							
Gamelake---------------	B	None------------	---	---	>6.0	---	---
Tincup-----------------	B	None------------	---	---	>6.0	---	---
126A-------------------- Gauldy	B	Occasional------	Brief---------	Nov-Apr	>6.0	---	---
127A:							
Gauldy-----------------	B	Occasional------	Brief---------	Nov-Apr	>6.0	---	---
Willanch---------------	D	Frequent--------	Brief---------	Nov-Mar	+.5-0.5	Apparent	Nov-Mar
128A-------------------- Gleneden	D	None------------	---	---	1.5-2.0	Perched	Dec-Apr
129E, 130F-------------- Grassyknob	B	None------------	---	---	>6.0	---	---
131G, 132F:							
Gravecreek-------------	C	None------------	---	---	>6.0	---	---
Eightlar---------------	D	None------------	---	---	>6.0	---	---
Pearsoll---------------	D	None------------	---	---	>6.0	---	---
133G:							
Gravecreek-------------	C	None------------	---	---	>6.0	---	---
Pearsoll---------------	D	None------------	---	---	>6.0	---	---
Eightlar---------------	D	None------------	---	---	>6.0	---	---
134E, 135F:							
Greggo-----------------	D	None------------	---	---	>6.0	---	---
Mislatnah--------------	B	None------------	---	---	>6.0	---	---
Rock outcrop-----------	D	None------------	---	---	>6.0	---	---
136G, 137G:							
Greggo-----------------	D	None------------	---	---	>6.0	---	---
Rock outcrop-----------	D	None------------	---	---	>6.0	---	---
Mislatnah--------------	B	None------------	---	---	>6.0	---	---
138B:							
Grindbrook-------------	C	None------------	---	---	2.0-3.0	Perched	Nov-May
Wadecreek--------------	C	None------------	---	---	2.0-3.0	Perched	Nov-May

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
139G:							
Grouslous	D	None	---	---	>6.0	---	---
Cassiday	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
140F:							
Haplumbrepts	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Cryaquepts	D	None	---	---	+.5-0.5	Apparent	Oct-Jun
141G:							
Haplumbrepts	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Rubble land	A	None	---	---	>6.0	---	---
142E:							
Hazelcamp	B	None	---	---	>6.0	---	---
Averlande	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
143B Hebo	D	None	---	---	+.5-1.0	Perched	Nov-Jun
144A Heceta	D	None	---	---	+1-2.0	Apparent	Oct-May
145E, 146F, 147E:							
Honeygrove	B	None	---	---	>6.0	---	---
Shivigny	B	None	---	---	>6.0	---	---
148D, 148E:							
Hooskanaden	D	None	---	---	1.0-2.5	Apparent	Nov-Apr
Loneranch	B	None	---	---	2.0-2.5	Apparent	Nov-Apr
Millicoma	C	None	---	---	>6.0	---	---
149E, 150F:							
Hooskanaden	D	None	---	---	1.0-2.5	Apparent	Nov-Apr
Loneranch	B	None	---	---	2.0-2.5	Apparent	Nov-Apr
Reinhart	D	None	---	---	>6.0	---	---
151D, 151E Horseprairie	B	None	---	---	>6.0	---	---
152E:							
Houstenader	D	None	---	---	1.0-4.0	Apparent	Nov-Apr
Carpenterville	D	None	---	---	1.5-3.0	Apparent	Nov-Apr
Huntley	D	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
153A-------------------- Huffling	D	None------------	---	---	+.5-1.5	Perched	Dec-Apr
154G:							
Jayar------------------	B	None------------	---	---	>6.0	---	---
Althouse---------------	B	None------------	---	---	>6.0	---	---
Woodseye---------------	D	None------------	---	---	>6.0	---	---
155F:							
Jayar------------------	B	None------------	---	---	>6.0	---	---
Rock outcrop-----------	D	None------------	---	---	>6.0	---	---
Althouse---------------	B	None------------	---	---	>6.0	---	---
156G:							
Jayar------------------	B	None------------	---	---	>6.0	---	---
Skymor-----------------	C	None------------	---	---	>6.0	---	---
Althouse---------------	B	None------------	---	---	>6.0	---	---
157E:							
Josephine--------------	B	None------------	---	---	>6.0	---	---
Pollard----------------	B	None------------	---	---	>6.0	---	---
Speaker----------------	B	None------------	---	---	>6.0	---	---
158F, 159F:							
Kanid------------------	B	None------------	---	---	>6.0	---	---
Acker------------------	B	None------------	---	---	>6.0	---	---
Atring-----------------	B	None------------	---	---	>6.0	---	---
160F, 160G:							
Kanid------------------	B	None------------	---	---	>6.0	---	---
Atring-----------------	B	None------------	---	---	>6.0	---	---
161A:							
Kirkendall-------------	C	Occasional------	Brief---------	Nov-Apr	3.5-4.0	Apparent	Nov-Apr
Quosatana--------------	D	Frequent--------	Brief---------	Nov-Apr	0-0.5	Apparent	Nov-Apr
162A, 162B-------------- Klooqueh	B	None------------	---	---	>6.0	---	---
163F:							
Knapke-----------------	B	None------------	---	---	>6.0	---	---
Fantz------------------	B	None------------	---	---	>6.0	---	---
164A-------------------- Langlois	D	Frequent--------	Long----------	Nov-Mar	+.5-0.5	Apparent	Nov-May
165D, 165E:							
Loeb-------------------	C	None------------	---	---	>6.0	---	---
Macklyn----------------	C	None------------	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
166E:							
Loeb	C	None	---	---	>6.0	---	---
Macklyn	C	None	---	---	>6.0	---	---
Vondergreen	C	None	---	---	1.0-3.0	Perched	Nov-May
167A Logsden	B	Rare	---	---	>6.0	---	---
168A:							
Logsden	B	Rare	---	---	>6.0	---	---
Euchre	C	None	---	---	1.0-3.0	Apparent	Nov-May
169F:							
Loneranch	B	None	---	---	2.0-2.5	Apparent	Nov-Apr
Hooskanaden	D	None	---	---	1.0-2.5	Apparent	Nov-Apr
Millicoma	C	None	---	---	>6.0	---	---
170F:							
Loneranch	B	None	---	---	2.0-2.5	Apparent	Nov-Apr
Hooskanaden	D	None	---	---	1.0-2.5	Apparent	Nov-Apr
Reinhart	D	None	---	---	>6.0	---	---
171B:							
McCurdy	C	None	---	---	2.0-3.0	Apparent	Nov-Apr
Wintley	B	None	---	---	>6.0	---	---
172C Meda	B	None	---	---	>6.0	---	---
173F, 174F:							
Milbury	C	None	---	---	>6.0	---	---
Remote	B	None	---	---	>6.0	---	---
Umpcoos	D	None	---	---	>6.0	---	---
175F, 175G, 176F, 176G:							
Milbury	C	None	---	---	>6.0	---	---
Umpcoos	D	None	---	---	>6.0	---	---
Dystrochrepts	B	None	---	---	>6.0	---	---
177G:							
Milbury	C	None	---	---	>6.0	---	---
Umpcoos	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
178F, 178G, 179G:							
Millicoma	C	None	---	---	>6.0	---	---
Whaleshead	B	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
178F, 178G, 179G:							
Reedsport	C	None	---	---	>6.0	---	---
180F:							
Mislatnah	B	None	---	---	>6.0	---	---
Greggo	D	None	---	---	>6.0	---	---
Redflat	B	None	---	---	>6.0	---	---
181F:							
Mislatnah	B	None	---	---	>6.0	---	---
Greggo	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
182F:							
Mislatnah	B	None	---	---	>6.0	---	---
Redflat	B	None	---	---	>6.0	---	---
Greggo	D	None	---	---	>6.0	---	---
183A Nehalem	B	Rare	---	---	>6.0	---	---
184B:							
Nelscott	C	None	---	---	2.0-3.5	Perched	Nov-Mar
Depoe	D	None	---	---	+.5-2.0	Perched	Oct-May
Bullards	B	None	---	---	>6.0	---	---
185A Nestucca	D	Frequent	Brief	Nov-Apr	1.0-1.5	Apparent	Dec-Apr
186D, 186E:							
Orford	B	None	---	---	>6.0	---	---
McDuff	C	None	---	---	>6.0	---	---
187B Orthents	A/D	None	---	---	>6.0	---	---
188G, 189G:							
Pearsoll	D	None	---	---	>6.0	---	---
Gravecreek	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
190F:							
Pearsoll	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Gravecreek	C	None	---	---	>6.0	---	---
191E, 192F:							
Pearsoll	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
193E, 194F, 194G, 195F, 195G:							
Perdin----------------	C	None------------	---	---	>6.0	---	---
Rock outcrop----------	D	None------------	---	---	>6.0	---	---
