United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with the
Louisiana Agricultural
Experiment Station and the
Louisiana State Soil and
Water Conservation
Committee

Soil Survey of Tensas Parish, Louisiana

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.

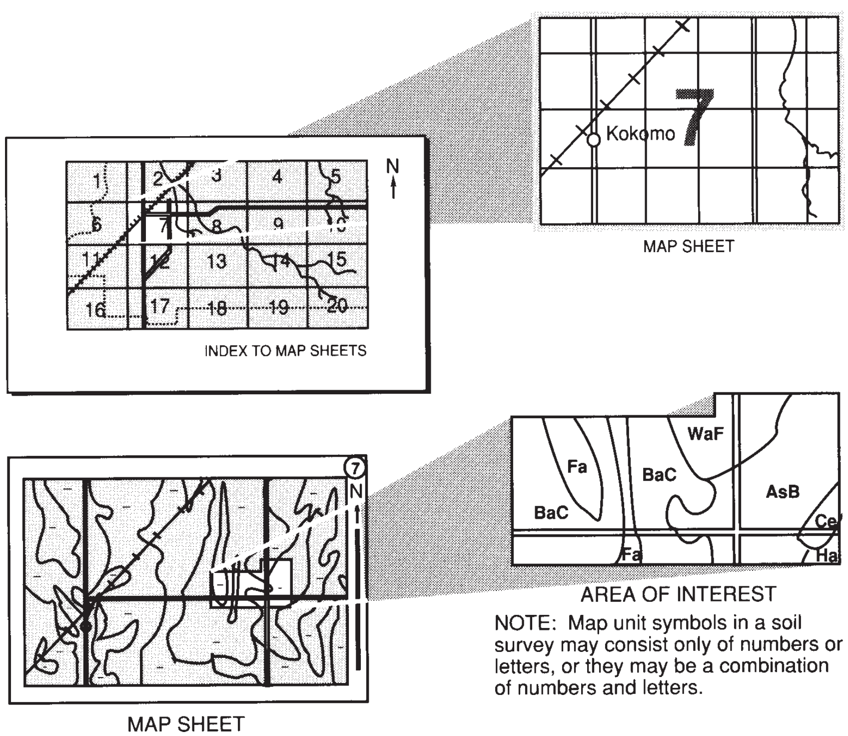
Detailed Soil Maps

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 2001. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service, the Louisiana Agricultural Experiment Station, and the Louisiana State Soil and Water Conservation District. The survey is part of the technical assistance furnished to the Tensas-Concordia Soil and Water Conservation District. This soil survey updates the survey of Tensas Parish published in October, 1968 (Weems, 1968).

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.

Cover: Cotton in an area of Bruin silt loam, 0 to 1 percent slopes.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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September 2006

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 on 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.

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Soil Survey of
Tensas Parish, Louisiana

By W.H. “Bill” Boyd

Fieldwork by Ed Scott, Delaney Johnson, and W.H. “Bill” Boyd

United States Department of Agriculture,
Natural Resources Conservation Service,
in cooperation with the Louisiana Agricultural Experiment Station and the
Louisiana State Soil and Water Conservation Committee

General Nature of the Parish

TENSAS PARISH is in northeastern Louisiana, about 90 miles north of Baton Rouge (fig. 1). The total area of the parish is 411,100 acres, of which about 18,040 acres is water in the form of lakes and major rivers. Tensas Parish is bordered on the north by Madison Parish, on the west by Franklin Parish, on the south by Concordia Parish, and on the east by Warren, Claiborne, Jefferson, and Adams Counties, Mississippi. In 2000, the population was 6,618 according to the Bureau of the Census. The parish is mostly rural. It has only three small towns: St. Joseph, the parish seat, Newellton, and Waterproof. The total population of the towns is 3,656.

The entire parish is located within the Mississippi River flood plain. Elevation ranges from about 90 feet above sea level on the higher natural levees along the Mississippi River to about 35 feet above sea level near Fletchers Lake. The soils in the area are level to undulating, excessively drained to poorly drained, and sandy to clayey. Relief among the landforms ranges from 0 to 8 feet in the level to undulating areas and from 15 to 20 feet in the more dissected areas. Areas unprotected by the Mississippi River Protection Levee are subject to over-bank flooding from the Mississippi River on nearly a yearly basis. Low lying areas in the western part of the parish are subject to occasional and rare flooding from backwaters of the Tensas River. This flooding occurs during periods of heavy rainfall and high water levels concurrently on the Mississippi, Red, and Black River systems, into which the Tensas River drainage system flows. Other low-lying areas are subject to flooding from high intensity rainfalls.

The major land use in the parish is high intensity row crop production. A minor portion of the parish supports bottomland hardwoods. Two State-owned wildlife management areas and one Federally owned wildlife refuge are in the parish. A small acreage is devoted to grassland and hayland for cattle.

Several large lakes, once a part of the Mississippi River, provide a source of water for boating, fishing, other recreational activities, and aesthetic beauty. Lands adjacent to the lakes provide homesites.

About 17,845 acres of Tensas Parish is in the Tensas River National Wildlife Refuge, which is owned by the U.S. Government, Department of Interior. About 16,285 acres is in the Big Lake and Buckhorn Wildlife management areas, which are

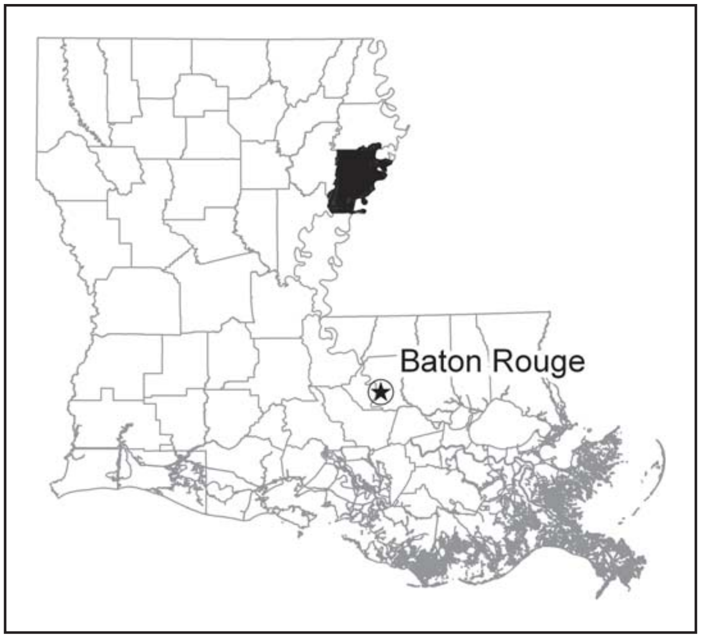

Figure 1.—Location of Tensas Parish in Louisiana.

owned by the State of Louisiana. Several large corporate farms own and manage up to about 15,000 acres each. Numerous individually owned plantations range in size up to 5,000 acres. Timber interests own or lease tracts up to 10,000 acres in size. The remaining acreage in the parish is privately owned.

This soil survey updates the survey of Tensas Parish published in October, 1968 (Weems, 1968). The fieldwork for the first survey was conducted from 1957 to 1964. This survey updates the earlier survey and provides additional information. It provides additional information, and the soils are described in greater detail.

History and Development

Tensas Parish was officially established by an act of the Louisiana State Legislature on March 17, 1843. The area had previously been part of Concordia Parish. The size of Tensas Parish was increased in 1861 by annexation of a part of Madison Parish. Tensas Parish lost a small portion of land to annexation by Franklin Parish in 1870. Since then, its boundaries—the Tensas River on the west, the Mississippi River on the east, Madison Parish to the North, and Concordia Parish to the south—have remained unchanged.

Early occupants of what is today Tensas Parish were the “mound-builders.” Earthen mounds, which are found throughout the parish, remain as a testament to their civilization. The Native American inhabitants of the region were first contacted in historic times by the explorer Hernando de Soto in the 1540s. More than a hundred years later (1682), Rene LaSalle documented contact with the Tensas Indians at Lake St. Joseph. The name of the parish and the river that forms its western boundary has preserved at least the memory of these people.

First European ownership of lands in the area that is now Tensas Parish was made by Spanish land grants in the 1760s. The economy of the area has always been almost exclusively dependent on agriculture. Cotton was the first important cash crop and was the foundation for the settlement and development of the area. Virtually all early commerce was handled by riverboats. The oldest road through the area was the “Texas Road,” which joined the area to Mississippi by ferry at the town of Waterproof and continued west into Texas and Mexico. The road followed trails used by prehistoric people and buffalo through the Tensas swamp long before the Louisiana Purchase, and it remained in good repair until the 1890's.

The period from 1840 to 1860 saw population growth and an economic boom in plantation settlements. Almost all of the original plantation homes, however, were burned by the army of the Union during the American Civil War. At the time of the first census in 1850, the parish had a population of 9,040. The peak population of the parish was reached at 17,810 in 1880.

The boll weevil was destructive to the cotton-based economy of the parish. Prior to arrival of the boll weevil in 1908, about 40,000 bales a year were produced in the parish. By 1912, production had dropped to 12,000 to 18,000 bales. By 1920, the population of the parish had fallen to 12,085. The year after the weevil arrived, the leading farmers in the region arranged for the services of the first farm agent. On January 1, 1929, the Northeast Louisiana Agricultural Experiment Station began operations under a cooperative agreement between Louisiana State University and the surrounding parishes. Tensas Parish continued to lose residents due to a lack of employment opportunity in the region, and by 1980 the population was less than in the original 1850 census at 8,525. The 2000 census figure is 6,618.

Climate

Prepared by the Natural Resources Conservation Service National Water and Climate Center, Portland, Oregon.

The climate data in tables 1, 2, and 3 are from a climate station at Saint Joseph, Louisiana. Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from a first order station at Jackson, Mississippi.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Saint Joseph in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 48.7 degrees F and the average daily minimum temperature is 38.5 degrees. The lowest temperature on record, which occurred at Saint Joseph on January 27, 1940, was -8 degrees. In summer, the average temperature is 81.4 degrees and the average daily maximum temperature is 91.7 degrees. The highest temperature, which occurred at Saint Joseph on September 1, 2000, was 107 degrees.

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 (50 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.

The average annual total precipitation is about 56.45 inches. Of this, about 39.67 inches, or 70 percent, usually falls in March through November. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 9.85 inches at Saint Joseph on April 4, 1940. Thunderstorms occur on about 67 days each year and can occur in any month but are most common in the summer.

The average seasonal snowfall is 0.4 inches. The greatest snow depth at any one time during the period of record was 11 inches recorded on January 23, 1940. On an average, less than 1 day per year has at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 8.1 inches recorded on January 22, 1935.

The average relative humidity in mid-afternoon is about 58 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines

67 percent of the time possible in summer and 50 percent in winter. The prevailing wind is dominantly from the south, except in the fall when it is from the east. Average wind speed is highest, around 9 miles per hour, in March.

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 soil 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.

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined. Map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. In the legend for the detailed soil maps, narrowly defined units are indicated by symbols in which the first letter is a capital and the second in lowercase. For broadly defined units, the first and second letters are capitals.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

General Soil Map Units

The general soil map in 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 and some minor soils or miscellaneous areas. It is named for the major soils. The components of one map unit can occur in another but in a different pattern. Levees along the Mississippi River and areas of water make up about 7 percent of the parish.

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.

Loamy Soils That Are Not Subject To Flooding

This group of map units consists of somewhat poorly drained, poorly drained, and moderately well drained soils that are loamy throughout or that have a loamy surface layer and either a loamy subsoil or a clayey and loamy subsoil. These soils are protected from flooding by the Mississippi River Protection Levee.

The two map units in this group make up about 10 percent of the parish. Most of the acreage is used as cropland. Areas of forestland generally are small and scattered. Seasonal wetness is the main limitation affecting most uses.

1. Commerce-Bruin

Level to gently undulating, somewhat poorly drained and moderately well drained soils that are loamy throughout; formed in young alluvium from the Mississippi River

This map unit consists of soils in high and intermediate positions on natural levees along the Mississippi River and Lakes Bruin, St. Joseph, and St. John. The landscape consists mainly of long, smooth areas that have slopes of 0 to 1 percent. In some undulating areas, low parallel ridges and swales have slopes of 0 to 3 percent.

This map unit makes up about 7 percent of the parish. It is about 56 percent Commerce soils, 42 percent Bruin soils, and 2 percent soils of minor extent.

The somewhat poorly drained Commerce soils are in high and intermediate positions on natural levees. The surface layer is dark grayish brown silt loam or silty clay loam. The subsoil is grayish brown, slightly alkaline or moderately alkaline silt loam. The underlying material is grayish brown and dark grayish brown, slightly alkaline or moderately alkaline silt loam, silty clay loam, and clay.

The moderately well drained Bruin soils are in the highest positions on natural levees. The surface layer is brown, slightly acid silt loam. The subsoil is yellowish brown, slightly acid silt loam. The underlying material is stratified grayish brown, dark grayish brown, and brown, neutral silt loam.

The soils of minor extent in this unit are the somewhat poorly drained Newellton soils, the poorly drained Sharkey and Tunica soils, and the very poorly drained Dowling soils. These soils are all in low backswamp positions and in swales in undulating areas.

Most areas of this map unit are cropland. Cotton, soybeans, corn, and milo are the main crops. A small acreage is pasture or forestland.

Most areas of this map unit are well suited to crops and pasture because of the loamy surface layer, high fertility, and gentle slopes. Wetness is the main limitation. Land grading or smoothing and a surface drainage system are needed in some places.

This map unit is well suited to forestland. The dominant trees are sugarberry, eastern cottonwood, sweetgum, and water oak. Productivity of eastern cottonwood is very high. In most years, logging is somewhat restricted by wetness in winter and early spring.

This map unit is moderately well suited as a site for buildings and poorly suited as a site for sanitary facilities. Wetness and a moderate shrink-swell potential are the main limitations.

2. Dundee-Goldman

Level to gently undulating, somewhat poorly drained and moderately well drained soils that have loamy surface and subsurface layers; formed in old alluvium from the Mississippi River

This map unit consists of soils in high positions on natural levees along old channels of the Mississippi River. The landscape consists of long ridges and swales in level to gently undulating areas. Slopes range from 0 to 3 percent.

This map unit makes up about 3 percent of the parish. It is about 77 percent Dundee soils, 15 percent Goldman soils, and 8 percent soils of minor extent.

The somewhat poorly drained Dundee soils are in the highest positions on natural levees and in swales. The surface layer is brown, slightly acid silt loam or silty clay loam. The subsoil is grayish brown, very strongly acid clay loam and loam. The underlying material is grayish brown, very strongly acid or strongly acid loam.

The moderately well drained Goldman soils are in high positions on natural levees and on ridges. The surface layer is brown, moderately acid very fine sandy loam. The subsoil is brown, strongly acid very fine sandy loam. The underlying material is grayish brown, slightly acid loamy very fine sand.

The soils of minor extent in this unit are the clayey, poorly drained and very poorly drained Sharkey, Tensas, and Dowling soils. These soils are in low positions on the landscape and in swales in undulating areas.

Most of the acreage of this unit has been cleared and is used as cropland. A small acreage is pasture or forestland.

This map unit is well suited to crops and pasture because of the loamy surface layer, moderately high fertility, and level to gentle slope. Wetness is the main limitation. A surface drainage system is needed in most places. Lime and fertilizer are needed for crops and pasture plants.

These soils are well suited to forestland. The dominant trees are sweetgum, willow oak, and water oak. In most years, logging is restricted by wetness in winter and early spring.

This map unit is moderately well suited to most urban uses. The main limitations are wetness, moderately slow or very slow permeability, and moderate to very high shrink-swell potential.

Clayey Soils That Are Not Subject To Flooding

This group of map units consists of poorly drained and somewhat poorly drained soils that have a clayey surface layer and a clayey or loamy subsoil. Most areas are protected from flooding by the Mississippi River Protection Levee.

The two map units in this group make up about 62 percent of the parish. Most of the acreage is used for crops or pasture. A few large areas are used as forestland. Seasonal wetness, slow or very slow permeability, and very high shrink-swell potential are the main limitations affecting most uses.

3. Tensas-Sharkey

Level to undulating, poorly drained and somewhat poorly drained soils that have a clayey or loamy surface layer and a subsoil that is clayey, loamy, or both; formed in old alluvium from the Mississippi River

This map unit consists of soils on ridges and swales in undulating areas and soils in broad, level areas. Slopes range from 0 to 8 percent. Most areas of this map unit are protected from flooding by the Mississippi River Protection Levee. Some low-lying areas, however, are subject to rare, occasional, or frequent flooding during periods of heavy rainfall and to backwater flooding when the major rivers are at high levels.

This map unit makes up about 36 percent of the parish. It is about 48 percent Tensas soils, 44 percent Sharkey soils, and 8 percent soils of minor extent.

The somewhat poorly drained Tensas soils are level to undulating. They are on low ridges in undulating areas and in intermediate positions on natural levees. The surface layer is dark grayish brown, moderately acid clay. The subsoil is grayish brown, moderately acid or slightly acid clay and silty clay. The underlying material is brown, grayish brown, or gray, moderately acid silty clay loam, silt loam, or very fine sandy loam.

The poorly drained Sharkey soils are level and gently undulating. They are in swales and low positions on the landscape. The surface layer is dark grayish brown and dark gray, strongly acid clay. The subsoil is dark gray, moderately acid or slightly acid clay. The underlying material is gray, neutral clay.

The soils of minor extent in this unit are Dundee soils, the frequently flooded Sharkey soils, and Dowling soils. The somewhat poorly drained Dundee soils are in intermediate positions on natural levees and on low ridges in undulating areas. The very poorly drained Sharkey and Dowling soils are in sloughs, in swales in undulating areas, and on broad flats in backswamp areas.

Most areas of this map unit are cropland. A few small areas are pasture or forestland.

This map unit is well suited to cropland. Wetness, poor tilth, and undulating topography are the main limitations. A surface drainage system is generally needed. Lime and fertilizer are needed for crops and pasture plants.

This map unit is well suited to forestland. The dominant trees are sweetgum, willow oak, and water oak. Wetness and the clayey surface layer generally restrict logging to the drier seasons.

The Tensas and Sharkey soils are poorly suited as sites for buildings and sanitary facilities. The main limitations are wetness, very slow permeability, and very high shrink-swell potential.

4. Sharkey

Level to gently undulating, poorly drained soils that have a clayey surface layer and subsoil; formed in young alluvium from the Mississippi River

This map unit consists of soils in broad, level areas and in gently undulating areas. The landscape consists of long, smooth areas that have slopes of 0 to 1 percent and low, parallel ridges and swales in undulating areas that have slopes of 0 to 8 percent. Areas of this map unit are protected from flooding by the Mississippi River Protection Levee. Some low-lying areas, however, are subject to rare, occasional, or frequent flooding during periods of heavy rainfall.

This map unit makes up about 26 percent of the parish. It is about 92 percent Sharkey soils and 8 percent soils of minor extent.

The poorly drained Sharkey soils are in low positions on the landscape and in swales in undulating areas. The surface layer is dark grayish brown and dark gray, strongly acid clay. The subsoil is dark gray, moderately acid or slightly acid clay. The underlying material is gray, neutral clay.

The soils of minor extent in this unit are Bruin, Commerce, Dowling, Newellton, and Tunica soils. The moderately well drained Bruin soils and the somewhat poorly drained Commerce soils are in high positions on natural levees. The poorly drained Newellton soils and the very poorly drained Dowling soils are in low positions on the landscape. The poorly drained Tunica soils are in intermediate positions on natural levees.

Most of the acreage of this map unit is cropland. A small acreage is forestland and pasture.

This map unit is moderately well suited to cropland. Wetness and poor tilth are the main limitations. A surface drainage system is needed for crops and pasture.

This map unit is well suited to forestland. The dominant trees are water oak, willow oak, green ash, sugarberry, Nuttall oak, overcup oak, and sweetgum. Wetness and a clayey surface layer generally restrict logging to dry periods.

This map unit is poorly suited as a site for buildings and sanitary facilities. The main limitations are wetness, very slow permeability, very high shrink-swell potential, and flooding in low-lying areas.

Sandy, Loamy, and Clayey Soils That Are Subject To Flooding

This group of map units consists of excessively drained to very poorly drained soils that have a clayey or loamy surface layer and a subsoil that is clayey, loamy, or both. These soils are subject to occasional or frequent flooding.

The three map units in this group make up about 21 percent of the parish. Most of the acreage is used for cultivated crops or as forestland. Wetness, very slow permeability, and the flooding are the main limitations affecting most uses.

5. Commerce-Bruin

Level to undulating, somewhat poorly drained and moderately well drained soils that have a loamy surface layer and subsoil; formed in young alluvium from the Mississippi River

This map unit consists of soils on narrow ridges and swales in undulating areas and level areas on natural levees. These soils are occasionally or frequently flooded and are behind the Mississippi River Protection Levee. When flooded, these areas are subject to scouring and deposition. The flooding is caused by high water levels in the Mississippi River. Slopes range from 0 to 3 percent.

This map unit makes up about 1 percent of the parish. It is about 60 percent Commerce soils, 39 percent Bruin soils, and 1 percent soils of minor extent.

The somewhat poorly drained Commerce soils are in high and intermediate positions on natural levees and ridges and in swales in undulating areas. The surface layer is very dark grayish brown, neutral very fine sandy loam. The subsoil is dark grayish brown and very dark grayish brown, neutral silt loam and silty clay loam. The underlying material is dark grayish brown and brown, slightly alkaline silty clay loam and very fine sandy loam.

The moderately well drained Bruin soils are in high positions on natural levees and on ridges in undulating areas. The surface layer is very dark grayish brown, moderately alkaline silt loam. The subsoil is brown, moderately alkaline silt loam. The underlying material is pale brown and brown, moderately alkaline silt loam and very fine sandy loam.

The soils of minor extent in this unit are Dowling, Sharkey, and Tunica soils. The very poorly drained Dowling soils are in deep swales, sloughs, and depressional areas. The poorly drained Sharkey and Tunica soils are in low positions and in swales in undulating areas.

Most areas of this map unit are forestland, used mainly for forestland production and intensely managed for wildlife habitat. Some areas are cropland.

This map unit is well suited to commercial forestland. The dominant trees are eastern cottonwood planted in plantations and eastern cottonwood, sugarberry, American sycamore, black willow, green ash, and willow oak in native stands. Some areas have been cleared of low-quality trees and planted to selected varieties of eastern cottonwood. Wetness and flooding in late winter, spring, and early summer generally restrict logging and planting to periods when the unit is not flooded.

This map unit is poorly suited to crops. Wetness and flooding are the main limitations. The wetness and the frequency and duration of flooding severely limit the choice of crops. Deposition of soil material and scouring during flooding can damage roads and drainage systems.

6. Crevasse-Bruno

Level to undulating, excessively drained, sandy soils that formed in young alluvium from the Mississippi River

This map unit consists of soils on ridges and swales in undulating areas and on broad, level and gently sloping natural levees. The soils are occasionally or frequently flooded and are in areas behind the Mississippi River Protection Levee. When flooded, these areas are subject to scouring and deposition. The flooding is caused by high water levels in the Mississippi River. Slopes range from 0 to 3 percent.

This map unit makes up about 2 percent of the parish. It is about 56 percent Crevasse soils, 28 percent Bruno soils, and 16 percent soils of minor extent.

The excessively drained Crevasse soils are in high positions on natural levees and ridges and in swales in undulating areas. The surface layer is dark grayish brown, moderately alkaline fine sand. The underlying material is brown and grayish brown, moderately alkaline loamy sand.

The excessively drained Bruno soils are in high positions on natural levees and ridges and in swales in undulating areas. The surface layer is dark brown, neutral loamy fine sand. The underlying material is brown and dark grayish brown, slightly alkaline fine sand, loamy fine sand, or loamy very fine sand.

The soils of minor extent in this unit are Commerce, Bruin, Sharkey, and Dowling soils and Riverwash. The somewhat poorly drained Commerce soils and the moderately well drained Bruin soils are in the lower positions. The very poorly drained Dowling soils and the poorly drained Sharkey soils are in deep swales. The Riverwash is at low elevations at the waterline along the Mississippi River.

Most areas of this map unit support very little vegetation and are used for wildlife habitat. Some areas are forestland where the trees were growing before the deposition of the sandy soil.

This map unit is very poorly suited to wildlife habitat. The main limitations are flooding and severe droughtiness.

This map unit is poorly suited to most other uses. Flooding and severe droughtiness are the main limitations.

7. Sharkey-Dowling

Level to gently undulating, poorly drained and very poorly drained, clayey soils that formed in young alluvium from the Mississippi River

This map unit consists of soils in low-level backswamp positions and in depressions and swales in undulating areas. These soils are subject to occasional or frequent flooding. Slopes range from 0 to 3 percent. Flooding typically occurs in late winter, in spring, and in early summer but can occur during any season when water levels are high on the major rivers. Flooding is caused by high water levels on the Mississippi River or by backwater in areas that are not protected by artificial levees. These areas are subject to deposition of sediments during flooding.

This map unit makes up about 17 percent of the parish. It is about 62 percent Sharkey soils, 30 percent Dowling soils, and 8 percent soils of minor extent.

The poorly drained Sharkey soils are in low positions in backswamps and in swales in undulating areas. The surface layer is dark grayish brown, slightly acid clay. The subsoil is gray and dark gray, slightly acid clay. The underlying material is gray, moderately alkaline clay.

The very poorly drained Dowling soils are in oxbow positions, sloughs, and swales. The surface layer is brown, slightly acid clay. The subsoil is gray and greenish gray, slightly acid or neutral clay.

The soils of minor extent in this unit are Bruno, Bruin, Commerce, Crevasse, and Tensas soils. The loamy Bruno, Bruin, Commerce, and Crevasse soils are in the higher positions and are flooded less frequently than the Tensas soils. The Tensas soils are on low ridges in undulating areas and in intermediate positions on natural levees.

This map unit is used mainly as cropland and forestland and for wildlife habitat. Rice, soybeans, and grain sorghum are the main crops.

This map unit is somewhat poorly suited to cultivated crops. Wetness, poor tilth, and flooding during the growing season are the main limitations. A surface drainage system is needed. Planting and harvesting are commonly delayed because of the flooding and wetness.

This map unit is well suited to forestland. The dominant trees are Nuttall oak, sugarberry, green ash, overcup oak, sweetgum, and water oak. Logging is generally limited to the drier periods because of wetness and flooding during winter and spring.

This map unit is not suited to urban uses or building sites. The main limitations are flooding, very slow permeability, and very high shrink-swell potential.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in 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.

A map unit delineation on a soil 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. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils 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 minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thereby they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. 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 contrasting components are mentioned in the map unit descriptions. A few areas of minor components 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 on the landscape.

The presence of minor components 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. If intensive use of small areas is planned, however, 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, Dundee silty clay loam, 0 to 1 percent slopes, is a phase of the Dundee series.

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

A *complex* consists of two or more soils 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. Tensas-Sharkey complex, undulating, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Commerce and Bruin soils, 0 to 3 percent slopes, frequently flooded, is an undifferentiated group in this survey area.

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.

BrA—Bruin silt loam, 0 to 1 percent slopes

Map Unit Composition

Major components
Bruin and similar soils: 65 to 88 percent

Contrasting inclusions
Commerce soils: 12 to 35 percent; these soils are lower on natural levees than the Bruin soil, are fine silty, and are somewhat poorly drained.

Characteristics of the Bruin Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Moderately well drained
Slowest permeability: Moderate (about 0.60 in/hr)
Available water capacity: Low (about 5.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 30 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 1

Typical profile
Surface layer:
0 to 6 inches; brown silt loam; strongly acid
6 to 11 inches; brown silt loam; strongly acid
Subsoil:
11 to 20 inches; yellowish brown silt loam; slightly acid

Substratum:
20 to 28 inches; brown stratified very fine sandy loam; neutral
28 to 36 inches; brown stratified silt loam; slightly alkaline
36 to 41 inches; 60 percent yellowish brown and 40 percent grayish brown stratified loam; moderately alkaline
Buried surface layer:
41 to 51 inches; very dark grayish brown silt loam; slightly alkaline
Substratum:
51 to 57 inches; brown stratified silt loam; moderately alkaline
Buried surface layer:
57 to 66 inches; dark grayish brown silt loam; moderately alkaline
Substratum:
66 to 71 inches; light olive brown stratified silt loam; moderately alkaline
71 to 81 inches; olive gray stratified silt loam; moderately alkaline

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- This soil is well suited to pasture.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.
- Moderate permeability within the depth of the absorption field somewhat limits the absorption of effluent from septic systems. An oversized absorption field may be needed.

Local roads and streets
- This soil is well suited to local roads and streets.

BrB—Bruin very fine sandy loam, 1 to 3 percent slopes

Map Unit Composition

Major components
Bruin and similar soils: 69 to 91 percent

Contrasting inclusions

Commerce soils: 0 to 21 percent; these soils are lower on natural levees than the Bruin soil, are fine silty, and are somewhat poorly drained.

Newellton soils: 0 to 10 percent; these soils are clayey over loamy.

Characteristics of the Bruin Soil

Soil properties and qualities

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Silty alluvium
Slope: 1 to 3 percent
Surface fragments: None
Drainage class: Moderately well drained
Slowest permeability: Moderate (about 0.60 in/hr)
Available water capacity: Low (about 5.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 30 to 48 inches
Runoff class: Medium
Nonirrigated land capability classification: 2e

Typical profile

Surface layer:
0 to 7 inches; dark grayish brown very fine sandy loam; slightly acid
Subsoil:
7 to 19 inches; brown very fine sandy loam; slightly acid
19 to 27 inches; brown very fine sandy loam; neutral
Substratum:
27 to 51 inches; brown stratified very fine sandy loam; slightly alkaline
51 to 80 inches; grayish brown stratified loamy very fine sand; slightly alkaline

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.

Pastureland
- This soil is well suited to pasture.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed. Structures need special design to avoid damage from wetness.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

- Moderate permeability within the depth of the absorption field somewhat limits the absorption of effluent from septic systems. An oversized absorption field may be needed.

Local roads and streets
- This soil is well suited to local roads and streets.

BuB—Bruin-Commerce silt loams, gently undulating

Map Unit Composition

Major components
Bruin and similar soils: 40 to 67 percent
Commerce and similar soils: 24 to 50 percent

Contrasting inclusions
Sharkey soils: 0 to 12 percent; these soils are very fine textured and poorly drained.
Newellton soils: 0 to 6 percent; these soils are clayey over loamy.

Characteristics of the Bruin Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Highest parts of natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Moderately well drained
Slowest permeability: Moderate (about 0.60 in/hr)
Available water capacity: Low (about 5.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 30 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 2e

Typical profile
Surface layer:
0 to 6 inches; brown silt loam; slightly acid
Subsoil:
6 to 15 inches; brown silt loam; slightly acid
15 to 21 inches; brown silt loam; neutral
Substratum:
21 to 37 inches; brown silt loam; slightly alkaline
37 to 80 inches; brown very fine sandy loam; moderately alkaline

Characteristics of the Commerce Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)

Available water capacity: Low (about 5.1 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 10 inches; dark grayish brown silt loam; slightly acid
Subsoil:
10 to 29 inches; dark grayish brown silty clay loam; neutral
29 to 36 inches; grayish brown silt loam; neutral
Substratum:
36 to 64 inches; grayish brown silt loam and silty clay loam; slightly alkaline
64 to 80 inches; grayish brown very fine sandy loam; moderately alkaline

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of these soils are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- These soils are well suited to pasture.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed. Structures need special design to avoid damage from wetness.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.
- Moderate permeability within the depth of the absorption field somewhat limits the absorption of effluent from septic systems. An oversized absorption field may be needed.

Local roads and streets
- These soils are well suited as a site for local roads and streets.
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.

CcA—Commerce silt loam, 0 to 1 percent slopes

Map Unit Composition

Major components
Commerce and similar soils: 65 to 88 percent

Contrasting inclusions
Tensas soils: 0 to 15 percent; these soils are fine textured.
Bruin soils: 0 to 10 percent; these soils are coarse silty and moderately well drained.
Sharkey soils: 0 to 5 percent; these soils are very fine textured and poorly drained.
Newellton soils: 0 to 5 percent; these soils are clayey over loamy.

Characteristics of the Commerce Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 5.1 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 7 inches; dark grayish brown silt loam; slightly alkaline
Subsoil:
7 to 15 inches; dark grayish brown silty clay loam; moderately alkaline
15 to 22 inches; dark grayish brown silty clay loam; moderately alkaline
22 to 30 inches; dark gray silt loam; moderately alkaline
30 to 43 inches; dark gray silt loam; moderately alkaline
43 to 52 inches; dark gray silt loam; moderately alkaline
52 to 63 inches; dark gray silt loam; moderately alkaline
63 to 73 inches; dark gray clay; moderately alkaline
73 to 80 inches; olive gray clay; slightly alkaline

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland (fig. 2).
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.

Figure 2.—Cotton in an area of Commerce silt loam, 0 to 1 percent slopes.

- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The restricted permeability limits the absorption and proper treatment of effluent from septic systems.
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.

CeA—Commerce silty clay loam, 0 to 1 percent slopes

Map Unit Composition

Major components
Commerce and similar soils: 72 to 100 percent

Contrasting inclusions
Sharkey soils: 0 to 10 percent; these soils are very fine textured and poorly drained.
Newellton soils: 0 to 5 percent; these soils are clayey over loamy.
Tunica soils: 0 to 5 percent; these soils are clayey over loamy and poorly drained.

Characteristics of the Commerce Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 5.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 6 inches; dark grayish brown silty clay loam; moderately acid
Subsoil:
6 to 22 inches; grayish brown silt loam; slightly acid
22 to 34 inches; grayish brown silty clay loam; neutral
Substratum:
34 to 48 inches; grayish brown silty clay loam; neutral
48 to 80 inches; grayish brown silty clay; neutral

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soil is tilled when wet.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.

- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The restricted permeability limits the absorption and proper treatment of effluent from septic systems.
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.

CoB—Commerce soils, overwash, 0 to 2 percent slopes

Map Unit Composition

Major components
Commerce, overwash, and similar soils: 100 percent

Contrasting inclusions
None

Characteristics of the Commerce, Overwash, Soils

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Crevasse fillings on flood plains
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 4.7 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 3s

Typical profile
Surface layer:
0 to 6 inches; dark yellowish brown loamy fine sand; moderately acid
Substratum:
6 to 11 inches; brown stratified very fine sandy loam; moderately acid
11 to 17 inches; brown stratified loamy fine sand; moderately acid
Subsoil:
17 to 32 inches; grayish brown silt loam; slightly acid
32 to 38 inches; dark grayish brown silty clay loam; slightly acid
Substratum:
38 to 69 inches; grayish brown stratified very fine sandy loam; slightly acid
69 to 80 inches; grayish brown stratified silt loam; neutral

Use and Management

Major land uses: Hayland

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The sandiness of the soils can reduce the traction of wheeled harvesting equipment and logging trucks.
- The sandy layers can slough, thereby reducing the efficiency of mechanical planting equipment.
- Uncontrolled burning can destroy organic matter.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The restricted permeability limits the absorption and proper treatment of effluent from septic systems.
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.

CSB—Commerce and Bruin soils, 0 to 3 percent slopes, frequently flooded

Map Unit Composition

Major components
Commerce and similar soils: 47 to 73 percent
Bruin and similar soils: 21 to 46 percent

Contrasting inclusions
Newellton soils: 0 to 13 percent; these soils are clayey over loamy.

Characteristics of the Commerce Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Concave swales in natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Somewhat poorly drained

Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 5.1 inches)
Shrink-swell potential: Moderate (about 4.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 2 inches; very dark gray stratified very fine sandy loam; slightly alkaline
2 to 8 inches; very dark grayish brown stratified silt loam; slightly alkaline
Subsoil:
8 to 21 inches; dark grayish brown stratified silt loam; slightly alkaline
21 to 29 inches; very dark grayish brown silty clay loam; slightly alkaline
29 to 33 inches; dark grayish brown stratified silty clay loam; slightly alkaline
Substratum:
33 to 80 inches; brown stratified very fine sandy loam to silt loam; slightly alkaline

Characteristics of the Bruin Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Ridges on natural levees on flood plains
Parent material: Silty alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Moderately well drained
Slowest permeability: Moderate (about 0.60 in/hr)
Available water capacity: Low (about 5.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 30 to 48 inches
Runoff class: Low
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 6 inches; very dark grayish brown silt loam; slightly acid
Subsoil:
6 to 15 inches; brown silt loam; slightly acid
Substratum:
15 to 25 inches; brown stratified silt loam; neutral
25 to 30 inches; pale brown stratified very fine sandy loam; slightly alkaline
30 to 35 inches; brown stratified silt loam; moderately alkaline
35 to 80 inches; brown stratified very fine sandy loam; moderately alkaline

Use and Management

Major land uses: Forestland and wildlife habitat (fig. 3)

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.

Figure 3.—A cottonwood plantation in an area of Commerce and Bruin soils, 0 to 3 percent slopes, frequently flooded.

- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.

Forestland
- Standing water can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.

Building sites
- The frequent flooding greatly increases the risk of damage associated with floodwater. Because of the flooding, these soils are generally unsuited to building site development.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- These soils are generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- Roads and bridges need special design to avoid the damage caused by flooding.

CuB—Crevasse fine sand, 0 to 2 percent slopes, frequently flooded

Map Unit Composition

Major components
Crevasse and similar soils: 47 to 93 percent

Contrasting inclusions
Bruno soils: 0 to 35 percent; these soils are sandy with strata of finer sediments.
Newellton soils: 0 to 18 percent; these soils are clayey over loamy.

Characteristics of the Crevasse Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Point bars on flood plains
Parent material: Sandy alluvium
Slope: 0 to 2 percent
Surface fragments: None
Drainage class: Excessively drained
Slowest permeability: Rapid (about 6.00 in/hr)
Available water capacity: Very low (about 0.9 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 42 to 72 inches
Runoff class: Low
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 7 inches; dark grayish brown fine sand; slightly acid
Substratum:
7 to 28 inches; brown stratified fine sand; neutral
28 to 80 inches; light olive brown stratified loamy fine sand; moderately alkaline

Use and Management

Major land uses: Wildlife habitat

Pastureland
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- If pastures are renovated, using a system of seedbed preparation that minimizes soil disturbance conserves soil moisture.
- This soil provides poor summer pasture.
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.

Forestland
- The limited available water capacity inhibits root development and increases the seedling mortality rate.
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.

- The sandiness of the soil can reduce the traction of wheeled harvesting equipment and logging trucks and increase the maintenance of haul roads and log landings.
- The sandy layers can slough, thereby reducing the efficiency of mechanical planting equipment.
- Uncontrolled burning can destroy organic matter.

Building sites
- The frequent flooding greatly increases the risk of damage associated with floodwater. Because of the flooding, this soil is generally unsuited to building site development.

Septic tank absorption fields
- This soil is generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Roads and bridges need special design to avoid the damage caused by flooding.

CVB—Crevasse and Bruno soils, gently undulating, frequently flooded

Map Unit Composition

Major components
Crevasse and similar soils: 44 to 76 percent
Bruno and similar soils: 19 to 51 percent

Contrasting inclusions
Newellton soils: 0 to 12 percent; these soils are clayey over loamy.

Characteristics of the Crevasse Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Point bars on flood plains
Parent material: Sandy alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Excessively drained
Slowest permeability: Rapid (about 6.00 in/hr)
Available water capacity: Very low (about 0.9 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 42 to 72 inches
Runoff class: Low
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 4 inches; dark grayish brown fine sand; slightly alkaline
Substratum:
4 to 22 inches; brown stratified loamy sand; moderately alkaline
22 to 84 inches; grayish brown loamy sand; moderately alkaline

Characteristics of the Bruno Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Point bars on flood plains
Parent material: Sandy alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Excessively drained
Slowest permeability: Rapid (about 6.00 in/hr)
Available water capacity: Very low (about 1.7 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 48 to 72 inches
Runoff class: Low
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 5 inches; dark brown loamy fine sand; slightly acid
Substratum:
5 to 21 inches; brown stratified fine sand; neutral
21 to 27 inches; dark grayish brown stratified loamy fine sand; slightly alkaline
27 to 41 inches; brown stratified loamy very fine sand; moderately alkaline
41 to 84 inches; brown stratified loamy fine sand; moderately alkaline

Use and Management

Major land uses: Forestland and wildlife habitat

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- The sandiness of the soils may reduce the traction of wheeled harvesting equipment and logging trucks and increase the maintenance of haul roads and log landings.
- The sandy layers can slough, thereby reducing the efficiency of mechanical planting equipment.
- Uncontrolled burning can destroy organic matter.

Building sites
- The frequent flooding greatly increases the risk of damage associated with floodwater. Because of the flooding, these soils are generally unsuited to building site development.
- Because of the high content of sand or gravel in the soils, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic tank absorption fields
- These soils are generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic

systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets

- Roads and bridges need special design to avoid the damage caused by flooding.

DdA—Dundee silt loam, 0 to 1 percent slopes

Map Unit Composition

Major components
Dundee and similar soils: 100 percent

Contrasting inclusions
None

Characteristics of the Dundee Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 4.7 inches)
Shrink-swell potential: Moderate (about 4.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 42 inches
Runoff class: Low
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 3 inches; brown silt loam; extremely acid
3 to 9 inches; grayish brown silt loam; extremely acid
Subsoil:
9 to 13 inches; grayish brown loam; strongly acid
13 to 23 inches; dark grayish brown loam; very strongly acid
23 to 34 inches; grayish brown very fine sandy loam; very strongly acid
34 to 43 inches; grayish brown very fine sandy loam; very strongly acid
43 to 48 inches; grayish brown loam; strongly acid
48 to 58 inches; grayish brown very fine sandy loam; strongly acid
58 to 65 inches; grayish brown loamy very fine sand; strongly acid
65 to 73 inches; grayish brown loam; strongly acid
73 to 82 inches; grayish brown silt loam; moderately acid
Substratum:
82 to 89 inches; 60 percent brown and 40 percent dark yellowish brown stratified fine sandy loam; moderately acid

Use and Management

Major land uses: Cropland and homesites

Cropland

- All areas of this soil are prime farmland.

- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- Shrinking and swelling of the soil can crack foundations and basement walls. Foundations and other structures may require special design and construction techniques or extra maintenance.

Septic tank absorption fields
- The restricted permeability and the seasonal high water table greatly limit the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.

DeA—Dundee silty clay loam, 0 to 1 percent slopes

Map Unit Composition

Major components
Dundee and similar soils: 73 to 93 percent

Contrasting inclusions
Tensas soils: 0 to 21 percent; these soils are fine textured.
Sharkey soils: 0 to 5 percent; these soils are very fine textured and poorly drained.

Characteristics of the Dundee Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 4.7 inches)

Shrink-swell potential: Moderate (about 4.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 42 inches
Runoff class: Low
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 7 inches; dark grayish brown silty clay loam; moderately acid
Subsoil:
7 to 15 inches; grayish brown silty clay loam; strongly acid
15 to 30 inches; grayish brown silt loam; strongly acid
30 to 47 inches; grayish brown silt loam; strongly acid
47 to 55 inches; grayish brown silt loam; moderately acid
Substratum:
55 to 80 inches; grayish brown stratified very fine sandy loam; slightly acid

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- Shrinking and swelling of the soil can crack foundations and basement walls. Foundations and other structures may require special design and construction techniques or extra maintenance.

Septic tank absorption fields
- The restricted permeability and the seasonal high water table greatly limit the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.

DgB—Dundee-Goldman complex, gently undulating

Map Unit Composition

Major components
Dundee and similar soils: 30 to 57 percent
Goldman and similar soils: 21 to 46 percent

Contrasting inclusions
Tensas soils: 9 to 25 percent; these soils are fine textured.
Sharkey soils: 0 to 10 percent; these soils are very fine textured and poorly drained.

Characteristics of the Dundee Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 4.7 inches)
Shrink-swell potential: Moderate (about 4.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 42 inches
Runoff class: Medium
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 6 inches; dark grayish brown silty clay loam; slightly acid
Subsoil:
6 to 14 inches; dark grayish brown silty clay loam; strongly acid
14 to 34 inches; grayish brown silty clay loam; strongly acid
34 to 44 inches; grayish brown silt loam; strongly acid
Substratum:
44 to 80 inches; grayish brown stratified very fine sandy loam; moderately acid

Characteristics of the Goldman Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Convex ridges on natural levees on flood plains
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Surface fragments: None
Drainage class: Moderately well drained
Slowest permeability: Moderate (about 0.60 in/hr)
Available water capacity: Low (about 3.9 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 42 to 60 inches
Runoff class: Low
Nonirrigated land capability classification: 2e

Typical profile
Surface layer:
0 to 5 inches; brown very fine sandy loam; moderately acid
Subsoil:
5 to 11 inches; brown very fine sandy loam; moderately acid
11 to 18 inches; brown very fine sandy loam; moderately acid
18 to 34 inches; brown very fine sandy loam; moderately acid
Substratum:
34 to 84 inches; grayish brown stratified loamy very fine sand; slightly acid

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of these soils are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Compaction can be minimized by controlling traffic.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- These soils are poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- Shrinking and swelling of the soils can crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or extra maintenance.

Septic tank absorption fields
- The restricted permeability and the seasonal high water table greatly limit the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.

DoA—Dowling clay, 0 to 1 percent slopes, frequently flooded

Map Unit Composition

Major components
Dowling and similar soils: 92 to 100 percent

Contrasting inclusions

Sharkey soils: 0 to 8 percent; these soils get dry enough to develop deep, wide cracks and slickensides.

Characteristics of the Dowling Soil

Soil properties and qualities

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Very poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.6 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Depth to seasonal water saturation: About 0 inches
Runoff class: Negligible
Nonirrigated land capability classification: 7w

Typical profile

Surface layer:
0 to 4 inches; very dark grayish brown clay; strongly acid
Subsoil:
4 to 18 inches; gray clay; slightly acid
18 to 31 inches; greenish gray clay; slightly acid
31 to 80 inches; gray clay; neutral

Use and Management

Major land uses: Recreation and wildlife habitat (fig. 4)

Forestland

- Standing water or the seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Wetness in the soil can limit the use logging trucks.
- Ponding restricts the safe use of roads by logging trucks.
- Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites

- Because of the flooding and ponding, this soil is generally unsuited to building site development.
- The frequent flooding greatly increases the risk of damage associated with floodwater.
- Because of ponding, the period when excavations can be made may be restricted and intensive construction site development and extra building maintenance may be needed.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Figure 4.—An area of Dowling clay, 0 to 1 percent slopes, frequently flooded.

Septic tank absorption fields
- Because of ponding and flooding, this soil is generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Ponding affects the ease of excavation and grading and limits the load bearing capacity of the soil.
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.
- Roads and bridges need special design to avoid the damage caused by flooding.

LE—Levees-Borrow pits complex, nearly level to strongly sloping

Map Unit Composition

Major components
Levees and similar areas: 60 percent
Borrow pits and similar areas: 40 percent

Contrasting inclusions
None

Characteristics of the Levees

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Artificial levees on flood plains

Parent material: Spoil from pits
Slope: 5 to 20 percent
Surface fragments: None
Drainage class: Not rated
Slowest permeability: Not rated
Available water capacity: Very low (about 0.0 inches)
Shrink-swell potential: Not rated
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: Not rated
Runoff class: High
Nonirrigated land capability classification: Not rated

Characteristics of the Borrow Pits

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Artificial levees on flood plains
Parent material: Mississippi alluvium from which the surface layer has been removed
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Not rated
Slowest permeability: Not rated
Available water capacity: Very low (about 0.0 inches)
Shrink-swell potential: Not rated
Frequency of flooding: Rare
Frequency of ponding: Frequent
Depth to seasonal water saturation: About 0 to 12 inches
Runoff class: Negligible
Nonirrigated land capability classification: 7w

Use and Management

Major land uses: Pasture and hayland

Pastureland
- Avoiding overgrazing and maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion-control measures are needed if pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- If pastures are renovated, using a system of seedbed preparation that minimizes soil disturbance conserves soil moisture.
- This map unit provides poor summer pasture.

Forestland
- If the soil is disturbed, the slope increases the hazard of erosion.
- The limited available water capacity inhibits root development and increases the seedling mortality rate.
- The seasonal high water table in the Borrow pits can inhibit the growth of some species of seedlings by reducing root respiration.
- The low pH can cause a nutrient imbalance in seedlings.
- Soil wetness in the Borrow pits can limit the use of logging trucks.
- The slope creates unsafe operating conditions and reduces the operating efficiency of logging trucks.
- The slope can restrict the use of some mechanical planting equipment.
- Stones restrict the use of equipment during site preparation for planting or seeding.

Building sites

- This map unit is generally unsuitable for homesites. It is subject to rare flooding under unusual weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.

Septic tank absorption fields

- Because of the seasonal high water table, this map unit is generally unsuitable as a site for septic tank absorption fields.
- Flooding limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

NeA—Newellton clay, 0 to 1 percent slopes

Map Unit Composition

Major components

Newellton and similar soils: 78 to 96 percent

Contrasting inclusions

Commerce soils: 0 to 11 percent; these soils are fine silty.
Sharkey soils: 0 to 11 percent; these soils are very fine textured and poorly drained.

Characteristics of the Newellton Soil

Soil properties and qualities

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (about 0.06 in/hr)
Available water capacity: Low (about 4.6 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 12 to 36 inches
Runoff class: Medium
Nonirrigated land capability classification: 2w

Typical profile

Surface layer:
0 to 7 inches; dark grayish brown clay; slightly acid
Subsoil:
7 to 16 inches; dark grayish brown clay; neutral
16 to 26 inches; brown very fine sandy loam; neutral
Substratum:
26 to 34 inches; grayish brown stratified silt loam to very fine sandy loam; moderately alkaline
34 to 80 inches; brown stratified very fine sandy loam to fine sand; moderately alkaline

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soil is tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth may be restricted by the high content of clay.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A subsurface drainage system can help to lower the seasonal high water table.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soil.

OW—Oil-waste land

Map Unit Composition

Major components
Oil-waste land: 92 to 100 percent

Contrasting inclusions
Bruin soils: 0 to 8 percent; these soils are in the higher convex positions.
Sharkey soils: 0 to 8 percent; these soils are in positions similar to those of the Oil-waste land.

Characteristics of the Oil-Waste land

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees and backswamps on flood plains
Parent material: Loamy and clayey alluvium
Slope: 0 to 3 percent

Drainage class: Very poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low to very low (about 5.0 to 2.9 inches)
Shrink-swell potential: Low to very high (about 1.5 to 17.0 percent linear extensibility)
Frequency of flooding: Rare
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 48 inches
Runoff class: High
Nonirrigated land capability classification: 8s

Typical profile
Surface layer:
0 to 2 inches; dark grayish brown clay; strongly acid
2 to 7 inches; dark gray clay; moderately acid
Subsoil:
7 to 11 inches; dark gray clay; moderately acid
11 to 20 inches; dark gray clay; slightly acid
20 to 28 inches; dark gray clay; neutral
28 to 49 inches; gray clay; slightly alkaline
Substratum:
49 to 80 inches; gray clay; slightly alkaline

Use and Management

Major land uses: Unsuited for all uses

Cropland
- This map unit is unsuited to cropland.

Pastureland
- This map unit is unsuited to pastureland.

Forestland
- This map unit is unsuited to forestland.

Building sites
- This map unit is unsuited to building site development.

Septic tank absorption fields
- This map unit is unsuited to septic tank absorption fields.

Local Roads and Streets
- This map unit is unsuited to local roads and streets.

This map unit is in areas where liquid oil and the accompanying saltwater brine waste have been deposited on the surface as a result of overflows and spills during oil exploration and production. These spills are in areas that range from $^1/_2$ to more than 25 acres in size. Only those areas 5 acres and larger are delineated on the maps. These areas occur on any soil on which oil exploration and production have been active. The surface texture varies. Most slopes are 0 to 3 percent. These areas are poorly suited to any use. Most areas are eroded and void of vegetation.

RW—Riverwash, frequently flooded

Map Unit Composition

Major components
Riverwash and similar soils: 100 percent

Characteristics of the Riverwash

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Point bar on alluvial plain
Parent material: Sandy Mississippi River alluvium
Slope: 0 to 2 percent
Drainage class: Excessively drained
Slowest permeability: Rapid (About 6.00 in/hr)
Available water capacity: Very low (About 0.9 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 6 to 72 inches
Runoff class: Low
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 4 inches; 90 percent dark grayish brown fine sand; slightly alkaline
Substratum:
4 to 22 inches; 90 percent brown stratified loamy sand; moderately alkaline
22 to 84 inches; 90 percent grayish brown loamy sand; moderately alkaline

Use and Management

Major land uses: Wildlife habitat

Pastureland
- Little or no vegetation grows in areas of this map unit because the sediments deposited by the frequent flooding are unstabilized and constantly being reworked.

Forestland
- Little or no vegetation grows in areas of this map unit because the sediments deposited by the frequent flooding are unstabilized and constantly being reworked.

Building sites
- The frequent flooding greatly increases the risk of damage associated with floodwater. Because of the flooding, this map unit is generally unsuited to building site development.
- Because of the high content of sand or gravel in areas of this map unit, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

ShA—Sharkey clay, 0 to 1 percent slopes

Map Unit Composition

Major components
Sharkey and similar soils: 92 to 100 percent

Contrasting inclusions
Tensas soils: 0 to 8 percent; these soils are loamy below a depth of 36 inches.

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Backswamps on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent

Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Very low (about 2.9 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Rare
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: High
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 2 inches; dark grayish brown clay; strongly acid
2 to 7 inches; dark gray clay; moderately acid
Subsoil:
7 to 11 inches; dark gray clay; moderately acid
11 to 20 inches; dark gray clay; slightly acid
20 to 28 inches; dark gray clay; neutral
28 to 49 inches; gray clay; slightly alkaline
Substratum:
49 to 80 inches; gray clay; slightly alkaline

Use and Management

Major land uses: Cropland and homesites (fig. 5)

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.

Figure 5.—Rice in an area of Sharkey clay, 0 to 1 percent slopes.

- Clods can form if the soil is tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- The seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- Wetness in the soil can limit the use logging trucks.
- Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- This soil is generally unsuited to building site development. It is subject to rare flooding under unusual weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Because of the seasonal high water table, this soil is generally unsuitable as a site for septic tank absorption fields.
- Flooding limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soil.
- Roads and bridges need special design to avoid the damage caused by flooding.

SkA—Sharkey clay, 0 to 1 percent slopes, occasionally flooded

Map Unit Composition

Major components
Sharkey and similar soils: 100 percent

Contrasting inclusions
None

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Backswamps on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Very low (about 2.9 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Occasional
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: High
Nonirrigated land capability classification: 4w

Typical profile
Surface layer:
0 to 5 inches; dark grayish brown clay; slightly acid
Subsoil:
5 to 19 inches; gray clay; slightly acid
19 to 42 inches; dark gray clay; slightly acid
Substratum:
42 to 80 inches; gray clay; moderately alkaline

Use and Management

Major land uses: Forestland and wildlife habitat (fig. 6)

Cropland
- This soil is prime farmland in areas that are protected from flooding or not frequently flooded during the growing season.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soil is tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Measures are needed to protect the soil from scouring and to minimize the crop-residue loss caused by flooding.
- Small-grain crops may be damaged by flooding in winter and spring.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Figure 6.—Forestland in an area of Sharkey clay, 0 to 1 percent slopes, occasionally flooded.

- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland

- The seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Wetness in the soil can limit the use logging trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment and restricts the use of equipment for site preparation to the drier periods.

Building sites

- This soil is generally unsuited to building site development. It is subject to occasional flooding under normal weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- This soil is generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

- This soil is also generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soil.
- Roads and bridges need special design to avoid the damage caused by flooding.

SrA—Sharkey clay, 0 to 1 percent slopes, frequently flooded

Map Unit Composition

Major components
Sharkey and similar soils: 100 percent

Contrasting inclusions
None

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Backswamps on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 3.1 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: High
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 10 inches; very dark grayish brown clay; moderately acid
Subsoil:
10 to 30 inches; dark gray clay; slightly acid
30 to 41 inches; dark gray clay; slightly acid
41 to 84 inches; dark gray clay; neutral

Use and Management

Major land uses: Forestland and wildlife habitat

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- The seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Wetness in the soil can limit the use logging trucks.
- Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- The frequent flooding greatly increases the risk of damage associated with floodwater. Because of the flooding, this soil is generally unsuited to building site development.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.
- This soil is also generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soil.
- Roads and bridges need special design to avoid the damage caused by flooding.

SsB—Sharkey-Dowling clays, 0 to 3 percent slopes

Map Unit Composition

Major components
Sharkey and similar soils: 37 to 64 percent
Dowling and similar soils: 33 to 60 percent

Contrasting inclusions
Tensas soils: 0 to 8 percent; these soils are fine textured and somewhat poorly drained.

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Backswamps on flood plains
Parent material: Clayey alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)

Available water capacity: Very low (about 2.9 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Rare
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Very high
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 4 inches; dark gray clay; slightly acid
Subsoil:
4 to 10 inches; dark grayish brown clay; neutral
10 to 24 inches; gray clay; neutral
24 to 42 inches; gray clay; slightly alkaline
42 to 80 inches; gray clay; slightly alkaline

Characteristics of the Dowling Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Concave meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Very poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.6 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Depth to seasonal water saturation: About 0 inches
Runoff class: Negligible
Nonirrigated land capability classification: 7w

Typical profile
Surface layer:
0 to 6 inches; very dark grayish brown clay; moderately acid
Subsoil:
6 to 18 inches; gray clay; slightly acid
18 to 31 inches; gray clay; slightly acid
31 to 49 inches; gray clay; slightly acid
49 to 80 inches; greenish gray clay; slightly acid

Use and Management

Major land uses: Cropland and wildlife habitat (fig. 7)

Cropland
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soils are tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Crops are not commonly grown in areas of this map unit because of the frequent flooding.

Figure 7.—An area of Sharkey-Dowling clays, 0 to 3 percent slopes.

- Measures are needed to protect the soils from scouring and to minimize the crop-residue loss caused by flooding.
- A combination of surface and subsurface drainage can help to remove excess water. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Standing water or the seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Wetness in the soils can limit the use logging trucks.
- Ponding restricts the safe use of roads by logging trucks.
- Because of the content of clay, these soils become sticky when wet. The stickiness

increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- Because of the flooding and ponding, these soils are generally unsuited to building site development.
- The frequent flooding greatly increases the risk of damage associated with floodwater.
- Because of ponding, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Because of the flooding and ponding, this soil is generally unsuitable as a site for septic tank absorption fields.
- The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Ponding affects the ease of excavation and grading and limits the load bearing capacity of these soils.
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- Roads and bridges need special design to avoid the damage caused by flooding.

StB—Sharkey-Tunica-Newellton complex, gently undulating

Map Unit Composition

Major components
Sharkey and similar soils: 23 to 47 percent
Tunica and similar soils: 18 to 41 percent
Newellton and similar soils: 15 to 38 percent

Contrasting inclusions
Dowling soils: 0 to 11 percent; these soils are very fine textured and do not get dry enough to develop deep, wide cracks and slickensides.
Commerce soils: 0 to 5 percent; these soils are fine silty.

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Concave meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Very low (about 2.9 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)

Frequency of flooding: Occasional
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Medium
Nonirrigated land capability classification: 4w

Typical profile
Surface layer:
0 to 11 inches; dark grayish brown clay; moderately acid
Subsoil:
11 to 28 inches; dark gray clay; slightly acid
28 to 37 inches; dark grayish brown clay; neutral
37 to 50 inches; dark gray clay; neutral
50 to 73 inches; gray clay; slightly alkaline
Substratum:
73 to 95 inches; dark grayish brown and brown clay; moderately alkaline
95 to 99 inches; grayish brown silty clay loam; moderately alkaline

Characteristics of the Tunica Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Intermediate positions on natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 36 inches
Runoff class: Very high
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 6 inches; dark grayish brown silty clay; slightly acid
Subsoil:
6 to 17 inches; dark gray silty clay; slightly acid
17 to 26 inches; dark gray clay; slightly acid
26 to 32 inches; dark grayish brown silty clay loam; slightly acid
32 to 41 inches; dark gray silt loam; neutral
Substratum:
41 to 53 inches; dark grayish brown silt loam; slightly alkaline
53 to 57 inches; grayish brown fine sandy loam; slightly alkaline
57 to 84 inches; grayish brown very fine sandy loam; slightly alkaline

Characteristics of the Newellton Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 1 percent

Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (about 0.06 in/hr)
Available water capacity: Low (about 4.6 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 12 to 36 inches
Runoff class: High
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 6 inches; dark grayish brown clay; slightly acid
Subsoil:
6 to 17 inches; dark grayish brown clay; slightly acid
17 to 22 inches; grayish brown silt loam; slightly acid
22 to 33 inches; grayish brown silt loam; neutral
Substratum:
33 to 73 inches; grayish brown very fine sandy loam; neutral
73 to 89 inches; grayish brown fine sandy loam; neutral

Use and Management

Major land uses: Cropland and homesites (fig. 8)

Cropland
- All areas of these soils are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.

Figure 8.—Sorghum in an area of Sharkey-Tunica-Newellton complex, gently undulating.

- Clods can form if the soils are tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Measures are needed to protect the soils from scouring and to minimize the crop-residue loss caused by flooding.
- Small-grain crops may be damaged by flooding in winter and spring.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- The seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Wetness in the soils can limit the use logging trucks.
- The stickiness of the soils reduces the efficiency of mechanical planting equipment and restricts the use of equipment for site preparation to the drier periods.

Building sites
- These soils are generally unsuited to building site development. They are subject to occasional flooding under normal weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Because of the flooding and the seasonal high water table, these soils are generally unsuitable as a site for septic tank absorption fields.
- The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soils.
- Roads and bridges need special design to avoid the damage caused by flooding.

SYA—Sharkey, Tunica, and Newellton soils, gently undulating, frequently flooded

Map Unit Composition

Major components
Sharkey and similar soils: 37 to 64 percent
Tunica and similar soils: 15 to 39 percent
Newellton and similar soils: 12 to 35 percent

Contrasting inclusions
None

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Concave meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 2 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 3.0 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Negligible
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 9 inches; very dark grayish brown clay; slightly acid
Subsoil:
9 to 23 inches; dark gray clay; slightly acid
23 to 33 inches; gray clay; neutral
33 to 56 inches; gray clay; neutral
Substratum:
56 to 69 inches; gray silty clay loam; neutral
69 to 83 inches; grayish brown silt loam; slightly alkaline

Characteristics of the Tunica Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Intermediate positions on natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 2 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 3.2 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 36 inches

Runoff class: Medium
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 7 inches; very dark grayish brown clay; slightly acid
Subsoil:
7 to 12 inches; dark gray clay; moderately acid
12 to 30 inches; dark gray clay; moderately acid
Substratum:
30 to 48 inches; grayish brown loam; slightly acid
48 to 81 inches; grayish brown very fine sandy loam; slightly acid

Characteristics of the Newellton Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Convex ridges on natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (about 0.06 in/hr)
Available water capacity: Low (about 4.6 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: Frequent
Frequency of ponding: None
Depth to seasonal water saturation: About 12 to 36 inches
Runoff class: High
Nonirrigated land capability classification: 5w

Typical profile
Surface layer:
0 to 4 inches; dark grayish brown silty clay loam; neutral
Subsoil:
4 to 14 inches; dark grayish brown silty clay; slightly alkaline
Substratum:
14 to 20 inches; stratified silt loam; moderately alkaline
20 to 36 inches; grayish brown stratified very fine sandy loam; moderately alkaline
36 to 46 inches; grayish brown stratified very fine sandy loam; moderately alkaline
46 to 80 inches; grayish brown stratified silt loam; moderately alkaline

Use and Management

Major land uses: Forestland and wildlife habitat

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- The seasonal high water table can restrict root respiration, thereby inhibiting the growth of some species of seedlings.

- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Wetness in the soils can limit the use logging trucks.
- Because of the content of clay, these soils become sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- The frequent flooding greatly increases the risk of damage associated with floodwater. Because of the flooding, these soils are generally unsuited to building site development.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Because of the flooding and the seasonal high water table, these soils are generally unsuitable as a site for septic tank absorption fields.
- The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soils.
- Roads and bridges need special design to avoid the damage caused by flooding.

TaA—Tensas clay, 0 to 1 percent slopes

Map Unit Composition

Major components
Tensas and similar soils: 82 to 98 percent

Contrasting inclusions
Sharkey soils: 0 to 12 percent; these soils are very fine textured and poorly drained.
Newellton soils: 0 to 6 percent; these soils are clayey over loamy.

Characteristics of the Tensas Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.8 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None

Depth to seasonal water saturation: About 12 to 36 inches
Runoff class: High
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 4 inches; very dark grayish brown clay; moderately acid
Subsoil:
4 to 20 inches; dark grayish brown clay; strongly acid
20 to 29 inches; grayish brown clay; strongly acid
29 to 36 inches; grayish brown silty clay loam; moderately acid
Substratum:
36 to 80 inches; grayish brown very fine sandy loam; neutral

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soil is tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth may be restricted by the high content of clay.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soil.

TeB—Tensas-Sharkey clays, gently undulating

Map Unit Composition

Major components
Tensas and similar soils: 39 to 56 percent
Sharkey and similar soils: 27 to 44 percent

Contrasting inclusions
Newellton soils: 0 to 16 percent; these soils are clayey over loamy.
Dundee soils: 0 to 8 percent; these soils are fine silty.

Characteristics of the Tensas Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.7 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 12 to 36 inches
Runoff class: Very high
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 4 inches; dark grayish brown clay; strongly acid
Subsoil:
4 to 11 inches; grayish brown clay; strongly acid
11 to 19 inches; grayish brown silty clay; strongly acid
19 to 30 inches; grayish brown silty clay loam; strongly acid
30 to 33 inches; brown loam; moderately acid
33 to 42 inches; grayish brown sandy clay loam; moderately acid
42 to 56 inches; light olive brown very fine sandy loam; moderately acid
56 to 70 inches; light olive brown silt loam; slightly acid
70 to 76 inches; gray silty clay loam; slightly acid
76 to 86 inches; gray silt loam; slightly acid
86 to 89 inches; olive gray silty clay loam; slightly acid

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent

Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Very low (about 2.9 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Occasional
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Very high
Nonirrigated land capability classification: 4w

Typical profile
Surface layer:
0 to 4 inches; dark grayish brown clay; strongly acid
Subsoil:
4 to 21 inches; gray clay; strongly acid
21 to 34 inches; gray clay; strongly acid
34 to 42 inches; gray clay; moderately acid
42 to 80 inches; gray clay; neutral

Use and Management

Major land uses: Cropland and homesites (fig. 9)

Cropland
- All areas of these soils are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soils are tilled when wet.

Figure 9.—Cotton in an area of Tensas-Sharkey clays, gently undulating.

- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Measures are needed to protect the soils from scouring and to minimize the crop-residue loss caused by flooding.
- Small-grain crops may be damaged by flooding in winter and spring.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Because of the content of clay, these soils become sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- These soils are generally unsuited to building site development. They are subject to occasional flooding under normal weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- These soils are generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soils.
- Roads and bridges need special design to avoid the damage caused by flooding.

TeD—Tensas-Sharkey complex, undulating

Map Unit Composition

Major components
Tensas and similar soils: 27 to 53 percent
Sharkey and similar soils: 24 to 50 percent

Contrasting inclusions
Dundee soils: 0 to 21 percent; these soils are fine silty.
Goldman soils: 0 to 10 percent; these soils are coarse silty and moderately well drained.
Newellton soils: 0 to 8 percent; these soils are clayey over loamy.

Characteristics of the Tensas Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Convex ridges on natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 8 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.7 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 12 to 36 inches
Runoff class: Very high
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 5 inches; dark grayish brown silty clay; moderately acid
Subsoil:
5 to 18 inches; grayish brown clay; strongly acid
18 to 29 inches; grayish brown clay; strongly acid
29 to 41 inches; grayish brown very fine sandy loam; strongly acid
41 to 80 inches; grayish brown and dark yellowish brown very fine sandy loam; slightly acid

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Very low (about 2.9 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Occasional
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches

Runoff class: Very high
Nonirrigated land capability classification: 4w

Typical profile
Surface layer:
0 to 6 inches; dark grayish brown clay; moderately acid
Subsoil:
6 to 15 inches; gray clay; strongly acid
15 to 40 inches; gray clay; strongly acid
40 to 60 inches; dark gray clay; slightly alkaline
60 to 84 inches; grayish brown silty clay loam; slightly alkaline
Substratum:
84 to 88 inches; grayish brown very fine sandy loam; moderately alkaline

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of these soils are prime farmland.
- Grassed waterways can be used in some areas to slow and direct the movement of water and to reduce the hazard of erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and the hazard of erosion.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soils are tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Measures are needed to protect the soils from scouring and to minimize the crop-residue loss caused by flooding.
- Small-grain crops may be damaged by flooding in winter and spring.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Pastureland
- Erosion-control measures are needed if pastures are renovated.
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Flooding can leave sediment on forage plants, thereby reducing the palatability of the plants and the forage intake by grazing animals.
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The flooding can damage haul roads, increase maintenance costs, and restrict the safe use of roads by logging trucks.
- Because of the content of clay, these soils become sticky when wet. The stickiness

increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to the drier periods.

Building sites
- These soils are generally unsuited to building site development. They are subject to occasional flooding under normal weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- These soils are generally unsuitable as a site for septic tank absorption fields. The flooding greatly limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.
- Because of the slope, special design and installation techniques are needed for distribution lines. Also, seepage of poorly treated effluent is a concern.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soils.
- Roads and bridges need special design to avoid the damage caused by flooding.

TkB—Tensas-Sharkey-Dundee complex, gently undulating

Map Unit Composition

Major components
Tensas and similar soils: 21 to 46 percent
Sharkey and similar soils: 21 to 46 percent
Dundee and similar soils: 18 to 42 percent

Contrasting inclusions
Goldman soils: 0 to 8 percent; these soils are coarse silty and moderately well drained.

Characteristics of the Tensas Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 3 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.7 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 12 to 36 inches

Runoff class: Very high
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 7 inches; silty clay; moderately acid
Subsoil:
7 to 17 inches; clay; moderately acid
17 to 25 inches; silty clay; moderately acid
25 to 38 inches; silty clay loam; moderately acid
38 to 49 inches; silt loam; moderately acid
49 to 80 inches; silt loam; neutral

Characteristics of the Sharkey Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Concave meander scars on flood plains
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 3.0 inches)
Shrink-swell potential: Very high (about 17.0 percent linear extensibility)
Frequency of flooding: Rare
Frequency of ponding: None
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Very high
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 7 inches; dark grayish brown clay; moderately acid
Subsoil:
7 to 17 inches; dark gray clay; strongly acid
17 to 32 inches; dark gray clay; moderately acid
32 to 49 inches; gray clay; slightly acid
49 to 80 inches; gray stratified silty clay; neutral

Characteristics of the Dundee Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Convex ridges on natural levees on flood plains
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Surface fragments: None
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (about 0.20 in/hr)
Available water capacity: Low (about 4.2 inches)
Shrink-swell potential: Moderate (about 4.5 percent linear extensibility)
Frequency of flooding: None
Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 42 inches
Runoff class: Medium
Nonirrigated land capability classification: 2w

Typical profile
Surface layer:
0 to 5 inches; dark grayish brown silt loam; moderately acid
5 to 12 inches; dark grayish brown silty clay loam; strongly acid
Subsoil:
12 to 25 inches; grayish brown loam; strongly acid
25 to 36 inches; grayish brown silt loam; strongly acid
Substratum:
36 to 53 inches; grayish brown stratified silt loam; moderately acid
53 to 80 inches; brown stratified silt loam; slightly alkaline

Use and Management

Major land uses: Cropland and homesites (fig. 10)

Cropland
- All areas of these soils are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soils are tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth is restricted by the very high content of clay.
- Maintaining or increasing the content of organic matter in the soils helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A subsurface drainage system can help to lower the seasonal high water table. The movement of water into the subsurface drains, however, is restricted. Drainage guides can be used to determine the spacing requirements for tile.
- Including deep-rooted cover crops in the rotation improves soil structure and provides pathways in the clayey subsoil, thereby facilitating the movement of water into subsurface drains.

Figure 10.—Corn in an area of Tensas-Sharkey-Dundee complex, gently undulating.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soils, ruts may form, resulting in unsafe conditions and damage to equipment.
- The stickiness of the soils reduces the efficiency of mechanical planting equipment and restricts the use of equipment for site preparation to the drier periods.

Building sites
- These soils are generally unsuited to building site development. They are subject to rare flooding under unusual weather conditions. The flooding can result in physical damage and costly repairs to buildings. Special design of structures, including farm outbuildings, may be needed to avoid the damage.
- In some areas, the high content of clay in the subsoil increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- These soils are generally poorly suited to septic tank absorption fields. The flooding limits the absorption and proper treatment of effluent from septic systems. Rapidly moving floodwater can damage some components of septic systems.
- The restricted permeability and the seasonal high water table greatly limit the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, these soils may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soils.
- Roads and bridges need special design to avoid the damage caused by flooding.

TnA—Tunica clay, 0 to 1 percent slopes

Map Unit Composition

Major components
Tunica and similar soils: 65 to 88 percent

Contrasting inclusions
Sharkey soils: 0 to 30 percent; these soils are clayey throughout.
Newellton soils: 0 to 5 percent; these soils are loamy below a depth of 20 inches.

Characteristics of the Tunica Soil

Soil properties and qualities
Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Landform: Intermediate positions on natural levees on flood plains
Parent material: Clayey alluvium over loamy alluvium
Slope: 0 to 1 percent
Surface fragments: None
Drainage class: Poorly drained
Slowest permeability: Impermeable (about 0.00 in/hr)
Available water capacity: Low (about 4.0 inches)
Shrink-swell potential: Low (about 1.5 percent linear extensibility)
Frequency of flooding: None

Frequency of ponding: None
Depth to seasonal water saturation: About 18 to 36 inches
Runoff class: High
Nonirrigated land capability classification: 3w

Typical profile
Surface layer:
0 to 5 inches; dark grayish brown clay; slightly acid
Subsoil:
5 to 18 inches; gray clay; neutral
18 to 28 inches; gray clay; neutral
Substratum:
28 to 43 inches; grayish brown silt loam; neutral
43 to 49 inches; gray very fine sandy loam; neutral
49 to 68 inches; gray silt loam; neutral
68 to 84 inches; gray silty clay; neutral

Use and Management

Major land uses: Cropland and homesites

Cropland
- All areas of this soil are prime farmland.
- Careful selection and application of chemicals and fertilizers can minimize contamination of ground water.
- Clods can form if the soil is tilled when wet.
- Compaction can be minimized by controlling traffic.
- The rooting depth may be restricted by the high content of clay.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland
- Excess water should be removed, or species of grasses or legumes that are adapted to wet soil conditions should be grown.
- Compaction can be minimized by restricting grazing during wet periods.

Forestland
- Because of the low strength of the soil, ruts may form, resulting in unsafe conditions and damage to equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment and restricts the use of equipment for site preparation to the drier periods.

Building sites
- This soil is poorly suited to building site development. Structures may need special design to avoid damage from wetness.
- The seasonal high water table can restrict the period when excavations can be made. A higher than normal degree of construction site development and building maintenance may be needed.

Septic tank absorption fields
- The restricted permeability and the seasonal high water table greatly limit the absorption and proper treatment of effluent from septic systems. Costly measures may be needed to lower the water table in the absorption field.

Local roads and streets
- Because of shrinking and swelling, this soil may not be suitable as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and limits the load-bearing capacity of the soil.

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, forestland, 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. 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.

About 316,745 acres, or nearly 77 percent of the survey area, would meet the requirements for prime farmland. Most areas of the parish are prime farmland, except those areas subject to frequent flooding, and are mainly behind the Mississippi River Protection Levee.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed below. 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."

The soils identified as prime farmland in Tensas Parish are:

BrA	Bruin silt loam, 0 to 1 percent slopes
BrB	Bruin very fine sandy loam, 1 to 3 percent slopes
BuB	Bruin-Commerce silt loams, gently undulating
CcA	Commerce silt loam, 0 to 1 percent slopes

CeA	Commerce silty clay loam, 0 to 1 percent slopes
DdA	Dundee silt loam, 0 to 1 percent slopes
DeA	Dundee silty clay loam, 0 to 1 percent slopes
DgB	Dundee-Goldman complex, gently undulating
NeA	Newellton clay, 0 to 1 percent slopes
ShA	Sharkey clay, 0 to 1 percent slopes
StB	Sharkey-Tunica-Newellton complex, gently undulating
TaA	Tensas clay, 0 to 1 percent slopes
TeB	Tensas-Sharkey clays, gently undulating
TeD	Tensas-Sharkey complex, undulating
TkB	Tensas-Sharkey-Dundee complex, gently undulating
TnA	Tunica clay, 0 to 1 percent slopes
SkA	Sharkey clay, 0 to 1 percent slopes, occasionally flooded (if protected from flooding or rarely or not flooded during the growing season)

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 for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; 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 that is in harmony with nature.

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.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited or not limited by all of the soil features that affect a specified use. Terms for the limitation classes are *not limited, slightly limited, moderately limited, limited,* and *very limited*. In certain tables, the soils are rated as *improbable, possible,* or *probable* sources of specific materials used for construction materials.

Numerical Ratings

Numerical ratings in the tables indicate the severity of individual limitations. They also indicate the overall degree to which a soil is limited or not limited for a specific use. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

The numerical ratings used to express the severity of individual limitations indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation.

In tables that use limitation class terms, such as *very limited* or *limited*, the limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each map unit component. The overall limitation rating for the component is based on the most severe limitation.

Crops and Pasture

Richard C. Aycock, conservation agronomist, Natural Resources Conservation Service, helped prepare this section.

About 182,000 of the approximately 190,000 acres of cleared land in Tensas Parish was used for crops and pasture in 2001. About 180,000 acres was used for row crops, mainly cotton, and about 2,000 acres was used for pasture and hay. Other crops grown separately or in rotation with cotton include corn, soybeans, grain sorghum, and wheat. The acreage of cropland is decreasing as acreage eligible for reserve programs is converted back to hardwood forest.

Differences in crop suitability and management needs result from differences in soil characteristics, such as fertility levels, erodibility, content of organic matter, drainage, flooding, and availability of water for plants. Cropping systems and tillage are also important parts of management. Because each farm has a unique pattern of soils, crops, and management systems, the principles of farm management need to be applied to specific soils and crops. The following sections present general principles of management that can be widely applied to the soils of Tensas Parish.

Pasture and Hayland

About 2,000 acres was used for pasture and hayland in Tensas Parish in 2001. Perennial grasses, legumes, or mixtures of both are grown for pasture and hay. The mixtures generally consist of either a summer or winter grass and a suitable legume. Many cattle producers also seed ryegrass or small grain in the field for use as winter and spring forage. Excess grass in the summer is harvested as hay for the winter.

Common bermudagrass, hybrid bermudagrass, and dallisgrass are the most common summer perennials in the parish. Hybrid bermudagrass produces good quality forage if it is grown on loamy soils. It is difficult to establish on poorly drained, clayey soils. Tall fescue, the chief winter perennial grass, grows well only on soils that have favorable moisture content. All of these grasses respond well to fertilizers, especially nitrogen.

White clover and vetch are the most commonly grown legumes. They respond well to lime, particularly if they are grown on acid soils. Proper grazing is essential for the production of high quality forage and to ensure stand survival. Brush control, weed control, applications of fertilizer and lime, and renovation of the pasture are also important.

The understory of native plants in forestland produces significant volumes of forage. Forage volume varies with the forestland site, the condition of the native forage, and the density of the timber stand. Although most forestland is managed mainly for timber production or wildlife habitat, substantial volumes of forage can be obtained from areas that are well managed. Stocking rates and grazing periods need to be carefully managed to obtain optimum forage production and to prevent damage to the forestland resource.

Fertilizer and Lime

The soils of the parish range from strongly acid to mildly alkaline in the surface layer. Soils on older landforms along the Tensas Rivers generally are strongly acid and have medium fertility. Examples are Dundee, Tensas, and Goldman soils. These soils may need lime and a complete fertilizer if used to grow non-leguminous crops and pasture plants. Bruin, Commerce, Tunica, and Sharkey soils formed in recent sediments along the Mississippi River and still have large areas in which the surface layer is slightly acid to mildly alkaline and that have high fertility. In these areas, only nitrogen fertilizer is needed to grow non-leguminous crops. In some areas, however, the continuous production of high yielding crops and the application of high rates of nitrogen fertilizer have increased the need for lime, phosphorus, potassium, calcium, magnesium, sulfur, and some micronutrients. Lime and fertilizer needs should be based on current (less than 3 years old) soil tests that adequately represent all combinations of soils, crops, and management unique to each farm.

Organic Matter

Organic matter is an important source of nitrogen for crop growth. The content of organic matter in a soil is a primary indicator of soil quality (health) and of carbon sequestration. Organic matter increases the rate of water intake, reduces the extent of surface crusting, helps to control erosion, and improves tilth. Soils that are mainly used for crops in conventionally tilled production systems have a low or moderately low content of organic matter. The level of organic matter can be increased significantly by conservation tillage systems, which leave substantial amounts of plant residue on the surface throughout the year. The content of organic matter in a soil can also be increased in conventionally tilled systems by managing plant residues and volunteer vegetation or by using cover crops on the soil during critical periods and reducing the seedbed preparation period to 3 weeks or less prior to planting. Other practices that are effective for maintaining or increasing the content of organic matter in a soil include using crop rotations, adding animal manure or other organic by-products, and including perennial grasses and legumes in the rotation.

Tillage

Dramatic changes in tillage practices have occurred in recent years. Herbicide-tolerant crops, along with improvements in tillage implements, planters, cultivators, and sprayers, have drastically reduced the need for the conventional practices of the past. They have enabled farmers to adopt conservation tillage and reduced tillage practices into their production systems. Controlled-traffic systems have reduced the need for annual deep tillage to break up compacted layers in loamy soils. Clayey soils that become cloddy when tilled conventionally are tilled only enough to maintain permanent beds or to fill in ruts from harvesting operations. According to the Conservation Technology Information Center (2006), conservation tillage was used on over 45 percent of the cropland in Tensas Parish during 2002. Conventional systems have changed from multiple passes of full-width soil inverting operations that leave the soil bare for extended periods prior to planting. Modern conventional systems involve far fewer trips over the field, use a combination of implements that do not invert and bury residue under several inches of soil, and have much shorter periods in which the soil is bare prior to planting.