196C, 196D-------------- Pollard	B	None------------	---	---	>6.0	---	---
197E:							
Pollard----------------	B	None------------	---	---	>6.0	---	---
Josephine--------------	B	None------------	---	---	>6.0	---	---
Shastacosta------------	C	None------------	---	---	>6.0	---	---
198E:							
Preacher---------------	B	None------------	---	---	>6.0	---	---
Blachly----------------	B	None------------	---	---	>6.0	---	---
199E:							
Preacher---------------	B	None------------	---	---	>6.0	---	---
Blachly----------------	B	None------------	---	---	>6.0	---	---
Digger-----------------	C	None------------	---	---	>6.0	---	---
200F, 201F:							
Preacher---------------	B	None------------	---	---	>6.0	---	---
Digger-----------------	C	None------------	---	---	>6.0	---	---
Bohannon---------------	C	None------------	---	---	>6.0	---	---
202D:							
Pyrady-----------------	C	None------------	---	---	2.0-2.5	Apparent	Oct-Jun
Zalea------------------	B	None------------	---	---	>6.0	---	---
Yorel------------------	B	None------------	---	---	>6.0	---	---
203B-------------------- Quillamook	B	None------------	---	---	>6.0	---	---
204E:							
Redflat----------------	B	None------------	---	---	>6.0	---	---
Mislatnah--------------	B	None------------	---	---	>6.0	---	---
Greggo-----------------	D	None------------	---	---	>6.0	---	---
205F:							
Reedsport--------------	C	None------------	---	---	>6.0	---	---
Whaleshead-------------	B	None------------	---	---	>6.0	---	---
206G:							
Reedsport--------------	C	None------------	---	---	>6.0	---	---
Whaleshead-------------	B	None------------	---	---	>6.0	---	---
Rock outcrop-----------	D	None------------	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
207E, 208F:							
Remote	B	None	---	---	>6.0	---	---
Digger	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
209F:							
Remote	B	None	---	---	>6.0	---	---
Whobrey	C	None	---	---	1.5-2.5	Perched	Dec-Mar
Rock outcrop	D	None	---	---	>6.0	---	---
210G, 211G:							
Rilea	B	None	---	---	>6.0	---	---
Euchrand	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
212G, 213G:							
Rilea	B	None	---	---	>6.0	---	---
Stackyards	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
214 Riverwash	D	Frequent	Long to very long.	Oct-Jul	0-2.0	Apparent	Jan-Dec
215G, 216G:							
Rock outcrop	D	None	---	---	>6.0	---	---
Grouslous	D	None	---	---	>6.0	---	---
Cassiday	C	None	---	---	>6.0	---	---
217:							
Rock outcrop	D	None	---	---	>6.0	---	---
Orthents	A/D	None	---	---	>6.0	---	---
218E, 219F, 220F Rogue	B	None	---	---	>6.0	---	---
221B, 221D:							
Ruch	B	None	---	---	>6.0	---	---
Selmac	D	None	---	---	1.5-3.0	Perched	Dec-May
222F:							
Rustybutte	B	None	---	---	>6.0	---	---
Sebastian	D	None	---	---	>6.0	---	---
223F:							
Rustybutte	B	None	---	---	>6.0	---	---
Sebastian	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
224E, 225D, 225E:							
Saddlepeak	B	None	---	---	>6.0	---	---
Threetrees	B	None	---	---	>6.0	---	---
226E:							
Saddlepeak	B	None	---	---	>6.0	---	---
Threetrees	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
227F, 228F:							
Saddlepeak	B	None	---	---	>6.0	---	---
Threetrees	B	None	---	---	>6.0	---	---
Scalerock	C	None	---	---	>6.0	---	---
229E:							
Sebastian	D	None	---	---	>6.0	---	---
Rustybutte	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
230E:							
Serpentano	B	None	---	---	>6.0	---	---
Mislatnah	B	None	---	---	>6.0	---	---
231F, 232F:							
Serpentano	B	None	---	---	>6.0	---	---
Mislatnah	B	None	---	---	>6.0	---	---
Greggo	D	None	---	---	>6.0	---	---
233F:							
Shastacosta	C	None	---	---	>6.0	---	---
Pollard	B	None	---	---	>6.0	---	---
Beekman	C	None	---	---	>6.0	---	---
234F:							
Shivigny	B	None	---	---	>6.0	---	---
Honeygrove	B	None	---	---	>6.0	---	---
235F, 236F:							
Sitkum	B	None	---	---	>6.0	---	---
Steinmetz	B	None	---	---	>6.0	---	---
237E:							
Skookumhouse	B	None	---	---	>6.0	---	---
Hazelcamp	B	None	---	---	>6.0	---	---
238D, 238E:							
Skookumhouse	B	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months
					Ft		
238D, 238E:							
Hazelcamp	B	None	---	---	>6.0	---	---
Averlande	D	None	---	---	>6.0	---	---
239G:							
Skymor	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Jayar	B	None	---	---	>6.0	---	---
240E:							
Snowcamp	B	None	---	---	>6.0	---	---
Cedarcamp	B	None	---	---	>6.0	---	---
Flycatcher	C	None	---	---	>6.0	---	---
241E:							
Snowcamp	B	None	---	---	>6.0	---	---
Cedarcamp	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
242G:							
Snowcamp	B	None	---	---	>6.0	---	---
Flycatcher	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
243F:							
Speaker	B	None	---	---	>6.0	---	---
Josephine	B	None	---	---	>6.0	---	---
Beekman	C	None	---	---	>6.0	---	---
244G, 245G:							
Stackyards	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
Euchrand	D	None	---	---	>6.0	---	---
246F, 246G, 247F, 247G, 248F, 249F:							
Stackyards	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
250F, 251F:							
Stackyards	B	None	---	---	>6.0	---	---
Rilea	B	None	---	---	>6.0	---	---
Yorel	B	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
252G, 253G:							
Steinmetz	B	None	---	---	>6.0	---	---
Sitkum	B	None	---	---	>6.0	---	---
254D, 254E:							
Svensen	B	None	---	---	>6.0	---	---
Reedsport	C	None	---	---	>6.0	---	---
255E, 256F:							
Swedeheaven	B	None	---	---	>6.0	---	---
Quailprairie	C	None	---	---	4.0-4.5	Apparent	Oct-Jun
Sankey	C	None	---	---	>6.0	---	---
257A Takilma	B	None	---	---	>6.0	---	---
258E, 259F Templeton	B	None	---	---	>6.0	---	---
260F, 261G, 262F, 262G, 263G:							
Threetrees	B	None	---	---	>6.0	---	---
Saddlepeak	B	None	---	---	>6.0	---	---
Scalerock	C	None	---	---	>6.0	---	---
264F:							
Threetrees	B	None	---	---	>6.0	---	---
Scalerock	C	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
265F, 265G:							
Tolfork	B	None	---	---	>6.0	---	---
Tincup	B	None	---	---	>6.0	---	---
266 Urban land	---	None	---	---	>2.0	---	---
267F:							
Vermisa	D	None	---	---	>6.0	---	---
Beekman	C	None	---	---	>6.0	---	---
Colestine	C	None	---	---	>6.0	---	---
268D:							
Waldport	A	None	---	---	>6.0	---	---
Dune land	A	None	---	---	>6.0	---	---
269D:							
Waldport	A	None	---	---	>6.0	---	---
Dune land	A	None	---	---	>6.0	---	---

Table 17.--Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
269D:							
Heceta	D	None	---	---	+1-2.0	Apparent	Oct-May
270E, 271F, 271G:							
Wedderburn	B	None	---	---	>6.0	---	---
Zwagg	B	None	---	---	>6.0	---	---
272F, 272G:							
Whaleshead	B	None	---	---	>6.0	---	---
Reedsport	C	None	---	---	>6.0	---	---
273F:							
Whaleshead	B	None	---	---	>6.0	---	---
Reedsport	C	None	---	---	>6.0	---	---
Millicoma	C	None	---	---	>6.0	---	---
274A, 274D, 274E Winchuck	C	None	---	---	>6.0	---	---
275G:							
Woodseye	D	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---
Brandypeak	B	None	---	---	>6.0	---	---
276A Yachats	B	Frequent	Brief	Nov-Apr	4.0-6.0	Apparent	Nov-Apr
277A Yaquina	D	None	---	---	+.5-2.0	Apparent	Nov-Apr
278E:							
Zalea	B	None	---	---	>6.0	---	---
Pyrady	C	None	---	---	2.0-2.5	Apparent	Oct-Jun
Yorel	B	None	---	---	>6.0	---	---
279E:							
Zalea	B	None	---	---	>6.0	---	---
Yorel	B	None	---	---	>6.0	---	---
Rock outcrop	D	None	---	---	>6.0	---	---

Table 18.--Soil Features

(The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
1B, 1D: Abegg	>60	---	---	---	Low	Moderate	Moderate.