Drainage and Flood Control

Surface drainage is needed to make most of the soils in the parish more suitable for crops. The soils in high positions on natural levees are drained by a gravity system consisting of row drains and field drains. The clayey soils in low positions on flood plains are drained by a gravity system consisting of a series of mains and laterals or smaller drains that branch out. The success of a system depends on the availability of adequate outlets. Drainage can also be improved by land grading or precisely leveling the fields to a uniform grade. Land grading improves surface drainage, eliminates cross ditches, and results in larger and more uniformly shaped fields, which are better suited to the use of modern, multirow farm machinery.

The Mississippi River Protection Levee protects the parish from flooding by the Mississippi River. Some flooding, however, can occur during major storms or prolonged and/or intense rain events, especially on soils that are at low elevations.

Water for Plant Growth

The available water capacity of most of the soils in the parish is moderate to high. In some years, however, sufficient water is not available at the critical time for optimum plant growth unless the soils are irrigated. Large amounts of rain generally fall in winter and spring, and rainfall is adequate for plant growth in summer and fall in most years. On some soils, however, plants commonly lack moisture during dry periods in summer and fall. The rainfall pattern favors the growth of early-maturing crops.

Cropping Systems

A good cropping system is one that produces positive effects on the content of organic matter in a soil. The content of organic matter in a soil is the primary indicator of soil quality and carbon sequestration. The Soil Condition Index (SCI) is a computer model that can predict the consequences of cropping systems and tillage practices on the status of organic matter in a field. The SCI is based on the amount of organic matter returned to or removed from the soil, the affects of tillage and field operations on organic matter decomposition, and the affect of predicted soil erosion associated with the management system.

In Tensas Parish, positive Soil Condition Indices are normally associated with high-residue-producing crops in a monoculture or in rotation with low-residue-producing crops coupled with conservation tillage or reduced tillage systems. Monocultures of low-residue-producing crops and clean-till systems generally do not produce positive values unless grown in combination with high yielding cover crops and/or additions of animal manure or other organic by-products.

Control of Erosion

Soil erosion generally is not a serious problem on the level and nearly level soils in Tensas Parish. It is, however, a problem on the more sloping soils and in fallow-plowed fields. Gullies commonly form in newly constructed drainage ditches and at overfalls into drainage ditches. If the surface layer of the soil is lost through erosion, most of the available plant nutrients and most of the organic matter are also lost. Soil erosion also results in sedimentation of drainage systems and pollution of streams by sediments, nutrients, and pesticides. Sheet and rill erosion can be reduced by using a system of minimum tillage or conservation tillage and by maintaining a plant cover on the soil for extended periods. New drainage ditches should be seeded immediately after construction. Water-control structures in drainageways lower water levels and can help prevent gullying.

Additional information regarding erosion control, cropping systems, and drainage practices can be obtained from the Natural Resources Conservation Service, the Cooperative Extension Service, or the Louisiana Agricultural Experiment Station.

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 land capability classification of map units in the survey area also is shown in the table.

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 also are 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.

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 (USDA–SCS, 1961). 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 rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

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, 2e. 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 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in this soil survey.

The capability classification of map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Forestland Productivity and Management

By Donald Lawrence, state forester, Natural Resources Conservation Service

Tensas Parish is located in the Mississippi River alluvial valley. Hardwood forests once covered most of this parish. Land clearing for cropland began soon after the first settlers arrived. Conversion of forestland to cropland intensified in the late 1950s through the early 1970s due to the soybean boom.

Currently, several thousand acres have been replanted to bottomland hardwoods because of USDA programs, such as the Conservation Reserve Program (CRP) and the Wetlands Reserve Program (WRP). Of the approximately 398,500 acres of land in Tensas Parish, 116,400 acres, or 29 percent, is forestland.

The ownership of the parish is as follows: 67 percent individual, 19 percent farmer, 9 percent forestry industry, and 5 percent corporate.

“Individual” is defined as lands owned by individuals rather than by the forestry industry, farmers, or miscellaneous private corporations. “Farmer” is defined as land operated as a unit of 10 acres or more and from which the sale of agricultural products totals $1,000 or more annually. “Forestry industry” is land owned by companies or individuals operating wood-using plants. “Corporate” is land owned by private corporations other than forest industries and incorporated farms.

In Tensas Parish, the oak-gum-cypress forest type comprises about 94,300 acres, or 72 percent of the forested area. Common associates include cottonwood, willow, ash, elm, sugarberry, and maple. The elm-ash-cottonwood forest type comprises about 22,200 acres, or 18 percent. Common associates are sycamore, willow, and maple.

The growing stock in Tensas Parish is predominantly bottomland hardwood. Most of the forest acreage is used for saw timber (71 percent) followed by pole timber (19 percent) and seedlings and saplings (10 percent).

Productivity of forestland can be measured as cubic feet of wood produced per acre per year. Forestland in Tensas Parish is highly productive. Forty-eight percent of the forestland produces greater than 165 cubic feet per acre per year, 29 percent produces 120 to 165 cubic feet per acre per year, 14 percent produces 85 to 120 cubic feet per acre per year, and 9 percent produces 50 to 85 cubic feet per acre per year.

Other values associated with forestland include wildlife habitat, recreation, aesthetics, and soil and water conservation. The importance of timber production and wildlife habitat has increased in recent years in the parish. Existing stands are commonly in need of management. Most of the stands would benefit from thinning out mature trees and undesirable species. Thinning would open the canopy and allow sunlight to reach the forest floor. As a result, seedlings of desirable trees and shrubs would be regenerated. The USDA Natural Resources Conservation Service, the Louisiana Department of Agriculture and Forestry, and the Louisiana Cooperative Extension Service can assist in determining specific forest management needs.

Forestland provides food and shelter for wildlife and offers opportunities for sport and recreation for many land users. It also provides watershed protection, helps to control erosion, reduces the extent of sedimentation, and enhances the quality and value of water resources. Trees can be used to screen distracting views of dumps and other unsightly areas, muffle sound, act as windbreaks, and increase the beauty of the landscape. Trees also help filter out airborne dust and other impurities, convert carbon dioxide to oxygen, release moisture to the atmosphere, and provide shade.

Soils directly influence the growth, management, harvesting, and multiple uses of forestland. Depth, fertility, texture, and available water capacity influence growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site.

The tables associated with this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 6, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In tables 7 through 11, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forestland management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forestland management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreation

The soils of the survey area are rated in tables 12 and 13 according to limitations that affect their suitability for recreational use. Soils are rated for camp areas, picnic areas, playgrounds, paths and trails, off-road motorcycle trails, and golf fairways.

The ratings in the table 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 also are important. Soils that are 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.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect recreational site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

The numerical ratings used to express the severity of individual limitations indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as five soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

The information in table 12 and 13 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

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 soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, a water table, ponding, flooding, slope, and texture of the surface layer. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to frequent flooding during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Tensas parish has a large and varied population of fish and wildlife. Habitat types include open agricultural land, bottomland hardwood forests, associated wetlands, large lakes, bayous, and rivers, each supporting populations of game and non-game fish and wildlife.

Furbearers in the area include the Northern raccoon, Virginia opossum, red foxes, gray foxes, North American mink, nutria, American beaver, bobcat, squirrels, and rabbits. The Louisiana black bear, which was listed as a federally threatened species under the auspices of the Endangered Species Act in 1992, is found in many wooded areas in the parish. White-tailed deer, Eastern wild turkey, gray squirrels, fox squirrels, swamp rabbits, and Eastern cottontails are hunted extensively in the forestland areas of the parish.

Lakes, bayous, rivers, various wetlands, and flooded agricultural fields provide feeding and resting areas for large populations of great blue herons, glossy ibis, white ibis, black-crowned night herons, snowy egrets, wood ducks, blue-winged teal, green-winged teal, American pigeon, mallards, gadwalls, Northern pintails, and other migrating waterfowl, wading birds, and shorebirds. The American alligator is also abundant in Tensas Parish.

Large tracts of mature bottomland hardwoods provide choice feeding areas for fox squirrels and gray squirrels. Squirrels feed, nest, and den in wooded areas but venture out into adjacent corn fields. Forestland containing mature hard-mast tree species, such as oaks and pecans, are best. An understory of briers, vines, and shrubs is important in spring and summer.

The cultivated fields and interspersed pastures provide choice feeding areas for mourning doves, which feed almost entirely on seeds and waste grain. Mourning doves prefer open fields and access to free water without thick ground cover. They do not scratch for food. They roost and nest in trees, typically preferring smaller trees for nesting. Choice foods are browntop millet, corn, grain sorghum, wheat, soybeans, beggarweed, partridge pea, sunflowers, and numerous grass seeds.

Borders between forestland and fields provide excellent habitat for rabbits, indigo buntings, Northern cardinals, and Eastern towhees. Swamp rabbits prefer wooded stream edges and thickets in drainageways. Eastern cottontails prefer well-drained brier patches, crop fields, fence rows, and grassy meadows. Rabbits eat almost any plant that is green and tender, but they prefer greenbrier, rattan, blackberry, dewberry, and tree seedlings.

Northern bobwhite quail inhabit the better drained areas where there is considerable field-edge vegetation. Bobwhites require grass and weeds for feeding and shrubby or woody cover for protection. Choice foods include insects, acorns, browntop millet, panicgrass, partridge pea, ragweed, sweetgum, beggarweed, vetch, woolly croton, lespedeza, corn, grain sorghum, soybeans, and wheat.

Deer require large wooded areas interspersed with grassy openings, fields, and thickets. Deer are mainly browsers. They feed on the leaves, stems, and twigs of greenbriers, blackberry, muscadine, rattan, hawthorns, honeysuckle, and other undergrowth plants. They favor herbs and tender grasses in spring and summer and acorns and pecans in fall and winter. During the cool season, they utilize agricultural plants such as clover, ryegrass, oats, and wheat. In summer, they utilize agricultural crops such as soybeans, cotton, grain sorghum, and corn.

Numerous species of fish are in the oxbow lakes, such as Lake Bruin and Lake Saint Joseph; deep backwater areas; and many bayous, ponds, and sloughs in the parish. Game fish, such as largemouth bass, bluegill, channel catfish, white crappie, black crappie, and red-eared sunfish, are abundant. Numerous species of garfish, shad, bullheads, and the bowfin can be found within the sluggish waters of Tensas Parish. Also, numerous riverine aquatic species can be found in the Mississippi and Tensas Rivers.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include grassland bird species, such as Eastern meadowlark, dickcissel, and field sparrow; numerous other species of songbirds and raptors; and rodents, Eastern cottontails, coyote, and red fox.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In tables 14a through 14d, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. *Not limited* indicates that the soil has features that are very favorable for the specified use. Habitat is easily established, improved, or maintained. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Habitat can be established, improved, or maintained. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified use. Habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. Habitat is difficult to create, improve, or maintain in most places. Management is difficult and must be very intensive. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. Habitat is usually impractical or impossible to create, improve, or maintain. Management would be very difficult, and unsatisfactory results can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

The numerical ratings used to express the severity of individual limitations indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation class for the component is based on the most severe limitation.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Selection should be made from a list of locally adapted species.

Domestic grasses and legumes are perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Selection should be made from a list of locally adapted species.

Upland wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Selection should be made from a list of locally adapted species.

Upland shrubs and vines are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs and vines are depth of the root zone, available water capacity, salinity, and soil moisture. Selection should be made from a list of locally adapted species.

Upland deciduous trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees are depth of the root zone, available water capacity, and wetness. Selection should be made from a list of locally adapted species.

Upland mixed deciduous-conifer trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, browse, seeds and foliage. Soil properties and features that affect the growth of these trees are depth of the root zone, available water capacity, and wetness. Selection should be made from a list of locally adapted species.

Riparian herbaceous plants are annual and perennial native or naturally established grasses and forbs that grow on moist or wet sites. Soil properties and features affecting riparian herbaceous plants are surface texture, wetness, flooding, ponding, and surface stones. Selection should be made from a list of locally adapted species.

Riparian shrubs, vines, and trees are bushy woody plants and trees that grow on moist or wet sites. Soil properties and features affecting these plants are surface texture, wetness, flooding, ponding, and surface stones. Selection should be made from a list of locally adapted species.

Freshwater wetland plants are grasses, forbs, and shrubs that are adapted to wet soil conditions. The soils suitable for this habitat generally occur adjacent to springs, seeps, depressions, bottomlands, marshes, or backwater areas of flood plains. Most areas are ponded for some period of time during the year. Soil properties and features affecting these plants are surface texture, wetness, ponding, and soil reaction. Selection should be made from a list of locally adapted species.

Irrigated freshwater wetland plants are grasses, forbs, and shrubs that are adapted to wet soil conditions. The soils suitable for this habitat generally occur in areas of cropland, previously cropped areas, and marginal areas associated with cropland and wetlands. These areas may be ponded for some period of time during the year. These areas are generally suitable for restoring wetland features temporarily or permanently. Soil properties and features affecting these plants are surface texture, permeability, wetness, ponding, and soil reaction. Selection should be made from a list of locally adapted species.

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 between the surface and a depth of 5 to 7 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 particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, 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

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 15 and 16 show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

The numerical ratings used to express the severity of individual limitations indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as five soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

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 soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 17 and 18 show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Not limited	0.00
Slightly limited	0.01 to 0.30
Moderately limited	0.31 to 0.60
Limited	0.61 to 0.99
Very limited	1.00

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 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

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. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, and flooding.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if the water table is high enough to raise the level of sewage in the lagoon or if floodwater overtops the lagoon.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to a water table, slope, flooding, texture, and soil reaction. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid 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. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, and slope.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

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. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, slope, and reaction.

Loamy or silty soils are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not be too acid.

Construction Materials

Tables 19 and 20 give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated as a *probable* or *improbable* source of sand and gravel. A rating of *probable* means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

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 table 19, 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 Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

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. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

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.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

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 whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by depth to a 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 AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Water Management

Tables 21, 22, and 23 give 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; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

These tables also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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. Embankments that have zoned construction (core and shell) are not considered. 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.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the permeability; depth to a high water table; slope; and the susceptibility to flooding. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. 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 performance of a system is affected by the depth of the root zone 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 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. Wetness and slope affect the construction of grassed waterways. Low available water capacity and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained 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 particle-size distribution, plasticity, and compaction characteristics. These results are reported in table 30.

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 are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 24 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

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 15 percent or more, 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, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-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 particle-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.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

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. The estimates of particle-size distribution 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 generally omitted in the table.

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.

Physical Properties

Table 25 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 25, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and 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 $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each 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. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, 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 soil layer. The capacity varies, depending on soil properties that affect retention of water. 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.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 25, 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 by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 25 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) 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 and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

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 susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 26 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases 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. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil 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.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Soil Features

Table 27 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes 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 or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete 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 also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

Table 28 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.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding 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 ponding 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 ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area 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.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

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.

Hydric Soils

In this section, hydric soils are defined and described. The hydric status of soils in the survey area is shown in table 29.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

Nearly all hydric soils exhibit characteristic morphologies that result from repeated periods of saturation and/or inundation for more than a few days. Saturation or inundation when combined with microbial activity in the soil cause a depletion of oxygen. This anaerobiosis promotes biogeochemical processes such as the accumulation of organic matter and the reduction, translocation, and/or accumulation of iron and other reducible elements. These processes result in characteristic morphologies which persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils.

Morphological features of hydric soils indicate that saturation and anaerobic conditions have existed under either contemporary or former (recent) hydrologic regimes. Features that do not reflect contemporary or recent hydrologic conditions of saturation and anaerobiosis are relict features. Typically, contemporary and recent hydric soil morphologies have diffuse boundaries; relict hydric soil features have sharp boundaries. When soil morphology seems inconsistent with the landscape, vegetation, or observable hydrology, it may be necessary to obtain the assistance of an experienced soil or wetland scientist to determine whether the soil is hydric.

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1996).

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999), “Keys to Soil Taxonomy” (Soil Survey Staff, 1998), and the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following criteria reflect those soils that are likely to meet the definitions of hydric soils in Tensas Parish:

1. Soils in Aquic suborders, great groups, or subgroups that are:
    a. somewhat poorly drained with a water table at the surface during the growing season, or
    b. poorly drained or very poorly drained and have either:
        (1) water table at the surface during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or
        (2) water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hour in all layers within 20 in, or
        (3) water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hour in any layer within 20 in, or
2. Soils that are frequently ponded for long duration or very long duration during the growing season, or
3. Soils that are frequently flooded for long duration or very long duration during the growing season.

Table 29 is a listing of the map units in Tensas Parish and includes the hydric soil designations and criteria met for each major component in those map units. The table includes major components that are phases of soil series that may or may not have been drained or protected from flooding. Some soil series that are designated as hydric have phases that are not hydric, depending on flooding and ponding characteristics. The table has a number of agricultural and nonagricultural applications, including assistance in land-use planning, conservation planning, and assessment of potential wildlife habitat. An area that meets the hydric soil criteria must also meet the criteria for hydrophytic vegetation and wetland hydrology to be classified as a jurisdictional wetland (Federal Interagency Committee for Wetland Delineation, 1989).

The identification of map units that meet the definition of hydric soils and have at least one of the hydric soil indicators can help in planning land uses. However, map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Onsite investigation is needed to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Physical and Chemical Analyses of Selected Soils

The results of physical analysis of several typical pedons in the survey area are given in table 30 and the results of chemical analysis in table 31. The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. They are described in the section “Soil Series and Their Morphology.” Soil samples were analyzed by Louisiana State University Agronomy Department Soils Laboratory and National Cooperative Soil Survey Laboratory, Lincoln, Nebraska.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an ovendry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods (USDA–NRCS, 1996).

Sand—(0.05-2.0 mm fraction) weight percentages of material less than 2 mm (3A1).

Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all material less than 2 mm (3A1).

Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1).

Water retained—pressure extraction, percentage of ovendry weight of less than 2 mm material; $^{1}/_{3}$ or $^{1}/_{10}$ bar (4B1), 15 bars (4B2).

Bulk density—of less than 2 mm material, saran-coated clods field moist (4A1a), $^{1}/_{3}$ bar (4A1d), ovendry (4A1h).

Linear extensibility—change in clod dimension based on whole soil (4D).

Organic carbon—dry combustion (6A2d).

Total nitrogen—Kjeldahl (6B3).

Extractable cations—ammonium acetate pH 7.0, ICP; calcium (6N2i), magnesium (6O2h), sodium (6P2f), potassium (6Q2f).

Extractable acidity—barium chloride-triethanolamine IV (6H5a).

Cation-exchange capacity—ammonium acetate, pH 7.0, steam distillation (5A8b).

Base saturation—ammonium acetate, pH 7.0 (5C1).

Reaction (pH)—1:1 water dilution (8C1f).

Reaction (pH)—calcium chloride (8C1f).

Aluminum—potassium chloride extraction (6G9c).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). 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 32 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve 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 Alfisol.

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 Aqalf (*Aq*, meaning aqua, or water, plus *alf*, from Alfisol).

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 Endoaqualfs (*Endo*, meaning within, implying a ground water table, plus *Aqalf*, the suborder of the Alfisols that has a aquic 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 Endoaqualfs.

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 fine-silty, mixed, active, thermic Typic Endoaqualfs.

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. An example is the Dundee series.

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" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). 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.

Bruin Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: High positions on natural levees
Geomorphic setting: Natural levees on alluvial plains
Parent material: Silty alluvium
Geology: Alluvial flood plains
Drainage class: Moderately well drained
Permeability class: Moderate
Soil depth class: Very deep
Shrink-swell potential: Low
Slope: 0 to 3 percent
Taxonomic classification: Coarse-silty, mixed, superactive, thermic Oxyaquic Eutrudepts

Associated Soils

The Bruin series is commonly associated with Commerce and Tunica soils.

- The Commerce soils are somewhat poorly drained.
- The Tunica soils are clayey in the upper part of the solum.

Typical Pedon

Bruin silt loam, 0 to 1 percent slopes (fig. 11); 2.25 miles south on Louisiana Highway 605 from its intersection with Louisiana Highway 4 in Newellton, 900 feet west-southwest on a field road, and 100 feet south of the road in field of row crops; E$^{1}/4$ sec. 17, T. 12 N., R. 12 E.; Newellton, Louisiana, USGS 7.5-minute quadrangle; lat. 32 degrees, 2 minutes, 36.92 seconds north and long. 91 degrees, 13 minutes, 18.67 seconds west.

Ap1—0 to 6 inches; silt loam, brown (10YR 4/3) broken face; weak fine subangular blocky structure; very friable; common very fine and fine roots throughout; strongly acid; clear smooth boundary.

Ap2—6 to 11 inches; silt loam, brown (10YR 5/3) broken face; very friable; common very fine and fine roots throughout; common fine low-continuity tubular pores; 5 percent patchy prominent light yellowish brown (2.5Y 6/3) silt coats on faces of peds; 1 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; strongly acid; clear smooth boundary.

Bw—11 to 20 inches; silt loam, yellowish brown (10YR 5/4) broken face; weak fine subangular blocky structure; very friable; common very fine and fine roots throughout; common fine low-continuity tubular pores; 5 percent patchy prominent light yellowish brown (2.5Y 6/3) silt coats on faces of peds; slightly acid; clear wavy boundary.

C1—20 to 28 inches; stratified very fine sandy loam, brown (10YR 5/3) broken face; weak fine subangular blocky structure; very friable; common very fine and fine roots throughout; common fine low-continuity tubular pores; 3 percent fine and medium distinct spherical extremely weakly cemented yellowish

Figure 11.—Profile of Bruin silt loam.

brown (10YR 5/6) iron-manganese masses that are in the matrix and have clear boundaries; 1 percent fine faint spherical extremely weakly cemented grayish brown (10YR 5/2) iron depletions that are in the matrix and have clear boundaries; neutral; clear wavy boundary.

C2—28 to 36 inches; stratified silt loam, brown (10YR 5/3) broken face; weak fine subangular blocky structure; friable; common very fine and fine roots throughout; common fine and medium low-continuity tubular pores; 15 percent discontinuous faint dark gray (2.5Y 4/1) organic stains; 3 percent medium distinct spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; slightly alkaline; abrupt wavy boundary.

C3—36 to 41 inches; stratified loam, 60 percent yellowish brown (10YR 5/4) and 40 percent grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; friable; common very fine and fine roots throughout; common fine low-continuity tubular pores; 3 percent medium prominent spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; moderately alkaline; abrupt wavy boundary.

Ab—41 to 51 inches; silt loam, very dark grayish brown (2.5Y 3/2) broken face; weak fine subangular blocky structure; very friable; common very fine and fine roots throughout; common fine and medium low-continuity tubular pores; 25 percent medium prominent spherical extremely weakly cemented strong brown (7.5YR 4/6) iron-manganese masses that are in the matrix and have sharp boundaries; 5 percent fine faint spherical weakly cemented very dark gray (2.5Y 3/1) iron-manganese concretions that are in the matrix and have sharp boundaries; slightly alkaline; abrupt smooth boundary.

Cb—51 to 57 inches; stratified silt loam, brown (10YR 5/3) broken face; weak fine subangular blocky structure; very friable; common very fine and fine roots throughout; common fine low-continuity tubular pores; 5 percent coarse distinct spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; moderately alkaline; clear smooth boundary.

A´b—57 to 66 inches; silt loam, dark grayish brown (2.5Y 4/2) broken face; moderate medium subangular blocky structure; friable; common fine and medium low-continuity tubular pores; 5 percent medium distinct spherical extremely weakly cemented olive yellow (2.5Y 6/6) iron-manganese masses that are in the matrix and have sharp boundaries; 1 percent fine prominent spherical weakly cemented black (10YR 2/1) iron-manganese concretions that are in the matrix and have sharp boundaries; moderately alkaline; clear smooth boundary.

C´b1—66 to 71 inches; stratified silt loam, light olive brown (2.5Y 5/3) broken face; weak fine subangular blocky structure; very friable; common fine and medium low-continuity tubular pores; 25 percent medium prominent spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; moderately alkaline; clear smooth boundary.

C´b2—71 to 81 inches; stratified silt loam, olive gray (5Y 5/2) broken face; weak fine subangular blocky structure; very friable; common fine and medium low-continuity tubular pores; 5 percent medium distinct spherical extremely weakly cemented light olive brown (2.5Y 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; moderately alkaline.

Range in Characteristics

Thickness of the solum: 18 to 40 inches
Content of clay in the control section: Less than 18 percent
Redoximorphic features: Iron-manganese accumulations throughout; iron depletions within a depth of 24 inches
Other distinctive features: Silt coats in the A and B horizons; tubular pores throughout
Concentrated minerals: None

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3

Redoximorphic features—iron depletions with chroma of 2 or less within a depth of 24 inches
Texture—silt loam or very fine sandy loam
Other distinctive features—silt coats and tubular pores
Reaction—strongly acid to slightly alkaline
Thickness—4 to 12 inches

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Redoximorphic features—iron depletions with chroma 2 or less within a depth of 24 inches
Texture—very fine sandy loam, loam, or silt loam
Other distinctive features—silt coats and tubular pores
Reaction—slightly acid to slightly alkaline
Thickness—5 to 40 inches

BC horizon: (where present)
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Redoximorphic features—iron depletions with chroma 2 or less within a depth of 24 inches
Texture—very fine sandy loam, loam, or silt loam
Other distinctive features—tubular pores
Reaction—slightly acid to moderately alkaline
Thickness—0 to 20 inches

Ab horizon: (where present)
Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 or 2
Redoximorphic features—the number of iron-manganese accumulations in shades of brown ranges from none to common.
Texture—very fine sandy loam, loam, or silt loam
Other distinctive features—tubular pores
Reaction—slightly acid to moderately alkaline
Thickness—0 to 12 inches

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 4; or hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 to 3
Redoximorphic features—iron depletions in shades of gray and iron-manganese accumulations in shades of brown
Texture—loamy fine sand, loamy very fine sand, fine sandy loam, very fine sandy loam, loam, silty clay loam, or silt loam to a depth of 60 inches or more
Other distinctive features—carbonates in some pedons; tubular pores
Reaction—slightly acid to moderately alkaline
Thickness—6 to 71 inches

Bruno Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Ridge-swales of point bars and natural levees
Geomorphic setting: Point bars on alluvial plains
Parent material: Sandy alluvium
Geology: Alluvial flood plains
Drainage class: Excessively drained
Permeability class: Rapid
Soil depth class: Very deep
Shrink-swell potential: Low

Slope: 0 to 3 percent
Taxonomic classification: Sandy, mixed, thermic Typic Udifluvents

Associated Soils

The Bruno series in the survey area is commonly associated with Bruin and Commerce soils.

- The Bruin and Commerce are silty and are more poorly drained than the Bruno soils.

Typical Pedon

Bruno loamy fine sand in an area of Crevasse and Bruno soils, gently undulating, frequently flooded; South of Point Pleasant; NE^1/4NW^1/4 sec. 26, T. 13 N., R. 13 E.; Grand Gulf, Mississippi, USGS 7.5-minute quadrangle; lat. 32 degrees, 4 minutes, 25.72 seconds north and long. 91 degrees, 5 minutes, 14.79 seconds west.

Ap—0 to 5 inches; loamy fine sand, dark brown (10YR 3/3) broken face; very friable, loose, nonsticky and nonplastic; common fine and common medium roots throughout; slightly acid; clear smooth boundary.

C1—5 to 21 inches; stratified fine sand, brown (10YR 5/3) broken face; loose, loose, nonsticky and nonplastic; common fine roots throughout; neutral; few faint very thin (less than 1 millimeter) very dark grayish brown (10YR 3/2) bedding planes; abrupt smooth boundary.

C2—21 to 27 inches; stratified loamy fine sand, dark grayish brown (10YR 4/2) broken face; loose, loose, nonsticky and nonplastic; slightly alkaline; few faint very thin (less than 1 millimeter) very dark grayish brown (10YR 3/2) bedding planes; abrupt smooth boundary.

C3—27 to 41 inches; stratified loamy very fine sand, brown (10YR 4/3) broken face; loose, loose, nonsticky and nonplastic; moderately alkaline; few faint very thin (less than 1 millimeter) very dark grayish brown (10YR 3/2) bedding planes; abrupt smooth boundary.

C4—41 to 84 inches; stratified loamy fine sand, brown (10YR 4/3) broken face; loose, loose, nonsticky and nonplastic; moderately alkaline; few faint very thin (less than 1 millimeter) very dark grayish brown (10YR 3/2) bedding planes.

Range in Characteristics

Thickness of the solum: 2 to 10 inches
Content of clay in the control section: Less than 15 percent
Redoximorphic features: Iron accumulations and depletions in the lower part of the C horizon in some pedons
Other distinctive features: Bedding planes throughout the C horizon
Concentrated minerals: None

A or Ap horizon:
Color—dominantly hue of 10YR, value of 4 or 5, and chroma of 2 to 4; value of 3 in some pedons where the A horizon is less than 6 inches thick
Redoximorphic features—none
Texture—loamy fine sand
Other distinctive features—none
Reaction—strongly acid to slightly alkaline
Thickness—2 to 10 inches

C horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 4; or hue of 2.5Y, value of 4 to 6, and chroma of 4 to 6
Redoximorphic features—iron accumulations and depletions in shades of brown or gray in the lower part of some pedons

Texture—dominantly sand, loamy fine sand, or loamy sand but contains thin strata of loamy very fine sand or finer textures
Other distinctive features—bedding planes
Reaction—strongly acid to moderately alkaline
Thickness—70 to 78 inches

Commerce Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: High positions on natural levees
Geomorphic setting: Natural levees on alluvial plains
Parent material: Silty alluvium
Geology: Alluvial flood plains
Drainage class: Somewhat poorly drained
Permeability class: Moderately slow
Soil depth class: Very deep
Shrink-swell potential: Moderate
Slope: 0 to 3 percent
Taxonomic classification: Fine-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts

Associated Soils

The Commerce series is commonly associated with Bruin and Tunica soils.

- The Bruin soils contain less clay than the Commerce soils and are moderately well drained.
- The Tunica soils are clayey in the upper part of the solum and are poorly drained.

Typical Pedon

Commerce silt loam, 0 to 1 percent slopes (fig. 12); 4.62 miles south on U.S. Highway 65 from Newellton, Louisiana, 1,000 feet northwest on State Highway 607, about 6 miles southeast on State Highway 605, about 900 feet northwest on a field road that runs along the south side of a drainage canal, and 30 feet south of the field road in a field of row crops; SE$^1/2$ sec. 9, T. 11 N., R. 12 E.; Saint Joseph, Louisiana, USGS 7.5-minute quadrangle; lat. 31 degrees, 55 minutes, 54.51 seconds north and long. 91 degrees, 13 minutes, 26.96 seconds west.

Ap—0 to 7 inches; silt loam, dark grayish brown (10YR 4/2) broken face; weak fine subangular blocky structure; friable, nonsticky and nonplastic; many fine and medium roots throughout; 1 percent fine faint cylindrical brown (10YR 4/3) masses of oxidized iron that are throughout the horizon and have sharp boundaries; slightly alkaline; clear smooth boundary.
Bw1—7 to 15 inches; silty clay loam, dark grayish brown (10YR 4/2) broken face; weak fine subangular blocky structure; firm, slightly sticky and slightly plastic; common fine roots throughout; many fine and very fine low-continuity tubular pores; 2 percent fine distinct spherical dark yellowish brown (10YR 4/4) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 2 percent fine spherical black (10YR 2/1) manganese masses that are throughout the horizon and have sharp boundaries; moderately alkaline; gradual wavy boundary.
Bw2—15 to 22 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm, slightly sticky and slightly plastic; common fine roots throughout; many fine and very fine low-continuity tubular pores; 2 percent fine distinct spherical dark yellowish brown (10YR 4/4) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 1 percent fine distinct

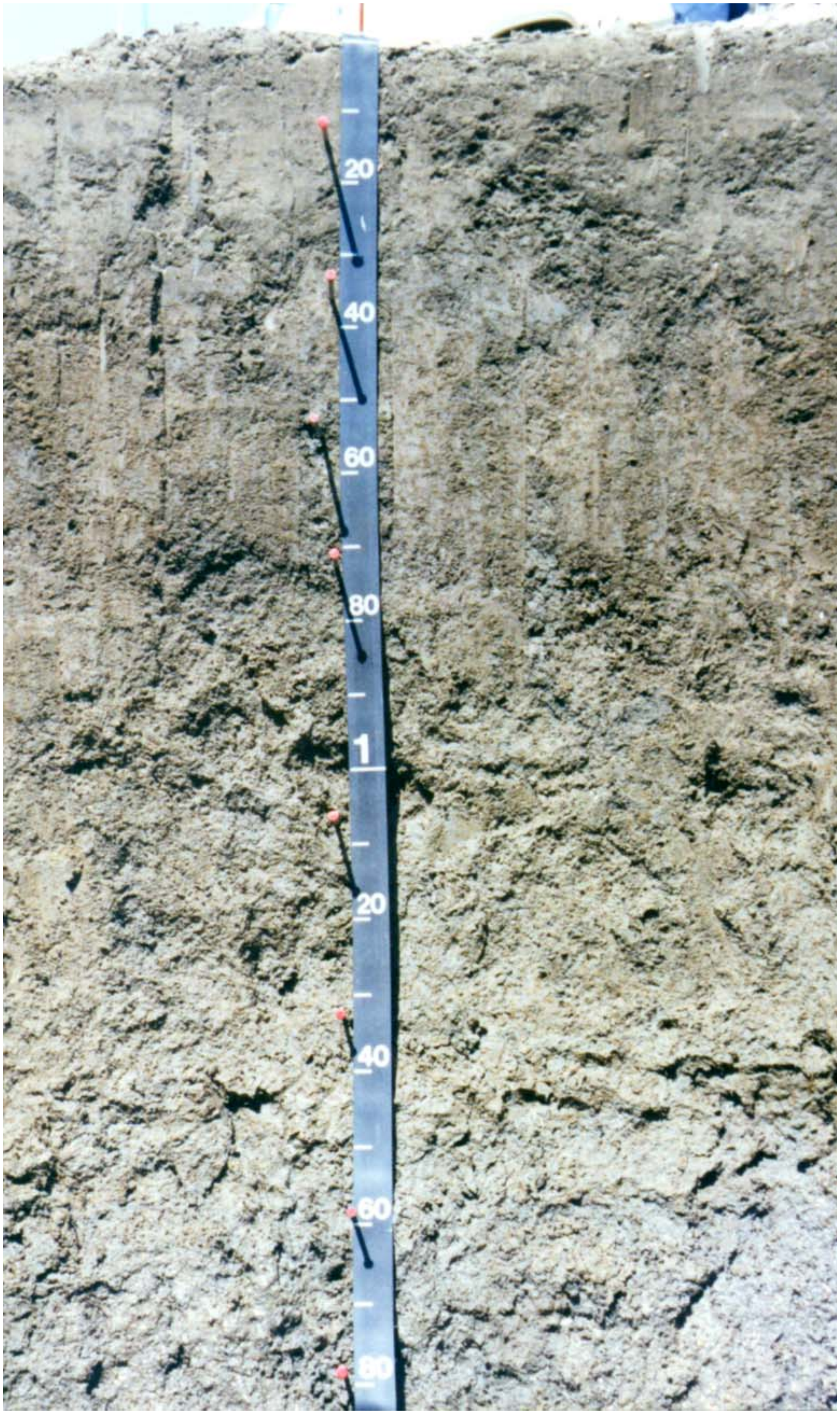

Figure 12.—Profile of Commerce silt loam.

irregular light brownish gray (10YR 6/2) shell fragments that are throughout the horizon and have sharp boundaries; moderately alkaline; clear smooth boundary.

Bg1—22 to 30 inches; dark gray (10YR 4/1) silt loam; moderate fine subangular blocky structure; friable, nonsticky and nonplastic; few very fine roots throughout; many fine and very fine low-continuity tubular pores; 2 percent fine distinct spherical dark yellowish brown (10YR 4/4) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 1 percent fine distinct irregular light brownish gray (10YR 6/2) shell fragments that are throughout the horizon and have sharp boundaries; moderately alkaline; gradual smooth boundary.

Bg2—30 to 43 inches; dark gray (10YR 4/1) silt loam; weak fine subangular blocky structure; friable, nonsticky and nonplastic; common fine roots throughout; many fine and very fine low-continuity tubular pores; 2 percent fine distinct spherical brown (10YR 4/3) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 2 percent fine spherical black (10YR 2/1) manganese masses that are throughout the horizon and have sharp boundaries; moderately alkaline; gradual wavy boundary.

Bg3—43 to 52 inches; dark gray (10YR 4/1) silt loam; weak fine subangular blocky structure; friable, nonsticky and nonplastic; few fine roots throughout; many fine and very fine low-continuity tubular pores; 21 percent fine prominent spherical black (10YR 2/1) manganese coatings that are throughout the horizon and have sharp boundaries; 2 percent fine distinct spherical brown (10YR 4/3) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 1 percent fine faint threadlike light brownish gray (10YR 6/2) shell fragments that are throughout the horizon and have sharp boundaries; moderately alkaline; gradual wavy boundary.

Bg4—52 to 63 inches; dark gray (2.5Y 4/1) silt loam; weak medium subangular blocky structure; friable, nonsticky and nonplastic; few fine roots throughout; many fine low-continuity tubular pores; 1 percent fine prominent spherical dark yellowish brown (10YR 4/4) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 1 percent fine prominent irregular moderately cemented dark yellowish brown (10YR 4/4) durinodes that are throughout the horizon and have sharp boundaries; moderately alkaline; gradual wavy boundary.

Bssg1—63 to 73 inches; dark gray (2.5Y 4/1) clay; moderate medium subangular blocky structure; firm, very sticky and very plastic; common fine roots between peds; many fine pores; 50 percent discontinuous distinct dark gray (2.5Y 4/1) pressure faces on all faces of peds and 3 percent discontinuous prominent dark gray (2.5Y 4/1) slickensides (pedogenic) on all faces of peds; 1 percent fine prominent spherical weakly cemented yellowish brown (10YR 5/6) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 1 percent fine prominent spherical weakly cemented dark yellowish brown (10YR 4/4) masses of oxidized iron that are throughout the horizon and have sharp boundaries; 1 percent fine faint irregular light brownish gray (10YR 6/2) shell fragments that are throughout the horizon and have sharp boundaries; moderately alkaline; few snail shells up to 2 centimeters in diameter; gradual wavy boundary.

Bssg2—73 to 80 inches; olive gray (5Y 5/2) clay; moderate medium subangular blocky structure; firm, very sticky and very plastic; common fine roots throughout; 50 percent continuous distinct olive gray (5Y 5/2) pressure faces on all faces of peds and 3 percent continuous prominent olive gray (5Y 5/2) slickensides (pedogenic) on all faces of peds; 1 percent medium prominent spherical yellowish brown (10YR 5/6) masses of oxidized iron that are throughout the horizon and have sharp boundaries; slightly alkaline.

Range in Characteristics

Thickness of the solum: 20 to more than 80 inches
Content of clay in the control section: 18 to 35 percent
Redoximorphic features: Iron-manganese accumulations throughout
Other distinctive features: Shell fragments throughout; in some pedons, slickensides and pressure faces in the lower part of B horizons that have clayey textures
Concentrated minerals: None

Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 3
Redoximorphic features—masses of iron accumulation and iron depletions, where present, in shades of brown and gray
Texture—very fine sandy loam, silt loam, or silty clay loam; an overwash phase of loamy fine sand is recognized.
Other distinctive features—none
Reaction—moderately acid to moderately alkaline
Thickness—4 to 12 inches

Bw horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2
Redoximorphic features—few or common masses of oxidized iron in shades of brown and iron depletions in shades of gray throughout and, in some pedons, dark gray or very dark grayish brown coatings or stains on ped surfaces
Texture—silt loam, loam, or silty clay loam
Other distinctive features—tubular pores; shell fragments
Reaction—slightly acid to moderately alkaline
Thickness—6 to 20 inches

Bg or BCg horizon:
Color—hue of 10YR or 2.5Y and chroma of 1
Redoximorphic features—few or common masses of oxidized iron in shades of brown and iron depletions in shades of gray throughout the Bg horizon
Texture—silt loam, loam, or silty clay loam; and, in some pedons, clayey below a depth of 50 inches
Other distinctive features—tubular pores; shell fragments
Reaction—neutral to moderately alkaline
Thickness—more than 30 inches combined

Ab horizon: (where present)
Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 3
Redoximorphic features—few or common iron accumulations and depletions in shades of brown and gray
Texture—very fine sandy loam, silt loam, or silty clay loam
Other distinctive features—none
Reaction—neutral to moderately alkaline
Thickness—0 to 12 inches

Bssg, 2Bg, or 2BCg horizon: (where present)
Color—hue of 2.5Y to 5GY, value of 4 or 5, and chroma of 1 or 2; or neutral in hue and value of 4 or 5
Redoximorphic features—few to many masses of iron accumulation in shades of brown or olive
Texture—clay, silty clay, or silty clay loam with more than 35 percent clay
Other distinctive features—slickensides in some pedons where the horizon is thicker; snail shells and fragments in some pedons

Reaction—neutral to moderately alkaline
Thickness—this layer consists of one or more lenses or layers several inches thick, or it is a continuous layer that extends below a depth of 80 inches.