2F:							
Acker	>60	---	---	---	Low	High	High.
Norling	20-40	Soft	---	---	Low	High	High.
3E, 4F:							
Agness	>60	---	---	---	Low	High	High.
Sixes	20-40	Hard	---	---	Low	High	High.
Goldbeach	10-20	Hard	---	---	Low	High	High.
5F:							
Althouse	40-60	Soft	---	---	Moderate	Moderate	Moderate.
Jayar	20-40	Hard	---	---	Moderate	Moderate	Moderate.
Skymor	10-20	Hard	---	---	Moderate	Moderate	Moderate.
6F:							
Althouse	40-60	Soft	---	---	Moderate	Moderate	Moderate.
Jayar	20-40	Hard	---	---	Moderate	Moderate	Moderate.
Woodseye	10-20	Hard	---	---	Moderate	Moderate	Moderate.
7D:							
Aquic Haplohumults	20-80	Soft	---	---	Moderate	Moderate	Moderate.
Cryaquepts	20-80	Soft	---	---	High	Moderate	Moderate.
8E, 9F, 9G:							
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
Kanid	40-60	Soft	---	---	Low	Moderate	Moderate.
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.
10F, 11F:							
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Kanid	40-60	Soft	---	---	Low	Moderate	Moderate.
12G:							
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.
13G:							
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		In				
14G:							
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
15A:							
Bagness	>60	---	---	---	Low	Moderate	Moderate.
Pistolriver	>60	---	---	---	Low	Moderate	Moderate.
16E, 17E:							
Barkshanty	>60	---	---	---	Low	Moderate	Moderate.
Nailkeg	20-40	Hard	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
18A Bayside	>60	---	---	---	Low	Moderate	Moderate.
19 Beaches	>60	---	---	---	Low	High	High.
20E:							
Bearcamp	40-60	Hard	---	---	Moderate	High	High.
Brandypeak	20-40	Hard	---	---	Moderate	High	High.
21F:							
Bearcamp	40-60	Hard	---	---	Moderate	High	High.
Brandypeak	20-40	Hard	---	---	Moderate	High	High.
Woodseye	10-20	Hard	---	---	Moderate	Moderate	Moderate.
22F:							
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
Colestine	20-40	Hard	---	---	Low	Moderate	Moderate.
Orthents	5-80	Hard	---	---	Low	High	High.
23G:							
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
Orthents	5-80	Hard	---	---	Low	High	High.
Colestine	20-40	Hard	---	---	Low	Moderate	Moderate.
24G:							
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.
25G:							
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
26A-Bigriver	>60	---	---	---	Low	Moderate	Moderate.
27F, 27G, 28F, 28G:							
Bobsgarden	>60	---	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
Euchrand	10-20	Hard	---	---	Moderate	High	High.
29F, 29G, 30F, 31F:							
Bobsgarden	>60	---	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
32E, 33E:							
Bobsgarden	>60	---	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
Yorel	20-40	Hard	---	---	Moderate	High	High.
34E:							
Bobsgarden	>60	---	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
35G:							
Brandypeak	20-40	Hard	---	---	Moderate	High	High.
Bearcamp	40-60	Hard	---	---	Moderate	High	High.
Woodseye	10-20	Hard	---	---	Moderate	Moderate	Moderate.
36F:							
Brandypeak	20-40	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
Bearcamp	40-60	Hard	---	---	Moderate	High	High.
37A-Brenner	>60	---	---	---	Low	High	High.
38B, 38D:							
Bullards	>60	---	---	---	Low	High	High.
Bandon	>60	---	20-36	Thin	Low	High	High.
Wadecreek	>60	---	---	---	Low	High	High.
39D:							
Bullards	>60	---	---	---	Low	High	High.
Ferrelo	>60	---	---	---	Low	Low	Moderate.
Hebo	>60	---	---	---	Low	High	High.
40E, 41F, 42F:							
Bullgulch	>60	---	---	---	Low	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
40E, 41F, 42F:							
Hunterscove	20-40	Soft	---	---	Low	High	High.
43D:							
Burnthill	>60	---	---	---	Low	High	High.
Cashner	>60	---	20-30	Thick	Low	High	High.
44E Burnthill	>60	---	---	---	Low	High	High.
45F, 46G:							
Calfranch	>60	---	---	---	Low	High	High.
Capeblanco	20-40	Hard	---	---	Low	High	High.
Watches	>60	---	---	---	Low	High	High.
47F:							
Calfranch	>60	---	---	---	Low	High	High.
Watches	>60	---	---	---	Low	High	High.
Capeblanco	20-40	Hard	---	---	Low	High	High.
48G:							
Capeblanco	20-40	Hard	---	---	Low	High	High.
Calfranch	>60	---	---	---	Low	High	High.
Watches	>60	---	---	---	Low	High	High.
49F:							
Carpenterville	20-40	Hard	---	---	Moderate	Moderate	Moderate.
Houstenader	>60	---	---	---	Moderate	Moderate	Moderate.
Huntley	10-20	Hard	---	---	Moderate	Moderate	Moderate.
50G, 51G:							
Cassiday	20-40	Hard	---	---	Low	High	High.
Grouslous	10-20	Hard	---	---	Low	High	High.
Bravo	20-40	Hard	---	---	Low	High	High.
52G:							
Cedarcamp	>60	---	---	---	Moderate	Moderate	Low.
Flycatcher	10-20	Hard	---	---	Moderate	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
53F, 54F:							
Cedarcamp	>60	---	---	---	Moderate	Moderate	Low.
Snowcamp	20-40	Hard	---	---	Moderate	Moderate	Low.
Flycatcher	10-20	Hard	---	---	Moderate	Moderate	Low.
55F, 56F:							
Cedarcamp	>60	---	---	---	Moderate	Moderate	Low.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
55F, 56F:							
Snowcamp	20-40	Hard	---	---	Moderate	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
57A Central Point	>60	---	---	---	Low	Moderate	Low.
58A Chetco	>60	---	---	---	Low	High	Moderate.
59A, 59C:							
Chismore	>60	---	---	---	Low	High	High.
Pyburn	>60	---	---	---	Low	High	High.
60B Chitwood	>60	---	---	---	Low	High	High.
61A Clawson	>60	---	---	---	Low	Moderate	Low.
62F:							
Colepoint	40-60	Hard	---	---	Low	High	High.
Bravo	20-40	Hard	---	---	Low	High	High.
Cassiday	20-40	Hard	---	---	Low	High	High.
63E, 64F:							
Colepoint	40-60	Hard	---	---	Low	High	High.
Nailkeg	20-40	Hard	---	---	Low	Moderate	Moderate.
65A Crofland	>60	---	---	---	Low	High	High.