Cg horizon: (where present)
Color—hue of 10YR to 5GY, value of 4 or 5, and chroma of 1 or 2
Redoximorphic features—the number of masses of iron accumulation in shades of brown or olive ranges from none to many.
Texture—very fine sandy loam, loam, silt loam, or silty clay loam; commonly stratified; thin strata of silty clay in some pedons
Other distinctive features—none
Reaction—neutral to moderately alkaline
Thickness—0 to 23 inches

Crevasse Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Ridge-swales of point bars and natural levees
Geomorphic setting: Point bars on alluvial plains
Parent material: Sandy alluvium
Geology: Alluvial flood plains
Drainage class: Excessively drained
Permeability class: Rapid
Soil depth class: Very deep
Shrink-swell potential: Low
Slope: 0 to 3 percent
Taxonomic classification: Mixed, thermic Typic Udipsamments

Associated Soils

The Crevasse series in the survey area is commonly associated with Bruin, Bruno, and Commerce soils.

- The Bruin and Commerce soils are silty and are more poorly drained than the Crevasse soils.
- The Bruno soils have strata of fine sandy loam or finer.

Typical Pedon

Crevasse fine sand in an area of Crevasse and Bruno soils, gently undulating, frequently flooded; in an area of grass and herbaceous cover; N1/2 sec. 28, T. 13 N., R. 13 E.; Grand Gulf, Mississippi, USGS 7.5-minute quadrangle; lat. 32 degrees, 6 minutes, 37.00 seconds north and long. 91 degrees, 5 minutes, 26.00 seconds west.

A—0 to 4 inches; fine sand, dark grayish brown (10YR 4/2) broken face; single grain; loose, loose, nonsticky and nonplastic; common fine and few medium roots throughout; slightly alkaline; noneffervescent; gradual smooth boundary.
C1—4 to 22 inches; stratified loamy sand, brown (10YR 5/3) broken face; 15 percent fine distinct dark gray (10YR 4/1) mottles; single grain; loose, loose, nonsticky and nonplastic; common fine and few medium roots throughout; moderately alkaline; common very thin (less than 1 millimeter) bedding planes of dark gray (10YR 4/1) organic matter; gradual smooth boundary.
C2—22 to 84 inches; loamy sand, grayish brown (2.5Y 5/2) broken face; single grain; loose, loose, nonsticky and nonplastic; 1 percent medium distinct spherical brown (10YR 5/3) masses of oxidized iron that are on faces of peds and have clear boundaries; moderately alkaline.

Range in Characteristics

Thickness of the solum: 4 to 10 inches
Content of clay in the control section: Less than 10 percent
Redoximorphic features: Iron accumulations and depletions in the C horizon
Other distinctive features: Bedding planes in the C horizon
Concentrated minerals: None

A horizon:
Color—dominantly hue of 10YR, value of 4 to 7, and chroma of 2 to 6; or, in some pedons where the horizon is thin, hue of 10YR, value of 3, and chroma of 1 or 2
Redoximorphic features—none
Texture—fine sand
Other distinctive features—none
Reaction—moderately acid to moderately alkaline; calcareous in some pedons
Thickness—4 to 10 inches

C horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 6; or hue of 2.5Y, value of 4 or 5, and chroma of 2
Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of brown
Texture—sand, fine sand, loamy fine sand, or loamy sand; and, in some pedons, thin lenses or strata of loamy materials below a depth of 40 inches
Other distinctive features—bedding planes
Reaction—moderately acid to moderately alkaline; calcareous in some pedons
Thickness—70 to 76 inches

Dowling Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Channel fill and swales of point-bar deposits
Geomorphic setting: Meander scars on alluvial plains
Parent material: Clayey alluvium
Geology: Alluvial flood plains
Drainage class: Very poorly drained
Permeability class: Impermeable
Soil depth class: Very deep
Shrink-swell potential: Very high
Slope: 0 to 1 percent
Taxonomic classification: Very-fine, smectitic, nonacid, thermic Vertic Endoaquepts

Associated Soils

The Dowling series is commonly associated with Sharkey soils.

- The Sharkey soils form cracks when dry.

Typical Pedon

Dowling clay, 0 to 1 percent slopes, frequently flooded; in a swamp; 9.4 miles south on U.S. Highway 65 from Newellton, 7.8 miles northwest on State Highway 128, about 3.5 miles southwest on State Highway 573, about 5.62 miles west on Crooked Bayou Road, 3,200 feet northwest on a field road, and 100 feet northeast of the road in an oxbow depression; SW$^1/_4$SW$^1/_4$NE$^1/_4$ sec. 29, T. 12 N., R. 10 E.; Gretna Green, Louisiana, USGS 7.5-minute quadrangle; lat. 31 degrees, 59 minutes, 32.49 seconds north and long. 91 degrees, 28 minutes, 1.07 seconds west.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) clay; massive; very firm, very sticky and very plastic; many fine and medium roots; 15 percent medium distinct irregular yellowish brown (10YR 5/4) masses of oxidized iron throughout; 1 percent wood fragments; strongly acid; clear smooth boundary.

Bg1—4 to 18 inches; gray (5Y 5/1) clay; weak medium subangular blocky structure; very firm, very sticky and very plastic; many fine roots throughout; 35 percent medium and coarse prominent irregular strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron throughout; 1 percent wood fragments; slightly acid; gradual smooth boundary.

Bg2—18 to 31 inches; greenish gray (5GY 5/1) clay; weak medium subangular blocky structure; very firm, very sticky and very plastic; many fine roots throughout; 35 percent medium and coarse prominent irregular strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron throughout; 1 percent wood fragments; slightly acid; gradual smooth boundary.

BCg—31 to 80 inches; gray (5Y 5/1) clay; weak fine subangular blocky structure; very firm, very sticky and very plastic; 2 percent faint pressure faces on all faces of peds; 15 percent medium distinct irregular dark yellowish brown (10YR 4/4) masses of oxidized iron; 1 percent fine distinct threadlike light gray (10YR 7/1) masses of barite; 1 percent wood fragments; neutral.

Range in Characteristics

Thickness of the solum: 40 to more than 80 inches
Content of clay in the control section: More than 60 percent
Redoximorphic features: Iron accumulations throughout
Other distinctive features: COLE of 0.09 to 0.18 in all mineral layers; no crack formation in the upper part of the subsoil in normal years; slickensides below a depth of 40 inches in some pedons; wood fragments throughout
Concentrated minerals: Masses of barite in the lower part of the subsoil

A horizon:
Color—hue of 10YR to 5Y, value of 3 or 4, and chroma of 1 or 2; or neutral in hue and value of 4
Redoximorphic features—iron accumulations in shades of yellow to brown
Texture—clay
Other distinctive features—n-value of less than 0.7
Reaction—strongly acid to neutral
Thickness—3 to 8 inches

Bg horizon:
Color—dominantly hue of 10YR to 5GY, value of 4 or 5, and chroma of 1 or neutral in hue and value of 4 or 5; value of 6 in the lower part in some pedons
Redoximorphic features—the number of masses of iron accumulation in shades of brown ranges from none to common.
Texture—clay
Other distinctive features—n-value of less than 0.7
Reaction—slightly acid to moderately alkaline
Thickness—more than 25 inches

BCg horizon: (where present)
Color—hue of 2.5Y to 5BG, value of 4 to 6, and chroma of 1; or neutral in hue and value of 4 to 6
Redoximorphic features—iron accumulations in shades of yellow to brown
Texture—clay, silty clay, or silty clay loam
Other distinctive features—n-value of less than 0.7; content of organic carbon decreases irregularly with depth and/or is more than 0.2 percent at a depth of 50 inches

Reaction—neutral to moderately alkaline
Thickness—0 to 48 inches

C horizon: (where present)
Color—hue of 5Y to 5BG, value of 4 to 6, and chroma of 1; or neutral in hue and value of 4 to 6
Redoximorphic features—iron accumulations in shades of yellow to brown
Texture—clay, silty clay, or silty clay loam
Other distinctive features—n-value ranging from 0.7 to 1.0 in some pedons
Reaction—neutral to moderately alkaline
Thickness—0 to 51 inches

Dundee Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: High positions on natural levees
Geomorphic setting: Natural levees on alluvial plains
Parent material: Loamy alluvium
Geology: Alluvial flood plains
Drainage class: Somewhat poorly drained
Permeability class: Moderately slow
Soil depth class: Very deep
Shrink-swell potential: Moderate
Slope: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, active, thermic Typic Endoaqualfs

Associated Soils

The Dundee series in the survey area is commonly associated with Goldman and Tensas soils.

- The Goldman soils are moderately well drained.
- The Tensas soils are clayey in the upper part of the solum.

Typical Pedon

Dundee silt loam, 0 to 1 percent slopes; in an area of row crops; NW1/4 S.L.G. sec. 39, T. 10 N., R. 10 E.; Waterproof, Louisiana, USGS 7.5-minute quadrangle; lat. 31 degrees, 48 minutes, 25.19 seconds north and long. 91 degrees, 25 minutes, 10.40 seconds west.

Ap1—0 to 3 inches; silt loam, brown (10YR 5/3) broken face; weak fine subangular blocky structure; friable; many fine roots throughout; many fine low-continuity tubular pores; 1 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; extremely acid; clear wavy boundary.

Ap2—3 to 9 inches; silt loam, grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; friable; many fine roots throughout; many fine low-continuity tubular pores; 5 percent medium distinct spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; extremely acid; clear smooth boundary.

Bt1—9 to 13 inches; loam, grayish brown (10YR 5/2) interior; moderate medium subangular blocky structure; firm; common fine roots throughout; many fine and medium low-continuity tubular pores; 20 percent discontinuous faint dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent medium distinct spherical extremely weakly cemented dark yellowish brown (10YR 4/4) iron-manganese masses that are in the matrix and have sharp boundaries; 5 percent medium distinct spherical extremely weakly cemented yellowish brown (10YR 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; strongly acid; gradual wavy boundary.

Bt2—13 to 23 inches; loam, dark grayish brown (10YR 4/2) interior; moderate medium subangular blocky structure; friable; common very fine roots throughout; many fine and medium low-continuity tubular pores; 70 percent discontinuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent medium distinct spherical extremely weakly cemented dark yellowish brown (10YR 4/4) iron-manganese masses that are in the matrix and have sharp boundaries; very strongly acid; gradual wavy boundary.

Bt3—23 to 34 inches; very fine sandy loam, grayish brown (10YR 5/2) interior; moderate fine subangular blocky structure; very friable; common fine roots throughout; common medium low-continuity tubular pores; 20 percent discontinuous faint dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent medium distinct spherical extremely weakly cemented dark yellowish brown (10YR 4/6) iron-manganese masses that are in the matrix and have sharp boundaries; 1 percent fine distinct spherical moderately cemented very dark gray (10YR 3/1) manganese masses that are in the matrix and have sharp boundaries; very strongly acid; clear smooth boundary.

Bg1—34 to 43 inches; very fine sandy loam, grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; very friable; common very fine roots throughout; many fine low-continuity tubular pores; 5 percent medium distinct spherical extremely weakly cemented dark yellowish brown (10YR 4/4) iron-manganese masses that are in the matrix and have sharp boundaries; 5 percent medium distinct spherical extremely weakly cemented yellowish brown (10YR 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; very strongly acid; gradual wavy boundary.

Bg2—43 to 48 inches; loam, grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; very friable; common very fine roots throughout; many fine low-continuity tubular pores; 5 percent medium distinct spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; 5 percent medium faint spherical extremely weakly cemented yellowish brown (10YR 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; strongly acid; gradual wavy boundary.

Bg3—48 to 58 inches; very fine sandy loam, grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; very friable; common very fine roots throughout; many fine low-continuity tubular pores; 5 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/4) iron-manganese masses that are in the matrix and have sharp boundaries; 5 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; strongly acid; gradual wavy boundary.

Bg4—58 to 65 inches; loamy very fine sand, grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; very friable; common very fine roots throughout; many fine low-continuity tubular pores; 5 percent medium faint spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; strongly acid; gradual wavy boundary.

Bg5—65 to 73 inches; loam, grayish brown (2.5Y 5/2) broken face; weak fine subangular blocky structure; very friable; common very fine roots throughout; 5 percent medium distinct spherical extremely weakly cemented yellowish brown (10YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; 1 percent fine prominent spherical extremely weakly cemented strong brown (7.5YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; strongly acid; gradual wavy boundary.

Bg6—73 to 82 inches; silt loam, grayish brown (10YR 5/2) broken face; weak fine subangular blocky structure; very friable; 5 percent medium distinct spherical extremely weakly cemented strong brown (7.5YR 5/6) iron-manganese masses that are in the matrix and have sharp boundaries; moderately acid; abrupt smooth boundary.

C—82 to 89 inches; stratified fine sandy loam, 60 percent brown (10YR 5/3) and 40 percent dark yellowish brown (10YR 4/4) broken face; massive; very friable; moderately acid.

Range in Characteristics

Thickness of the solum: 24 to more than 80 inches
Content of clay in the control section: 18 to 35 percent
Redoximorphic features: Iron-manganese accumulations throughout
Other distinctive features: Tubular pores throughout
Concentrated minerals: None

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3; or, in some pedons where the horizon is less than 6 inches thick, hue of 10YR, value of 3, and chroma of 2
Redoximorphic features—the number of iron accumulations in shades of brown ranges from none to common.
Texture—silt loam or silty clay loam
Other distinctive features—tubular pores
Reaction—extremely acid to moderately acid
Thickness—4 to 12 inches

BA or AB horizon: (where present)
Color—hue of 10YR, value of 4 or 5, and chroma of 2
Redoximorphic features—iron accumulations and depletions in shades of gray or brown
Texture—silt loam, very fine sandy loam, or loam
Other distinctive features—tubular pores
Reaction—very strongly acid to moderately acid
Thickness—0 to 8 inches

Bg or Btg horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2; or, in the lower part of the horizon, hue of 10YR, value 6, and chroma of 1 or 2 or hue of 10YR, value of 4 or 5, and chroma of 1
Redoximorphic features—iron accumulations and depletions in shades of gray and brown
Texture—silty clay loam, loam, or silt loam; the upper 20 inches has 18 to 34 percent clay and more than 15 percent sand that is mainly in the very-fine size fraction.
Other distinctive features—tubular pores
Reaction—very strongly acid to moderately acid
Thickness—20 to 40 inches

BCg horizon: (where present)
Color—hue of 10YR, value of 4 to 6, and chroma of 1 or 2; or hue of 2.5Y, value of 4 or 5, and chroma of 2
Redoximorphic features—iron accumulations and depletions in shades of brown, yellow, and gray

Texture—loam, sandy clay loam, or silt loam
Other distinctive features—none
Reaction—very strongly acid to moderately acid
Thickness—0 to 13 inches

C or Cg horizon:
Color—dominantly hue of 10YR, value of 4 to 6, and chroma of 1 or 2 or hue of 2.5Y, value of 4 or 5, and chroma of 2; or, below a depth of 80 inches, hue of 10YR, value of 4 to 6, and chroma of 1 to 4
Redoximorphic features—masses of iron accumulation in shades of yellow and brown
Texture—loam, very fine sandy loam, fine sandy loam, silt loam, or silty clay loam; and, in some pedons, strata of silty clay or clay below a depth of 40 inches
Other distinctive features—stratification
Reaction—very strongly acid to slightly alkaline; calcium-magnesium ratio of more than 1
Thickness—7 to 56 inches

Goldman Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Ridges in areas that have ridges and swales
Geomorphic setting: Convex ridges of natural levees on alluvial plains
Parent material: Loamy alluvium
Geology: Alluvial flood plains
Drainage class: Moderately well drained
Permeability class: Moderate
Soil depth class: Very deep
Shrink-swell potential: Low
Slope: 1 to 3 percent
Taxonomic classification: Coarse-silty, mixed, active, thermic Aquic Hapludalfs

Associated Soils

The Goldman series is commonly associated with Dundee, Newellton, and Tensas soils.

- The Dundee soils are fine-silty.
- The Newellton and Tensas soils have clayey surface and subsurface layers.

Typical Pedon

Goldman very fine sandy loam in an area of Dundee-Goldman complex, gently undulating; 21.3 miles south on U.S. Highway 65 from its intersection with Louisiana Highway 4 in Newellton, Louisiana, 8.7 miles west and south on Highway 566 to Powells Cemetery, 600 feet southwest on a field road, and 50 feet south of the road; NW1/4SW1/4 sec. 12, T. 9 N., R. 9 E.; Foules, Louisiana, USGS 7.5-minute quadrangle; lat. 31 degrees, 46 minutes, 21.68 seconds north and long. 91 degrees, 30 minutes, 41.08 seconds west.

Ap—0 to 5 inches; very fine sandy loam, brown (10YR 4/3) broken face; weak medium granular structure; very friable, nonsticky and nonplastic; common fine and common very fine roots throughout; moderately acid; clear smooth boundary.

Bt1—5 to 11 inches; very fine sandy loam, brown (10YR 4/3) broken face; weak medium subangular blocky structure; very friable, nonsticky and nonplastic; common fine and common very fine roots throughout; common fine low-continuity tubular pores; 3 percent discontinuous faint clay bridging; 2 percent fine faint irregular brown (10YR 5/3) clay depletions; 1 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/4) masses of oxidized iron; moderately acid; clear smooth boundary.

Bt2—11 to 18 inches; very fine sandy loam, brown (10YR 4/3) broken face; weak medium subangular blocky structure; very friable, nonsticky and nonplastic; common very fine roots throughout; common fine low-continuity tubular pores; 3 percent discontinuous faint clay bridging; 3 percent fine distinct irregular grayish brown (10YR 5/2) iron depletions; 1 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/4) masses of oxidized iron; 1 percent fine faint irregular brown (10YR 5/3) clay depletions; moderately acid; clear smooth boundary.

BC—18 to 34 inches; very fine sandy loam, brown (10YR 5/3) broken face; weak medium subangular blocky structure; very friable, nonsticky and nonplastic; common very fine roots throughout; common fine low-continuity tubular pores; 3 percent fine faint irregular grayish brown (10YR 5/2) iron depletions; 1 percent fine faint spherical extremely weakly cemented yellowish brown (10YR 5/4) masses of oxidized iron; moderately acid; clear smooth boundary.

C—34 to 84 inches; stratified loamy very fine sand, grayish brown (10YR 5/2) broken face; single grain; loose, nonsticky and nonplastic; slightly acid.

Range in Characteristics

Thickness of the solum: 20 to 60 inches
Content of clay in the control section: Less than 18 percent
Redoximorphic features: Iron accumulations throughout the B horizon
Other distinctive features: Tubular pores throughout the B horizon
Concentrated minerals: None

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Redoximorphic features—none
Texture—very fine sandy loam
Other distinctive features—none
Reaction—strongly acid to slightly acid, except where lime has been applied
Thickness—4 to 8 inches

Bt horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Redoximorphic features—few or common iron or clay depletions in shades of gray or grayish brown within the upper 10 inches of the horizon; iron accumulations in shades of brown throughout
Texture—loam, silt loam, or very fine sandy loam
Other distinctive features—tubular pores
Reaction—very strongly acid to slightly acid
Thickness—8 to 22 inches

BC horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Redoximorphic features—few to many iron accumulations in shades of brown and iron depletions in shades of gray
Texture—loamy very fine sand, very fine sandy loam, silt loam, or fine sandy loam
Other distinctive features—tubular pores
Reaction—strongly acid to slightly acid
Thickness—5 to 48 inches

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4

Redoximorphic features—few to many iron accumulations in shades of brown and iron depletions in shades of gray
Texture—loamy very fine sand, very fine sandy loam, silt loam, fine sandy loam, or loamy fine sand
Other distinctive features—stratification
Reaction—strongly acid to slightly acid

Newellton Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Channel fill
Geomorphic setting: Natural levees on alluvial plains
Parent material: Clayey over loamy alluvium
Geology: Mississippi River alluvium
Drainage class: Somewhat poorly drained
Permeability class: Slow
Soil depth class: Very deep
Shrink-swell potential: High
Slope: 0 to 3 percent
Taxonomic classification: Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Fluvaquentic Epiaquepts

Associated Soils

The Newellton series is commonly associated with Bruin, Commerce, Dundee, Goldman, Sharkey, and Tunica soils.

- The Commerce and Bruin soils do not have a clayey epipedon.
- The Dundee and Goldman soils have argillic horizons.
- The Sharkey soils are clayey to a depth of more than 40 inches.
- The Tunica soils are clayey to a depth of 20 to 36 inches.

Typical Pedon

Newellton clay, 0 to 1 percent slopes (fig. 13); 1,450 feet north on Highway 605 from its intersection with Highway 4 in Newellton, Louisiana, 0.95 mile east on Highway 887, about 1.2 miles northeast on Highway 808, and 450 feet due west of the road into a field; NE1/4SW1/4 sec. 45, T. 13 N., R. 12 E.; Newellton, Louisiana, USGS 7.5-minute quadrangle; lat. 32 degrees, 5 minutes, 25.45 seconds north and long. 91 degrees, 12 minutes, 58.86 seconds west.

Ap—0 to 7 inches; clay, dark grayish brown (10YR 4/2) broken face; weak medium subangular blocky structure; firm, very sticky and very plastic; common fine and common medium roots throughout; 2 percent medium faint spherical very weakly cemented brown (10YR 4/3) masses of oxidized iron; slightly acid; clear smooth boundary.
Bg—7 to 16 inches; clay, dark grayish brown (10YR 4/2) broken face; moderate medium subangular blocky structure; firm, very sticky and very plastic; common fine roots throughout; 4 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/4) masses of oxidized iron; neutral; abrupt smooth boundary.
2BC—16 to 26 inches; very fine sandy loam, brown (10YR 5/3) broken face; weak medium subangular blocky structure; very friable, nonsticky and nonplastic; common fine roots throughout; common fine low-continuity tubular pores; 4 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/6) masses of oxidized iron; neutral; clear smooth boundary.

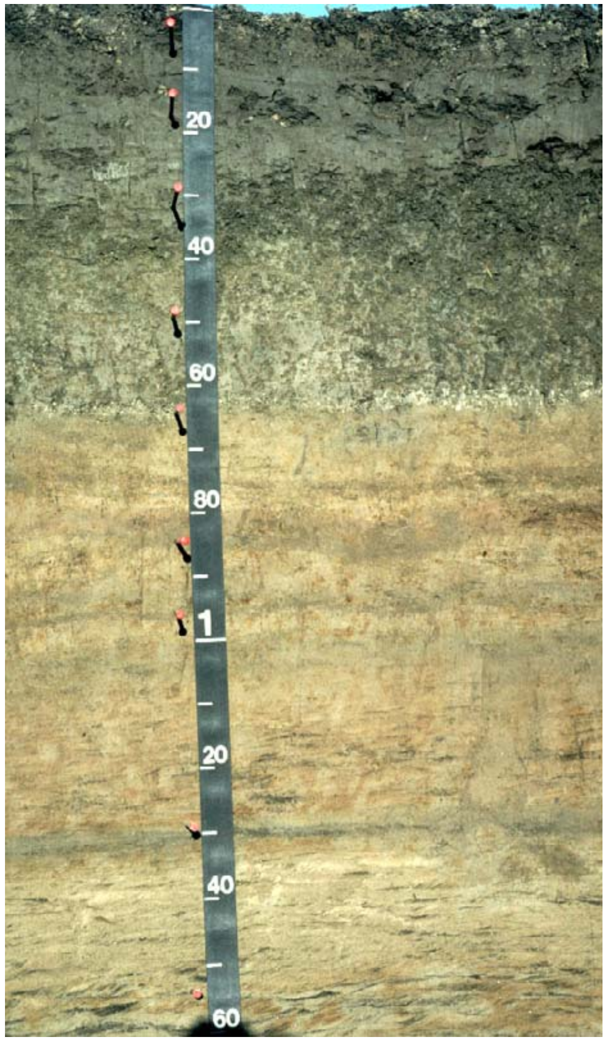

Figure 13.—Profile of Newellton clay.

2C1—26 to 34 inches; stratified silt loam to very fine sandy loam, grayish brown (10YR 5/2) broken face; structureless; very friable, nonsticky and nonplastic; 4 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/6) masses of oxidized iron; moderately alkaline; clear smooth boundary.

2C2—34 to 80 inches; stratified very fine sandy loam to fine sand, brown (10YR 5/3) broken face; structureless; loose, nonsticky and nonplastic; 4 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/6) masses of oxidized iron; moderately alkaline.

Range in Characteristics

Thickness of the solum: 14 to 32 inches
Content of clay in the control section: More than 35 percent in the upper part and less than 35 percent below a depth of 20 inches
Redoximorphic features: Iron accumulations throughout
Other distinctive features: Stratified in the C horizon
Concentrated minerals: None

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 or 2

Redoximorphic features—the number of iron accumulations in shades of brown ranges from none to common.
Texture—clay, silty clay, or, less commonly, silty clay loam
Other distinctive features—none
Reaction—moderately acid to slightly alkaline
Thickness—4 to 8 inches

Bg horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2
Redoximorphic features—few or common iron accumulations in shades of brown
Texture—clay or silty clay
Other distinctive features—none
Reaction—moderately acid to slightly alkaline
Thickness—4 to 14 inches

2BC or 2B horizon: (where present)
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3
Redoximorphic features—few or common iron accumulations in shades of brown
Texture—silt loam, loam, very fine sandy loam, or silty clay loam; average content of clay ranges from 10 to 28 percent.
Other distinctive features—tubular pores
Reaction—strongly acid to moderately alkaline
Thickness—0 to 18 inches

2C or 2Cg horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 3; or hue of 2.5Y, value of 4 or 5, and chroma of 1 or 2
Redoximorphic features—the number of iron accumulations in shades of brown ranges from none to common.
Texture—commonly stratified with layers or lenses of silt loam, loam, very fine sandy loam, fine sandy loam, loamy fine sand, fine sand, or silty clay loam; average content of clay ranges from 10 to 28 percent in the 2C horizon within a depth of 40 inches.
Other distinctive features—none
Reaction—strongly acid to moderately alkaline

Sharkey Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Backswamps
Geomorphic setting: Backswamps on alluvial plains
Parent material: Clayey alluvium
Geology: Alluvial flood plains
Drainage class: Poorly drained
Permeability class: Impermeable
Soil depth class: Very deep
Shrink-swell potential: Very high
Slope: 0 to 3 percent
Taxonomic classification: Very-fine, smectitic, thermic Chromic Epiaquerts

Associated Soils

The Sharkey series in the survey area is commonly associated with Commerce, Dowling, Tunica, and Tensas soils.

- The Commerce soils are silty and somewhat poorly drained.
- The Dowling soils do not crack below a depth of 20 inches.
- The Tunica and Tensas soils are loamy below a depth of 36 inches.

Typical Pedon

Sharkey clay, 0 to 1 percent slopes; in an area of row crops; 40 feet south of a farm road at a gap in the fence; SE1/4NW1/4NW1/4 sec. 46, T. 11 N., R. 12 E.; Lake Bruin, Louisiana, USGS 7.5-minute quadrangle; lat. 31 degrees, 53 minutes, 36.00 seconds north and long. 91 degrees, 17 minutes, 12.00 seconds west.

Ap1—0 to 2 inches; clay, dark grayish brown (10YR 4/2) broken face; weak medium granular structure; moderately hard, very sticky and very plastic; common fine roots throughout; strongly acid; abrupt irregular boundary.

Ap2—2 to 7 inches; clay, dark gray (10YR 4/1) broken face; weak medium subangular blocky structure; slightly hard, very sticky and very plastic; common fine roots throughout; 19 percent fine and medium distinct spherical weakly cemented dark yellowish brown (10YR 3/4) iron-manganese concretions that are throughout the horizon and have sharp boundaries; moderately acid; clear wavy boundary.

Bg1—7 to 11 inches; clay, dark gray (10YR 4/1) broken face; weak medium subangular blocky structure; friable, very sticky and very plastic; 40 percent discontinuous distinct dark gray (10YR 4/1) pressure faces; 15 percent fine and medium distinct spherical weakly cemented dark yellowish brown (10YR 3/4) iron-manganese concretions that are throughout the horizon and have sharp boundaries; moderately acid; gradual wavy boundary.

Bg2—11 to 20 inches; clay, dark gray (10YR 4/1) broken face; weak medium subangular blocky structure; friable, very sticky and very plastic; 40 percent discontinuous distinct dark gray (10YR 4/1) pressure faces; 1 percent fine faint spherical weakly cemented dark yellowish brown (10YR 4/4) iron-manganese concretions that are throughout the horizon and have sharp boundaries; slightly acid; gradual wavy boundary.

Bg3—20 to 28 inches; clay, dark gray (10YR 4/1) broken face; weak medium subangular blocky structure; friable, very sticky and very plastic; 40 percent discontinuous distinct dark gray (10YR 4/1) pressure faces; 19 percent fine and medium distinct spherical weakly cemented yellowish brown (10YR 5/6) iron-manganese concretions that are throughout the horizon and have sharp boundaries; neutral; gradual wavy boundary.

Bssg—28 to 49 inches; clay, gray (10YR 5/1) broken face; weak medium subangular blocky structure; friable, very sticky and very plastic; 80 percent discontinuous distinct gray (10YR 5/1) pressure faces throughout and 10 percent discontinuous prominent gray (10YR 5/1) slickensides (pedogenic) throughout; 9 percent fine and medium distinct spherical weakly cemented yellowish brown (10YR 5/6) iron-manganese concretions that are throughout the horizon and have sharp boundaries; 9 percent fine and medium distinct spherical weakly cemented yellowish brown (10YR 5/8) iron-manganese concretions that are throughout the horizon and have sharp boundaries; slightly alkaline; gradual wavy boundary.

Bssyg—49 to 80 inches; clay, gray (10YR 5/1) broken face; weak medium subangular blocky structure; friable, very sticky and very plastic; 55 percent discontinuous distinct gray (10YR 5/1) pressure faces throughout and 10 percent patchy prominent gray (10YR 5/1) slickensides (pedogenic) throughout; 9 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/6) iron-manganese concretions that are throughout the horizon and have sharp boundaries; 9 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/8) iron-manganese concretions that are throughout the horizon and have sharp boundaries; 1 percent fine prominent platy very weakly cemented white (2.5Y 8/1) gypsum masses that are throughout the horizon and have sharp boundaries; slightly alkaline.

Range in Characteristics

Thickness of the solum: 36 to more than 80 inches
Content of clay in the control section: More than 60 percent
Redoximorphic features: Iron-manganese accumulations throughout
Other distinctive features: Formation of 1- to 3-centimeter wide cracks to a depth of 20 to more than 24 inches in most years (fig. 14); COLE of about 0.10 to 0.17 throughout the Bg, Bssg, and Bssyg horizons; slickensides and pressure faces in the lower part of the B horizon and in the C horizon; calcareous at a depth of more than 20 inches in some pedons
Concentrated minerals: Accumulated gypsum in the lower part of the B horizon and in the C horizon

A or Ap horizon:
Color—hue of 10YR, value of 2 to 4, and chroma of 1 or 2; or, in some loamy overwash phases that are less than 30 percent clay, hue of 10YR, value of 2 to 5, and chroma of 1 to 3
Redoximorphic features—the number of iron-manganese accumulations in shades of brown ranges from none to common.
Texture—clay, silty clay, or silty clay loam with more than 30 percent clay
Other distinctive features—none
Reaction—strongly acid to moderately alkaline
Thickness—4 to 12 inches

Bg horizon: (where present)
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2; or neutral in hue and value of 4 to 6
Redoximorphic features—the number of iron-manganese accumulations and depletions in shades of gray, brown, yellow, and red ranges from none to common.

Figure 14.—Surface cracks in Sharkey clay.

Texture—clay
Other distinctive features—pressure faces
Reaction—strongly acid to moderately alkaline
Thickness—0 to 20 inches

Bssg or Bssyg horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2; or neutral in hue and value of 4 to 6
Redoximorphic features—few to many iron-manganese accumulations and depletions in shades of gray, brown, yellow, and red
Texture—clay
Other distinctive features—slickensides and pressure faces; the number of accumulations of gypsum and calcium carbonate ranges from none to common.
Reaction—strongly acid to moderately alkaline
Thickness—26 to 80 inches

BC or C horizon: (where present)
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2; or neutral in hue and value of 4 to 6
Redoximorphic features—few to many iron-manganese accumulations and depletions in shades of gray, brown, yellow, and red
Texture—dominantly clay or silty clay, but coarser textures below a depth of 40 inches in some pedons
Other distinctive features—slickensides and pressure faces; the number of accumulations of gypsum and calcium carbonate ranges from none to common.
Reaction—neutral to moderately alkaline

Tensas Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Intermediate natural levees
Geomorphic setting: Convex ridges of natural levees on alluvial plains
Parent material: Clayey over loamy alluvium
Geology: Alluvial flood plains
Drainage class: Somewhat poorly drained
Permeability class: Impermeable
Soil depth class: Very deep
Shrink-swell potential: Very high
Slope: 0 to 3 percent
Taxonomic classification: Fine, smectitic, thermic Chromic Vertic Epiaqualfs

Associated Soils

The Tensas series is commonly associated with Dundee soils.

- The Dundee soils are loamy throughout and are somewhat poorly drained.

Typical Pedon

Tensas clay in an area of Tensas-Sharkey clays, gently undulating; in an area of row crops; 9.4 miles south on U.S. Highway 65 from Newellton, Louisiana, 1.8 miles west on State Highway 568, about 5.22 miles west on State Highway 802 to Mayflower, Louisiana, 1.04 miles west and southwest on Mayflower Road, 1.66 miles south on a field road, and 150 feet southwest of the road in a field; NW1/4NW1/4NE1/4 sec. 24, T.

11 N., R. 10 E.; Gretna Green, Louisiana, USGS 7.5-minute quadrangle; lat. 31 degrees, 55 minutes, 28.00 seconds north and long. 91 degrees, 23 minutes, 58.00 seconds west.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) clay; moderate medium subangular blocky structure; firm, moderately sticky and very plastic; many fine and medium roots throughout; few fine and medium low-continuity tubular pores; 1 percent fine distinct irregular greenish gray (5GY 5/1) iron depletions on surfaces along pores; 1 percent medium distinct irregular brownish yellow (10YR 6/6) masses of oxidized iron on faces of peds; strongly acid; clear wavy boundary.

Btg1—4 to 11 inches; grayish brown (2.5Y 5/2) clay; strong medium angular blocky structure; firm, very sticky and very plastic; many fine roots between peds; 50 percent distinct pressure faces on faces of peds; 25 percent medium prominent irregular yellowish brown (10YR 5/6) masses of oxidized iron on faces of peds; 15 percent medium prominent irregular gray (2.5Y 5/1) iron depletions on faces of peds; strongly acid; gradual smooth boundary.

Btg2—11 to 19 inches; grayish brown (2.5Y 5/2) silty clay; strong medium angular blocky structure; firm, very sticky and very plastic; many fine roots between peds; few fine low-continuity tubular pores; 52 percent distinct gray (2.5Y 5/1) pressure faces on faces of peds; 25 percent medium prominent irregular brownish yellow (10YR 6/8) masses of oxidized iron on faces of peds; 1 percent very weakly cemented charcoal fragments 2 to 3 millimeters in size; strongly acid; gradual smooth boundary.

2Bg—19 to 30 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium angular blocky structure; firm, moderately sticky and moderately plastic; few fine roots between peds; few fine low-continuity tubular pores; 51 percent distinct gray (2.5Y 5/1) pressure faces on faces of peds; 25 percent medium prominent irregular yellowish brown (10YR 5/6) masses of oxidized iron on faces of peds; 2 percent medium distinct irregular gray (10YR 5/1) iron depletions on faces of peds; 1 percent fine faint irregular reddish yellow (7.5YR 6/6) iron-manganese masses on faces of peds; strongly acid; gradual smooth boundary.

2Bw—30 to 33 inches; brown (10YR 5/3) loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; many fine roots throughout; few medium moderate-continuity irregular pores; 8 percent distinct grayish brown (10YR 5/2) clay films on faces of peds; 15 percent medium prominent irregular strong brown (7.5YR 5/6) masses of oxidized iron on faces of peds; 5 percent medium prominent irregular grayish brown (10YR 5/2) iron depletions on faces of peds; moderately acid; gradual smooth boundary.

2Bg´—33 to 42 inches; grayish brown (2.5Y 5/2) sandy clay loam; weak fine subangular blocky structure; friable, nonsticky and nonplastic; many fine roots throughout; many fine moderate-continuity irregular pores; 15 percent medium prominent irregular yellowish brown (10YR 5/8) masses of oxidized iron on faces of peds; 1 percent fine faint irregular gray (5Y 6/1) iron depletions on surfaces along root channels; moderately acid; diffuse smooth boundary.

2Bw´1—42 to 56 inches; light olive brown (2.5Y 5/3) very fine sandy loam; massive; very friable, nonsticky and nonplastic; many fine and medium roots throughout; many fine moderate-continuity irregular pores; 25 percent medium distinct irregular yellowish brown (10YR 5/6) masses of oxidized iron on faces of peds; 1 percent fine distinct irregular gray (10YR 6/1) iron depletions on surfaces along root channels; moderately acid; diffuse smooth boundary.

2Bw´2—56 to 70 inches; light olive brown (2.5Y 5/3) silt loam; weak medium subangular blocky structure; friable, slightly sticky and nonplastic; many fine and medium roots throughout; many fine moderate-continuity dendritic tubular pores; 15 percent medium distinct irregular yellowish brown (10YR 5/6) masses of oxidized iron on faces of peds; 1 percent fine faint irregular grayish brown (10YR 5/2) iron depletions on surfaces along root channels; 1 percent fine spherical iron-manganese concretions; slightly acid; diffuse smooth boundary.

2Bg´´1—70 to 76 inches; gray (5Y 5/1) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky and moderately plastic; many fine and medium roots throughout; many fine moderate-continuity dendritic tubular pores; 25 percent medium prominent irregular yellowish brown (10YR 5/4) masses of oxidized iron on faces of peds; 1 percent fine faint irregular gray (5Y 6/1) iron depletions on surfaces along root channels; slightly acid; diffuse smooth boundary.

2Bg´´2—76 to 86 inches; gray (5Y 5/1) silt loam; weak medium subangular blocky structure; friable, slightly sticky and nonplastic; many fine and medium roots throughout; many fine moderate-continuity dendritic tubular pores; 25 percent medium prominent irregular yellowish brown (10YR 5/6) masses of oxidized iron on faces of peds; 1 percent fine faint irregular gray (5Y 6/1) iron depletions on surfaces along root channels; slightly acid; diffuse smooth boundary.

2BCg—86 to 89 inches; olive gray (5Y 5/2) silty clay loam; moderate medium angular blocky structure; firm, slightly sticky and moderately plastic; few fine roots between peds; few fine low-continuity dendritic tubular pores; 51 percent discontinuous distinct grayish brown (2.5Y 5/2) pressure faces on faces of peds; 25 percent medium prominent irregular yellowish brown (10YR 5/6) masses of oxidized iron on faces of peds; 15 percent medium faint irregular light olive gray (5Y 6/2) iron depletions in cracks; slightly acid.

Range in Characteristics

Thickness of the solum: 30 to more than 80 inches
Content of clay in the control section: 35 to 60 percent
Redoximorphic features: Iron-manganese depletions and accumulations throughout
Other distinctive features: Loamy lithologic discontinuity at a depth of 18 to 36 inches; common pressure faces in clayey horizons; tubular pores in loamy horizons
Concentrated minerals: None

A or Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 1 or 2
Redoximorphic features—iron-manganese accumulations and depletions in shades of brown, yellow, and gray
Texture—clay, silty clay, or silty clay loam
Other distinctive features—None
Reaction—very strongly acid to neutral
Thickness—0 to 7 inches

Btg horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2; or, in some pedons that have subhorizons between the base of the A horizon and a depth of 30 inches, hue of 10YR, value of 4 or 5, and chroma of 1 or neutral in hue and value of 4 or 5
Redoximorphic features—iron accumulations and depletions in shades of brown, yellow, and gray
Texture—clay or silty clay
Other distinctive features—dark coatings and pressure faces on surfaces of peds in some pedons
Reaction—very strongly acid to moderately acid
Thickness—combined A and Btg horizons range from 18 to 36 inches

2Bg or 2Bw horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3; or, in the lower

part, hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 or 2; depth to layers with matrix chroma of 3 is 30 inches or more.
Redoximorphic features—iron-manganese accumulations and depletions in shades of brown, yellow, and gray
Texture—very fine sandy loam through silty clay loam
Other distinctive features—few to many tubular pores
Reaction—strongly acid to neutral
Thickness—9 to 36 inches

2BCg or 2Cg horizon:
Color—hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 or 2
Redoximorphic features—iron-manganese accumulations and depletions in shades of brown, yellow, and gray
Texture—very fine sandy loam through silty clay loam
Other distinctive features—the number of pressure faces in the lower part of the horizon ranges from none to common.
Reaction—strongly acid to neutral

Tunica Series

Major Land Resource Area: 131—Southern Mississippi Valley Alluvium
Local physiographic area: Intermediate natural levees
Geomorphic setting: Intermediate positions on natural levees on alluvial plains
Parent material: Clayey over loamy alluvium
Geology: Alluvial flood plains
Drainage class: Poorly drained
Permeability class: Impermeable
Soil depth class: Very deep
Shrink-swell potential: High
Slope: 0 to 3 percent
Taxonomic classification: Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Vertic Epiaquepts

Associated Soils

The Tunica series is commonly associated with Commerce and Sharkey soils.

- The Commerce soils are loamy throughout and are somewhat poorly drained.
- The Sharkey soils are clayey throughout and are very poorly drained.