66D, 66E, 67F, 68F:							
Crutchfield	20-40	Hard	---	---	Low	High	High.
Colepoint	40-60	Hard	---	---	Low	High	High.
69D, 69E Cunniff	>60	---	---	---	Low	High	High.
70D:							
Cunniff	>60	---	---	---	Low	High	High.
Joeney	>60	---	10-18	Thin	Low	High	High.
71F, 72F, 73F:							
Deadline	40-60	Hard	---	---	Low	Moderate	Moderate.
Barkshanty	>60	---	---	---	Low	Moderate	Moderate.
Nailkeg	20-40	Hard	---	---	Low	Moderate	Moderate.
74F:							
Deadline	40-60	Hard	---	---	Low	Moderate	Moderate.
Barkshanty	>60	---	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
75E, 76E:							
Deadline	40-60	Hard	---	---	Low	Moderate	Moderate.
Irma	>60	---	---	---	Low	Moderate	Moderate.
Nailkeg	20-40	Hard	---	---	Low	Moderate	Moderate.
77G, 78G, 79G:							
Deadline	40-60	Hard	---	---	Low	Moderate	Moderate.
Nailkeg	20-40	Hard	---	---	Low	Moderate	Moderate.
80F, 81G, 82G:							
Deadline	40-60	Hard	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Nailkeg	20-40	Hard	---	---	Low	Moderate	Moderate.
83E:							
Desons	>60	---	---	---	Low	Moderate	Moderate.
Watches	>60	---	---	---	Low	High	High.
Calfranch	>60	---	---	---	Low	High	High.
84G, 85F, 86G:							
Digger	20-40	Soft	---	---	Low	High	High.
Preacher	>60	---	---	---	Low	High	High.
Bohannon	20-40	Soft	---	---	Low	High	High.
87F:							
Digger	20-40	Soft	---	---	Low	High	High.
Remote	>60	---	---	---	Low	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
88F:							
Digger	20-40	Soft	---	---	Low	High	High.
Remote	>60	---	---	---	Low	High	High.
Umpcoos	10-20	Hard	---	---	Low	High	High.
89E, 90E:							
Digger	20-40	Soft	---	---	Low	High	High.
Remote	>60	---	---	---	Low	High	High.
91F, 91G:							
Digger	20-40	Soft	---	---	Low	High	High.
Umpcoos	10-20	Hard	---	---	Low	High	High.
Dystrochrepts	20-80	Hard	---	---	Low	Moderate	Moderate.
92G, 93G:							
Digger	20-40	Soft	---	---	Low	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock: Depth	Bedrock: Hardness	Cemented pan: Depth	Cemented pan: Thickness	Potential frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In		In				
92G, 93G:							
Umpcoos	10-20	Hard	---	---	Low	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
94F:							
Dubakella	20-40	Hard	---	---	Low	Low	Moderate.
Cornutt	40-60	Soft	---	---	Low	Moderate	Low.
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
95G, 96G: -							
Dulandy	20-40	Hard	---	---	Low	Moderate	Moderate.
Bosland	20-40	Hard	---	---	Low	High	High.
Floras	40-60	Soft	---	---	Low	High	High.
97E:							
Dulandy	20-40	Hard	---	---	Low	Moderate	Moderate.
Guerin	10-20	Hard	---	---	Low	Moderate	Moderate.
Bosland	20-40	Hard	---	---	Low	High	High.
98G:							
Dulandy	20-40	Hard	---	---	Low	Moderate	Moderate.
Guerin	10-20	Hard	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
99E:							
Dumont	>60	---	---	---	Low	High	High.
Acker	>60	---	---	---	Low	High	High.
Kanid	40-60	Soft	---	---	Low	Moderate	Moderate.
100G:							
Dystrochrepts	20-80	Hard	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Rubble land	>40	Hard	---	---	---	---	---
101F:							
Dystrochrepts	20-80	Hard	---	---	Low	Moderate	Moderate.
Rubble land	>40	Hard	---	---	---	---	---
Rock outcrop	0	Hard	---	---	---	---	---
102D, 102E, 103D, 103E:							
Edson	>60	---	---	---	Low	Moderate	Moderate.
Barkshanty	>60	---	---	---	Low	Moderate	Moderate.
104E, 105F:							
Eightlar	>60	---	---	---	Low	Moderate	Low.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock: Depth	Bedrock: Hardness	Cemented pan: Depth	Cemented pan: Thickness	Potential frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In		In				
104E, 105F:							
Gravecreek	20-40	Hard	---	---	Low	Moderate	Low.
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
106B:							
Eilertsen	>60	---	---	---	Low	High	High.
Zyzzug	>60	---	---	---	Low	High	High.
107C Ekoms	>60	---	---	---	Low	Moderate	Moderate.
108F, 109F:							
Etelka	>60	---	---	---	Low	Moderate	Moderate.
Remote	>60	---	---	---	Low	High	High.
Whobrey	>60	---	---	---	Low	Moderate	Moderate.
110D, 110E:							
Etelka	>60	---	---	---	Low	Moderate	Moderate.
Whobrey	>60	---	---	---	Low	Moderate	Moderate.
Remote	>60	---	---	---	Low	High	High.
111A Ettersburg	>60	---	---	---	Low	Moderate	Moderate.
112A Evans	>60	---	---	---	Low	Moderate	Low.
113F, 113G, 114G:							
Fantz	20-40	Hard	---	---	Low	Moderate	Low.
Knapke	>60	---	---	---	Low	Moderate	Low.
115F:							
Ferrelo	>60	---	---	---	Low	Low	Moderate.
Bullards	>60	---	---	---	Low	High	High.
116D, 116E:							
Ferrelo	>60	---	---	---	Low	Low	Moderate.
Gearhart	>60	---	---	---	Low	High	High.
117F, 118F:							
Floras	40-60	Soft	---	---	Low	High	High.
Bosland	20-40	Hard	---	---	Low	High	High.
Dulandy	20-40	Hard	---	---	Low	Moderate	Moderate.
119A:							
Foehlin	>60	---	---	---	Low	Moderate	Low.
Cove	>60	---	---	---	Low	Moderate	Low.
120E, 121E Frankport	>60	---	---	---	Low	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
122F, 123F:							
Fritsland	40-60	Hard	---	---	Low	High	High.
Bravo	20-40	Hard	---	---	Low	High	High.
Cassiday	20-40	Hard	---	---	Low	High	High.
124E, 125F, 125G:							
Gamelake	>60	---	---	---	Moderate	High	High.
Tincup	20-40	Hard	---	---	Moderate	Moderate	Moderate.
126A Gauldy	>60	---	---	---	Low	Moderate	Moderate.
127A:							
Gauldy	>60	---	---	---	Low	Moderate	Moderate.
Willanch	>60	---	---	---	Low	Moderate	Moderate.
128A Gleneden	>60	---	---	---	Low	High	High.
129E, 130F Grassyknob	20-40	Hard	---	---	Low	High	Moderate.
131G, 132F:							
Gravecreek	20-40	Hard	---	---	Low	Moderate	Low.
Eightlar	>60	---	---	---	Low	Moderate	Low.
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
133G:							
Gravecreek	20-40	Hard	---	---	Low	Moderate	Low.
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
Eightlar	>60	---	---	---	Low	Moderate	Low.
134E, 135F:							
Greggo	10-20	Hard	---	---	Low	Moderate	Low.
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
136G, 137G:							
Greggo	10-20	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
138B:							
Grindbrook	>60	---	---	---	Low	High	High.
Wadecreek	>60	---	---	---	Low	High	High.
139G:							
Grouslous	10-20	Hard	---	---	Low	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
139G:							
Cassiday---------------	20-40	Hard	---	---	Low------------	High-----------	High.
Rock outcrop-----------	0	Hard	---	---	---	---	---
140F:							
Haplumbrepts-----------	20-80	Hard	---	---	Low------------	High-----------	High.
Rock outcrop-----------	0	Hard	---	---	---	---	---
Cryaquepts-------------	20-80	Soft	---	---	High-----------	Moderate-------	Moderate.
141G:							
Haplumbrepts-----------	20-80	Hard	---	---	Low------------	High-----------	High.