Typical Pedon

Tunica clay, 0 to 1 percent slopes; in an area of row crops; 0.65 mile south on U.S. Highway 65 from its intersection with Louisiana Highway 4 in Newellton, 540 feet east of the highway and 600 feet north of fourth light on an airstrip; W$^{1}/4$ sec. 3, T. 13 N., R. 12 E.; Saranac, Louisiana, USGS 7.5-minute quadrangle; lat. 32 degrees, 15 minutes, 45.03 seconds north and long. 91 degrees, 15 minutes, 14.25 seconds west.

Ap—0 to 5 inches; clay, 90 percent dark grayish brown (10YR 4/2) broken face; moderate medium platy structure; platy structure is due to plowpan compaction; firm, loose, very sticky and very plastic; common fine roots on top of horizon; 5 percent prominent threadlike yellowish red (5YR 5/8) masses of oxidized iron that are lining pores and have sharp boundaries; slightly acid; surface has weak medium granular structure, loose when dry; clear smooth boundary.
Bg1—5 to 18 inches; clay, 90 percent gray (10YR 5/1) broken face; weak medium subangular blocky structure; firm, very sticky and very plastic; 15 percent fine prominent spherical moderately cemented reddish brown (5YR 4/4) masses of

oxidized iron that are on faces of peds and have clear boundaries; 10 percent medium distinct spherical weakly cemented dark yellowish brown (10YR 4/4) masses of oxidized iron that are on faces of peds and have sharp boundaries; neutral; shiny red faces along some roots; gradual smooth boundary.

Bg2—18 to 28 inches; clay, 90 percent gray (10YR 5/1) broken face; weak medium subangular blocky structure; firm, very sticky and very plastic; 15 percent medium distinct weakly cemented dark yellowish brown (10YR 4/4) masses of oxidized iron that are on faces of peds and have clear boundaries; neutral; shiny red faces along some roots; abrupt wavy boundary.

2Cg1—28 to 43 inches; silt loam, 90 percent grayish brown (10YR 5/2) broken face; massive; friable, very plastic; 16 percent medium distinct spherical weakly cemented yellowish brown (10YR 5/4) masses of oxidized iron that are on faces of peds and have clear boundaries; yellowish brown (10YR 5/6); neutral; abrupt smooth boundary.

2Cg2—43 to 49 inches; silty clay loam, 90 percent gray (10YR 5/1) broken face; massive; very friable; 16 percent medium distinct spherical weakly cemented dark yellowish brown (10YR 4/4) masses of oxidized iron that are on faces of peds and have clear boundaries; neutral; abrupt smooth boundary.

2Cg3—49 to 68 inches; silt loam, 90 percent gray (10YR 5/1) broken face; massive; friable; 16 percent medium distinct spherical weakly cemented dark yellowish brown (10YR 4/4) masses of oxidized iron that are on faces of peds and have clear boundaries; neutral; abrupt smooth boundary.

2Cg4—68 to 84 inches; silty clay loam, 90 percent gray (10YR 5/1) broken face; massive; firm; 16 percent medium distinct spherical weakly cemented dark yellowish brown (10YR 4/4) masses of oxidized iron that are on faces of peds and have clear boundaries; neutral.

Range in Characteristics

Thickness of the solum: 20 to 36 inches
Content of clay in the control section: More than 35 percent in the upper part and less than 35 percent below a depth of 36 inches
Redoximorphic features: Iron accumulations throughout, including oxidized rhizospheres in the A and B horizons
Other distinctive features: Loamy lithologic discontinuity at a depth of 20 to 36 inches
Concentrated minerals: None

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2; or, in some pedons where the horizon is less than 6 inches thick, hue of 10YR or 2.5Y, value of 3, and chroma of 2
Redoximorphic features—few or common iron accumulations in shades of brown and red
Texture—silty clay or clay; and, in some pedons, an overwash of silt loam or silty clay loam
Other distinctive features—none
Reaction—moderately acid to mildly alkaline
Thickness—3 to 12 inches

Bg horizon:
Color—hue of 10YR to 5Y, value of 4 or 5, and chroma of 1; hue of 10YR to 5Y, value of 6, and chroma of 1 or 2; or, in the Bg2 horizon, hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2
Redoximorphic features—few or common iron accumulations in shades of brown and red
Texture—silty clay or clay

Other distinctive features—none
Reaction—moderately acid to mildly alkaline
Thickness—17 to 29 inches

2Cg horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2
Redoximorphic features—in some pedons, variegated in shades of brown, yellow, and gray below a depth of 30 inches; few or common iron accumulations in shades of brown
Texture—silt loam, loam, silty clay loam, sandy loam, or fine sandy loam; and, in the lower part of some pedons, loamy fine sand
Other distinctive features—none
Reaction—moderately acid to moderately alkaline

Formation of the Soils

In this section, the processes and factors of soil formation are explained and related to the soils in the survey area. The landforms and surface geology of the parish are also described.

Processes of Soil Formation

The processes of soil formation influence the kind and degree of development of soil horizons. The rate and relative effect of different processes are determined by the factors of soil formation, which are climate, living organisms, relief, parent material, and time.

Soil-forming processes include the addition of organic, mineral, and gaseous materials to the soil; the translocation of materials from one place to another within the soil; and the physical and chemical transformation of mineral and organic materials within the soil.

Many processes take place simultaneously. Examples of processes in the survey area include accumulation of organic matter, development of soil structure, and leaching of bases from soil horizons. The contribution of a particular process can change over time. For example, levees have reduced the extent of flooding, resulting in a reduced rate of sediment accumulation on many soils in the survey area. Some important processes that have contributed to the formation of the soils in the parish are discussed in the following paragraphs.

Organic matter has accumulated on and been partly decomposed and incorporated into all of the soils in the parish. The production of organic matter is greatest in and above the surface horizon (A horizon), resulting in the formation of soils in which the surface horizon has a higher content of organic matter and a darker color than the deeper horizons. Soils that have a dark surface layer that was buried by more recent alluvium are exceptions. The Commerce, overwash, soils are an example.

The activity of living organisms is largely responsible for the decomposition and mixing of organic residue into soil horizons. Many of the more stable products of decomposition (humus) remain in the soil as finely divided material that increases granulation and provides a source of plant nutrients.

Intermittent additions of alluvial sediment at the surface contribute to the formation of some of the soils in the parish. The sediment provides new parent material in which the processes of soil formation can occur. In many cases, the new material accumulates faster than the processes of soil formation can appreciably alter it. Examples are Crevasse and Bruno soils. Accumulation of sediment is also indicated by the contrasting textures in the Newellton, Tunica, and Tensas soils.

Processes resulting in the development of soil structure have taken place in most of the soils in the parish. Plant roots, animals, and microorganisms are all effective agents in the rearrangement of soil material into secondary aggregates. Decomposition products, organic residue, and secretions of organisms serve as cementing agents that help to stabilize structural aggregates. Wetting and drying accompanied by shrinking and swelling contribute to the development of structural aggregates, particularly in soils that have an appreciable amount of clay. The Sharkey soils are an example.

The translocation of elements from upper to lower soil horizons is an important process in soil formation. Water moving through the soil leaches soluble bases and any free carbonates that were initially in the upper horizons. This process is indicated by a more alkaline soil reaction in lower horizons than in the surface horizon and by the absence of free carbonates in the surface horizon of soils that are calcareous in the lower horizons (Bk horizons). The effects of leaching are most pronounced in the Goldman, Dundee, and Tensas soils. These soils formed in the oldest sediment in the survey area. They are acid throughout or in the upper horizons except the surface horizon. The other soils in the survey area are not as leached and typically are neutral or alkaline in the upper horizons.

The formation, translocation, and accumulation of clay were important processes in the development of the Dundee, Goldman, and Tensas soils. Silicon and aluminum, released as a result of weathering of such minerals as pyroxenes, amphiboles, and feldspars, can recombine with the components of water to form secondary clay minerals, such as kaolinite. Layered silicate minerals, such as biotite and montmorillonite, can weather to form other clay minerals, such as vermiculite and kaolinite. As water moves downward, it can carry small amounts of clay in suspension. This clay is deposited and accumulates at the depth of penetration of the water or in horizons where it becomes flocculated or is filtered out by fine pores in the soil. Over long periods, distinct horizons of secondary clay accumulation can form. Such horizons result largely from translocation of clays from upper to lower horizons and are designated as Bt horizons.

The poorly drained and very poorly drained soils in the survey area have horizons in which reduction and segregation of iron and manganese compounds are important processes. Reducing conditions prevail for long periods in poorly aerated horizons. Consequently, the more soluble reduced forms of iron and manganese predominate over the much less soluble oxidized forms. Reduced forms of these elements result in the gray colors that are characteristic of Bg and Cg horizons. Examples include horizons in the Dowling, Sharkey, and Tunica soils. Appreciable amounts of the more soluble reduced forms of iron and manganese can be removed from the soils or translocated within the soils by water. Brown mottles in predominantly gray horizons indicate segregation and concentration of oxidized iron compounds resulting from alternating oxidizing and reducing conditions.

Factors of Soil Formation

Soil is a natural, three-dimensional body that is formed on the earth's surface. It has properties resulting from the integrated effects of climate and living organisms acting on parent material, as conditioned by relief over time.

The interaction of the five soil forming factors influences the processes of soil formation and results in differences among the soils. The factors are the physical and chemical composition of the parent material, the climate during formation of the soil from the parent material, the kinds of plants and other organisms living in the soil, the relief of the land and the effects of relief on runoff and soil moisture conditions, and the length of time the soil has been forming (Jenny, 1941).

The effects of a factor can differ from place to place. The interaction of all of the factors determines the kind of soil that forms. Many soil differences cannot be attributed to differences in a single factor. For example, the content of organic matter in the soils of Tensas Parish is influenced by several factors, including relief, parent material, and living organisms. The diversity of factors does not diminish the importance of the influence of any given factor on a specific soil property. The factors of soil formation as they relate to the soils in the survey area are described in the following sections.

Parent Material

Parent material is the material in which soils form. The soils in Tensas Parish are mineral soils that formed mainly in unconsolidated alluvium from the Mississippi River. The alluvium is variable. It originated throughout a drainage area that extends from western Montana to eastern Pennsylvania. The sediment has diverse mineralogy. Sorting during deposition has resulted in marked differences in the parent material. Mineralogical studies of the alluvium indicate that smectite minerals are predominant in the clay-size fraction with secondary amounts of micaceous clays. Associated with the smectite minerals and micaceous clays are lesser amounts of kaolinite, a chlorite-vermiculite intergrade, and quartz minerals. The sand- and silt-sized fractions are largely quartz. A sizeable component of feldspars and smaller amounts of a variety of minerals, including such readily weatherable components as biotite and hornblende, are also evident.

When river sediment is deposited, a partial sorting of the alluvium takes place. As streams overflow their banks, a subsequent decrease in velocity and transporting capability results in sequential deposition of the sediment. The initial deposits have a high content of sand. As the velocity of the water decreases, the initial deposits are followed by sediment that has a high content of silt. The deposition of silty sediment is followed by deposition of the more clayey materials.

As a consequence of the sorting, natural levees are highest and have the greatest content of sand nearest the river. The long, gentle slopes of the natural levees characteristically extend from the river to clayey deposits in backswamps. The clayey sediment in backswamps is deposited from still or slowly moving water in low areas behind natural levees. The Newellton and Tunica soils formed in areas where about 12 to 36 inches of clayey alluvium overlies loamy alluvium. The thickness of the clayey alluvium corresponds to the position relative to the river channel at the time of deposition.

Bruin, Commerce, Crevasse, Dowling, Newellton, Sharkey, and Tunica soils formed in sediments associated with the present meander belt of the Mississippi River. The Crevasse soils are mainly between the river and the levee constructed and maintained by the U.S. Army Corps of Engineers. The Crevasse soils formed in coarse-textured parent material; the Bruin and Commerce soils formed in intermediate-textured parent material; and the Sharkey soils formed in fine-textured parent material. In order of decreasing content of clay, the soils that formed in sediment from the older meander belt of the Mississippi River are Sharkey, Tensas, and Dundee soils.

A number of differences in the soils can be attributed, wholly or partially, to differences in parent material. For example, as the amount of clay increases in a soil, so do cation exchange capacity, content of organic matter, and change in volume upon wetting and drying. Permeability, aeration, and content of readily weatherable minerals decrease as the content of clay increases. Consequently, the loamy soils are generally more productive for most agricultural crops and also provide the most desirable sites in the parish for most urban and industrial uses.

Not all differences between the soils can be attributed to differences in parent material. For example, Dowling and Sharkey soils formed in clayey deposits of similar parent material but have major differences.

Climate

Tensas Parish is in a region characterized by a humid, subtropical climate. Because of the relatively young age of most of the parent material, the soils in the parish formed under climatic conditions similar to those of the present.

The climate is relatively uniform throughout the parish; therefore, local differences between soils that formed in parent material of similar age are not a result of atmospheric climate. The warm temperatures and large amount of precipitation favor rapid weathering of minerals in the soils. The soils in the parish, however, are only slightly weathered because they have been exposed to weathering for only relatively short periods. Weathering and leaching have occurred to some extent in most of the soils. These processes are indicated by an increase in alkalinity with depth and by an absence of free carbonates in the upper horizons. Weathering processes involving the release and reduction of iron are evident in soils, such as Dowling and Sharkey soils, that have a gray Bg or Cg horizon. Oxidation and segregation of iron resulting from alternating oxidizing and reducing conditions are indicated by mottled horizons in most of the soils.

Deep, wide cracks form in some of the soils in Tensas Parish. Where the cracks are present, much of the water from rainfall or irrigation initially enters the soil through the cracks. Once the soil becomes wet and the cracks close, infiltration becomes slow or very slow. Cracks form extensively in Sharkey, Tensas, and Tunica soils late in summer and early in fall, which is when the soils are driest. Cracks that are 1 inch or more in width extend to a depth of more than 20 inches in most years. Less extensive, shallower cracks sometimes form in the more silty Dundee, Commerce, and Newellton soils and in the clayey Dowling soils. The Dowling soils do not dry out as deeply as the Sharkey soils and therefore have shallower cracks. Cracks do not form in the loamy Bruin soils or the sandy Crevasse soils.

Living Organisms

Living organisms affect soil formation in a number of ways and exert a major influence on the kind and extent of soil horizons. Plant growth and the activity of other organisms disturb the soil. They modify porosity, influence tilth, and affect the incorporation of organic matter into the soil. Earthworms, crayfish, and other animals burrow beneath the surface and mix the soil. Plants recycle soil nutrients and are major sources of organic residue. The decomposition and incorporation of organic matter into the soil by microorganisms furthers the development of soil structure and generally increases the infiltration rate and available water capacity. When animals and plants die, their remains decay to form humus in the soil, and the humus serves as a storehouse for plant nutrients. The relatively stable organic compounds in soils generally have very high cation exchange capacities. The organic compounds increase the capacity of the soil to absorb and store nutrients, such as calcium, magnesium, and potassium.

The extent of the processes involving organic compounds and the kinds of organic matter produced can vary widely, depending on the kinds of organisms living in and on the soil. Consequently, large differences in soils can occur between areas that have widely contrasting numbers of plants and other organisms.

The soils in Tensas Parish formed under hardwood forests and the associated understory and ground cover. Cottonwood, sycamore, and pecan trees are predominant on the higher and better drained soils. Oak, sweetgum, and green ash trees are predominant on the clayey, poorly drained Sharkey soils. The native forest on the clayey, very poorly drained Dowling soils includes baldcypress, water tupelo, and water hickory.

Differences in the accumulation of organic matter in and on soils are influenced by the kinds and quantities of microorganisms. Aerobic organisms use oxygen from the air to rapidly oxidize organic residue and are chiefly responsible for the decomposition of organic matter. These organisms are most abundant and prevail for longer periods in the better drained and better aerated soils, such as the Bruin and Goldman soils. Anaerobic organisms do not require oxygen from the air, and they decompose organic residues very slowly. They are predominant throughout most or all of the year in the most poorly drained soils. Differences in decomposition by microorganisms can result in variable accumulations of organic matter. For example, the accumulation of organic matter is greater in the very poorly drained Dowling soils than in the better drained Bruin and Goldman soils.

Relief

Relief and other physiographic features influence soil formation mainly by affecting internal soil drainage, runoff, erosion, deposition, and exposure to the sun and wind.

In Tensas Parish, the sediment accumulates faster than many of the processes of soil formation can alter them. This is evident in the weakly developed B horizons in such soils as the Commerce soils and in distinct stratification in the lower horizons of some soils. Levee construction and other water-control measures seem to have reversed this trend for most of the soils. Slope and rate of runoff are low enough that erosion is not a major problem in the parish.

An important feature of Tensas Parish is the level to gently undulating land surface. With few exceptions, the entire parish is characterized by soils that have slopes of less than 3 percent. Slopes do range up to 8 percent in the Tensas-Sharkey complex but only for a limited extent. Relief and landscape position have influenced formation of the different soils. Typically, slopes are long and extend several miles from the highest elevations on natural levees to the lower areas in backswamps.

Differences between the clayey Sharkey and Dowling soils illustrate the influence of relief. The Sharkey and Dowling soils would be the same except for the influence of landscape position. The Dowling soils are in the lowest, ponded, backswamp areas. The Sharkey soils are predominantly at the higher elevations in the backswamps and on the lower parts of the natural levees. As compared to the clayey soils at higher elevations, the Dowling soils have a higher content of organic matter, are more poorly drained, have a thinner solum, and crack to a shallower depth during dry seasons.

From highest to lowest elevations in the present meander belt of the Mississippi River, the predominant soils typically are Bruin, Commerce, Newellton, Tunica, Sharkey, and Dowling soils. Soils at lower elevations receive runoff from surrounding soils at higher elevations. For example, the Commerce soils are somewhat poorly drained and have a water table at a depth of 1.5 to 4 feet for only short periods during most years. The Dowling soils are very poorly drained, are often submerged, and have a water table that fluctuates from about 12 inches above the surface to a depth of 1.5 feet year-round. Differences in the content of organic matter are related to the internal drainage of the soils and consequently to relief. The content of organic matter generally increases as internal soil drainage becomes more restricted.

Bruin, Commerce, Dundee, and Goldman soils are in the higher, better drained positions and are subject to more extensive oxidation of organic matter. The very poorly drained Dowling soils are covered with water for extended periods, resulting in greater reduction and accumulation of more organic matter in the surface layer.

Time

The kinds of horizons that form in a soil and their degree of development are influenced by time. Large differences can exist between the soils because of differences in time of soil formation. The soils in Tensas Parish range from young soils that have little or no development to older soils that have somewhat pronounced development.

Long periods are generally required for prominent horizons to form. The differences between time of soil formation for the soils of Tensas Parish may amount to several thousand years.

Bruin, Commerce, Crevasse, Dowling, Newellton, Sharkey, and Tunica soils are considered the younger soils in the parish. They developed in the most recent alluvium, which is probably less than about 3,000 years old. Dundee, Tensas, and Goldman soils formed in somewhat older alluvium, which is possibly 7,000 years old (Saucier, 1974).

The youngest soils have only faint profile development. For example, Commerce soils retain most of the characteristics of their alkaline, loamy parent material. Evidence of the faint development is a darkening of the A horizon by organic matter and a weakly developed B horizon. Crevasse soils have even less profile development. The only significant evidence of the aging of the Crevasse soils is a darkening of the A horizon by organic matter.

In contrast, the Tensas, Goldman, and Dundee soils, all of which formed in older parent material, have distinct profile development. They have been leached of most carbonates and other soluble salts and are acid. Fine clay has move downward from the A horizon to form a Bt horizon.

Landforms and Surface Geology

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Tensas Parish lies entirely within the Mississippi River Alluvial Valley. The Mississippi River and its abandoned meander channels form the entire eastern boundary of the parish. The western boundary of the parish mostly follows the Tensas River, which occupies abandoned meander channels of the Mississippi River. Between these meandering river courses are numerous arcuate bayous, rivers, and lakes that mark the positions of prior Mississippi River channels. Areas of clayey backswamps make up much of the northwestern part of the parish.

The elevations in the parish range from about 40 to 85 feet above mean sea level. The highest elevations are on natural levees along the Mississippi River in the northern part of the parish. The lowest elevations are in areas surrounding streams and lakes along the southern boundary of the parish. The highest elevations on natural levees along the Mississippi River are typically 5 to 10 feet higher than elevations on comparable natural levees along the Tensas River.

Regionally, the land surface of the flood plain along the Mississippi River slopes from north to south at a rate of less than 1 foot per mile. Slopes throughout the parish are generally less than 1 percent. Steeper gradients are restricted almost entirely to very short slopes adjacent to existing or abandoned stream channels. Typically, the highest elevations are on natural levees paralleling streams and long, gentle slopes extend to the lowest elevations in level, clayey backswamps. Abandoned river channels in various stages of filling range from oxbow lakes like Lake Bruin to low, crescent-shaped swamps.

The landscape of Tensas Parish is dominated by flood plain constructional surfaces formed by the Mississippi River. The continuous change in position of the Mississippi River over time formed large areas of ridge-and-swale topography in most areas of the parish. These landform features develop as point bars and laterally migrating channel deposits as the river migrates across an area (Saucier, 1994; Aslan and Autin, 1998). In many areas, clayey deposits cover part or all of the loamy and sandy deposits in which the ridge-and-swale topography developed. Thus, both ridges and swales may have textures that range from sandy to clayey at the surface depending on the extent of alluviation on the pre-existing ridges and swales. Soil parent materials associated with ridge-and-swale topography can be sandy, loamy over sandy, clayey over loamy, or clayey.

Holocene-age deposits from the Mississippi River cover the surface of Tensas Parish. Beneath the surface, sediments are stratified with deposits of varying textures that become generally coarser with depth. The Holocene-age deposits are underlain by coarse grained Pleistocene-age deposits from the Mississippi River. The

Pleistocene-age deposits are part of the Mississippi River valley alluvial aquifer (Dalsin, 1978). At depths of up to 150 feet below land surface, these deposits rest on an erosion surface developed in Tertiary-age deposits. The erosion surface on the Tertiary-age deposits developed as the Mississippi River laterally planated its valley floor during episodes of Pleistocene glaciation (Saucier, 1994). During the Holocene, sea level rose and the gradient to sea level decreased, causing sediment to fill the incised valley. The Mississippi River developed its meandering channel pattern and deposited the parent materials of the soils in the parish.

Sediments exposed at the surface in Tensas Parish were deposited by the meandering rivers along loamy natural levees and areas of rapid overland flow, in sandy natural levee breaks where crevasses develop, and as clayey backswamps. Sediments associated with river meander belts of different ages have been identified in the parish (Saucier, 1994). The oldest meander belt in Tensas Parish was active from about 7,500 to 5,800 years ago and is now occupied by the Tensas River in the northern part of the parish. Separate meander belts occupied areas between the Tensas River and the present river in two episodes from 6,200 to 3,800 years ago and from 4,800 to 2,600 years ago. The meander belt associated with the Tensas River along the southwestern boundary of the parish formed as part of the latter episode from 4,800 to 2,600 years ago. The modern meander belt along the eastern side of the parish formed during the past 2,800 years.

The development of certain soils in the parish is restricted almost entirely to sediments associated with a given meander belt. There is not however, a one-to-one correspondence between all soils and a specific meander belt. This is to be expected because factors other than time can affect rates and trends of soil formation (Aslan and Autin, 1998). Soils patterns in Tensas Parish are related to the texture and composition of parent materials, patterns of constructional topography, and seasonal variations in soil water tables. Principle soil areas in the parish include 1) loamy soils that are not subject to flooding, 2) clayey soils that are not subject to flooding, and 3) loamy and clayey soils that are subject to flooding.

Loamy soils that are not subject to flooding include those in the Commerce-Bruin and Dundee-Goldman associations. Commerce and Bruin soils are inceptisols that formed on natural levees and ridges of the youngest meander belt. Dundee and Goldman soils are alfisols that formed on natural levees and ridges of the older, abandoned meander belts.

Clayey soils that are not subject to flooding include those in the Tensas-Sharkey and Sharkey associations. The Sharkey soils are vertisols that formed in areas where the parent material is smectite-rich clay. The Tensas soils are alfisols with a smectite-rich clay deposit burying a loamy argillic horizon and developed in deposits on either point bars or natural levees. Included in these associations are Dundee, Tunica, and Newellton soils. The Dundee soils are in the highest landscape positions of the partly clay-covered, abandoned meander belts. The Tunica soils are inceptisols, and the Newellton soils are entisols. The Tunica and Newellton soils formed as smectite-rich clayey deposits buried loamy parent material in younger meander belts.

Soils that are subject to flooding are in areas that are not protected by flood-control levees and areas where the water table has not been lowered by ditching. Loamy soils that are subject to flooding include those in the Commerce-Bruin and Crevasse-Bruno associations. Clayey soils that are subject to flooding include those in the Sharkey-Dowling association.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

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 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.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

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.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

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

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.

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.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bottom land. The normal flood plain of a stream, subject to flooding.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

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.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

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.

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.

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.

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.

COLE (coefficient of linear extensibility). See Linear extensibility.

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.

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."

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.

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.

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.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

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.

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.

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.

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.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

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.

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.

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.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

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.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

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*.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

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.

Forb. Any herbaceous plant not a grass or a sedge.

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.

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.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

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:

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.

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.

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.

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.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

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.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

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:

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

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.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

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.

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.

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).

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.

N-value. The relationship between the percentage of water under field conditions and the percentages of inorganic clay and of humus.

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.

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

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.

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 movement of water through the soil.

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.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

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.

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.

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.

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.

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 maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

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.

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.

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.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

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.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

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.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

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.

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 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.

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.

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 1 percent
Very gently sloping	1 to 3 percent

Classes for complex slopes are as follows:

Gently undulating	0 to 3 percent
Undulating	3 to 8 percent

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.

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. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

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.

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.

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.”

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

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.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

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.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

[Recorded in the period 1971-2000 at Saint Joseph, Louisiana]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher	2 years in 10 will have-- Minimum temperature lower	Average number of growing degree	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	Average snowfall
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*		*In*
January-----	56.2	36.6	46.4	78	16	83	6.31	3.28	8.96	7	0.4
February----	60.8	39.8	50.3	81	20	125	4.83	2.57	6.81	6	0.0
March-------	68.8	47.4	58.1	85	26	283	6.31	3.94	8.45	7	0.0
April-------	76.3	54.3	65.3	90	35	462	5.45	2.27	8.14	5	0.0
May---------	83.8	63.3	73.6	94	47	727	5.44	2.28	8.12	6	0.0
June--------	90.1	69.9	80.0	98	56	900	3.81	1.95	5.44	5	0.0
July--------	92.6	72.7	82.6	100	64	1,009	3.79	2.17	5.24	6	0.0
August------	92.3	71.2	81.7	100	60	981	3.22	1.29	4.85	5	0.0
September---	87.9	65.6	76.8	99	46	801	3.06	1.64	4.32	5	0.0
October-----	79.0	53.8	66.4	93	34	508	3.59	1.19	5.56	4	0.0
November----	68.3	46.0	57.2	86	26	257	5.00	2.57	7.12	6	0.0
December----	59.4	39.1	49.3	81	17	124	5.64	3.21	7.80	7	0.0
Yearly:											
Average---	76.3	55.0	65.6	---	---	---	---	---	---	---	---
Extreme---	107	5	---	101	13	---	---	---	---	---	---
Total-----	---	---	---	---	---	6,260	56.45	47.87	64.15	69	0.4

* 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 (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

[Recorded in the period 1971-2000 at Saint Joseph, Louisiana]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 3	Mar. 6	Mar. 26
2 years in 10 later than--	Feb. 22	Feb. 28	Mar. 20
5 years in 10 later than--	Feb. 1	Feb. 14	Mar. 7
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 21	Nov. 13	Oct. 30
2 years in 10 earlier than--	Dec. 3	Nov. 20	Nov. 5
5 years in 10 earlier than--	Dec. 3	Dec. 4	Nov. 17

Table 3.--Growing Season

[Recorded for the period 1971-2000 at Saint Joseph, Louisiana]

Probability	Daily Minimum Temperature During growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	282	263	226
8 years in 10	298	273	236
5 years in 10	328	292	253
2 years in 10	> 365	311	271
1 year in 10	> 365	321	280

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
BrA	Bruin silt loam, 0 to 1 percent slopes	6,552	1.6
BrB	Bruin very fine sandy loam, 1 to 3 percent slopes	659	0.2
BuB	Bruin-Commerce silt loams, gently undulating	7,866	1.9
CcA	Commerce silt loam, 0 to 1 percent slopes	11,167	2.7
CeA	Commerce silty clay loam, 0 to 1 percent slopes	2,577	0.6
CoB	Commerce soils, overwash, 0 to 2 percent slopes	244	*
CSB	Commerce and Bruin soils, 0 to 3 percent slopes, frequently flooded	4,942	1.2
CuB	Crevasse fine sand, 0 to 2 percent slopes, frequently flooded	495	0.1
CVB	Crevasse and Bruno soils, gently undulating, frequently flooded	8,114	2.0
DdA	Dundee silt loam, 0 to 1 percent slopes	4,623	1.1
DeA	Dundee silty clay loam, 0 to 1 percent slopes	5,224	1.3
DgB	Dundee-Goldman complex, gently undulating	4,095	1.0
DoA	Dowling clay, 0 to 1 percent slopes, frequently flooded	11,092	2.7
LE	Levees-Borrow pits complex, nearly level to strongly sloping	6,398	1.6
NeA	Newellton clay, 0 to 1 percent slopes	776	0.2
OW	Oil-waste land	343	*
RW	Riverwash, frequently flooded	1,325	0.3
ShA	Sharkey clay, 0 to 1 percent slopes	97,326	23.7
SkA	Sharkey clay, 0 to 1 percent slopes, occasionally flooded	20,375	5.0
SrA	Sharkey clay, 0 to 1 percent slopes, frequently flooded	6,059	1.5
SsB	Sharkey-Dowling clays, 0 to 3 percent slopes	10,585	2.6
StB	Sharkey-Tunica-Newellton complex, gently undulating	6,844	1.7
SYA	Sharkey, Newellton, and Tunica soils, gently undulating, frequently flooded	23,175	5.6
TaA	Tensas clay, 0 to 1 percent slopes	12,867	3.1
TeB	Tensas-Sharkey clays, gently undulating	111,023	27.0
TeD	Tensas-Sharkey complex, undulating	3,369	0.8
TkB	Tensas-Sharkey-Dundee complex, gently undulating	19,476	4.7
TnA	Tunica clay, 0 to 1 percent slopes	1,926	0.5
W	Water	21,583	5.3
	Total	411,100	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classification and Yields per Acre of Crops and Pasture

[Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Corn	Cotton lint	Grain sorghum	Improved bermudagrass	Soybeans
		Bu	*Lbs*	*Bu*	*AUM*	*Bu*
BrA:		95	900	---	15.5	40
Bruin------------------	1					
BrB:		90	875	---	15.5	40
Bruin------------------	2e					
BuB:		90	875	---	15.5	40
Bruin------------------	2e					
Commerce----------------	3w					
CcA:		95	900	---	15.5	40
Commerce----------------	2w					
CeA:		85	850	---	15	40
Commerce----------------	2w					
CoB:		95	900	---	15.5	40
Commerce, overwash------	3s					
CSB:		---	---	---	---	---
Commerce----------------	5w					
Bruin------------------	5w					
CuB:		---	---	---	---	---
Crevasse----------------	5w					
CVB:		---	---	---	---	---
Crevasse----------------	5w					
Bruno------------------	5w					
DdA:		85	750	---	9	40
Dundee------------------	2w					
DeA:		85	750	---	9	40
Dundee------------------	2w					
DgB:		---	625	60	---	35
Dundee------------------	2w					
Goldman-----------------	2e					
DoA:		---	---	---	---	---
Dowling-----------------	7w					
LE:		---	---	---	---	---
Levees------------------	---					
Borrow pits-------------	7w					
NeA:		---	675	65	12	40
Newellton---------------	2w					
OW:		---	---	---	---	---
Oil-waste land----------	8w					
RW:		---	---	---	---	---
Riverwash---------------	5w					

Table 5.--Land Capability Classification and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Cotton lint	Grain sorghum	Improved bermudagrass	Soybeans
		Bu	*Lbs*	*Bu*	*AUM*	*Bu*
ShA:		---	650	---	10	40
Sharkey-----------------	3w					
SkA:		---	---	---	---	30
Sharkey-----------------	4w					
SrA:		---	---	---	---	---
Sharkey-----------------	5w					
SsB:		---	---	---	---	---
Sharkey-----------------	3w					
Dowling-----------------	7w					
StB:		---	625	---	10.5	35
Sharkey-----------------	4w					
Tunica------------------	3w					
Newellton---------------	2w					
SYA:		---	---	---	---	---
Sharkey-----------------	5w					
Newellton---------------	5w					
Tunica------------------	5w					
TaA:		---	600	---	11	40
Tensas------------------	3w					
TeB:		---	550	---	10.5	30
Tensas------------------	3w					
Sharkey-----------------	4w					
TeD:		---	550	---	10.5	30
Tensas------------------	3w					
Sharkey-----------------	4w					
TkB:		---	550	---	10.5	30
Tensas------------------	3w					
Sharkey-----------------	3w					
Dundee------------------	2w					
TnA:		---	625	---	10.5	35
Tunica------------------	3w					

Table 6.--Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
BrA:				
Bruin	American elm	---	---	American sycamore, eastern cottonwood, sweetgum
	American sycamore	---	---	
	Eastern cottonwood	105	143	
	Green ash	---	---	
	Pecan	---	---	
	Sugarberry	---	---	
	Sweetgum	105	157	
	Water oak	---	---	
BrB:				
Bruin	American elm	---	---	American sycamore, eastern cottonwood, sweetgum
	American sycamore	---	---	
	Eastern cottonwood	105	143	
	Green ash	---	---	
	Pecan	---	---	
	Sugarberry	---	---	
	Sweetgum	105	157	
	Water oak	---	---	
BuB:				
Bruin	American elm	---	---	American sycamore, eastern cottonwood, sweetgum
	American sycamore	---	---	
	Eastern cottonwood	105	143	
	Green ash	---	---	
	Pecan	---	---	
	Sugarberry	---	---	
	Sweetgum	105	157	
	Water oak	---	---	
Commerce	American sycamore	---	---	American sycamore, eastern cottonwood
	Eastern cottonwood	120	186	
	Green ash	120	186	
	Nuttall oak	90	---	
	Pecan	---	---	
	Water oak	110	114	
	Willow oak	---	---	
CcA:				
Commerce	American sycamore	---	---	American sycamore, eastern cottonwood
	Eastern cottonwood	120	186	
	Green ash	120	186	
	Nuttall oak	90	---	
	Pecan	---	---	
	Water oak	110	114	
	Willow oak	---	---	
CeA:				
Commerce	American sycamore	---	---	American sycamore, eastern cottonwood
	Eastern cottonwood	120	186	
	Green ash	120	186	
	Nuttall oak	90	---	
	Pecan	---	---	
	Water oak	110	114	
	Willow oak	---	---	

Table 6.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CoB:				
Commerce, overwash	American sycamore	---	---	American sycamore, eastern cottonwood
	Eastern cottonwood	120	186	
	Green ash	120	186	
	Nuttall oak	90	---	
	Pecan	---	---	
	Water oak	110	114	
	Willow oak	---	---	
CSB:				
Commerce	Eastern cottonwood	113	172	American sycamore, eastern cottonwood
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	---	---	
	Water hickory	---	---	
Bruin	American elm	---	---	American sycamore, eastern cottonwood, sweetgum
	American sycamore	---	---	
	Eastern cottonwood	105	143	
	Green ash	---	---	
	Pecan	---	---	
	Sugarberry	---	---	
	Sweetgum	105	157	
	Water oak	---	---	
CuB:				
Crevasse	Sweetgum	90	100	---
	White oak	100	72	
CVB:				
Crevasse	Sweetgum	90	100	---
	White oak	100	72	
Bruno	American sycamore	100	129	Cherrybark oak, loblolly pine, Shumard's oak, sweetgum, tuliptree, willow oak
	Black willow	---	---	
	Cherrybark oak	90	114	
	Eastern cottonwood	110	157	
	Loblolly pine	93	143	
	River birch	---	---	
	Sweetgum	94	114	
	Tuliptree	94	100	
	Water oak	90	86	
	Willow oak	90	86	
DdA:				
Dundee	Cherrybark oak	105	172	Cherrybark oak, eastern cottonwood, sweetgum, tuliptree, water oak
	Eastern cottonwood	100	129	
	Sweetgum	100	143	
	Water oak	95	86	
DeA:				
Dundee	Cherrybark oak	105	172	Cherrybark oak, eastern cottonwood, sweetgum, tuliptree, water oak
	Eastern cottonwood	100	129	
	Sweetgum	100	143	
	Water oak	95	86	

Table 6.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
DgB:				
Dundee	Cherrybark oak	105	172	Cherrybark oak, eastern cottonwood, sweetgum, tuliptree, water oak
	Eastern cottonwood	100	129	
	Sweetgum	100	143	
	Water oak	95	86	
Goldman	Cherrybark oak	95	57	American sycamore, eastern cottonwood
	Eastern cottonwood	100	129	
	Green ash	70	43	
	Nuttall oak	90	---	
	Pecan	---	---	
	Sweetgum	100	143	
	Water oak	90	129	
	Willow oak	97	100	
DoA:				
Dowling	Baldcypress	96	86	Baldcypress, water tupelo
	Black willow	---	---	
	Overcup oak	---	---	
	Red maple	---	---	
	Water hickory	---	---	
	Water tupelo	---	---	
LE:				
Levees.				
Borrow pits.				
NeA:				
Newellton	Cedar elm	---	---	Green ash, Nuttall oak, sweetgum, water oak
	Green ash	75	43	
	Honeylocust	---	---	
	Nuttall oak	85	---	
	Sugarberry	---	---	
	Sweetgum	95	114	
	Water oak	90	86	
	Willow oak	---	---	
OW:				
Oil-waste land	---	---	---	Green ash, Nuttall oak, sweetgum
RW:				
Riverwash.				
ShA:				
Sharkey	Cedar elm	---	---	Green ash, Nuttall oak, sweetgum
	Green ash	---	---	
	Nuttall oak	90	---	
	Sugarberry	---	---	
	Sweetgum	90	100	
	Water oak	90	86	
	Willow oak	100	100	

Table 6.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
SkA:				
Sharkey	Green ash	98	86	Nuttall oak
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	---	---	
	Sweetgum	---	---	
	Water hickory	---	---	
SrA:				
Sharkey	Baldcypress	---	---	Baldcypress, green ash
	Black willow	---	---	
	Green ash	90	57	
	Overcup oak	96	---	
	Sugarberry	---	---	
	Water hickory	---	---	
	Water tupelo	---	---	
SsB:				
Sharkey	Cedar elm	---	---	Green ash, Nuttall oak, sweetgum
	Green ash	---	---	
	Nuttall oak	90	---	
	Sugarberry	---	---	
	Sweetgum	90	100	
	Water oak	90	86	
	Willow oak	100	100	
Dowling	Baldcypress	96	86	Baldcypress
	Black willow	---	---	
	Overcup oak	---	---	
	Red maple	---	---	
	Water hickory	---	---	
	Water tupelo	---	---	
StB:				
Sharkey	Green ash	98	86	Nuttall oak
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	---	---	
	Sweetgum	---	---	
	Water hickory	---	---	
Tunica	Cherrybark oak	90	114	American sycamore, cherrybark oak, eastern cottonwood, green ash, Nuttall oak, sweetgum
	Eastern cottonwood	105	143	
	Green ash	100	57	
	Nuttall oak	105	---	
	Sweetgum	90	100	
Newellton	Cedar elm	---	---	Green ash, Nuttall oak, sweetgum, water oak
	Green ash	75	43	
	Honeylocust	---	---	
	Nuttall oak	85	---	
	Sugarberry	---	---	
	Sweetgum	95	114	
	Water oak	90	86	
	Willow oak	---	---	

Table 6.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
SYA:				
Sharkey	Baldcypress	---	---	Baldcypress, green ash
	Black willow	---	---	
	Green ash	90	57	
	Overcup oak	96	---	
	Sugarberry	---	---	
	Water hickory	---	---	
	Water tupelo	---	---	
Newellton	Green ash	70	29	Baldcypress, green ash
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	---	---	
	Water hickory	---	---	
Tunica	Eastern cottonwood	105	143	Baldcypress, eastern cottonwood
	Green ash	---	---	
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	100	57	
	Water hickory	---	---	
TaA:				
Tensas	Cedar elm	---	---	Green ash, Nuttall oak, water oak
	Green ash	80	57	
	Honeylocust	---	---	
	Nuttall oak	---	---	
	Sweetgum	100	143	
	Water oak	95	86	
	Willow oak	---	---	
TeB:				
Tensas	Cedar elm	---	---	Green ash, Nuttall oak, water oak
	Green ash	80	57	
	Honeylocust	---	---	
	Nuttall oak	---	---	
	Sweetgum	100	143	
	Water oak	95	86	
	Willow oak	---	---	
Sharkey	Green ash	98	86	Nuttall oak
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	---	---	
	Sweetgum	---	---	
	Water hickory	---	---	
TeD:				
Tensas	Cedar elm	---	---	Green ash, Nuttall oak, water oak
	Green ash	80	57	
	Honeylocust	---	---	
	Nuttall oak	---	---	
	Sweetgum	100	143	
	Water oak	95	86	
	Willow oak	---	---	

Table 6.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
TeD:				
Sharkey	Green ash	98	86	Nuttall oak
	Nuttall oak	---	---	
	Overcup oak	---	---	
	Sugarberry	---	---	
	Sweetgum	---	---	
	Water hickory	---	---	
TkB:				
Tensas	Cedar elm	---	---	Green ash, Nuttall oak, water oak
	Green ash	80	57	
	Honeylocust	---	---	
	Nuttall oak	---	---	
	Sweetgum	100	143	
	Water oak	95	86	
	Willow oak	---	---	
Sharkey	Cedar elm	---	---	Green ash, Nuttall oak, sweetgum
	Green ash	---	---	
	Nuttall oak	90	---	
	Sugarberry	---	---	
	Sweetgum	90	100	
	Water oak	90	86	
	Willow oak	100	100	
Dundee	Cherrybark oak	105	172	Cherrybark oak, eastern cottonwood, sweetgum, tuliptree, water oak
	Eastern cottonwood	100	129	
	Sweetgum	100	143	
	Water oak	95	86	
TnA:				
Tunica	Cherrybark oak	90	114	American sycamore, cherrybark oak, eastern cottonwood, green ash, Nuttall oak, sweetgum
	Eastern cottonwood	105	143	
	Green ash	100	57	
	Nuttall oak	105	---	
	Sweetgum	90	100	

Table 7.--Forestland Planting and Harvesting

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin----------------	77	Well suited		Well suited		Moderately suited	
						Low strength	0.50
BrB:							
Bruin----------------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
BuB:							
Bruin----------------	53	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Commerce------------	37	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CcA:							
Commerce------------	77	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CeA:							
Commerce------------	87	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
CoB:							
Commerce, overwash--	100	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
CSB:							
Commerce------------	60	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Bruin----------------	33	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CuB:							
Crevasse------------	70	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
CVB:							
Crevasse------------	60	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Bruno----------------	35	Well suited		Well suited		Well suited	
DdA:							
Dundee--------------	100	Well suited		Well suited		Moderately suited	
						Low strength	0.50
DeA:							
Dundee--------------	83	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 7.--Forestland Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
DgB:							
Dundee	43	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Goldman	33	Well suited		Well suited		Moderately suited	
						Low strength	0.50
DoA:							
Dowling	97	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
LE:							
Levees	60	Not rated		Not rated		Not rated	
Borrow pits	40	Not rated		Not rated		Not rated	
NeA:							
Newellton	87	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
OW:							
Oil-waste land	100	Not rated		Not rated		Not rated	
RW:							
Riverwash	100	Not rated		Not rated		Not rated	
ShA:							
Sharkey	97	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
SkA:							
Sharkey	100	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
SrA:							
Sharkey	100	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
SsB:							
Sharkey	50	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Dowling	47	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50

Table 7.--Forestland Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
StB:							
Sharkey	35	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Tunica	29	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Newellton	27	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
SYA:							
Sharkey	50	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Newellton	27	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Tunica	23	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
TaA:							
Tensas	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
TeB:							
Tensas	47	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Sharkey	36	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
TeD:							
Tensas	40	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Sharkey	37	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50

Table 7.--Forestland Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
TkB:							
Tensas	34	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Sharkey	32	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50
Dundee	30	Well suited		Well suited		Moderately suited	
						Low strength	0.50
TnA:							
Tunica	77	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Stickiness; high plasticity index	0.50

Table 8.--Forestland Site Preparation

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:					
Bruin	77	Well suited		Well suited	
BrB:					
Bruin	80	Well suited		Well suited	
BuB:					
Bruin	53	Well suited		Well suited	
Commerce	37	Well suited		Well suited	
CcA:					
Commerce	77	Well suited		Well suited	
CeA:					
Commerce	87	Well suited		Well suited	
CoB:					
Commerce, overwash	100	Well suited		Well suited	
CSB:					
Commerce	60	Well suited		Well suited	
Bruin	33	Well suited		Well suited	
CuB:					
Crevasse	70	Well suited		Well suited	
CVB:					
Crevasse	60	Well suited		Well suited	
Bruno	35	Well suited		Well suited	
DdA:					
Dundee	100	Well suited		Well suited	
DeA:					
Dundee	83	Well suited		Well suited	
DgB:					
Dundee	43	Well suited		Well suited	
Goldman	33	Well suited		Well suited	
DoA:					
Dowling	97	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
		Stickiness; high plasticity index	0.50		

Table 8.--Forestland Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LE:					
Levees	60	Not rated		Not rated	
Borrow pits	40	Not rated		Not rated	
NeA:					
Newellton	87	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
OW:					
Oil-waste land	100	Not rated		Not rated	
RW:					
Riverwash	100	Not rated		Not rated	
ShA:					
Sharkey	97	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
SkA:					
Sharkey	100	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
SrA:					
Sharkey	100	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
SsB:					
Sharkey	50	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Dowling	47	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
		Stickiness; high plasticity index	0.50		
StB:					
Sharkey	35	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Tunica	29	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Newellton	27	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
SYA:					
Sharkey	50	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 8.--Forestland Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SYA:					
Newellton-----------	27	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Tunica--------------	23	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
TaA:					
Tensas--------------	90	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
TeB:					
Tensas--------------	47	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Sharkey-------------	36	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
TeD:					
Tensas--------------	40	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Sharkey-------------	37	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
TkB:					
Tensas--------------	34	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Sharkey-------------	32	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Dundee--------------	30	Well suited		Well suited	
TnA:					
Tunica--------------	77	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 9.--Hazard of Erosion and Suitability for Roads on Forestland

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin	77	Slight		Slight		Moderately suited	
						Low strength	0.50
BrB:							
Bruin	80	Slight		Slight		Moderately suited	
						Low strength	0.50
BuB:							
Bruin	53	Slight		Slight		Moderately suited	
						Low strength	0.50
Commerce	37	Slight		Slight		Moderately suited	
						Low strength	0.50
CcA:							
Commerce	77	Slight		Slight		Moderately suited	
						Low strength	0.50
CeA:							
Commerce	87	Slight		Slight		Moderately suited	
						Low strength	0.50
CoB:							
Commerce, overwash	100	Slight		Slight		Moderately suited	
						Sandiness	0.50
CSB:							
Commerce	60	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
Bruin	33	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
CuB:							
Crevasse	70	Slight		Slight		Poorly suited	
						Flooding	1.00
						Sandiness	0.50
CVB:							
Crevasse	60	Slight		Slight		Poorly suited	
						Flooding	1.00
						Sandiness	0.50
Bruno	35	Slight		Slight		Poorly suited	
						Flooding	1.00
DdA:							
Dundee	100	Slight		Slight		Moderately suited	
						Low strength	0.50

Table 9.--Hazard of Erosion and Suitability for Roads on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
DeA:							
Dundee	83	Slight		Slight		Moderately suited	
						Low strength	0.50
DgB:							
Dundee	43	Slight		Slight		Moderately suited	
						Low strength	0.50
Goldman	33	Slight		Slight		Moderately suited	
						Low strength	0.50
DoA:							
Dowling	97	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
						Stickiness; high plasticity index	0.50
LE:							
Levees	60	Not rated		Not rated		Not rated	
Borrow pits	40	Not rated		Not rated		Not rated	
NeA:							
Newellton	87	Slight		Slight		Moderately suited	
						Low strength	0.50
						Stickiness; high plasticity index	0.50
OW:							
Oil-waste land	100	Not rated		Not rated		Not rated	
RW:							
Riverwash	100	Not rated		Not rated		Not rated	
ShA:							
Sharkey	97	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50
SkA:							
Sharkey	100	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Stickiness; high plasticity index	0.50
						Low strength	0.50
SrA:							
Sharkey	100	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50

Table 9.--Hazard of Erosion and Suitability for Roads on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
SsB:							
Sharkey	50	Slight		Slight		Moderately suited	
						Wetness	0.50
						Stickiness; high plasticity index	0.50
						Low strength	0.50
Dowling	47	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
						Stickiness; high plasticity index	0.50
StB:							
Sharkey	35	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50
Tunica	29	Slight		Slight		Moderately suited	
						Low strength	0.50
						Stickiness; high plasticity index	0.50
Newellton	27	Slight		Slight		Moderately suited	
						Low strength	0.50
						Stickiness; high plasticity index	0.50
SYA:							
Sharkey	50	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50
Newellton	27	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Stickiness; high plasticity index	0.50
Tunica	23	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Stickiness; high plasticity index	0.50
TaA:							
Tensas	90	Slight		Slight		Moderately suited	
						Low strength	0.50
						Stickiness; high plasticity index	0.50

Table 9.--Hazard of Erosion and Suitability for Roads on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
TeB:							
Tensas	47	Slight		Slight		Moderately suited	
						Low strength	0.50
						Stickiness; high plasticity index	0.50
Sharkey	36	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Stickiness; high plasticity index	0.50
						Low strength	0.50
TeD:							
Tensas	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Stickiness; high plasticity index	0.50
Sharkey	37	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50
TkB:							
Tensas	34	Slight		Slight		Moderately suited	
						Low strength	0.50
						Landslides	0.50
						Stickiness; high plasticity index	0.50
Sharkey	32	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50
Dundee	30	Slight		Slight		Moderately suited	
						Low strength	0.50
TnA:							
Tunica	77	Slight		Slight		Moderately suited	
						Low strength	0.50
						Stickiness; high plasticity index	0.50

Table 10.--Haul Roads, Log Landings, and Soil Rutting on Forestland

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin---------------	77	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
BrB:							
Bruin---------------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
BuB:							
Bruin---------------	53	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Commerce------------	37	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
CcA:							
Commerce------------	77	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
CeA:							
Commerce------------	87	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
CoB:							
Commerce, overwash--	100	Moderate		Moderately suited		Moderate	
		Low strength	0.50	Sandiness	0.50	Low strength	0.50
		Sandiness	0.50				
CSB:							
Commerce------------	60	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Bruin---------------	33	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
CuB:							
Crevasse------------	70	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
		Sandiness	0.50	Sandiness	0.50		
CVB:							
Crevasse------------	60	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
		Sandiness	0.50	Sandiness	0.50		
Bruno---------------	35	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
DdA:							
Dundee--------------	100	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 10.--Haul Roads, Log Landings, and Soil Rutting on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
DeA:							
Dundee	83	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
DgB:							
Dundee	43	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Goldman	33	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
DoA:							
Dowling	97	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Wetness	1.00	Flooding	1.00	Wetness	0.50
		Low strength	0.50	Wetness	1.00		
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
LE:							
Levees	60	Not rated		Not rated		Not rated	
Borrow pits	40	Not rated		Not rated		Not rated	
NeA:							
Newellton	87	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
OW:							
Oil-waste land	100	Not rated		Not rated		Not rated	
RW:							
Riverwash	100	Not rated		Not rated		Not rated	
ShA:							
Sharkey	97	Moderate		Moderately suited		Severe	
		Low strength	0.50	Wetness	0.50	Low strength	1.00
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
SkA:							
Sharkey	100	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
				Low strength	0.50		
SrA:							
Sharkey	100	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		

Table 10.--Haul Roads, Log Landings, and Soil Rutting on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
SsB:							
Sharkey	50	Moderate		Moderately suited		Severe	
		Low strength	0.50	Wetness	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
				Low strength	0.50		
Dowling	47	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Wetness	1.00	Flooding	1.00	Wetness	0.50
		Low strength	0.50	Wetness	1.00		
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
StB:							
Sharkey	35	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
Tunica	29	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
Newellton	27	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
SYA:							
Sharkey	50	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
Newellton	27	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
Tunica	23	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
TaA:							
Tensas	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		

Table 10.--Haul Roads, Log Landings, and Soil Rutting on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TeB:							
Tensas	47	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
Sharkey	36	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
				Low strength	0.50		
TeD:							
Tensas	40	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
Sharkey	37	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
TkB:							
Tensas	34	Moderate		Moderately suited		Severe	
		Landslides	0.50	Low strength	0.50	Low strength	1.00
		Low strength	0.50	Landslides	0.50		
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
Sharkey	32	Moderate		Moderately suited		Severe	
		Low strength	0.50	Wetness	0.50	Low strength	1.00
		Stickiness/slope	0.50	Low strength	0.50		
				Stickiness; high plasticity index	0.50		
Dundee	30	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
TnA:							
Tunica	77	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		

Table 11.--Damage by Fire and Seedling Mortality on Forestland

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Potential for damage to soil by fire: Value	Potential for seedling mortality: Rating class and limiting features	Potential for seedling mortality: Value
BrA:					
Bruin	77	Low		Low	
		Texture/rock fragments	0.10		
BrB:					
Bruin	80	Low		Low	
		Texture/rock fragments	0.10		
BuB:					
Bruin	53	Low		Low	
		Texture/rock fragments	0.10		
Commerce	37	Low		Low	
		Texture/rock fragments	0.10		
CcA:					
Commerce	77	Low		Low	
		Texture/rock fragments	0.10		
CeA:					
Commerce	87	Low		Low	
		Texture/rock fragments	0.10		
CoB:					
Commerce, overwash	100	High		Low	
		Texture/rock fragments	1.00		
CSB:					
Commerce	60	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
Bruin	33	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
CuB:					
Crevasse	70	High		High	
		Texture/rock fragments	1.00	Wetness	1.00
CVB:					
Crevasse	60	High		High	
		Texture/surface depth/rock fragments	1.00	Wetness	1.00

Table 11.--Damage by Fire and Seedling Mortality on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
CVB:					
Bruno	35	High		High	
		Texture/rock fragments	1.00	Wetness	1.00
DdA:					
Dundee	100	Moderate		Moderate	
		Texture/rock fragments	0.50	Soil reaction	0.50
DeA:					
Dundee	83	Moderate		Low	
		Texture/rock fragments	0.50		
DgB:					
Dundee	43	Moderate		Low	
		Texture/rock fragments	0.50		
Goldman	33	Low		Low	
		Texture/rock fragments	0.10		
DoA:					
Dowling	97	Moderate		High	
		Texture/surface depth/rock fragments	0.50	Wetness	1.00
LE:					
Levees	60	Not rated		Not rated	
Borrow pits	40	Not rated		Not rated	
NeA:					
Newellton	87	Low		Low	
OW:					
Oil-waste land	100	Not rated		Not rated	
RW:					
Riverwash	100	Not rated		Not rated	
ShA:					
Sharkey	97	Low		High	
				Wetness	1.00
SkA:					
Sharkey	100	Low		High	
				Wetness	1.00
SrA:					
Sharkey	100	Low		High	
				Wetness	1.00

Table 11.--Damage by Fire and Seedling Mortality on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
SsB:					
Sharkey-------------	50	Moderate		High	
		Texture/surface depth/rock fragments	0.50	Wetness	1.00
Dowling-------------	47	Low		High	
				Wetness	1.00
StB:					
Sharkey-------------	35	Low		High	
				Wetness	1.00
Tunica--------------	29	Low		Low	
Newellton-----------	27	Low		Low	
SYA:					
Sharkey-------------	50	Low		High	
				Wetness	1.00
Newellton-----------	27	Moderate		High	
		Texture/surface depth/rock fragments	0.50	Wetness	1.00
Tunica--------------	23	Low		High	
				Wetness	1.00
TaA:					
Tensas--------------	90	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
TeB:					
Tensas--------------	47	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Sharkey-------------	36	Moderate		High	
		Texture/surface depth/rock fragments	0.50	Wetness	1.00
TeD:					
Tensas--------------	40	Low		Low	
Sharkey-------------	37	Low		High	
				Wetness	1.00
TkB:					
Tensas--------------	34	Low		Low	
Sharkey-------------	32	Low		High	
				Wetness	1.00
Dundee--------------	30	Moderate		Low	
		Texture/rock fragments	0.50		

Table 11.--Damage by Fire and Seedling Mortality on Forestland--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
TnA:					
Tunica	77	Low		Low	

Table 12.--Camp Areas, Picnic Areas, and Playgrounds

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
BrA:							
Bruin	77	Not limited		Not limited		Not limited	
BrB:							
Bruin	80	Not limited		Not limited		Not limited	
BuB:							
Bruin	53	Not limited		Not limited		Not limited	
Commerce	37	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
CcA:							
Commerce	77	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
CeA:							
Commerce	87	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
CoB:							
Commerce, overwash	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.37	Too sandy	0.37	Too sandy	0.37
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
CSB:							
Commerce	60	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Bruin	33	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
CuB:							
Crevasse	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Too sandy	1.00	Too sandy	1.00
		Too sandy	1.00	Flooding	0.40	Flooding	1.00
CVB:							
Crevasse	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Too sandy	1.00	Too sandy	1.00
		Too sandy	1.00	Flooding	0.40	Flooding	1.00
Bruno	35	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Too sandy	0.27	Too sandy	0.27	Too sandy	0.27
DdA:							
Dundee	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21

Table 12.--Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
DeA:							
Dundee	83	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
DgB:							
Dundee	43	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Goldman	33	Not limited		Not limited		Not limited	
DoA:							
Dowling	97	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Ponding	1.00	Slow water movement	1.00	Ponding	1.00
		Slow water movement	1.00	Too clayey	1.00	Slow water movement	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
LE:							
Levees	60	Not rated		Not rated		Not rated	
Borrow pits	40	Not rated		Not rated		Not rated	
NeA:							
Newellton	87	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
OW:							
Oil-waste land	100	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00				
RW:							
Riverwash	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Too sandy	1.00	Too sandy	1.00
		Too sandy	1.00	Flooding	0.40	Flooding	1.00
		Gravel content	0.12	Gravel content	0.12	Gravel content	1.00
ShA:							
Sharkey	97	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00				

Table 12.--Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SkA:							
Sharkey	100	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00			Flooding	0.60
SrA:							
Sharkey	100	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Slow water movement	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
SsB:							
Sharkey	50	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00				
Dowling	47	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Ponding	1.00	Slow water movement	1.00	Ponding	1.00
		Slow water movement	1.00	Too clayey	1.00	Slow water movement	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
StB:							
Sharkey	35	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00			Flooding	0.60
Tunica	29	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07
Newellton	27	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39

Table 12.--Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
SYA:							
Sharkey	50	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Slow water movement	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
Newellton	27	Very limited		Very limited		Very limited	
		Flooding	1.00	Too clayey	1.00	Flooding	1.00
		Too clayey	1.00	Slow water movement	0.96	Too clayey	1.00
		Slow water movement	0.96	Flooding	0.40	Slow water movement	0.96
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Tunica	23	Very limited		Very limited		Very limited	
		Flooding	1.00	Slow water movement	1.00	Flooding	1.00
		Slow water movement	1.00	Too clayey	1.00	Slow water movement	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07
TaA:							
Tensas	90	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
TeB:							
Tensas	47	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Sharkey	36	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00			Flooding	0.60
TeD:							
Tensas	40	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
						Depth to saturated zone	0.39

Table 12.--Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
TeD:							
Sharkey	37	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00			Flooding	0.60
TkB:							
Tensas	34	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Sharkey	32	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99	Too clayey	1.00
		Too clayey	1.00				
Dundee	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
TnA:							
Tunica	77	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07

Table 13.--Paths, Trails, and Golf Fairways

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin---------------	77	Not limited		Not limited		Not limited	
BrB:							
Bruin---------------	80	Not limited		Not limited		Not limited	
BuB:							
Bruin---------------	53	Not limited		Not limited		Not limited	
Commerce------------	37	Not limited		Not limited		Not limited	
CcA:							
Commerce------------	77	Not limited		Not limited		Not limited	
CeA:							
Commerce------------	87	Not limited		Not limited		Not limited	
CoB:							
Commerce, overwash--	100	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.37	Too sandy	0.37		
CSB:							
Commerce------------	60	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
Bruin---------------	33	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
CuB:							
Crevasse------------	70	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Droughty	1.00
CVB:							
Crevasse------------	60	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Droughty	1.00
Bruno---------------	35	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
		Too sandy	0.27	Too sandy	0.27	Droughty	0.19
DdA:							
Dundee--------------	100	Not limited		Not limited		Not limited	
DeA:							
Dundee--------------	83	Not limited		Not limited		Not limited	
DgB:							
Dundee--------------	43	Not limited		Not limited		Not limited	
Goldman-------------	33	Not limited		Not limited		Not limited	

Table 13.--Paths, Trails, and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
DoA:							
Dowling-------------	97	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Flooding	1.00
		Too clayey	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00
LE:							
Levees--------------	60	Not rated		Not rated		Not rated	
Borrow pits---------	40	Not rated		Not rated		Not rated	
NeA:							
Newellton-----------	87	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.19
OW:							
Oil-waste land------	100	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
RW:							
Riverwash-----------	100	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Droughty	1.00
						Too sandy	0.50
						Gravel content	0.12
ShA:							
Sharkey-------------	97	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
SkA:							
Sharkey-------------	100	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
SrA:							
Sharkey-------------	100	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Flooding	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Too clayey	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.99
SsB:							
Sharkey-------------	50	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99

Table 13.--Paths, Trails, and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
SsB:							
Dowling	47	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Flooding	1.00
		Too clayey	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00
StB:							
Sharkey	35	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
Tunica	29	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.03
Newellton	27	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.19
SYA:							
Sharkey	50	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Flooding	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Too clayey	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.99
Newellton	27	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00
						Depth to saturated zone	0.19
Tunica	23	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00
						Depth to saturated zone	0.03
TaA:							
Tensas	90	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.19
TeB:							
Tensas	47	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.19
Sharkey	36	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60

Table 13.--Paths, Trails, and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
TeD:							
Tensas	40	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.19
Sharkey	37	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
TkB:							
Tensas	34	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.19
Sharkey	32	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
Dundee	30	Not limited		Not limited		Not limited	
TnA:							
Tunica	77	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Depth to saturated zone	0.03

Table 14a.--Wildlife Habitat (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Grain and seed crops (for use as food and cover): Rating class and limiting features	Value	Domestic grasses and legumes (for use as food and cover): Rating class and limiting features	Value	Upland wild herbaceous plants: Rating class and limiting features	Value
BrA:						
Bruin	Not limited		Not limited		Not limited	
BrB:						
Bruin	Moderately limited		Moderately limited		Not limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50		
BuB:						
Bruin	Not limited		Not limited		Not limited	
Commerce	Slightly limited		Slightly limited		Slightly limited	
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15	~wetness (slightly limited)	0.13
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13		
CcA:						
Commerce	Moderately limited		Moderately limited		Slightly limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50	~wetness (slightly limited)	0.13
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15		
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13		
CeA:						
Commerce	Moderately limited		Moderately limited		Slightly limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50	~wetness (slightly limited)	0.13
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15	~too clayey (slightly limited)	0.11
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13		
CrB:						
Commerce, overwash	Very limited		Very limited		Very limited	
	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15	~wetness (slightly limited)	0.13
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13		
CSB:						
Bruin	Limited		Limited		Slightly limited	
	~flooding (limited)	0.90	~flooding (limited)	0.90	~flooding (prolonged) (slightly limited)	0.20

Table 14a.--Wildlife Habitat (Part 1)--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CSB:						
Commerce-------	Limited		Limited		Slightly limited	
	~flooding (limited)	0.90	~flooding (limited)	0.90	~flooding (prolonged) (slightly limited)	0.20
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15	~wetness (slightly limited)	0.13
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13		
CuB:						
Crevasse-------	Very limited		Very limited		Very limited	
	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00
	~droughty (very limited)	1.00	~droughty (very limited)	1.00	~droughty (very limited)	1.00
	~flooding (limited)	0.90	~flooding (limited)	0.90		
CVB:						
Crevasse-------	Very limited		Very limited		Very limited	
	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00
	~droughty (very limited)	1.00	~droughty (very limited)	1.00	~droughty (very limited)	1.00
	~flooding (limited)	0.90	~flooding (limited)	0.90		
Bruno----------	Very limited		Limited		Moderately limited	
	~droughty (very limited)	1.00	~flooding (limited)	0.90	~too sandy (moderately limited)	0.50
	~flooding (limited)	0.90	~too sandy (moderately limited)	0.50	~droughty (slightly limited)	0.11
	~too sandy (moderately limited)	0.50	~droughty (slightly limited)	0.11		
DdA:						
Dundee---------	Moderately limited		Moderately limited		Slightly limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50	~wetness (slightly limited)	0.26
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26		
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15		
DeA:						
Dundee---------	Moderately limited		Moderately limited		Slightly limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50	~wetness (slightly limited)	0.26
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26		
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15		

Table 14a.--Wildlife Habitat (Part 1)--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover): Rating class and limiting features	Value	Domestic grasses and legumes (for use as food and cover): Rating class and limiting features	Value	Upland wild herbaceous plants: Rating class and limiting features	Value
DgB:						
Dundee---------	Moderately limited		Moderately limited		Slightly limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50	~wetness (slightly limited)	0.26
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26		
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15		
Goldman--------	Moderately limited		Moderately limited		Not limited	
	~moderate erodibility (moderately limited)	0.50	~moderate erodibility (moderately limited)	0.50		
DoA:						
Dowling--------	Very limited		Very limited		Very limited	
	~wetness (very limited)	1.00	~wetness (very limited)	1.00	~wetness (very limited)	1.00
	~ponded (wetness) (very limited)	1.00	~ponded (wetness) (very limited)	1.00	~flooding (prolonged) (limited)	0.90
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.86
LE:						
Levees---------	Not rated		Not rated		Not rated	
Borrow pits----	Not rated		Not rated		Not rated	
NeA:						
Newellton------	Moderately limited		Moderately limited		Moderately limited	
	~too clayey (moderately limited)	0.55	~too clayey (moderately limited)	0.55	~too clayey (moderately limited)	0.55
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
	~percs slowly (moderately limited)	0.40	~percs slowly (moderately limited)	0.40		
OW:						
Oil-waste land-	Very limited		Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~excess sodium (very limited)	1.00
	~excess sodium (very limited)	1.00	~excess sodium (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~too clayey (limited)	0.61
RW:						
Riverwash------	Not rated		Not rated		Not rated	
ShA:						
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~too clayey (limited)	0.61
	~droughty (limited)	0.92	~too clayey (limited)	0.61		

Table 14a.--Wildlife Habitat (Part 1)--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SkA:						
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~flooding (prolonged) (limited)	0.90
	~droughty (limited)	0.85	~too clayey (limited)	0.61	~too clayey (limited)	0.61
SrA:						
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~flooding (prolonged) (limited)	0.90
	~flooding (limited)	0.90	~flooding (limited)	0.90	~too clayey (limited)	0.61
SsB:						
Dowling--------	Very limited		Very limited		Very limited	
	~wetness (very limited)	1.00	~wetness (very limited)	1.00	~wetness (very limited)	1.00
	~ponded (wetness) (very limited)	1.00	~ponded (wetness) (very limited)	1.00	~flooding (prolonged) (limited)	0.90
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.86
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~too clayey (limited)	0.61
	~droughty (limited)	0.92	~too clayey (limited)	0.61		
StB:						
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~flooding (prolonged) (limited)	0.90
	~droughty (limited)	0.85	~too clayey (limited)	0.61	~too clayey (limited)	0.61
Newellton------	Moderately limited		Moderately limited		Moderately limited	
	~too clayey (moderately limited)	0.55	~too clayey (moderately limited)	0.55	~too clayey (moderately limited)	0.55
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
	~percs slowly (moderately limited)	0.40	~percs slowly (moderately limited)	0.40		
Tunica---------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.69
	~too clayey (limited)	0.69	~too clayey (limited)	0.69	~wetness (moderately limited)	0.36
	~wetness (moderately limited)	0.36	~wetness (moderately limited)	0.36		

Table 14a.--Wildlife Habitat (Part 1)--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SYA:						
Sharkey	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~flooding (prolonged) (limited)	0.90
	~flooding (limited)	0.90	~flooding (limited)	0.90	~too clayey (limited)	0.61
Newellton	Limited		Limited		Moderately limited	
	~flooding (limited)	0.90	~flooding (limited)	0.90	~too clayey (moderately limited)	0.55
	~too clayey (moderately limited)	0.55	~too clayey (moderately limited)	0.55	~wetness (moderately limited)	0.44
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44	~flooding (prolonged) (slightly limited)	0.20
Tunica	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.69
	~flooding (limited)	0.90	~flooding (limited)	0.90	~wetness (moderately limited)	0.36
	~too clayey (limited)	0.69	~too clayey (limited)	0.69	~flooding (prolonged) (slightly limited)	0.20
TaA:						
Tensas	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.61
	~too clayey (limited)	0.61	~too clayey (limited)	0.61	~wetness (moderately limited)	0.44
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44		
TeB:						
Tensas	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.61
	~too clayey (limited)	0.61	~too clayey (limited)	0.61	~wetness (moderately limited)	0.44
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44		
Sharkey	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~flooding (prolonged) (limited)	0.90
	~droughty (limited)	0.85	~too clayey (limited)	0.61	~too clayey (limited)	0.61
TeD:						
Tensas	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.61
	~too clayey (limited)	0.61	~too clayey (limited)	0.61	~wetness (moderately limited)	0.44
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44		

Table 14a.--Wildlife Habitat (Part 1)--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TeD:						
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~flooding (prolonged) (limited)	0.90
	~droughty (limited)	0.85	~too clayey (limited)	0.61	~too clayey (limited)	0.61
TkB:						
Tensas---------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.61
	~too clayey (limited)	0.61	~too clayey (limited)	0.61	~wetness (moderately limited)	0.44
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44		
Dundee---------	Slightly limited		Slightly limited		Slightly limited	
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26
	~percs slowly (slightly limited)	0.15	~percs slowly (slightly limited)	0.15		
Sharkey--------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~wetness (limited)	0.99
	~wetness (limited)	0.99	~wetness (limited)	0.99	~too clayey (limited)	0.61
	~droughty (limited)	0.92	~too clayey (limited)	0.61		
TnA:						
Tunica---------	Very limited		Very limited		Limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00	~too clayey (limited)	0.69
	~too clayey (limited)	0.69	~too clayey (limited)	0.69	~wetness (moderately limited)	0.36
	~wetness (moderately limited)	0.36	~wetness (moderately limited)	0.36		

Table 14b.--Wildlife Habitat (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:				
Bruin	Not limited		Not limited	
BrB:				
Bruin	Not limited		Slightly limited	
			~wetness (slightly limited)	0.30
BuB:				
Bruin	Not limited		Slightly limited	
			~wetness (slightly limited)	0.30
Commerce	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.13	~wetness (moderately limited)	0.37
CcA:				
Commerce	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.13	~wetness (moderately limited)	0.37
CeA:				
Commerce	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.13	~wetness (moderately limited)	0.37
	~too clayey (slightly limited)	0.11		
CrB:				
Commerce, overwash	Very limited		Moderately limited	
	~too sandy (very limited)	1.00	~wetness (moderately limited)	0.37
	~wetness (slightly limited)	0.13		
CSB:				
Bruin	Slightly limited		Slightly limited	
	~flooding (prolonged) (slightly limited)	0.20	~flooding (prolonged) (slightly limited)	0.20
Commerce	Slightly limited		Moderately limited	
	~flooding (prolonged) (slightly limited)	0.20	~wetness (moderately limited)	0.37
	~wetness (slightly limited)	0.13	~flooding (prolonged) (slightly limited)	0.20
CuB:				
Crevasse	Very limited		Very limited	
	~too sandy (very limited)	1.00	~droughty (very limited)	1.00
	~droughty (very limited)	1.00		

Table 14b.--Wildlife Habitat (Part 2)--Continued

Map symbol and soil name	Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CVB:				
Crevasse-------	Very limited		Very limited	
	~too sandy (very limited)	1.00	~droughty (very limited)	1.00
	~droughty (very limited)	1.00		
Bruno----------	Moderately limited		Slightly limited	
	~too sandy (moderately limited)	0.50	~droughty (slightly limited)	0.11
	~droughty (slightly limited)	0.11		
DdA:				
Dundee---------	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.26	~wetness (moderately limited)	0.44
DeA:				
Dundee---------	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.26	~wetness (moderately limited)	0.44
DgB:				
Dundee---------	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.26	~wetness (moderately limited)	0.44
Goldman--------	Not limited		Not limited	
DoA:				
Dowling--------	Very limited		Very limited	
	~wetness (very limited)	1.00	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.86	~seasonally ponded (limited)	0.80
LE:				
Levees---------	Not rated		Not rated	
Borrow pits----	Not rated		Not rated	
NeA:				
Newellton------	Moderately limited		Moderately limited	
	~too clayey (moderately limited)	0.55	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44		
OW:				
Oil-waste land-	Very limited		Very limited	
	~excess sodium (very limited)	1.00	~wetness (very limited)	1.00
	~wetness (limited)	0.99	~excess sodium (very limited)	1.00
	~too clayey (limited)	0.61		
RW:				
Riverwash------	Not rated		Not rated	

Table 14b.--Wildlife Habitat (Part 2)--Continued

Map symbol and soil name	Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ShA:				
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~too clayey (limited)	0.61		
SkA:				
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.61		
SrA:				
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.61		
SsB:				
Dowling--------	Very limited		Very limited	
	~wetness (very limited)	1.00	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.86	~seasonally ponded (limited)	0.80
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~too clayey (limited)	0.61		
StB:				
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.61		
Newellton------	Moderately limited		Moderately limited	
	~too clayey (moderately limited)	0.55	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44		
Tunica---------	Limited		Moderately limited	
	~too clayey (limited)	0.69	~wetness (moderately limited)	0.51
	~wetness (moderately limited)	0.36		

Table 14b.--Wildlife Habitat (Part 2)--Continued

Map symbol and soil name	Upland shrubs and vines: Rating class and limiting features	Value	Upland deciduous trees: Rating class and limiting features	Value
SYA:				
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.61		
Newellton------	Moderately limited		Moderately limited	
	~too clayey (moderately limited)	0.55	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44	~flooding (prolonged) (slightly limited)	0.20
	~flooding (prolonged) (slightly limited)	0.20		
Tunica---------	Limited		Moderately limited	
	~too clayey (limited)	0.69	~wetness (moderately limited)	0.51
	~wetness (moderately limited)	0.36	~flooding (prolonged) (slightly limited)	0.20
	~flooding (prolonged) (slightly limited)	0.20		
TaA:				
Tensas---------	Limited		Moderately limited	
	~too clayey (limited)	0.61	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44		
TeB:				
Tensas---------	Limited		Moderately limited	
	~too clayey (limited)	0.61	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44		
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.61		
TeD:				
Tensas---------	Limited		Moderately limited	
	~too clayey (limited)	0.61	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44		
Sharkey--------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~too clayey (limited)	0.61		

Table 14b.--Wildlife Habitat (Part 2)--Continued

Map symbol and soil name	Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
TkB:				
Tensas----------	Limited		Moderately limited	
	~too clayey (limited)	0.61	~wetness (moderately limited)	0.59
	~wetness (moderately limited)	0.44		
Dundee----------	Slightly limited		Moderately limited	
	~wetness (slightly limited)	0.26	~wetness (moderately limited)	0.44
Sharkey---------	Limited		Very limited	
	~wetness (limited)	0.99	~wetness (very limited)	1.00
	~too clayey (limited)	0.61		
TnA:				
Tunica----------	Limited		Moderately limited	
	~too clayey (limited)	0.69	~wetness (moderately limited)	0.51
	~wetness (moderately limited)	0.36		

Table 14c.--Wildlife Habitat (Part 3)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:						
Bruin	Not limited		Very limited		Very limited	
			~deep to water (very limited)	1.00	~deep to water (very limited)	1.00
			~infrequent flooding (limited)	0.80		
BrB:						
Bruin	Slightly limited		Limited		Slightly limited	
	~wetness (slightly limited)	0.30	~infrequent flooding (limited)	0.80	~deep to water (slightly limited)	0.01
BuB:						
Bruin	Slightly limited		Limited		Slightly limited	
	~wetness (slightly limited)	0.30	~infrequent flooding (limited)	0.80	~deep to water (slightly limited)	0.01
Commerce	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.37	~deep to water (limited)	0.82		
			~infrequent flooding (limited)	0.80		
CcA:						
Commerce	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.37	~deep to water (limited)	0.82		
			~infrequent flooding (limited)	0.80		
CeA:						
Commerce	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.37	~deep to water (limited)	0.82		
			~infrequent flooding (limited)	0.80		
CrB:						
Commerce, overwash	Moderately limited		Very limited		Not limited	
	~wetness (moderately limited)	0.37	~too sandy (very limited)	1.00		
			~deep to water (limited)	0.82		
			~infrequent flooding (limited)	0.80		
CSB:						
Bruin	Slightly limited		Very limited		Very limited	
	~flooding (prolonged) (slightly limited)	0.20	~deep to water (very limited)	1.00	~deep to water (very limited)	1.00
			~flooding (prolonged) (slightly limited)	0.20	~flooding (prolonged) (slightly limited)	0.20

Table 14c.--Wildlife Habitat (Part 3)--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CSB:						
Commerce	Moderately limited		Limited		Slightly limited	
	~wetness (moderately limited)	0.37	~deep to water (limited)	0.82	~flooding (prolonged) (slightly limited)	0.20
	~flooding (prolonged) (slightly limited)	0.20	~flooding (prolonged) (slightly limited)	0.20		
CuB:						
Crevasse	Very limited		Very limited		Very limited	
	~droughty (very limited)	1.00	~too sandy (very limited)	1.00	~droughty (very limited)	1.00
			~deep to water (very limited)	1.00	~deep to water (limited)	0.85
CVB:						
Crevasse	Very limited		Very limited		Very limited	
	~droughty (very limited)	1.00	~too sandy (very limited)	1.00	~droughty (very limited)	1.00
			~deep to water (very limited)	1.00	~deep to water (limited)	0.85
Bruno	Slightly limited		Very limited		Very limited	
	~droughty (slightly limited)	0.11	~deep to water (very limited)	1.00	~deep to water (very limited)	1.00
			~too sandy (moderately limited)	0.50	~droughty (slightly limited)	0.11
DdA:						
Dundee	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.44	~infrequent flooding (limited)	0.80		
			~deep to water (limited)	0.63		
DeA:						
Dundee	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.44	~infrequent flooding (limited)	0.80		
			~deep to water (limited)	0.63		
DgB:						
Dundee	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.44	~infrequent flooding (limited)	0.80		
			~deep to water (limited)	0.63		
Goldman	Not limited		Very limited		Moderately limited	
			~deep to water (very limited)	1.00	~deep to water (moderately limited)	0.47
			~infrequent flooding (limited)	0.80		

Table 14c.--Wildlife Habitat (Part 3)--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DoA:						
Dowling--------	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~seasonally ponded (limited)	0.80	~seasonally ponded (limited)	0.80
	~seasonally ponded (limited)	0.80				
LE:						
Levees---------	Not rated		Not rated		Not rated	
Borrow pits----	Not rated		Not rated		Not rated	
NeA:						
Newellton------	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.59	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.45		
OW:						
Oil-waste land-	Very limited		Limited		Slightly limited	
	~wetness (very limited)	1.00	~infrequent flooding (limited)	0.80	~excess sodium (slightly limited)	0.17
	~excess sodium (very limited)	1.00	~excess sodium (slightly limited)	0.17		
			~deep to water (slightly limited)	0.02		
RW:						
Riverwash------	Not rated		Not rated		Not rated	
ShA:						
Sharkey--------	Very limited		Limited		Not limited	
	~wetness (very limited)	1.00	~infrequent flooding (limited)	0.80		
			~deep to water (slightly limited)	0.02		
SkA:						
Sharkey--------	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~infrequent flooding (moderately limited)	0.50		
			~deep to water (slightly limited)	0.02		
SrA:						
Sharkey--------	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~deep to water (slightly limited)	0.02		

Table 14c.--Wildlife Habitat (Part 3)--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SsB:						
Dowling--------	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~seasonally ponded (limited)	0.80	~seasonally ponded (limited)	0.80
	~seasonally ponded (limited)	0.80				
Sharkey--------	Very limited		Limited		Not limited	
	~wetness (very limited)	1.00	~infrequent flooding (limited)	0.80		
			~deep to water (slightly limited)	0.02		
StB:						
Sharkey--------	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~infrequent flooding (moderately limited)	0.50		
			~deep to water (slightly limited)	0.02		
Newellton------	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.59	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.45		
Tunica---------	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.51	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.53		
SYA:						
Sharkey--------	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~deep to water (slightly limited)	0.02		
Newellton------	Moderately limited		Moderately limited		Slightly limited	
	~wetness (moderately limited)	0.59	~deep to water (moderately limited)	0.45	~flooding (prolonged) (slightly limited)	0.20
	~flooding (prolonged) (slightly limited)	0.20	~flooding (prolonged) (slightly limited)	0.20		
Tunica---------	Moderately limited		Moderately limited		Slightly limited	
	~wetness (moderately limited)	0.51	~deep to water (moderately limited)	0.53	~flooding (prolonged) (slightly limited)	0.20
	~flooding (prolonged) (slightly limited)	0.20	~flooding (prolonged) (slightly limited)	0.20		
TaA:						
Tensas---------	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.59	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.45		

Table 14c.--Wildlife Habitat (Part 3)--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TeB:						
Tensas	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.59	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.45		
Sharkey	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~infrequent flooding (moderately limited)	0.50		
			~deep to water (slightly limited)	0.02		
TeD:						
Tensas	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.59	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.45		
Sharkey	Very limited		Limited		Limited	
	~wetness (very limited)	1.00	~flooding (prolonged) (limited)	0.90	~flooding (prolonged) (limited)	0.90
	~flooding (prolonged) (limited)	0.90	~infrequent flooding (moderately limited)	0.50		
			~deep to water (slightly limited)	0.02		
TkB:						
Tensas	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.59	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.45		
Dundee	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.44	~infrequent flooding (limited)	0.80		
			~deep to water (limited)	0.63		
Sharkey	Very limited		Limited		Not limited	
	~wetness (very limited)	1.00	~infrequent flooding (limited)	0.80		
			~deep to water (slightly limited)	0.02		
TnA:						
Tunica	Moderately limited		Limited		Not limited	
	~wetness (moderately limited)	0.51	~infrequent flooding (limited)	0.80		
			~deep to water (moderately limited)	0.53		