Rock outcrop-----------	0	Hard	---	---	---	---	---
Rubble land------------	>40	Hard	---	---	---	---	---
142E:							
Hazelcamp--------------	20-40	Soft	---	---	Low------------	High-----------	High.
Averlande--------------	10-20	Hard	---	---	Low------------	High-----------	High.
Rock outcrop-----------	0	Hard	---	---	---	---	---
143B-------------------- Hebo	>60	---	---	---	Low------------	High-----------	High.
144A-------------------- Heceta	>60	---	---	---	Low------------	Moderate-------	Moderate.
145E, 146F, 147E:							
Honeygrove-------------	>60	---	---	---	Low------------	High-----------	High.
Shivigny---------------	>60	---	---	---	Low------------	High-----------	High.
148D, 148E:							
Hooskanaden------------	>60	---	---	---	Low------------	High-----------	High.
Loneranch--------------	20-40	Hard	---	---	Low------------	Moderate-------	Moderate.
Millicoma--------------	20-40	Soft	---	---	Low------------	High-----------	High.
149E, 150F:							
Hooskanaden------------	>60	---	---	---	Low------------	High-----------	High.
Loneranch--------------	20-40	Hard	---	---	Low------------	Moderate-------	Moderate.
Reinhart---------------	10-20	Hard	---	---	Low------------	High-----------	High.
151D, 151E-------------- Horseprairie	>60	---	---	---	Low------------	Moderate-------	Moderate.
152E:							
Houstenader------------	>60	---	---	---	Moderate-------	Moderate-------	Moderate.
Carpenterville---------	20-40	Hard	---	---	Moderate-------	Moderate-------	Moderate.
Huntley----------------	10-20	Hard	---	---	Moderate-------	Moderate-------	Moderate.
153A-------------------- Huffling	>60	---	---	---	Low------------	High-----------	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
154G:							
Jayar	20-40	Hard	---	---	Moderate	Moderate	Moderate.
Althouse	40-60	Soft	---	---	Moderate	Moderate	Moderate.
Woodseye	10-20	Hard	---	---	Moderate	Moderate	Moderate.
155F:							
Jayar	20-40	Hard	---	---	Moderate	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Althouse	40-60	Soft	---	---	Moderate	Moderate	Moderate.
156G:							
Jayar	20-40	Hard	---	---	Moderate	Moderate	Moderate.
Skymor	10-20	Hard	---	---	Moderate	Moderate	Moderate.
Althouse	40-60	Soft	---	---	Moderate	Moderate	Moderate.
157E:							
Josephine	40-60	Soft	---	---	Low	Moderate	Moderate.
Pollard	>60	---	---	---	Low	Moderate	Moderate.
Speaker	20-40	Soft	---	---	Low	Moderate	Moderate.
158F, 159F:							
Kanid	40-60	Soft	---	---	Low	Moderate	Moderate.
Acker	>60	---	---	---	Low	High	High.
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
160F, 160G:							
Kanid	40-60	Soft	---	---	Low	Moderate	Moderate.
Atring	20-40	Soft	---	---	Low	Moderate	Moderate.
161A:							
Kirkendall	>60	---	---	---	Low	High	High.
Quosatana	>60	---	---	---	Low	Moderate	Moderate.
162A, 162B Klooqueh	>60	---	---	---	Low	High	High.
163F:							
Knapke	>60	---	---	---	Low	Moderate	Low.
Fantz	20-40	Hard	---	---	Low	Moderate	Low.
164A Langlois	>60	---	---	---	Low	High	High.
165D, 165E:							
Loeb	40-60	Soft	---	---	Low	High	High.
Macklyn	20-40	Soft	---	---	Low	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
166E:							
Loeb-------------------	40-60	Soft	---	---	Low------------	High-----------	High.
Macklyn----------------	20-40	Soft	---	---	Low------------	High-----------	High.
Vondergreen------------	40-60	Soft	---	---	Low------------	High-----------	High.
167A-------------------- Logsden	>60	---	---	---	Low------------	High-----------	High.
168A:							
Logsden----------------	>60	---	---	---	Low------------	High-----------	High.
Euchre-----------------	>60	---	---	---	Low------------	High-----------	High.
169F:							
Loneranch--------------	20-40	Hard	---	---	Low------------	Moderate-------	Moderate.
Hooskanaden------------	>60	---	---	---	Low------------	High-----------	High.
Millicoma--------------	20-40	Soft	---	---	Low------------	High-----------	High.
170F:							
Loneranch--------------	20-40	Hard	---	---	Low------------	Moderate-------	Moderate.
Hooskanaden------------	>60	---	---	---	Low------------	High-----------	High.
Reinhart---------------	10-20	Hard	---	---	Low------------	High-----------	High.
171B:							
McCurdy----------------	>60	---	---	---	Low------------	High-----------	High.
Wintley----------------	>60	---	---	---	Low------------	High-----------	High.
172C-------------------- Meda	>60	---	---	---	Low------------	High-----------	High.
173F, 174F:							
Milbury----------------	20-40	Hard	---	---	Low------------	High-----------	High.
Remote-----------------	>60	---	---	---	Low------------	High-----------	High.
Umpcoos----------------	10-20	Hard	---	---	Low------------	High-----------	High.
175F, 175G, 176F, 176G:							
Milbury----------------	20-40	Hard	---	---	Low------------	High-----------	High.
Umpcoos----------------	10-20	Hard	---	---	Low------------	High-----------	High.
Dystrochrepts----------	20-80	Hard	---	---	Low------------	Moderate-------	Moderate.
177G:							
Milbury----------------	20-40	Hard	---	---	Low------------	High-----------	High.
Umpcoos----------------	10-20	Hard	---	---	Low------------	High-----------	High.
Rock outcrop-----------	0	Hard	---	---	---	---	---
178F, 178G, 179G:							
Millicoma--------------	20-40	Soft	---	---	Low------------	High-----------	High.
Whaleshead-------------	>60	---	---	---	Low------------	Moderate-------	Moderate.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock: Depth	Bedrock: Hardness	Cemented pan: Depth	Cemented pan: Thickness	Potential frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In		In				
178F, 178G, 179G:							
Reedsport	20-40	Soft	---	---	Low	High	High.
180F:							
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
Greggo	10-20	Hard	---	---	Low	Moderate	Low.
Redflat	>60	---	---	---	Low	Moderate	Moderate.
181F:							
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
Greggo	10-20	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
182F:							
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
Redflat	>60	---	---	---	Low	Moderate	Moderate.
Greggo	10-20	Hard	---	---	Low	Moderate	Low.
183A Nehalem	>60	---	---	---	Low	High	High.
184B:							
Nelscott	>60	---	24-40	Thin	Low	High	High.
Depoe	>60	---	12-20	Thick	Low	High	High.
Bullards	>60	---	---	---	Low	High	High.
185A Nestucca	>60	---	---	---	Low	High	High.
186D, 186E:							
Orford	>60	---	---	---	Low	High	High.
McDuff	20-40	Soft	---	---	Low	High	High.
187B Orthents	5-80	Hard	---	---	Low	High	High.
188G, 189G:							
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
Gravecreek	20-40	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
190F:							
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
Gravecreek	20-40	Hard	---	---	Low	Moderate	Low.
191E, 192F:							
Pearsoll	10-20	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		In				
193E, 194F, 194G, 195F, 195G:							
Perdin----------------	20-40	Soft	---	---	Moderate-------	Moderate-------	Low.
Rock outcrop----------	0	Hard	---	---	---	---	---
196C, 196D-------------- Pollard	>60	---	---	---	Low------------	Moderate-------	Moderate.
197E:							
Pollard----------------	>60	---	---	---	Low------------	Moderate-------	Moderate.
Josephine--------------	40-60	Soft	---	---	Low------------	Moderate-------	Moderate.
Shastacosta------------	>60	---	---	---	Low------------	High-----------	High.
198E:							
Preacher---------------	>60	---	---	---	Low------------	High-----------	High.
Blachly----------------	>60	---	---	---	Low------------	High-----------	High.
199E:							
Preacher---------------	>60	---	---	---	Low------------	High-----------	High.
Blachly----------------	>60	---	---	---	Low------------	High-----------	High.
Digger-----------------	20-40	Soft	---	---	Low------------	High-----------	High.
200F, 201F:							
Preacher---------------	>60	---	---	---	Low------------	High-----------	High.
Digger-----------------	20-40	Soft	---	---	Low------------	High-----------	High.
Bohannon---------------	20-40	Soft	---	---	Low------------	High-----------	High.
202D:							
Pyrady-----------------	>60	---	---	---	Moderate-------	High-----------	High.
Zalea------------------	20-40	Hard	---	---	Moderate-------	High-----------	High.
Yorel------------------	20-40	Hard	---	---	Moderate-------	High-----------	High.
203B-------------------- Quillamook	>60	---	---	---	Low------------	High-----------	High.
204E:							
Redflat----------------	>60	---	---	---	Low------------	Moderate-------	Moderate.
Mislatnah--------------	20-40	Hard	---	---	Low------------	Moderate-------	Moderate.
Greggo-----------------	10-20	Hard	---	---	Low------------	Moderate-------	Low.
205F:							
Reedsport--------------	20-40	Soft	---	---	Low------------	High-----------	High.
Whaleshead-------------	>60	---	---	---	Low------------	Moderate-------	Moderate.
206G:							
Reedsport--------------	20-40	Soft	---	---	Low------------	High-----------	High.
Whaleshead-------------	>60	---	---	---	Low------------	Moderate-------	Moderate.
Rock outcrop-----------	0	Hard	---	---	---	---	---

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock: Depth	Bedrock: Hardness	Cemented pan: Depth	Cemented pan: Thickness	Potential frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In		*In*				
207E, 208F:							
Remote	>60	---	---	---	Low	High	High.
Digger	20-40	Soft	---	---	Low	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
209F:							
Remote	>60	---	---	---	Low	High	High.
Whobrey	>60	---	---	---	Low	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
210G, 211G:							
Rilea	20-40	Hard	---	---	Moderate	High	High.
Euchrand	10-20	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
212G, 213G:							
Rilea	20-40	Hard	---	---	Moderate	High	High.
Stackyards	40-60	Hard	---	---	Moderate	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
214 Riverwash	>60	---	---	---	---	---	---
215G, 216G:							
Rock outcrop	0	Hard	---	---	---	---	---
Grouslous	10-20	Hard	---	---	Low	High	High.
Cassiday	20-40	Hard	---	---	Low	High	High.
217:							
Rock outcrop	0	Hard	---	---	---	---	---
Orthents	5-80	Hard	---	---	Low	High	High.
218E, 219F, 220F Rogue	40-60	Soft	---	---	Moderate	Moderate	Moderate.
221B, 221D:							
Ruch	>60	---	---	---	Low	Moderate	Moderate.
Selmac	>60	---	---	---	Low	Moderate	Moderate.
222F:							
Rustybutte	20-40	Hard	---	---	Low	Moderate	Low.
Sebastian	10-20	Hard	---	---	Low	Moderate	Low.
223F:							
Rustybutte	20-40	Hard	---	---	Low	Moderate	Low.
Sebastian	10-20	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
224E, 225D, 225E:							
Saddlepeak	>60	---	---	---	Moderate	High	High.
Threetrees	20-40	Hard	---	---	Moderate	High	High.
226E:							
Saddlepeak	>60	---	---	---	Moderate	High	High.
Threetrees	20-40	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
227F, 228F:							
Saddlepeak	>60	---	---	---	Moderate	High	High.
Threetrees	20-40	Hard	---	---	Moderate	High	High.
Scalerock	10-20	Hard	---	---	Moderate	High	High.
229E:							
Sebastian	10-20	Hard	---	---	Low	Moderate	Low.
Rustybutte	20-40	Hard	---	---	Low	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
230E:							
Serpentano	40-60	Soft	---	---	Low	Moderate	Low.
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
231F, 232F:							
Serpentano	40-60	Soft	---	---	Low	Moderate	Low.
Mislatnah	20-40	Hard	---	---	Low	Moderate	Moderate.
Greggo	10-20	Hard	---	---	Low	Moderate	Low.
233F:							
Shastacosta	>60	---	---	---	Low	High	High.
Pollard	>60	---	---	---	Low	Moderate	Moderate.
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
234F:							
Shivigny	>60	---	---	---	Low	High	High.
Honeygrove	>60	---	---	---	Low	High	High.
235F, 236F:							
Sitkum	20-40	Soft	---	---	Low	Moderate	Moderate.
Steinmetz	>60	---	---	---	Low	High	High.
237E:							
Skookumhouse	40-60	Soft	---	---	Low	High	High.
Hazelcamp	20-40	Soft	---	---	Low	High	High.
238D, 238E:							
Skookumhouse	40-60	Soft	---	---	Low	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock: Depth	Bedrock: Hardness	Cemented pan: Depth	Cemented pan: Thickness	Potential frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In		*In*				
238D, 238E:							
Hazelcamp	20-40	Soft	---	---	Low	High	High.
Averlande	10-20	Hard	---	---	Low	High	High.
239G:							
Skymor	10-20	Hard	---	---	Moderate	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Jayar	20-40	Hard	---	---	Moderate	Moderate	Moderate.
240E:							
Snowcamp	20-40	Hard	---	---	Moderate	Moderate	Low.
Cedarcamp	>60	---	---	---	Moderate	Moderate	Low.
Flycatcher	10-20	Hard	---	---	Moderate	Moderate	Low.
241E:							
Snowcamp	20-40	Hard	---	---	Moderate	Moderate	Low.
Cedarcamp	>60	---	---	---	Moderate	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
242G:							
Snowcamp	20-40	Hard	---	---	Moderate	Moderate	Low.
Flycatcher	10-20	Hard	---	---	Moderate	Moderate	Low.
Rock outcrop	0	Hard	---	---	---	---	---
243F:							
Speaker	20-40	Soft	---	---	Low	Moderate	Moderate.
Josephine	40-60	Soft	---	---	Low	Moderate	Moderate.
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
244G, 245G:							
Stackyards	40-60	Hard	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
Euchrand	10-20	Hard	---	---	Moderate	High	High.
246F, 246G, 247F, 247G, 248F, 249F:							
Stackyards	40-60	Hard	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
250F, 251F:							
Stackyards	40-60	Hard	---	---	Moderate	Moderate	Moderate.
Rilea	20-40	Hard	---	---	Moderate	High	High.
Yorel	20-40	Hard	---	---	Moderate	High	High.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Thickness		Uncoated steel	Concrete
	In		*In*				
252G, 253G:							
Steinmetz	>60	---	---	---	Low	High	High.
Sitkum	20-40	Soft	---	---	Low	Moderate	Moderate.
254D, 254E:							
Svensen	40-60	Soft	---	---	Low	High	High.
Reedsport	20-40	Soft	---	---	Low	High	High.
255E, 256F:							
Swedeheaven	20-40	Hard	---	---	Low	High	High.
Quailprairie	>60	---	---	---	Low	High	High.
Sankey	14-20	Hard	---	---	Low	High	High.
257A	>60	---	---	---	Low	Moderate	Low.
Takilma							
258E, 259F	40-60	Soft	---	---	Low	High	High.
Templeton							
260F, 261G, 262F, 262G, 263G:							
Threetrees	20-40	Hard	---	---	Moderate	High	High.
Saddlepeak	>60	---	---	---	Moderate	High	High.
Scalerock	10-20	Hard	---	---	Moderate	High	High.
264F:							
Threetrees	20-40	Hard	---	---	Moderate	High	High.
Scalerock	10-20	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---
265F, 265G:							
Tolfork	40-60	Hard	---	---	Moderate	Moderate	Moderate.
Tincup	20-40	Hard	---	---	Moderate	Moderate	Moderate.
266	>10	---	---	---	---	---	---
Urban land							
267F:							
Vermisa	10-20	Hard	---	---	Low	Moderate	Low.
Beekman	20-40	Hard	---	---	Low	Moderate	Moderate.
Colestine	20-40	Hard	---	---	Low	Moderate	Moderate.
268D:							
Waldport	>60	---	---	---	Low	High	High.