Table 14d.--Wildlife Habitat (Part 4)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:				
Bruin----------	Very limited		Very limited	
	~deep to water (very limited)	1.00	~deep to water (very limited)	1.00
			~seepage (moderately limited)	0.46
BrB:				
Bruin----------	Not limited		Moderately limited	
			~seepage (moderately limited)	0.46
			~deep to water (slightly limited)	0.01
BuB:				
Bruin----------	Not limited		Moderately limited	
			~seepage (moderately limited)	0.46
			~deep to water (slightly limited)	0.01
Commerce-------	Limited		Slightly limited	
	~deep to water (limited)	0.82	~seepage (slightly limited)	0.16
CcA:				
Commerce-------	Limited		Slightly limited	
	~deep to water (limited)	0.82	~seepage (slightly limited)	0.16
CeA:				
Commerce-------	Limited		Slightly limited	
	~deep to water (limited)	0.82	~seepage (slightly limited)	0.16
CrB:				
Commerce, overwash------	Very limited		Very limited	
	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00
	~deep to water (limited)	0.82	~seepage (slightly limited)	0.16
CSB:				
Bruin----------	Very limited		Very limited	
	~deep to water (very limited)	1.00	~deep to water (very limited)	1.00
			~seepage (moderately limited)	0.46
Commerce-------	Limited		Slightly limited	
	~deep to water (limited)	0.82	~seepage (slightly limited)	0.16

Table 14d.--Wildlife Habitat (Part 4)--Continued

Map symbol and soil name	Freshwater wetland plants: Rating class and limiting features	Value	Irrigated freshwater wetland plants: Rating class and limiting features	Value
CuB:				
Crevasse-------	Very limited		Very limited	
	~deep to water (very limited)	1.00	~seepage (very limited)	1.00
	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00
			~deep to water (limited)	0.85
CVB:				
Crevasse-------	Very limited		Very limited	
	~deep to water (very limited)	1.00	~seepage (very limited)	1.00
	~too sandy (very limited)	1.00	~too sandy (very limited)	1.00
			~deep to water (limited)	0.85
Bruno----------	Very limited		Very limited	
	~deep to water (very limited)	1.00	~seepage (very limited)	1.00
	~too sandy (moderately limited)	0.50	~deep to water (very limited)	1.00
			~too sandy (moderately limited)	0.50
DdA:				
Dundee---------	Limited		Slightly limited	
	~deep to water (limited)	0.63	~seepage (slightly limited)	0.16
DeA:				
Dundee---------	Limited		Slightly limited	
	~deep to water (limited)	0.63	~seepage (slightly limited)	0.16
DgB:				
Dundee---------	Limited		Slightly limited	
	~deep to water (limited)	0.63	~seepage (slightly limited)	0.16
Goldman--------	Very limited		Moderately limited	
	~deep to water (very limited)	1.00	~deep to water (moderately limited)	0.47
			~seepage (moderately limited)	0.46
DoA:				
Dowling--------	Limited		Limited	
	~seasonally ponded (limited)	0.80	~seasonally ponded (limited)	0.80
LE:				
Levees---------	Not rated		Not rated	
Borrow pits----	Not rated		Not rated	
NeA:				
Newellton------	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.45		

Table 14d.--Wildlife Habitat (Part 4)--Continued

Map symbol and soil name	Freshwater wetland plants: Rating class and limiting features	Value	Irrigated freshwater wetland plants: Rating class and limiting features	Value
OW:				
Oil-waste land-	Very limited		Very limited	
	~excess sodium (very limited)	1.00	~excess sodium (very limited)	1.00
	~deep to water (slightly limited)	0.02		
RW:				
Riverwash------	Not rated		Not rated	
ShA:				
Sharkey--------	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
SkA:				
Sharkey--------	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
SrA:				
Sharkey--------	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
SsB:				
Dowling--------	Limited		Limited	
	~seasonally ponded (limited)	0.80	~seasonally ponded (limited)	0.80
Sharkey--------	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
StB:				
Sharkey--------	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
Newellton------	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.45		
Tunica---------	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.53		
SYA:				
Sharkey--------	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
Newellton------	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.45		
Tunica---------	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.53		

Table 14d.--Wildlife Habitat (Part 4)--Continued

Map symbol and soil name	Freshwater wetland plants: Rating class and limiting features	Freshwater wetland plants: Value	Irrigated freshwater wetland plants: Rating class and limiting features	Irrigated freshwater wetland plants: Value
TaA:				
Tensas	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.45		
TeB:				
Tensas	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.45		
Sharkey	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
TeD:				
Tensas	Moderately limited		Moderately limited	
	~deep to water (moderately limited)	0.45	~slope (moderately limited)	0.31
Sharkey	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
TkB:				
Tensas	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.45		
Dundee	Limited		Slightly limited	
	~deep to water (limited)	0.63	~seepage (slightly limited)	0.16
Sharkey	Slightly limited		Not limited	
	~deep to water (slightly limited)	0.02		
TnA:				
Tunica	Moderately limited		Not limited	
	~deep to water (moderately limited)	0.53		

Table 15.--Dwellings and Small Commercial Buildings

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin	77	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.99		
BrB:							
Bruin	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.95		
BuB:							
Bruin	53	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.95		
Commerce	37	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
CcA:							
Commerce	77	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
				Shrink-swell	0.50		
CeA:							
Commerce	87	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
CoB:							
Commerce, overwash	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
CSB:							
Commerce	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
Bruin	33	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		
CuB:							
Crevasse	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.24		

Table 15.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
CVB:							
Crevasse	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.24		
Bruno	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.15		
DdA:							
Dundee	100	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
DeA:							
Dundee	83	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
				Shrink-swell	0.50		
DgB:							
Dundee	43	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
Goldman	33	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.47		
DoA:							
Dowling	97	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
LE:							
Levees	60	Not rated		Not rated		Not rated	
Borrow pits	40	Not rated		Not rated		Not rated	
NeA:							
Newellton	87	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
OW:							
Oil-waste land	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
RW:							
Riverwash	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.90		

Table 15.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
ShA:							
Sharkey-------------	97	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
SkA:							
Sharkey-------------	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
SrA:							
Sharkey-------------	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
SsB:							
Sharkey-------------	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Dowling-------------	47	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
StB:							
Sharkey-------------	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Tunica--------------	29	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.07			Depth to saturated zone	0.07
Newellton-----------	27	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
SYA:							
Sharkey-------------	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 15.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SYA:							
Newellton	27	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
Tunica	23	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.07			Depth to saturated zone	0.07
TaA:							
Tensas	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
TeB:							
Tensas	47	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
Sharkey	36	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
TeD:							
Tensas	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
Sharkey	37	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
TkB:							
Tensas	34	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
Sharkey	32	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Dundee	30	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50

Table 15.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TnA:							
Tunica--------------	77	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.07			Depth to saturated zone	0.07

Table 16.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin	77	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
BrB:							
Bruin	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.95		
				Cutbanks cave	0.10		
BuB:							
Bruin	53	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.95		
				Cutbanks cave	0.10		
Commerce	37	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
CcA:							
Commerce	77	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
CeA:							
Commerce	87	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
CoB:							
Commerce, overwash	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
CSB:							
Commerce	60	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.99	Flooding	1.00
		Shrink-swell	0.50	Flooding	0.80		
				Cutbanks cave	0.10		
Bruin	33	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.95	Flooding	1.00
				Flooding	0.80		
				Cutbanks cave	0.10		

Table 16.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CuB:							
Crevasse	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	1.00
				Depth to saturated zone	0.24		
CVB:							
Crevasse	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	1.00
				Depth to saturated zone	0.24		
Bruno	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.19
				Depth to saturated zone	0.15		
DdA:							
Dundee	100	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
DeA:							
Dundee	83	Very limited		Very limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.99		
		Shrink-swell	0.50				
				Cutbanks cave	0.10		
DgB:							
Dundee	43	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
Goldman	33	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.47		
				Cutbanks cave	0.10		
DoA:							
Dowling	97	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	1.00			Depth to saturated zone	1.00
				Too clayey	1.00		
		Flooding	1.00	Flooding	0.80	Too clayey	1.00
				Cutbanks cave	0.10		
LE:							
Levees	60	Not rated		Not rated		Not rated	
Borrow pits	40	Not rated		Not rated		Not rated	

Table 16.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NeA:							
Newellton	87	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Too clayey	1.00
				Cutbanks cave	0.10	Depth to saturated zone	0.19
OW:							
Oil-waste land	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Too clayey	1.00	Depth to saturated zone	0.99
		Flooding	0.40	Cutbanks cave	1.00		
RW:							
Riverwash	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Depth to saturated zone	0.90	Droughty	1.00
				Flooding	0.80	Too sandy	0.50
						Gravel content	0.12
ShA:							
Sharkey	97	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Low strength	1.00	Too clayey	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
		Flooding	0.40				
SkA:							
Sharkey	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Flooding	1.00	Too clayey	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		
SrA:							
Sharkey	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Too clayey	1.00	Too clayey	1.00
		Low strength	1.00	Cutbanks cave	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Flooding	0.80		
SsB:							
Sharkey	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Too clayey	1.00	Depth to saturated zone	0.99
		Flooding	0.40	Cutbanks cave	1.00		
Dowling	47	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.80	Too clayey	1.00
				Cutbanks cave	0.10		

Table 16.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
StB:							
Sharkey	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Flooding	1.00	Too clayey	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		
Tunica	29	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.03	Too clayey	0.88	Depth to saturated zone	0.03
				Cutbanks cave	0.10		
Newellton	27	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Too clayey	1.00
				Cutbanks cave	0.10	Depth to saturated zone	0.19
SYA:							
Sharkey	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Cutbanks cave	1.00	Depth to saturated zone	0.99
				Flooding	0.80		
Newellton	27	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	0.19	Flooding	0.80	Too clayey	1.00
				Cutbanks cave	0.10	Depth to saturated zone	0.19
Tunica	23	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Shrink-swell	1.00	Too clayey	0.88	Too clayey	1.00
		Depth to saturated zone	0.03	Flooding	0.80	Depth to saturated zone	0.03
				Cutbanks cave	0.10		
TaA:							
Tensas	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.19	Too clayey	1.00	Depth to saturated zone	0.19
				Cutbanks cave	0		
TeB:							
Tensas	47	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Too clayey	1.00
				Cutbanks cave	0.10	Depth to saturated zone	0.19
Sharkey	36	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Flooding	1.00	Too clayey	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		

Table 16.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
TeD:							
Tensas	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Low strength	1.00	Too clayey	1.00	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
Sharkey	37	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Flooding	1.00	Too clayey	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Cutbanks cave	1.00	Flooding	0.60
		Depth to saturated zone	0.99	Flooding	0.60		
TkB:							
Tensas	34	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.19	Too clayey	1.00	Depth to saturated zone	0.19
				Cutbanks cave	0.10		
Sharkey	32	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.99	Too clayey	1.00	Depth to saturated zone	0.99
		Flooding	0.40	Cutbanks cave	1.00		
Dundee	30	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
TnA:							
Tunica	77	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	0.03	Too clayey	0.88	Depth to saturated zone	0.03
				Cutbanks cave	0.10		

Table 17.--Sewage Disposal

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:					
Bruin---------------	77	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
BrB:					
Bruin---------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
BuB:					
Bruin---------------	53	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
Commerce------------	37	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.28
CcA:					
Commerce------------	77	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
CeA:					
Commerce------------	87	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.28
CoB:					
Commerce, overwash--	100	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.28

Table 17.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CSB:					
Commerce	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.28
Bruin	33	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
CuB:					
Crevasse	70	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	0.02
		Depth to saturated zone	0.65		
CVB:					
Crevasse	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	0.02
		Depth to saturated zone	0.65		
Bruno	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00		
		Depth to saturated zone	0.40		
DdA:					
Dundee	100	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53
DeA:					
Dundee	83	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53
DgB:					
Dundee	43	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53

Table 17.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
DgB:					
Goldman	33	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.94	Seepage	0.53
		Slow water movement	0.46	Depth to saturated zone	0.40
DoA:					
Dowling	97	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Slow water movement	1.00	Flooding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
LE:					
Levees	60	Not rated		Not rated	
Borrow pits	40	Not rated		Not rated	
NeA:					
Newellton	87	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.72	Seepage	0.28
OW:					
Oil-waste land	100	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	0.40
		Flooding	0.40		
RW:					
Riverwash	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00		
ShA:					
Sharkey	97	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	0.40
		Flooding	0.40		
SkA:					
Sharkey	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		

Table 17.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
SrA:					
Sharkey	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
SsB:					
Sharkey	50	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	0.40
		Flooding	0.40		
Dowling	47	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Slow water movement	1.00	Flooding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
StB:					
Sharkey	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
Tunica	29	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.21
Newellton	27	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.72	Seepage	0.28
SYA:					
Sharkey	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
Newellton	27	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.72	Seepage	0.28

Table 17.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SYA:					
Tunica	23	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.21
TaA:					
Tensas	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.28
TeB:					
Tensas	47	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.72	Seepage	0.28
Sharkey	36	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
TeD:					
Tensas	40	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.32
				Seepage	0.28
Sharkey	37	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
TkB:					
Tensas	34	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.28
Sharkey	32	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	0.40
		Flooding	0.40		

Table 17.--Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
TkB:					
Dundee--------------	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	0.53
TnA:					
Tunica--------------	77	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.21

Table 18.--Landfills

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
BrA:							
Bruin	77	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.27
BrB:							
Bruin	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.11
BuB:							
Bruin	53	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.11
Commerce	37	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
CcA:							
Commerce	77	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
CeA:							
Commerce	87	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
CoB:							
Commerce, overwash	100	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
CSB:							
Commerce	60	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.24
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Bruin	33	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.11
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
CuB:							
Crevasse	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	0.50
		Seepage	1.00	Seepage	1.00		
		Too sandy	0.50				

Table 18.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
CVB:							
Crevasse	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	0.50
		Seepage	1.00	Seepage	1.00		
		Too sandy	0.50				
Bruno	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00		
		Too sandy	1.00				
DdA:							
Dundee	100	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.44
DeA:							
Dundee	83	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50			Depth to saturated zone	0.44
DgB:							
Dundee	43	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.44
Goldman	33	Very limited		Very limited		Not limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
DoA:							
Dowling	97	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
LE:							
Levees	60	Not rated		Somewhat limited		Not rated	
				Slope	0.84		
Borrow pits	40	Not rated		Very limited		Not rated	
				Ponding	1.00		
				Depth to saturated zone	1.00		
				Flooding	0.40		
NeA:							
Newellton	87	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86

Table 18.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OW:							
Oil-waste land	100	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
		Flooding	0.40			Hard to compact	1.00
RW:							
Riverwash	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
						Gravel content	0.12
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	0.02
		Too sandy	1.00				
ShA:							
Sharkey	97	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
		Flooding	0.40			Hard to compact	1.00
SkA:							
Sharkey	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
SrA:							
Sharkey	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
SsB:							
Sharkey	50	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
		Flooding	0.40			Hard to compact	1.00
Dowling	47	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
				Depth to saturated zone	1.00		
		Ponding	1.00			Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
StB:							
Sharkey	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
Tunica	29	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68

Table 18.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
StB:							
Newellton-----------	27	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
SYA:							
Sharkey-------------	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
Newellton-----------	27	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Tunica--------------	23	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
TaA:							
Tensas--------------	90	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
TeB:							
Tensas--------------	47	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
Sharkey-------------	36	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
TeD:							
Tensas--------------	40	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
Sharkey-------------	37	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
TkB:							
Tensas--------------	34	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
Sharkey-------------	32	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
		Flooding	0.40			Hard to compact	1.00

Table 18.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TkB:							
Dundee--------------	30	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
						Depth to saturated zone	0.44
TnA:							
Tunica--------------	77	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68

Table 19.--Source of Gravel and Sand

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
BrA:					
Bruin	77	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BrB:					
Bruin	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BuB:					
Bruin	53	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Commerce	37	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CcA:					
Commerce	77	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CeA:					
Commerce	87	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CoB:					
Commerce, overwash	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CSB:					
Commerce	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bruin	33	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CuB:					
Crevasse	70	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.02
		Thickest layer	0.00	Thickest layer	0.25
CVB:					
Crevasse	60	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.02
		Thickest layer	0.00	Thickest layer	0.25

Table 19.--Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
CVB:					
Bruno	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.64
DdA:					
Dundee	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DeA:					
Dundee	83	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DgB:					
Dundee	43	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Goldman	33	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DoA:					
Dowling	97	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LE:					
Levees	60	Not rated		Not rated	
Borrow pits	40	Not rated		Not rated	
NeA:					
Newellton	87	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
OW:					
Oil-waste land	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
RW:					
Riverwash	100	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.75
		Thickest layer	0.00	Thickest layer	0.75
ShA:					
Sharkey	97	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SkA:					
Sharkey	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 19.--Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
SrA:					
Sharkey	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SsB:					
Sharkey	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dowling	47	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
StB:					
Sharkey	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Tunica	29	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Newellton	27	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SYA:					
Sharkey	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Newellton	27	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Tunica	23	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TaA:					
Tensas	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TeB:					
Tensas	47	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sharkey	36	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TeD:					
Tensas	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sharkey	37	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 19.--Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
TkB:					
Tensas	34	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sharkey	32	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dundee	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TnA:					
Tunica	77	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 20.--Source of Reclamation Material, Roadfill, and Topsoil

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
BrA:							
Bruin	77	Fair		Fair		Fair	
		Too acid	0.54	Wetness depth	0.97	Wetness depth	0.97
		Organic matter content low	0.88				
		Water erosion	0.90				
BrB:							
Bruin	80	Fair		Poor		Good	
		Organic matter content low	0.88	Low strength	0.00		
		Water erosion	0.90				
		Too acid	0.99				
BuB:							
Bruin	53	Fair		Good		Good	
		Too acid	0.54				
		Organic matter content low	0.88				
		Water erosion	0.90				
Commerce	37	Fair		Fair		Fair	
		Organic matter content low	0.88	Wetness depth	0.98	Wetness depth	0.98
		Water erosion	0.90				
		Too acid	0.99				
CcA:							
Commerce	77	Fair		Fair		Fair	
		Organic matter content low	0.88	Shrink-swell	0.87	Wetness depth	0.98
				Wetness depth	0.98		
		Water erosion	0.90				
CeA:							
Commerce	87	Fair		Fair		Fair	
		Too acid	0.84	Wetness depth	0.98	Wetness depth	0.98
		Organic matter content low	0.88				
		Water erosion	0.99				
CoB:							
Commerce, overwash	100	Fair		Fair		Fair	
		Too acid	0.84	Wetness depth	0.98	Wetness depth	0.98
		Organic matter content low	0.88				
		Water erosion	0.99				
CSB:							
Commerce	60	Fair		Fair		Fair	
		Organic matter content low	0.88	Wetness depth	0.98	Wetness depth	0.98
		Water erosion	0.90				

Table 20.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
CSB:							
Bruin	33	Fair		Good		Good	
		Organic matter content low	0.88				
		Water erosion	0.90				
		Too acid	0.99				
CuB:							
Crevasse	70	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.36
		Droughty	0.01				
		Organic matter content low	0.12				
		Too sandy	0.36				
		Too acid	0.99				
CVB:							
Crevasse	60	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.36
		Droughty	0.01				
		Organic matter content low	0.12				
		Too sandy	0.36				
Bruno	35	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.36
		Organic matter content low	0.12				
		Too sandy	0.36				
		Droughty	0.80				
		Too acid	0.99				
DdA:							
Dundee	100	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.91	Wetness depth	0.91
						Too acid	0.98
		Too acid	0.50				
		Water erosion	0.90				
DeA:							
Dundee	83	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.91
				Wetness depth	0.91	Too acid	0.98
		Too acid	0.54	Shrink-swell	0.97		
		Water erosion	0.90				
DgB:							
Dundee	43	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.91	Wetness depth	0.91
						Too acid	0.98
		Too acid	0.54				
		Water erosion	0.90				
Goldman	33	Fair		Good		Good	
		Organic matter content low	0.12				
		Too acid	0.68				
		Water erosion	0.90				

Table 20.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
DoA:							
Dowling-------------	97	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.00	Wetness depth	0.00
		Too acid	0.54				
LE:							
Levees--------------	60	Not rated		Not rated		Not rated	
Borrow pits---------	40	Not rated		Not rated		Not rated	
NeA:							
Newellton-----------	87	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Water erosion	0.99				
OW:							
Oil-waste land------	100	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
RW:							
Riverwash-----------	100	Poor		Good		Not rated	
		Too sandy	0.00				
		Wind erosion	0.00				
		Droughty	0.01				
		Organic matter content low	0.12				
ShA:							
Sharkey-------------	97	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.00	Wetness depth	0.00
				Wetness depth	0.00		
		Too acid	0.54				
SkA:							
Sharkey-------------	100	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.99				
SrA:							
Sharkey-------------	100	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.00	Wetness depth	0.00
				Wetness depth	0.00		
		Too acid	0.84				
SsB:							
Sharkey-------------	50	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.99				

Table 20.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
SsB:							
Dowling	47	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Too clayey	0.00
		Too acid	0.84	Shrink-swell	0.00	Wetness depth	0.00
		Organic matter content low	0.88				
StB:							
Sharkey	35	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.80				
Tunica	29	Poor		Fair		Poor	
		Too clayey	0.00	Wetness depth	0.76	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.99	Wetness depth	0.76
		Too acid	0.99				
Newellton	27	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Water erosion	0.99				
SYA:							
Sharkey	50	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.99				
Newellton	27	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Water erosion	0.99				
Tunica	23	Poor		Fair		Poor	
		Too clayey	0.00	Wetness depth	0.76	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.95	Wetness depth	0.76
		Too acid	0.80				
TaA:							
Tensas	90	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.11	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.54			Too acid	0.98
		Water erosion	0.99				
TeB:							
Tensas	47	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.54	Shrink-swell	0.88		
		Water erosion	0.99				

Table 20.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
TeB:							
Sharkey	36	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
						Too acid	0.98
		Too acid	0.54				
TeD:							
Tensas	40	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.11	Wetness depth	0.53
				Wetness depth	0.53	Too acid	0.98
		Too acid	0.54				
		Water erosion	0.99				
Sharkey	37	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.00
				Wetness depth	0.00	Too acid	0.98
		Too acid	0.54				
TkB:							
Tensas	34	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.39	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.84				
		Water erosion	0.99				
Sharkey	32	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.68				
Dundee	30	Fair		Fair		Fair	
		Organic matter content low	0.12	Wetness depth	0.91	Too clayey	0.48
						Wetness depth	0.91
		Too acid	0.54			Too acid	0.98
		Too clayey	0.82				
		Water erosion	0.90				
TnA:							
Tunica	77	Poor		Fair		Poor	
		Too clayey	0.00	Wetness depth	0.76	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.97	Wetness depth	0.76

Table 21.--Ponds and Embankments

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:							
Bruin---------------	77	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.76	Slow refill	0.28
				Depth to saturated zone	0.70	Depth to saturated zone	0.13
						Cutbanks cave	0.10
BrB:							
Bruin---------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.98	Slow refill	0.28
				Depth to saturated zone	0.46	Depth to saturated zone	0.24
						Cutbanks cave	0.10
BuB:							
Bruin---------------	53	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.76	Slow refill	0.28
				Depth to saturated zone	0.46	Depth to saturated zone	0.24
						Cutbanks cave	0.10
Commerce------------	37	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.68	Slow refill	0.46
				Piping	0.12	Depth to saturated zone	0.14
						Cutbanks cave	0.10
CcA:							
Commerce------------	77	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.68	Slow refill	0.46
				Piping	0.11	Depth to saturated zone	0.14
						Cutbanks cave	0.10
CeA:							
Commerce------------	87	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.68	Slow refill	0.46
				Piping	0.05	Depth to saturated zone	0.14
						Cutbanks cave	0.10
CoB:							
Commerce, overwash--	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.68	Slow refill	0.46
				Piping	0.20	Depth to saturated zone	0.14
						Cutbanks cave	0.10
CSB:							
Commerce------------	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.68	Slow refill	0.46
				Piping	0.14	Depth to saturated zone	0.14
						Cutbanks cave	0.10

Table 21.--Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CSB:							
Bruin	33	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.81	Slow refill	0.28
				Depth to saturated zone	0.46	Depth to saturated zone	0.24
						Cutbanks cave	0.10
CuB:							
Crevasse	70	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.25	Cutbanks cave	1.00
						Depth to saturated zone	0.99
CVB:							
Crevasse	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.25	Cutbanks cave	1.00
						Depth to saturated zone	0.99
Bruno	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.64	Depth to water	1.00
DdA:							
Dundee	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	0.84	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.42	Depth to saturated zone	0.07
DeA:							
Dundee	83	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	0.84	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.15	Depth to saturated zone	0.07
DgB:							
Dundee	43	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	0.84	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.37	Depth to saturated zone	0.07
Goldman	33	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Depth to saturated zone	0.90
						Slow refill	0.28
						Cutbanks cave	0.10
DoA:							
Dowling	97	Not limited		Very limited		Very limited	
				Ponding	1.00	Slow refill	1.00
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Hard to pack	1.00		
LE:							
Levees	60	Somewhat limited		Not rated		Not rated	
		Slope	0.01				
Borrow pits	40	Not limited		Not rated		Not rated	

Table 21.--Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NeA:							
Newellton	87	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
				Piping	0.01	Cutbanks cave	0.10
						Depth to saturated zone	0.01
OW:							
Oil-waste land	100	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
RW:							
Riverwash	100	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.75	Cutbanks cave	1.00
				Depth to saturated zone	0.24	Depth to saturated zone	0.38
ShA:							
Sharkey	97	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
SkA:							
Sharkey	100	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
SrA:							
Sharkey	100	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
SsB:							
Sharkey	50	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
Dowling	47	Not limited		Very limited		Very limited	
				Ponding	1.00	Slow refill	1.00
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Hard to pack	1.00		
StB:							
Sharkey	35	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
Tunica	29	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.47	Depth to saturated zone	0.95	Slow refill	0.53
						Cutbanks cave	0.10
						Depth to saturated zone	0.02

Table 21.--Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
StB:							
Newellton-----------	27	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
				Piping	0.03	Cutbanks cave	0.10
						Depth to saturated zone	0.01
SYA:							
Sharkey-------------	50	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
Newellton-----------	27	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
				Piping	0.11	Cutbanks cave	0.10
						Depth to saturated zone	0.01
Tunica--------------	23	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.47	Depth to saturated zone	0.95	Slow refill	0.53
						Cutbanks cave	0.10
						Depth to saturated zone	0.02
TaA:							
Tensas--------------	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
						Cutbanks cave	0.10
						Depth to saturated zone	0.01
TeB:							
Tensas--------------	47	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
						Cutbanks cave	0.10
						Depth to saturated zone	0.01
Sharkey-------------	36	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
TeD:							
Tensas--------------	40	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
						Cutbanks cave	0.10
						Depth to saturated zone	0.01
Sharkey-------------	37	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10

Table 21.--Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TkB:							
Tensas	34	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	0.99	Slow refill	0.46
						Cutbanks cave	0.10
						Depth to saturated zone	0.01
Sharkey	32	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
Dundee	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.86	Slow refill	0.28
				Depth to saturated zone	0.84	Cutbanks cave	0.10
						Depth to saturated zone	0.07
TnA:							
Tunica	77	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.47	Depth to saturated zone	0.95	Slow refill	0.53
						Cutbanks cave	0.10
						Depth to saturated zone	0.02

Table 22.--Water Management

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Drainage: Rating class and limiting features	Drainage: Value	Irrigation: Rating class and limiting features	Irrigation: Value
BrA:				
Bruin----------	Not limited		Moderately limited	
			~erodes easily (moderately limited)	0.60
BrB:				
Bruin----------	Not limited		Moderately limited	
			~erodes easily (moderately limited)	0.60
BuB:				
Bruin----------	Not limited		Moderately limited	
			~erodes easily (moderately limited)	0.60
Commerce-------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
CcA:				
Commerce-------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
CeA:				
Commerce-------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~slow intake (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
CoB:				
Commerce, overwash------	Slightly limited		Very limited	
	~percs slowly (slightly limited)	0.15	~fast intake (very limited)	1.00
			~percs slowly (slightly limited)	0.15
CSB:				
Commerce-------	Limited		Limited	
	~flooding (limited)	0.90	~flooding (limited)	0.90
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15

Table 22.--Water Management--Continued

Map symbol and soil name	Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CSB:				
Bruin----------	Limited		Limited	
	~flooding (limited)	0.90	~flooding (limited)	0.90
			~erodes easily (moderately limited)	0.60
CuB:				
Crevasse-------	Limited		Very limited	
	~cutbanks cave (limited	0.90	~fast intake (very limited)	1.00
	~flooding (limited)	0.90	~droughty (very limited)	1.00
			~flooding (limited)	0.90
CVB:				
Crevasse-------	Limited		Very limited	
	~cutbanks cave (limited	0.90	~fast intake (very limited)	1.00
	~flooding (limited)	0.90	~droughty (very limited)	1.00
			~flooding (limited)	0.90
Bruno----------	Limited		Limited	
	~cutbanks cave (limited	0.90	~flooding (limited)	0.90
	~flooding (limited)	0.90	~fast intake (limited	0.90
			~droughty (slightly limited)	0.19
DdA:				
Dundee---------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
DeA:				
Dundee---------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~slow intake (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
DgB:				
Dundee---------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~slow intake (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
Goldman--------	Not limited		Moderately limited	
			~erodes easily (moderately limited)	0.60

Table 22.--Water Management--Continued

Map symbol and soil name	Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
DoA:				
Dowling--------	Very limited		Very limited	
	~ponded (wetness) (very limited)	1.00	~ponded (wetness) (very limited)	1.00
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (limited)	0.90	~slow intake (very limited)	1.00
LE:				
Levees---------	Not rated		Not rated	
Borrow pits----	Not rated		Not rated	
NeA:				
Newellton------	Moderately limited		Limited	
	~percs slowly (moderately limited)	0.40	~slow intake (limited)	0.99
			~percs slowly (moderately limited)	0.40
OW:				
Oil-waste land-	Not rated		Not rated	
RW:				
Riverwash------	Not rated		Not rated	
ShA:				
Sharkey--------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.99
SkA:				
Sharkey--------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (moderately limited)	0.60	~slow intake (limited)	0.99
			~flooding (moderately limited)	0.60
SrA:				
Sharkey--------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (limited)	0.90	~slow intake (limited)	0.99
			~flooding (limited)	0.90
SsB:				
Sharkey--------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.99

Table 22.--Water Management--Continued

Map symbol and soil name	Drainage: Rating class and limiting features	Drainage: Value	Irrigation: Rating class and limiting features	Irrigation: Value
SsB:				
Dowling--------	Very limited		Very limited	
	~ponded (wetness) (very limited)	1.00	~ponded (wetness) (very limited)	1.00
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (limited)	0.90	~slow intake (very limited)	1.00
StB:				
Sharkey--------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (moderately limited)	0.60	~slow intake (limited)	0.99
			~flooding (moderately limited)	0.60
Tunica---------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.89
Newellton------	Moderately limited		Limited	
	~percs slowly (moderately limited)	0.40	~slow intake (limited)	0.99
			~percs slowly (moderately limited)	0.40
SYA:				
Sharkey--------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (limited)	0.90	~slow intake (limited)	0.99
			~flooding (limited)	0.90
Newellton------	Limited		Limited	
	~flooding (limited)	0.90	~slow intake (limited)	0.99
	~percs slowly (moderately limited)	0.40	~flooding (limited)	0.90
			~percs slowly (moderately limited)	0.40
Tunica---------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (limited)	0.90	~flooding (limited)	0.90
			~slow intake (limited)	0.89
TaA:				
Tensas---------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.99

Table 22.--Water Management--Continued

Map symbol and soil name	Drainage		Irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
TeB:				
Tensas----------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.99
Sharkey---------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (moderately limited)	0.60	~slow intake (limited)	0.99
			~flooding (moderately limited)	0.60
TeD:				
Tensas----------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~slope (moderately limited)	0.40	~slow intake (limited)	0.79
			~slope (moderately limited)	0.40
Sharkey---------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
	~flooding (moderately limited)	0.60	~slow intake (limited)	0.99
			~flooding (moderately limited)	0.60
TkB:				
Tensas----------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.79
Sharkey---------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.99
Dundee----------	Slightly limited		Moderately limited	
	~percs slowly (slightly limited)	0.15	~erodes easily (moderately limited)	0.60
			~percs slowly (slightly limited)	0.15
TnA:				
Tunica----------	Very limited		Very limited	
	~percs slowly (very limited)	1.00	~percs slowly (very limited)	1.00
			~slow intake (limited)	0.89

Table 23.--Terraces and Diversions and Grassed Waterways

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BrA:				
Bruin	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.15	~wetness (slightly limited)	0.15
BrB:				
Bruin	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
BuB:				
Bruin	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
Commerce	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13
CcA:				
Commerce	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13
CeA:				
Commerce	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13
CoB:				
Commerce, overwash	Slightly limited		Slightly limited	
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13
CSB:				
Commerce	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.13	~wetness (slightly limited)	0.13
Bruin	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60

Table 23.--Terraces and Diversions and Grassed Waterways--Continued

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CuB:				
Crevasse-------	Moderately limited		Very limited	
	~too sandy (moderately limited)	0.60	~droughty (very limited)	1.00
CVB:				
Crevasse-------	Moderately limited		Very limited	
	~too sandy (moderately limited)	0.60	~droughty (very limited)	1.00
Bruno----------	Very limited		Slightly limited	
	~too sandy (very limited)	1.00	~droughty (slightly limited)	0.19
DdA:				
Dundee---------	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26
DeA:				
Dundee---------	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26
DgB:				
Dundee---------	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26
Goldman--------	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
DoA:				
Dowling--------	Very limited		Very limited	
	~ponded (wetness) (very limited)	1.00	~wetness (very limited)	1.00
	~wetness (very limited)	1.00		
LE:				
Levees---------	Not rated		Not rated	
Borrow pits----	Not rated		Not rated	
NeA:				
Newellton------	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
OW:				
Oil-waste land-	Not rated		Not rated	
RW:				
Riverwash------	Not rated		Not rated	

Table 23.--Terraces and Diversions and Grassed Waterways--Continued

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ShA:				
Sharkey	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
SkA:				
Sharkey	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
SrA:				
Sharkey	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
SsB:				
Sharkey	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
Dowling	Very limited		Very limited	
	~ponded (wetness) (very limited)	1.00	~wetness (very limited)	1.00
	~wetness (very limited)	1.00		
StB:				
Sharkey	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
Tunica	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.36	~wetness (moderately limited)	0.36
Newellton	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
SYA:				
Sharkey	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
Newellton	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
Tunica	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.36	~wetness (moderately limited)	0.36
TaA:				
Tensas	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
TeB:				
Tensas	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44

Table 23.--Terraces and Diversions and Grassed Waterways--Continued

Map symbol and soil name	Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value
TeB:				
Sharkey--------	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
TeD:				
Tensas---------	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
	~slope (slightly limited)	0.10	~slope (slightly limited)	0.10
Sharkey--------	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
TkB:				
Tensas---------	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.44	~wetness (moderately limited)	0.44
Sharkey--------	Limited		Limited	
	~wetness (limited)	0.99	~wetness (limited)	0.99
Dundee---------	Moderately limited		Moderately limited	
	~erodes easily (moderately limited)	0.60	~erodes easily (moderately limited)	0.60
	~wetness (slightly limited)	0.26	~wetness (slightly limited)	0.26
TnA:				
Tunica---------	Moderately limited		Moderately limited	
	~wetness (moderately limited)	0.36	~wetness (moderately limited)	0.36

Table 24.--Engineering Properties

[Absence of an entry indicates that the data were not estimated]

Map symbol and soil name	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	
BrA:												
Bruin-----------	0-11	Silt loam	CL, CL-ML	A-4	0	0	100	100	95-100	80-100	21-37	6-12
	11-20	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4	0	0	100	100	95-100	80-100	21-31	6-12
	20-80	Very fine sandy loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	100	95-100	80-100	21-45	6-25
BrB:												
Bruin-----------	0-7	Very fine sandy loam	CL, ML	A-4	0	0	100	100	95-100	80-100	21-37	6-12
	7-27	Silt loam, loam, stratified very fine sandy loam to loam to silt loam	CL, CL-ML	A-4	0	0	100	100	95-100	80-100	21-31	6-12
	27-80	Very fine sandy loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	100	95-100	80-100	21-45	6-25
BuB:												
Bruin-----------	0-11	Silt loam	CL, ML	A-4	0	0	100	100	95-100	80-100	21-37	6-12
	11-20	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4	0	0	100	100	95-100	80-100	21-31	6-12
	20-80	Stratified very fine sandy loam to loam to silt loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	100	95-100	80-100	21-45	6-25

Table 24.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
BuB:												
Commerce--------	0-10	Silt loam	CL	A-6	0	0	100	100	100	75-100	25-45	9-18
	10-36	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	100	100	100	85-100	26-51	9-28
	36-80	Stratified very fine sandy loam to silty clay	CL, CH	A-4, A-6, A-7-6	0	0	100	100	100	75-100	25-67	9-43
CcA:												
Commerce--------	0-7	Silt loam	CL	A-6	0	0	100	100	100	75-100	25-45	9-18
	7-63	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	100	100	100	85-100	26-51	9-28
	63-80	Stratified very fine sandy loam to silty clay loam to clay	CL, CH	A-4, A-6, A-7-6	0	0	100	100	100	75-100	25-67	9-43
CeA:												
Commerce--------	0-6	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	100	90-100	38-57	19-28
	6-34	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	100	100	100	85-100	26-51	9-28
	34-80	Stratified very fine sandy loam to silty clay	CL, CH	A-4, A-6, A-7-6	0	0	100	100	100	75-100	25-62	9-39

Table 24.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
CoB: Commerce, overwash-------	0-6	Sand, loamy sand, loamy fine sand	SC-SM, SP-SM	A-2-4, A-3	0	0	100	95-100	50-100	5-20	0-22	NP-4
	6-17	Stratified loamy fine sand to very fine sandy loam	CL, CH	A-4, A-6, A-7-6	0	0	100	100	100	75-100	25-62	9-39
	17-38	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	100	100	100	85-100	26-51	9-28
	38-80	Stratified very fine sandy loam to silty clay	CL, CH	A-4, A-6, A-7-6	0	0	100	100	100	75-100	25-62	9-39
CSB: Commerce--------	0-8	Very fine sandy loam	CL	A-6	0	0	100	100	100	75-100	25-39	9-13
	8-33	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	100	100	100	85-100	26-51	9-28
	33-80	Stratified very fine sandy loam to silty clay	CL, CH	A-4, A-6, A-7-6	0	0	100	100	100	75-100	25-62	9-39
Bruin-----------	0-6	Silt loam	CL, ML	A-4	0	0	100	100	95-100	80-100	21-37	6-12
	6-25	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4	0	0	100	100	95-100	80-100	21-31	6-12
	25-80	Stratified very fine sandy loam to silt loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	100	95-100	80-100	21-45	6-25
CuB: Crevasse--------	0-7	Fine sand	SC-SM, SP-SM	A-2-4, A-3	0	0	100	95-100	50-100	5-20	0-25	NP-4
	7-80	Sand, loamy sand, loamy fine sand	SC-SM, SP-SM	A-2-4, A-3	0	0	100	95-100	50-100	5-20	0-21	NP-4

Table 24.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
CVB:												
Crevasse--------	0-4	Fine sand	SC-SM, SP-SM	A-2-4, A-3	0	0	100	95-100	50-100	5-20	0-25	NP-4
	4-80	Sand, loamy sand, loamy fine sand	SC-SM, SP-SM	A-2-4, A-3	0	0	100	95-100	50-100	5-20	0-21	NP-4
Bruno-----------	0-5	Loamy fine sand	ML, SC-SM	A-2, A-4	0	0	100	100	60-85	30-60	0-26	NP-6
	5-38	Sand, loamy sand, loamy fine sand	SC-SM, SP-SM	A-2-4	0	0	100	100	60-80	10-30	0-21	NP-4
	38-80	Sand	SC-SM, SP-SM	A-2-4, A-3	0	0	100	100	50-70	5-20	0-21	NP-4
DdA:												
Dundee----------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	75-98	21-41	6-21
	9-34	Silty clay loam, clay loam, sandy clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-95	29-45	12-24
	34-80	Loam, very fine sandy loam, silt loam	CL	A-6	0	0	100	100	85-100	60-90	27-36	12-17
DeA:												
Dundee----------	0-7	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	90-100	75-98	36-50	18-28
	7-47	Silty clay loam, clay loam, sandy clay loam, silt loam	CL	A-7, A-6	0	0	100	100	90-100	70-95	29-45	12-24
	47-80	Loam, very fine sandy loam, silt loam	CL	A-6	0	0	100	100	85-100	60-90	27-36	12-17
DgB:												
Dundee----------	0-6	Silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	75-98	21-41	6-21
	6-34	Silty clay loam, clay loam, sandy clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-95	29-45	12-24
	34-80	Loam, very fine sandy loam, silt loam	CL	A-6	0	0	100	100	85-100	60-90	27-36	12-17