Dune land	>60	---	---	---	---	Low	Low.
269D:							
Waldport	>60	---	---	---	Low	High	High.
Dune land	>60	---	---	---	---	Low	Low.

Table 18.--Soil Features--Continued

Soil name and map symbol	Bedrock: Depth	Bedrock: Hardness	Cemented pan: Depth	Cemented pan: Thickness	Potential frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In		In				
269D:							
Heceta	>60	---	---	---	Low	Moderate	Moderate.
270E, 271F, 271G:							
Wedderburn	40-60	Hard	---	---	Low	Moderate	Moderate.
Zwagg	20-40	Hard	---	---	Low	High	High.
272F, 272G:							
Whaleshead	>60	---	---	---	Low	Moderate	Moderate.
Reedsport	20-40	Soft	---	---	Low	High	High.
273F:							
Whaleshead	>60	---	---	---	Low	Moderate	Moderate.
Reedsport	20-40	Soft	---	---	Low	High	High.
Millicoma	20-40	Soft	---	---	Low	High	High.
274A, 274D, 274E Winchuck	>60	---	---	---	Low	High	High.
275G:							
Woodseye	10-20	Hard	---	---	Moderate	Moderate	Moderate.
Rock outcrop	0	Hard	---	---	---	---	---
Brandypeak	20-40	Hard	---	---	Moderate	High	High.
276A Yachats	>60	---	---	---	Low	High	High.
277A Yaquina	>60	---	---	---	Low	High	High.
278E:							
Zalea	20-40	Hard	---	---	Moderate	High	High.
Pyrady	>60	---	---	---	Moderate	High	High.
Yorel	20-40	Hard	---	---	Moderate	High	High.
279E:							
Zalea	20-40	Hard	---	---	Moderate	High	High.
Yorel	20-40	Hard	---	---	Moderate	High	High.
Rock outcrop	0	Hard	---	---	---	---	---

Table 19.--Classification of the Soils

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series)

Soil name	Family or higher taxonomic class
Abegg	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
Acker	Fine-loamy, mixed, mesic Typic Palexerults
Agness	Fine-loamy, mixed, mesic Pachic Haplumbrepts
Althouse	Loamy-skeletal, mixed, frigid Dystric Xerochrepts
Aquic Haplohumults	Aquic Haplohumults
Atring	Loamy-skeletal, mixed, mesic Dystric Xerochrepts
Averlande	Loamy-skeletal, mixed, mesic Lithic Hapludults
Bagness	Fine-loamy, mixed, isomesic Fluventic Humitropepts
Bandon	Coarse-loamy, mixed, isomesic, ortstein Typic Haplorthods
Barkshanty	Loamy-skeletal, mixed, mesic Typic Palehumults
Bayside	Fine, mixed, nonacid, isomesic Aeric Tropic Fluvaquents
Bearcamp	Loamy-skeletal, mixed, frigid Typic Xerumbrepts
Beekman	Loamy-skeletal, mixed, mesic Dystric Xerochrepts
Bigriver	Coarse-loamy, mixed, nonacid, isomesic Typic Tropofluvents
Blachly	Fine, mixed, mesic Umbric Dystrochrepts
Bobsgarden	Loamy-skeletal, mixed, frigid Umbric Dystrochrepts
Bohannon	Fine-loamy, mixed, mesic Andic Haplumbrepts
Bosland	Fine-loamy, mixed, isomesic Typic Humitropepts
Brandypeak	Loamy-skeletal, mixed, frigid Typic Xerumbrepts
Bravo	Fine-loamy, mixed, mesic Umbric Dystrochrepts
Brenner	Fine-silty, mixed, acid, isomesic Aeric Tropaquepts
Bullards	Coarse-loamy, mixed, isomesic Typic Haplorthods
Bullgulch	Clayey, mixed, isomesic Typic Haplohumults
Burnthill	Fine-loamy, siliceous, isomesic Typic Palehumults
Calfranch	Loamy-skeletal, mixed, isomesic Typic Humitropepts
Capeblanco	Loamy-skeletal, mixed, isomesic Typic Humitropepts
Carpenterville	Clayey-skeletal, mixed, mesic Aquic Argiudolls
Cashner	Coarse-loamy, siliceous, isomesic, ortstein Typic Duraquods
Cassiday	Loamy-skeletal, mixed, mesic Umbric Dystrochrepts
Cedarcamp	Loamy-skeletal, serpentinitic, frigid Dystric Eutrochrepts
Central Point	Coarse-loamy, mixed, mesic Pachic Haploxerolls
Chetco	Fine, mixed, nonacid, isomesic Typic Tropaquepts
Chismore	Clayey, mixed, mesic Aquic Haplohumults
Chitwood	Fine, mixed, isomesic Aquic Humitropepts
Clawson	Coarse-loamy, mixed, nonacid, mesic Typic Endoaquepts
Colepoint	Fine-loamy, mixed, mesic Typic Haplumbrepts
Colestine	Fine-loamy, mixed, mesic Dystric Xerochrepts
Cornutt	Fine, mixed, mesic Ultic Haploxeralfs
Cove	Fine, montmorillonitic, mesic Vertic Epiaquolls
Crofland	Clayey, mixed, isomesic Aquic Haplohumults
Crutchfield	Fine-loamy, mixed, mesic Typic Haplumbrepts
Cryaquepts	Cryaquepts
Cunniff	Clayey, mixed, isomesic Typic Palehumults
Deadline	Loamy-skeletal, mixed, mesic Umbric Dystrochrepts
Depoe	Loamy, mixed, isomesic, ortstein & shallow Typic Duraquods
Desons	Clayey, mixed, isomesic Typic Palehumults
Digger	Loamy-skeletal, mixed, mesic Dystric Eutrochrepts
Dubakella	Clayey-skeletal, serpentinitic, mesic Mollic Haploxeralfs
Dulandy	Loamy-skeletal, mixed, isomesic Typic Humitropepts
Dumont	Clayey, kaolinitic, mesic Typic Palexerults
Dystrochrepts	Dystrochrepts
Edson	Clayey, mixed, mesic Typic Palehumults
Eightlar	Clayey-skeletal, serpentinitic, mesic Typic Xerochrepts
Eilertsen	Fine-silty, mixed, mesic Ultic Hapludalfs
Ekoms	Fine-loamy, mixed, isomesic Typic Haplohumults
Etelka	Fine, mixed, mesic Oxyaquic Dystrochrepts
Ettersburg	Fine-loamy, mixed, isomesic Typic Humitropepts
Euchrand	Loamy-skeletal, mixed, frigid Lithic Dystrochrepts
Euchre	Medial over loamy, mixed, isomesic Typic Melanaquands
Evans	Coarse-loamy, mixed, mesic Cumulic Haploxerolls

Table 19.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Fantz	Loamy-skeletal, mixed, mesic Pachic Ultic Haploxerolls
Ferrelo	Coarse-loamy, mixed, isomesic Typic Dystropepts
Floras	Fine, mixed, isomesic Typic Humitropepts
Flycatcher	Loamy-skeletal, serpentinitic, frigid Lithic Eutrochrepts
Foehlin	Fine-loamy, mixed, mesic Typic Argixerolls
Frankport	Mixed, isomesic Typic Tropopsamments
Fritsland	Fine-loamy, mixed, mesic Umbric Dystrochrepts
Gamelake	Loamy-skeletal, mixed, frigid Typic Haplumbrepts
Gauldy	Coarse-loamy over sandy or sandy-skeletal, mixed, isomesic Fluventic Humitropepts
Gearhart	Sandy, mixed, isomesic Typic Dystropepts
Gleneden	Fine, mixed, isomesic Aquic Humitropepts
Goldbeach	Loamy-skeletal, mixed, mesic Lithic Haplumbrepts
Grassyknob	Fine-loamy, mixed, isomesic Andic Humitropepts
Gravecreek	Loamy-skeletal, serpentinitic, mesic Dystric Xerochrepts
Greggo	Loamy-skeletal, serpentinitic, mesic Lithic Eutrochrepts
Grindbrook	Fine-silty, mixed, isomesic Aquic Humitropepts
Grouslous	Loamy-skeletal, mixed, mesic Lithic Dystrochrepts
Guerin	Loamy-skeletal, mixed, isomesic Lithic Dystropepts
Haplumbrepts	Haplumbrepts
Hazelcamp	Clayey, mixed, mesic Typic Haplohumults
Hebo	Fine, mixed, acid, isomesic Typic Tropaquepts
Heceta	Mixed, isomesic Typic Psammaquents
Honeygrove	Clayey, mixed, mesic Typic Palehumults
Hooskanaden	Fine, mixed, isomesic Andic Hapludalfs
Horseprairie	Fine-loamy, mixed, isomesic Andic Humitropepts
Houstenader	Fine-loamy, mixed, mesic Aquic Argiudolls
Huffling	Clayey, mixed, isomesic Typic Umbraquults
Hunterscove	Clayey, mixed, isomesic Typic Haplohumults
Huntley	Loamy, mixed, mesic Lithic Hapludolls
Irma	Fine-loamy, mixed, mesic Umbric Dystrochrepts
Jayar	Loamy-skeletal, mixed, frigid Dystric Xerochrepts
Joeney	Loamy, mixed, isomesic, ortstein and shallow Typic Duraquods
Josephine	Fine-loamy, mixed, mesic Typic Haploxerults
Kanid	Loamy-skeletal, mixed, mesic Dystric Xerochrepts
Kirkendall	Fine-silty, mixed, mesic Fluventic Haplumbrepts
Klooqueh	Clayey, mixed, isomesic Typic Palehumults
Knapke	Loamy-skeletal, mixed, mesic Entic Ultic Haploxerolls
Langlois	Fine, mixed, nonacid, isomesic Tropic Fluvaquents
Loeb	Clayey, mixed, isomesic Typic Haplohumults
Logsden	Fine-silty, mixed, isomesic Typic Humitropepts
Loneranch	Fine-loamy, mixed, isomesic Andic Humitropepts
Macklyn	Clayey, mixed, isomesic Typic Haplohumults
McCurdy	Clayey, mixed, mesic Oxyaquic Palehumults
McDuff	Clayey, mixed, mesic Typic Haplohumults
Meda	Fine-loamy, mixed, mesic Typic Haplumbrepts
Milbury	Loamy-skeletal, mixed, mesic Typic Haplumbrepts
Millicoma	Loamy-skeletal, mixed, isomesic Andic Humitropepts
Mislatnah	Loamy-skeletal, serpentinitic, mesic Dystric Eutrochrepts
Nailkeg	Loamy-skeletal, mixed, mesic Typic Dystrochrepts
Nehalem	Fine-silty, mixed, isomesic Fluventic Humitropepts
Nelscott	Fine-loamy over sandy or sandy-skeletal, mixed, isomesic, ortstein Typic Haplorthods
Nestucca	Fine-silty, mixed, acid, isomesic Aeric Tropaquepts
Norling	Fine-loamy, mixed, mesic Ultic Haploxeralfs
Orford	Clayey, mixed, mesic Typic Palehumults
Orthents	Orthents
Pearsoll	Clayey-skeletal, serpentinitic, mesic Lithic Xerochrepts
Perdin	Fine, serpentinitic, frigid Ultic Haploxeralfs
Pistolriver	Coarse-loamy over sandy or sandy-skeletal, mixed, nonacid, isomesic Aeric Tropaquepts
Pollard	Clayey, kaolinitic, mesic Typic Palexerults
Preacher	Fine-loamy, mixed, mesic Andic Haplumbrepts
Pyburn	Clayey, mixed, mesic Typic Umbraquults
Pyrady	Clayey, mixed, frigid Oxyaquic Palehumults

Table 19.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Quailprairie	Fine-loamy, mixed, mesic Pachic Haplumbrepts
*Quillamook	Medial, isomesic Alic Pachic Melanudands
Quosatana	Fine-silty, mixed, nonacid, mesic Fluvaquentic Humaquepts
Redflat	Fine-loamy, serpentinitic, mesic Dystric Eutrochrepts
Reedsport	Fine-loamy, mixed, isomesic Andic Humitropepts
Reinhart	Loamy-skeletal, mixed, isomesic Lithic Humitropepts
Remote	Loamy-skeletal, mixed, mesic Typic Dystrochrepts
Rilea	Loamy-skeletal, mixed, frigid Typic Dystrochrepts
Rogue	Coarse-loamy, mixed, frigid Dystric Xerochrepts
Ruch	Fine-loamy, mixed, mesic Mollic Palexeralfs
Rustybutte	Loamy-skeletal, serpentinitic, isomesic Typic Hapludolls
Saddlepeak	Loamy-skeletal, mixed, frigid Typic Dystrochrepts
Sankey	Loamy-skeletal, mixed, mesic Lithic Haplumbrepts
Scalerock	Loamy-skeletal, mixed, frigid Lithic Dystrochrepts
Sebastian	Loamy-skeletal, serpentinitic, isomesic Lithic Hapludolls
Selmac	Fine-loamy over clayey, mixed, mesic Ultic Haploxeralfs
Serpentano	Loamy-skeletal, serpentinitic, mesic Dystric Eutrochrepts
Shastacosta	Loamy-skeletal, mixed, mesic Typic Palexerults
Shivigny	Clayey-skeletal, mixed, mesic Typic Palehumults
Sitkum	Coarse-loamy, mixed, mesic Dystric Xerochrepts
Sixes	Fine-loamy, mixed, mesic Pachic Haplumbrepts
Skookumhouse	Clayey, mixed, mesic Typic Haplohumults
Skymor	Loamy-skeletal, mixed, frigid Dystric Lithic Xerochrepts
Snowcamp	Loamy-skeletal, serpentinitic, frigid Dystric Eutrochrepts
Speaker	Fine-loamy, mixed, mesic Ultic Haploxeralfs
Stackyards	Loamy-skeletal, mixed, frigid Typic Haplumbrepts
Steinmetz	Coarse-loamy, mixed, mesic Dystric Xerochrepts
Svensen	Fine-loamy, mixed, isomesic Andic Humitropepts
Swedeheaven	Loamy-skeletal, mixed, mesic Typic Haplumbrepts
Takilma	Loamy-skeletal, mixed, mesic Entic Ultic Haploxerolls
Templeton	Fine-silty, mixed, isomesic Andic Humitropepts
Threetrees	Loamy-skeletal, mixed, frigid Typic Dystrochrepts
Tincup	Loamy-skeletal, mixed, frigid Umbric Dystrochrepts
Tolfork	Loamy-skeletal, mixed, frigid Pachic Haplumbrepts
Umpcoos	Loamy-skeletal, mixed, mesic Lithic Eutrochrepts
Vermisa	Loamy-skeletal, mixed, mesic Lithic Xerochrepts
Vondergreen	Clayey, mixed, isomesic Aquic Hapludults
Wadecreek	Clayey, mixed, isomesic Typic Haplohumults
Waldport	Mixed, isomesic Typic Tropopsamments
Watches	Fine-loamy, mixed, isomesic Typic Humitropepts
Wedderburn	Fine-loamy, mixed, isomesic Typic Humitropepts
Whaleshead	Loamy-skeletal, mixed, isomesic Andic Humitropepts
Whobrey	Fine-silty over clayey, mixed, mesic Vertic Eutrochrepts
Willanch	Coarse-loamy, mixed, nonacid, isomesic Aeric Tropaquepts
Winchuck	Clayey, mixed, isomesic Typic Haplohumults
Wintley	Clayey, mixed, mesic Typic Haplohumults
Woodseye	Loamy-skeletal, mixed, frigid Lithic Xerumbrepts
Yachats	Coarse-loamy, mixed, isomesic Fluventic Humitropepts
Yaquina	Sandy, mixed, isomesic Aquentic Haplorthods
Yorel	Fine-loamy, mixed, frigid Typic Dystrochrepts
Zalea	Fine-loamy, mixed, frigid Typic Haplohumults
Zwagg	Coarse-loamy, mixed, isomesic Typic Humitropepts
Zyzzug	Fine-silty, mixed, acid, mesic Typic Humaquepts

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