Table 24.--Engineering Properties--Continued

Map symbol and soil name	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	
DgB:												
Goldman---------	0-5	Very fine sandy loam	CL, ML	A-4	0	0	100	100	85-100	60-90	21-37	6-12
	5-34	Loam, silt loam, very fine sandy loam	CL, CL-ML	A-4	0	0	100	100	90-100	60-80	20-29	6-12
	34-80	Very fine sandy loam, silt loam, fine sandy loam	CL, CL-ML	A-4	0	0	100	100	90-100	50-90	20-33	6-15
DoA:												
Dowling---------	0-4	Clay	CH, MH, OH	A-7-5	0	0	100	100	100	95-100	55-133	29-68
	4-18	Clay, mucky clay	CH, MH, OH	A-7-6	0	0	100	100	100	95-100	53-113	29-71
	18-31	Clay	CH	A-7-5	0	0	100	100	100	95-100	69-110	44-72
	31-80	Clay, silty clay, silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	100	100	95-100	47-109	25-72
LE:												
Levees.												
Borrow pits.												
NeA:												
Newellton-------	0-7	Clay	CH	A-7-6	0	0	100	100	100	95-100	50-93	29-58
	7-16	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	50-87	29-59
	16-80	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-49	6-28
OW:												
Oil-waste land--	0-11	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	11-47	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	47-75	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66
RW:												
Riverwash-------	0-80	Sand	SP, SP-SM, SW-SM	A-1-a, A-1-b	0-2	0-5	80-98	45-90	25-50	4-10	0-19	NP-2

Table 24.--Engineering Properties--Continued

Map symbol and soil name	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*	
ShA:												
Sharkey---------	0-7	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	7-28	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	28-49	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	49-80	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66
SkA:												
Sharkey---------	0-5	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	5-42	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	42-80	Clay, silty clay loam, silty clay	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66
SrA:												
Sharkey---------	0-10	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	10-41	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	41-80	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66
SsB:												
Sharkey---------	0-4	Clay	CH	A-7-6, A-7-5	0	0	100	100	100	95-100	52-102	29-60
	4-24	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	24-80	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66
Dowling---------	0-6	Clay	CH, MH, OH	A-7-5	0	0	100	100	100	95-100	55-133	29-68
	6-18	Clay, mucky clay	CH, MH, OH	A-7-6	0	0	100	100	100	95-100	53-113	29-71
	18-49	Clay	CH	A-7-5	0	0	100	100	100	95-100	69-110	44-72
	49-80	Clay, silty clay, silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	100	100	95-100	47-109	25-72
StB:												
Sharkey---------	0-11	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	11-50	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	50-80	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66

Table 24.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
StB:												
Tunica----------	0-6	Silty clay	CH	A-7-6	0	0	100	98-100	95-100	90-100	47-87	25-55
	6-26	Clay, silty clay	CH	A-7-6	0	0	100	98-100	95-100	90-100	45-82	25-55
	26-80	Fine sandy loam, loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	65-100	51-100	20-42	6-22
Newellton-------	0-6	Clay	CH	A-7-6	0	0	100	100	100	95-100	50-93	29-58
	6-17	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	50-87	29-59
	17-80	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-38	6-19
SYA:												
Sharkey---------	0-9	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	9-42	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	42-80	Clay, silty clay loam, silt loam	CH, CL	A-7-6, A-6	0	0	100	100	100	95-100	37-95	18-66
Newellton-------	0-4	Clay	CH	A-7-6	0	0	100	100	100	95-100	50-93	29-58
	4-14	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	50-87	29-59
	14-80	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-38	6-19
Tunica----------	0-7	Clay	CH	A-7-6	0	0	100	98-100	95-100	90-100	47-87	25-55
	7-30	Clay, silty clay	CH	A-7-6	0	0	100	98-100	95-100	90-100	45-82	25-55
	30-80	Very fine sandy loam, loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	65-100	51-100	20-42	6-22

Table 24.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
TaA:												
Tensas----------	0-4	Clay	CH	A-7-6	0	0	100	100	100	95-100	50-93	29-58
	4-29	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	52-97	29-61
	29-80	Very fine sandy loam, silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	80-100	20-48	6-28
TeB:												
Tensas----------	0-4	Clay	CH	A-7-6	0	0	100	100	100	95-100	50-93	29-58
	4-19	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	52-97	29-61
	19-80	Very fine sandy loam, silty clay loam, silt loam, fine sandy loam, sandy clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	80-100	20-48	6-28
Sharkey---------	0-4	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	4-42	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	42-80	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66
TeD:												
Tensas----------	0-5	Silty clay	CH	A-7-6	0	0	100	100	100	95-100	50-76	29-43
	5-29	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	52-97	29-61
	29-80	Very fine sandy loam, silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	80-100	20-48	6-28
Sharkey---------	0-6	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	6-60	Silty clay, clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	60-80	Clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	100	95-100	37-95	18-66

Table 24.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				*Pct*	*Pct*					*Pct*	
TkB:												
Tensas----------	0-5	Silty clay	CH	A-7-6	0	0	100	100	100	95-100	50-76	29-43
	5-25	Clay, silty clay	CH	A-7-6	0	0	100	100	100	95-100	52-97	29-61
	25-49	Very fine sandy loam, silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	80-100	20-48	6-28
	49-80	Fine sandy loam, loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	65-100	51-100	20-42	6-22
Sharkey---------	0-7	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	52-102	29-60
	7-49	Clay	CH	A-7-5, A-7-6	0	0	100	100	100	95-100	68-105	44-68
	49-80	Silty clay, silty clay loam, silt loam	CH, CL	A-7-6, A-6	0	0	100	100	100	95-100	37-95	18-66
Dundee----------	0-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	75-98	21-41	6-21
	12-36	Silty clay loam, clay loam, sandy clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-95	37-50	19-29
	36-80	Loam, very fine sandy loam, silt loam	CL, CL-ML, ML	A-6	0	0	100	100	85-100	60-90	16-32	2-13
TnA:												
Tunica----------	0-5	Clay	CH	A-7-6	0	0	100	98-100	95-100	90-100	47-87	25-55
	5-28	Clay, silty clay	CH	A-7-6	0	0	100	98-100	95-100	90-100	45-82	25-55
	28-68	Very fine sandy loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	65-100	51-100	20-42	6-22
	68-80	Fine sandy loam, loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	65-100	51-100	20-42	6-22

Table 25.--Physical Soil Properties

[Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
BrA:												
Bruin---------------	0-11	10-18	1.30-1.65	0.6-2	0.21-0.23	0.0-2.9	0.4-4.0	.43	.43	5	5	56
	11-20	10-18	1.30-1.70	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
	20-80	10-35	1.30-1.65	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
BrB:												
Bruin---------------	0-7	10-18	1.30-1.65	0.6-2	0.21-0.23	0.0-2.9	0.4-4.0	.43	.43	5	5	56
	7-27	10-18	1.30-1.70	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
	27-80	10-35	1.30-1.65	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
BuB:												
Bruin---------------	0-11	10-18	1.30-1.65	0.6-2	0.21-0.23	0.0-2.9	0.4-4.0	.43	.43	5	5	56
	11-20	10-18	1.30-1.70	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
	20-80	10-35	1.30-1.65	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
Commerce------------	0-10	14-27	1.35-1.65	0.6-2	0.21-0.23	0.0-2.9	0.5-4.0	.43	.43	5	6	56
	10-36	14-39	1.35-1.65	0.2-0.6	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	36-80	14-60	1.35-1.65	0.2-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
CcA:												
Commerce------------	0-7	14-27	1.35-1.65	0.6-2	0.21-0.23	0.0-2.9	0.5-4.0	.43	.43	5	6	56
	7-63	14-39	1.35-1.65	0.2-0.6	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	63-80	14-60	1.35-1.65	0.2-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
CeA:												
Commerce------------	0-6	27-39	1.25-1.45	0.2-0.6	0.15-0.19	3.0-5.9	0.5-4.0	.37	.37	5	7	38
	6-34	14-39	1.35-1.65	0.2-0.6	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	34-80	14-55	1.35-1.65	0.2-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
CoB:												
Commerce, overwash--	0-6	2-8	1.40-1.50	6-20	0.02-0.06	0.0-2.9	0.5-1.0	.15	.15	5	6	56
	6-17	14-55	1.35-1.65	0.2-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
	17-38	14-39	1.35-1.65	0.2-0.6	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	38-80	14-55	1.35-1.65	0.2-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
CSB:												
Commerce------------	0-8	14-20	1.35-1.65	0.6-2	0.21-0.23	0.0-2.9	0.5-4.0	.43	.43	5	6	56
	8-33	14-39	1.35-1.65	0.2-0.6	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	33-80	14-55	1.35-1.65	0.2-2	0.20-0.23	0.0-2.9	0.5-1.0	.37	.37			
Bruin---------------	0-6	10-18	1.30-1.65	0.6-2	0.21-0.23	0.0-2.9	0.4-4.0	.43	.43	5	5	56
	6-25	10-18	1.30-1.70	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	.37			
	25-80	10-35	1.30-1.65	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.37	---			

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
CuB:												
Crevasse------------	0-7	2-8	1.40-1.50	6-20	0.02-0.06	0.0-2.9	0.5-2.0	.10	.10	5	1	220
	7-80	2-8	1.40-1.50	6-20	0.02-0.06	0.0-2.9	0.0-0.5	.15	.15			
CVB:												
Crevasse------------	0-4	2-8	1.40-1.50	6-20	0.02-0.06	0.0-2.9	0.5-2.0	.10	.10	5	1	220
	4-80	2-8	1.40-1.50	6-20	0.02-0.06	0.0-2.9	0.0-0.5	.15	.15			
Bruno---------------	0-5	3-10	1.40-1.55	6-20	0.10-0.15	0.0-2.9	0.5-2.0	.17	.17	5	2	134
	5-38	2-8	1.40-1.60	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
	38-80	2-8	1.40-1.60	6-20	0.02-0.05	0.0-2.9	0.0-0.5	.10	.10			
DdA:												
Dundee--------------	0-9	10-30	1.30-1.70	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.43	.43	5	5	56
	9-34	18-34	1.30-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.0-0.5	.32	.32			
	34-80	18-25	1.30-1.70	0.6-2	0.18-0.22	0.0-2.9	0.0-0.5	.32	.32			
DeA:												
Dundee--------------	0-7	27-40	1.30-1.70	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.43	.43	5	5	56
	7-47	18-34	1.30-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.0-0.5	.32	.32			
	47-80	18-25	1.30-1.70	0.6-2	0.18-0.22	0.0-2.9	0.0-0.5	.32	.32			
DgB:												
Dundee--------------	0-6	10-35	1.30-1.70	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.43	.43	5	5	56
	6-34	18-35	1.30-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.0-0.5	.32	.32			
	34-80	15-25	1.30-1.70	0.6-2	0.18-0.22	0.0-2.9	0.0-0.5	.32	.32			
Goldman-------------	0-5	10-18	1.30-1.65	0.6-2	0.15-0.20	0.0-2.9	0.5-4.0	.43	.43	5	5	56
	5-34	10-18	1.30-1.65	0.6-2	0.15-0.20	0.0-2.9	0.0-0.1	.37	.37			
	34-80	10-22	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.37	.37			
DoA:												
Dowling-------------	0-4	40-95	0.80-1.45	0.00-0.06	0.18-0.20	9.0-25.0	2.0-15	.20	.20	5	4	86
	4-18	40-95	0.80-1.45	0.00-0.06	0.18-0.20	9.0-25.0	1.0-3.0	.20	.20			
	18-31	60-95	1.10-1.35	0.00-0.06	0.18-0.20	9.0-25.0	0.5-1.0	.24	.24			
	31-80	35-95	1.10-1.45	0.00-0.2	0.18-0.22	9.0-25.0	0.0-0.5	.24	.24			
LE:												
Levees.												
Borrow pits.												
NeA:												
Newellton-----------	0-7	40-80	1.20-1.50	0.06-0.2	0.12-0.20	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	7-16	40-80	1.20-1.60	0.06-0.2	0.12-0.20	6.0-8.9	0.5-1.0	.32	.32			
	16-80	10-40	1.30-1.65	0.2-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
OW:												
Oil-waste land------	0-11	40-80	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.5-4.0	.32	.32	5	4	---
	11-47	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	47-75	25-90	1.20-1.70	0.06-0.2	0.12-0.22	6.0-8.9	0.0-0.5	.28	.28			
RW:												
Riverwash-----------	0-80	2-5	1.50-1.60	2-20	0.02-0.05	0.0-2.9	0.0-0.5	.10	.10	5	1	220
ShA:												
Sharkey-------------	0-7	40-80	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	7-28	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	28-49	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	49-80	25-90	1.20-1.70	0.06-0.2	0.12-0.22	6.0-8.9	0.0-0.5	.28	.28			
SkA:												
Sharkey-------------	0-5	40-80	1.20-1.50	0.00-0.06	0.12-0.18	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	5-42	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	42-80	25-90	1.20-1.65	0.06-0.2	0.12-0.18	6.0-8.9	0.0-0.5	.28	.28			
SrA:												
Sharkey-------------	0-10	40-80	1.20-1.50	0.00-0.06	0.12-0.18	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	10-41	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	41-80	25-90	1.20-1.65	0.06-0.2	0.12-0.18	6.0-8.9	0.0-0.5	.28	.28			
SsB:												
Sharkey-------------	0-4	40-80	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	4-24	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	24-80	25-90	1.20-1.70	0.06-0.2	0.12-0.22	6.0-8.9	0.0-0.5	.28	.28			
Dowling-------------	0-6	40-95	0.80-1.45	0.00-0.06	0.18-0.20	9.0-25.0	2.0-15	.20	.20	5	4	86
	6-18	40-95	0.80-1.45	0.00-0.06	0.18-0.20	9.0-25.0	1.0-3.0	.20	.20			
	18-49	60-95	1.10-1.35	0.00-0.06	0.18-0.20	9.0-25.0	0.5-1.0	.24	.24			
	49-80	35-95	1.10-1.45	0.00-0.2	0.18-0.22	9.0-25.0	0.0-0.5	.24	.24			
StB:												
Sharkey-------------	0-11	40-80	1.20-1.50	0.00-0.06	0.12-0.18	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	11-50	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	50-80	25-90	1.20-1.65	0.06-0.2	0.12-0.18	6.0-8.9	0.0-0.5	.28	.28			
Tunica--------------	0-6	35-75	1.45-1.55	0.00-0.06	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	5	4	86
	6-26	35-75	1.45-1.55	0.00-0.06	0.15-0.20	6.0-8.9	0.0-0.5	.32	.32			
	26-80	10-32	1.40-1.50	0.06-2	0.10-0.22	0.0-2.9	0.0-0.5	.32	.32			
Newellton-----------	0-6	40-80	1.20-1.50	0.06-0.2	0.12-0.20	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	6-17	40-80	1.20-1.60	0.06-0.2	0.12-0.20	6.0-8.9	0.5-1.0	.32	.32			
	17-80	10-28	1.30-1.65	0.2-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
SYA:												
Sharkey-------------	0-9	40-80	1.20-1.50	0.00-0.06	0.12-0.18	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	9-42	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	42-80	25-90	1.20-1.65	0.06-0.2	0.12-0.18	6.0-8.9	0.0-0.5	.28	.28			
Newellton-----------	0-4	40-80	1.20-1.50	0.06-0.2	0.12-0.20	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	4-14	40-80	1.20-1.60	0.06-0.2	0.12-0.20	6.0-8.9	0.5-1.0	.32	.32			
	14-80	10-28	1.30-1.65	0.2-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			
Tunica--------------	0-7	35-75	1.45-1.55	0.00-0.06	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	5	4	86
	7-30	35-75	1.45-1.55	0.00-0.06	0.15-0.20	6.0-8.9	0.0-0.5	.32	.32			
	30-80	10-32	1.40-1.50	0.06-2	0.10-0.22	0.0-2.9	0.0-0.5	.32	.32			
TaA:												
Tensas--------------	0-4	40-80	1.20-1.50	0.00-0.06	0.15-0.19	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	4-29	40-80	1.20-1.50	0.00-0.06	0.15-0.19	9.0-25.0	0.5-1.0	.32	.32			
	29-80	10-39	1.30-1.70	0.2-2	0.20-0.23	0.0-2.9	0.0-0.5	.37	.37			
TeB:												
Tensas--------------	0-4	40-80	1.20-1.50	0.00-0.06	0.15-0.19	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	4-19	40-80	1.20-1.50	0.00-0.06	0.15-0.19	9.0-25.0	0.5-1.0	.32	.32			
	19-80	10-39	1.30-1.70	0.2-2	0.20-0.23	0.0-2.9	0.0-0.5	.37	.37			
Sharkey-------------	0-4	40-80	1.20-1.50	0.00-0.06	0.12-0.18	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	4-42	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	42-80	25-90	1.20-1.65	0.06-0.2	0.12-0.18	6.0-8.9	0.0-0.5	.28	.28			
TeD:												
Tensas--------------	0-5	40-60	1.20-1.50	0.00-0.06	0.15-0.19	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	5-29	40-80	1.20-1.50	0.00-0.06	0.15-0.19	9.0-25.0	0.5-1.0	.32	.32			
	29-80	10-39	1.30-1.70	0.2-2	0.20-0.23	0.0-2.9	0.0-0.5	.37	.37			
Sharkey-------------	0-6	40-80	1.20-1.50	0.00-0.06	0.12-0.18	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	6-60	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	60-80	25-90	1.20-1.65	0.06-0.2	0.12-0.18	6.0-8.9	0.0-0.5	.28	.28			
TkB:												
Tensas--------------	0-5	40-60	1.20-1.50	0.00-0.06	0.15-0.19	6.0-8.9	0.5-4.0	.32	.32	5	4	86
	5-25	40-80	1.20-1.50	0.00-0.06	0.15-0.19	9.0-25.0	0.5-1.0	.32	.32			
	25-49	10-39	1.30-1.70	0.2-2	0.20-0.23	0.0-2.9	0.0-0.5	.37	.37			
	49-80	10-32	1.40-1.50	0.06-2	0.10-0.22	0.0-2.9	0.0-0.5	.37	.37			
Sharkey-------------	0-7	40-80	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.5-4.0	.32	.32	5	4	86
	7-49	60-90	1.20-1.50	0.00-0.06	0.07-0.14	9.0-25.0	0.0-0.5	.28	.28			
	49-80	25-90	1.20-1.70	0.06-0.2	0.12-0.22	6.0-8.9	0.0-0.5	.28	.28			

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
TkB:												
Dundee--------------	0-12	10-30	1.30-1.70	0.6-2	0.15-0.20	0.0-2.9	0.5-1.0	.43	.43	5	5	56
	12-36	27-40	1.30-1.70	0.2-0.6	0.15-0.20	3.0-5.9	0.0-0.5	.32	.32			
	36-80	5-20	1.30-1.70	0.6-2	0.15-0.20	0.0-2.9	0.0-0.5	.32	.32			
TnA:												
Tunica--------------	0-5	35-75	1.45-1.55	0.00-0.06	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	5	4	86
	5-28	35-75	1.45-1.55	0.00-0.06	0.15-0.20	6.0-8.9	0.0-0.5	.32	.32			
	28-68	10-32	1.40-1.50	0.06-2	0.10-0.22	0.0-2.9	0.0-0.5	.32	.32			
	68-80	10-32	1.40-1.50	0.06-2	0.10-0.22	0.0-2.9	0.0-0.5	.32	.32			

Table 26.--Chemical Soil Properties

[Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*
BrA:					
Bruin----------------	0-11	5.0-15	---	5.1-7.8	0
	11-20	5.0-15	---	6.1-8.4	0
	20-80	5.0-25	---	6.1-8.4	0
BrB:					
Bruin----------------	0-7	5.0-15	---	5.1-7.8	0
	7-27	5.0-15	---	6.1-8.4	0
	27-80	5.0-25	---	6.1-8.4	0
BuB:					
Bruin----------------	0-11	5.0-15	---	5.1-7.8	0
	11-20	5.0-15	---	6.1-8.4	0
	20-80	5.0-25	---	6.1-8.4	0
Commerce-------------	0-10	5.0-15	---	5.6-8.4	0
	10-36	10-30	---	6.1-8.4	0
	36-80	10-40	---	6.6-8.4	0
CcA:					
Commerce-------------	0-7	5.0-15	---	5.6-8.4	0
	7-63	10-30	---	6.1-8.4	0
	63-80	10-40	---	6.6-8.4	0
CeA:					
Commerce-------------	0-6	10-25	---	5.6-8.4	0
	6-34	10-30	---	6.1-8.4	0
	34-80	10-40	---	6.6-8.4	0
CoB:					
Commerce, overwash---	0-6	2.0-7.0	---	5.6-8.4	0
	6-17	12-41	---	5.6-8.4	0
	17-38	10-30	---	6.1-8.4	0
	38-80	10-40	---	6.6-8.4	0
CSB:					
Commerce-------------	0-8	5.0-15	---	5.6-8.4	0
	8-33	10-30	---	6.1-8.4	0
	33-80	10-40	---	6.6-8.4	0
Bruin----------------	0-6	5.0-15	---	5.1-7.8	0
	6-25	5.0-15	---	6.1-8.4	0
	25-80	5.0-25	---	6.1-8.4	0
CuB:					
Crevasse-------------	0-7	2.0-7.0	---	5.6-8.4	0
	7-80	2.0-6.0	---	5.6-8.4	0
CVB:					
Crevasse-------------	0-4	1.8-6.8	---	5.6-8.4	0
	4-80	1.4-6.1	---	5.6-8.4	0
Bruno----------------	0-5	3.0-8.0	---	5.1-7.8	0
	5-38	2.0-6.0	---	5.1-8.4	0
	38-80	2.0-6.0	---	5.1-8.4	0

Table 26.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*
DdA:					
Dundee---------------	0-9	---	2.7-10	3.5-6.0	0
	9-34	---	5.7-17	4.5-6.0	0
	34-80	9.1-13	---	4.5-7.8	0
DeA:					
Dundee---------------	0-7	---	8.4-14	4.5-6.0	0
	7-47	---	5.7-17	4.5-6.0	0
	47-80	9.1-13	---	4.5-7.3	0
DgB:					
Dundee---------------	0-6	5.0-18	---	4.5-6.0	0
	6-34	---	6.0-18	4.5-6.0	0
	34-80	7.0-13	---	4.5-7.3	0
Goldman--------------	0-5	5.0-15	---	5.1-6.5	0
	5-34	5.0-20	---	4.5-6.5	0
	34-80	5.0-20	---	5.1-6.5	0
DoA:					
Dowling--------------	0-4	32-132	---	5.1-7.3	0
	4-18	25-78	---	5.6-7.3	0
	18-31	28-54	---	6.1-8.4	0
	31-80	6.0-43	---	6.6-8.4	0
LE:					
Levees.					
Borrow pits.					
NeA:					
Newellton------------	0-7	30-61	---	5.6-7.3	0
	7-16	20-47	---	5.6-7.8	0
	16-80	2.0-20	---	5.1-8.4	0
OW:					
Oil-waste land-------	0-11	20-40	---	5.1-8.4	0
	11-47	20-40	---	5.6-8.4	0-5
	47-75	5.0-40	---	6.6-8.4	0-5
RW:					
Riverwash------------	0-80	1.0-5.0	---	6.6-7.8	0-2
ShA:					
Sharkey--------------	0-7	---	20-70	5.1-8.4	0
	7-28	20-40	---	5.6-8.4	0-5
	28-49	20-40	---	5.6-8.4	0-5
	49-80	5.0-40	---	6.6-8.4	0-5
SkA:					
Sharkey--------------	0-5	20-40	---	5.1-8.4	0
	5-42	20-40	---	5.1-8.4	0-5
	42-80	10-40	---	6.6-8.4	0-5
SrA:					
Sharkey--------------	0-10	20-40	---	5.1-8.4	0
	10-41	20-40	---	5.1-8.4	0-5
	41-80	10-40	---	6.6-8.4	0-5
SsB:					
Sharkey--------------	0-4	20-40	---	5.1-8.4	0
	4-24	20-40	---	5.6-8.4	0-5
	24-80	5.0-40	---	6.6-8.4	0-5

Table 26.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*
SsB:					
Dowling--------------	0-6	32-132	---	5.6-7.3	0
	6-18	25-78	---	5.6-7.3	0
	18-49	29-54	---	6.1-8.4	0
	49-80	6.0-43	---	6.1-8.4	0
StB:					
Sharkey--------------	0-11	20-40	---	5.1-8.4	0
	11-50	20-40	---	5.1-8.4	0-5
	50-80	10-40	---	6.6-8.4	0-5
Tunica---------------	0-6	30-60	---	5.6-7.8	0
	6-26	20-50	---	5.6-7.8	0
	26-80	2.0-20	---	5.6-8.4	0
Newellton------------	0-6	20-73	---	5.6-7.3	0
	6-17	30-58	---	5.6-7.8	0
	17-80	2.0-15	---	5.1-8.4	0
SYA:					
Sharkey--------------	0-9	20-40	---	5.1-8.4	0
	9-42	20-40	---	5.1-8.4	0-5
	42-80	10-40	---	6.6-8.4	0-5
Newellton------------	0-4	20-40	---	5.6-8.4	0
	4-14	20-40	---	5.6-8.4	0
	14-80	5.0-25	---	5.1-8.4	0-5
Tunica---------------	0-7	20-60	---	5.6-7.8	0
	7-30	6.0-35	---	5.6-7.8	0
	30-80	2.0-15	---	5.6-8.4	0
TaA:					
Tensas---------------	0-4	---	20-40	4.5-6.0	0
	4-29	---	20-40	4.5-6.0	0
	29-80	5.0-25	---	5.1-7.3	0
TeB:					
Tensas---------------	0-4	---	20-40	4.5-6.0	0
	4-19	---	20-40	4.5-6.0	0
	19-80	5.0-25	---	5.1-7.3	0
Sharkey--------------	0-4	---	20-70	5.1-8.4	0
	4-42	---	20-78	5.1-8.4	0-5
	42-80	5.0-40	---	6.1-8.4	0-5
TeD:					
Tensas---------------	0-5	---	20-40	4.5-6.0	0
	5-29	---	20-40	4.5-6.0	0
	29-80	5.0-25	---	5.1-7.3	0
Sharkey--------------	0-6	20-40	---	5.1-8.4	0
	6-60	---	33-79	5.1-8.4	0-5
	60-80	10-40	---	6.6-8.4	0-5
TkB:					
Tensas---------------	0-5	20-40	---	4.5-6.0	0
	5-25	20-40	---	4.5-6.0	0
	25-49	5.0-25	---	5.1-7.3	0
	49-80	2.0-17	---	5.1-7.3	0

Table 26.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*
TkB:					
Sharkey--------------	0-7	20-40	---	5.1-8.4	0
	7-49	20-40	---	5.1-8.4	0-5
	49-80	5.0-40	---	6.6-8.4	0-5
Dundee---------------	0-12	---	2.7-10	4.5-6.0	0
	12-36	---	9.1-21	4.5-6.0	0
	36-80	2.6-11	---	4.5-7.8	0
TnA:					
Tunica---------------	0-5	23-63	---	5.6-7.8	0
	5-28	23-53	---	5.6-7.8	0
	28-68	2.0-17	---	5.6-8.4	0
	68-80	2.0-17	---	5.6-8.4	0

Table 27.--Soil Features

[See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Restrictive layer (kind)	Risk of corrosion	
		Uncoated steel	Concrete
BrA:			
Bruin	---	High	Low
BrB:			
Bruin	---	High	Low
BuB:			
Bruin	---	High	Low
Commerce	---	High	Low
CcA:			
Commerce	---	High	Low
CeA:			
Commerce	---	High	Low
CoB:			
Commerce, overwash	---	High	Low
CSB:			
Commerce	---	High	Low
Bruin	---	High	Low
CuB:			
Crevasse	---	Low	Moderate
CVB:			
Crevasse	---	Low	Moderate
Bruno	---	Low	Low
DdA:			
Dundee	---	High	Moderate
DeA:			
Dundee	---	High	Moderate
DgB:			
Dundee	---	High	Moderate
Goldman	---	Moderate	Moderate
DoA:			
Dowling	---	High	Low
LE:			
Levees	---	Moderate	Moderate
Borrow pits	---	High	Low
NeA:			
Newellton	---	High	Low
OW:			
Oil-waste land	Natric	High	Moderate

Table 27.--Soil Features--Continued

Map symbol and soil name	Restrictive layer (kind)	Risk of corrosion	
		Uncoated steel	Concrete
RW:			
Riverwash	---	High	Low
ShA:			
Sharkey	---	High	Moderate
SkA:			
Sharkey	---	High	Moderate
SrA:			
Sharkey	---	High	Moderate
SsB:			
Sharkey	---	High	Moderate
Dowling	---	High	Low
StB:			
Sharkey	---	High	Moderate
Tunica	---	High	Low
Newellton	---	High	Low
SYA:			
Sharkey	---	High	Moderate
Newellton	---	High	Low
Tunica	---	High	Low
TaA:			
Tensas	---	High	Moderate
TeB:			
Tensas	---	High	Moderate
Sharkey	---	High	Moderate
TeD:			
Tensas	---	High	Moderate
Sharkey	---	High	Moderate
TkB:			
Tensas	---	High	Moderate
Sharkey	---	High	Moderate
Dundee	---	High	Moderate
TnA:			
Tunica	---	High	Low

Table 28.--Water Features

[Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
BrA:										
Bruin	B	Low								
			Jan-Apr	2.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	2.5-4.0	>6.0	---	---	None	---	None
BrB:										
Bruin	B	Medium								
			Jan-Apr	2.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	2.5-4.0	>6.0	---	---	None	---	None
BuB:										
Bruin	B	Low								
			Jan-Apr	2.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	2.5-4.0	>6.0	---	---	None	---	None
Commerce	C	Low								
			Jan-Apr	1.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-4.0	>6.0	---	---	None	---	None
CcA:										
Commerce	C	Low								
			Jan-Apr	1.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-4.0	>6.0	---	---	None	---	None
CeA:										
Commerce	C	Low								
			Jan-Apr	1.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-4.0	>6.0	---	---	None	---	None
CoB:										
Commerce overwash	C	Low								
			Jan-Apr	1.5-4.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-4.0	>6.0	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
CSB:										
Commerce------------------	C	Low								
			Jan-Apr	1.5-4.0	>6.0	---	---	None	Long	Frequent
			May-June	---	---	---	---	None	Long	Frequent
			July-Nov	---	---	---	---	None	---	None
			December	1.5-4.0	>6.0	---	---	None	Long	Frequent
Bruin---------------------	B	Low								
			Jan-Apr	2.5-4.0	>6.0	---	---	None	Long	Frequent
			May-June	---	---	---	---	None	Long	Frequent
			July-Nov	---	---	---	---	None	---	None
			December	2.5-4.0	>6.0	---	---	None	Long	Frequent
CuB:										
Crevasse------------------	A	Low								
			Jan-Mar	3.5-6.0	>6.0	---	---	None	Very long	Frequent
			Apr-June	---	---	---	---	None	Very long	Frequent
			Jul-Sep	---	---	---	---	None	---	None
			October	---	---	---	---	None	Very long	Frequent
			Nov-Dec	3.5-6.0	>6.0	---	---	None	Very long	Frequent
CVB:										
Crevasse------------------	A	Low								
			Jan-Mar	3.5-6.0	>6.0	---	---	None	Very long	Frequent
			Apr-June	---	---	---	---	None	Very long	Frequent
			Jul-Oct	---	---	---	---	None	---	None
			November	3.5-6.0	>6.0	---	---	None	---	None
			December	3.5-6.0	>6.0	---	---	None	Very long	Frequent
Bruno---------------------	A	Low								
			Jan-Apr	4.0-6.0	>6.0	---	---	None	Long	Frequent
			May-June	---	---	---	---	None	Long	Frequent
			July-Nov	---	---	---	---	None	---	None
			December	4.0-6.0	>6.0	---	---	None	Long	Frequent
DdA:										
Dundee--------------------	C	Low								
			Jan-Apr	1.5-3.5	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
DeA:										
Dundee--------------------	C	Low								
			Jan-Apr	1.5-3.5	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
DgB:										
Dundee	C	Medium								
			Jan-Apr	1.5-3.5	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
Goldman	C	Low								
			Jan-Apr	3.5-5.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	3.5-5.0	>6.0	---	---	None	---	None
DoA:										
Dowling	D	Negligible								
			Jan-Dec	0.0	>6.0	0.0-1.0	Very long	Frequent	Very long	Frequent
LE:										
Levees	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Borrow pits	D	Negligible								
			Jan-Apr	0.0-1.0	>6.0	---	Very long	Frequent	---	Rare
			May-June	0.0-1.0	>6.0	---	Very long	Frequent	---	None
			July-Oct	---	---	---	Very long	Frequent	---	None
			November	0.0-1.0	>6.0	---	Very long	Frequent	---	None
			December	0.0-1.0	>6.0	---	Very long	Frequent	---	Rare
NeA:										
Newellton	D	Medium								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	---	None
OW:										
Oil-waste land	D	---								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	---	Rare
			May-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	---	Rare
RW:										
Riverwash	A	---								
			Jan-Apr	0.5-6.0	>6.0	---	---	None	Very long	Frequent
			May-Oct	---	---	---	---	None	Very long	Frequent
			Nov-Dec	0.5-6.0	>6.0	---	---	None	Very long	Frequent

Table 28.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
ShA:										
Sharkey-------------------	D	High								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	---	Rare
			May-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	---	Rare
SkA:										
Sharkey-------------------	D	High								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	Long	Occasional
			May-July	---	---	---	---	None	Long	Occasional
			Aug-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	Long	Occasional
SrA:										
Sharkey-------------------	D	High								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	Long	Frequent
			May-July	---	---	---	---	None	Long	Frequent
			Aug-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	Long	Frequent
SsB:										
Sharkey-------------------	D	Very high								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	---	Rare
			May-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	---	Rare
Dowling-------------------	D	Negligible								
			Jan-May	0.0	>6.0	0.0-1.0	Very long	Frequent	Very long	Frequent
			June-Nov	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
			December	0.0	>6.0	0.0-1.0	Very long	Frequent	Very long	Frequent
StB:										
Sharkey-------------------	D	Medium								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	Long	Occasional
			May-July	---	---	---	---	None	Long	Occasional
			Aug-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	Long	Occasional
Tunica--------------------	D	Very high								
			Jan-Apr	1.5-3.0	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
Newellton-----------------	D	High								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
SYA:										
Sharkey-------------------	D	Negligible								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			May-July	---	---	---	---	None	Very long	Frequent
			Aug-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	Very long	Frequent
Newellton-----------------	D	High								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	Long	Frequent
			May-July	---	---	---	---	None	Long	Frequent
			Aug-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	Long	Frequent
Tunica--------------------	D	Medium								
			Jan-Apr	1.5-3.0	>6.0	---	---	None	Long	Frequent
			May-July	---	---	---	---	None	Long	Frequent
			Aug-Nov	---	---	---	---	None	---	None
			December	---	---	---	---	None	Long	Frequent
TaA:										
Tensas--------------------	D	High								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	---	None
TeB:										
Tensas--------------------	D	Very high								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	---	None
Sharkey-------------------	D	Very high								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	Long	Occasional
			May-July	---	---	---	---	None	Long	Occasional
			Aug-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	Long	Occasional
TeD:										
Tensas--------------------	D	Very high								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
TeD:										
Sharkey-------------------	D	Very high								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	Long	Occasional
			May-July	---	---	---	---	None	Long	Occasional
			Aug-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	Long	Occasional
TkB:										
Tensas--------------------	D	Very high								
			Jan-Apr	1.0-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.0-3.0	>6.0	---	---	None	---	None
Sharkey-------------------	D	Very high								
			Jan-Apr	0.0-2.0	>6.0	---	---	None	---	Rare
			May-Nov	---	---	---	---	None	---	None
			December	0.0-2.0	>6.0	---	---	None	---	Rare
Dundee--------------------	C	Medium								
			Jan-Apr	1.5-3.5	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
TnA:										
Tunica--------------------	D	High								
			Jan-Apr	1.5-3.0	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None

Table 29.--Hydric Soils

[This report lists only those map unit components that are rated as hydric. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria*
CSB:					
Commerce and Bruin soils, 0 to 3 percent slopes, frequently flooded	Commerce	60	Natural levees	Yes	4
DoA:					
Dowling clay, 0 to 1 percent slopes, frequently flooded	Dowling	97	Meander scars	Yes	2B3, 3, 4
LE:					
Levees-Borrow pits complex, nearly level to strongly sloping	Borrow pits	40	Flood plains	Yes	2B3, 3
OW:					
Oil-waste land	Oil-waste land	100	Flood plains	Yes	2B3
ShA:					
Sharkey clay, 0 to 1 percent slopes	Sharkey	97	Backswamps	Yes	2B3
SkA:					
Sharkey clay, 0 to 1 percent slopes, occasionally flooded	Sharkey	100	Backswamps	Yes	2B3
SrA:					
Sharkey clay, 0 to 1 percent slopes, frequently flooded	Sharkey	100	Backswamps	Yes	2B3, 4
SsB:					
Sharkey-Dowling clays, 0 to 3 percent slopes	Sharkey	50	Backswamps	Yes	2B3
	Dowling	47	Meander scars	Yes	2B3, 3, 4
StB:					
Sharkey-Tunica-Newellton complex, gently undulating	Sharkey	35	Meander scars	Yes	2B3
SYA:					
Sharkey, Newellton, and Tunica soils, gently undulating, frequently flooded	Sharkey	50	Meander scars	Yes	2B3, 4
	Newellton	27	Natural levees	Yes	4
	Tunica	23	Natural levees	Yes	4
TeB:					
Tensas-Sharkey clays, gently undulating	Sharkey	36	Meander scars	Yes	2B3
TeD:					
Tensas-Sharkey complex, undulating	Sharkey	37	Meander scars	Yes	2B3
TkB:					
Tensas-Sharkey-Dundee complex, gently undulating	Sharkey	32	Meander scars	Yes	2B3

Table 29.--Hydric Soils--Continued

* Explanation of hydric criteria codes:

1. All Histels, except for Folistels, and Histosols, except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   - B. are poorly drained or very poorly drained and have either:
     - 1.) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
     - 2.) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
     - 3.) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Table 30.--Physical Test Data for Selected Soils

[Dashes indicate that analyses were not made]

Soil name and sample number	Horizon	Depth	Particle-size distribution: Sand: Very coarse (2-1 mm)	Sand: Coarse (1-0.5 mm)	Sand: Medium (0.5-0.25 mm)	Sand: Fine (0.25-0.1 mm)	Sand: Very fine (0.1-0.05 mm)	Sand: Total (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<.002 mm)	Water content: 1/3-bar	Water content: 15-bar	Bulk density: 1/3-bar	Bulk density: Oven-dry	COLE
		In	*Pct*	*Pct*	*Pct*	*Pct*	*Pct*	*Pct*	*Pct*	*Pct*	*Pct (wt)*	*Pct (wt)*	*g/cc*	*g/cc*	
Bruin [1]	Ap1	0-6	0.0	0.1	0.4	2.1	36.9	39.5	55.1	5.4	13.3	3.6	1.37	1.39	0.005
S96LA-107-002	Ap2	6-11	0.0	0.2	0.4	2.5	30.5	33.6	59.6	6.8	14.8	4.2	1.58	1.59	0.002
	Bw	11-20	0.0	0.2	0.5	1.9	23.1	25.7	63.5	10.8	20.6	6.5	1.41	1.44	0.007
	C1	20-28	0.0	0.4	0.6	11.3	43.3	55.6	38.5	5.9	16.2	4.2	1.38	1.40	0.005
	C2	28-36	0.0	0.1	0.3	1.3	20.4	22.1	61.5	16.4	17.3	9.1	1.33	1.35	0.005
	C3	36-41	0.0	0.0	0.5	6.2	33.8	40.5	48.2	11.3	13.3	6.8	1.36	1.38	0.005
	Ab	41-51	0.0	0.1	0.1	0.6	10.3	11.1	68.7	20.2	24.8	11.2	1.27	1.35	0.021
	Cb	51-57	0.0	0.2	0.3	1.8	25.5	27.8	54.6	17.6	27.3	9.7	1.26	1.34	0.021
	A'b	57-66	0.0	0.0	0.0	0.2	5.7	5.9	68.0	26.1	32.1	14.6	1.22	1.36	0.037
	C'1	66-71	0.0	0.1	0.2	0.6	12.1	13.0	73.4	13.6	30.9	8.5	1.26	1.34	0.021
	C'2	71-81	0.0	0.0	0.1	0.2	3.9	4.2	74.9	20.9	33.2	11.8	1.24	1.34	0.026
	B'w	81-91	0.0	0.0	0.0	0.3	1.0	1.3	68.6	30.1	34.4	16.0	1.20	1.45	0.065
Commerce [1]	Ap	0-7	0.0	0.0	0.2	1.1	12.3	13.6	68.2	18.2	22.8	9.4	1.59	1.71	0.025
S96LA-107-004	Bw1	7-15	0.0	0.1	0.1	1.1	8.3	9.6	69.6	20.8	22.9	11.0	1.58	1.71	0.027
	Bw2	15-22	0.0	0.0	0	0.3	3.1	3.4	68.8	27.8	30.0	16.0	1.29	1.49	0.049
	Bg1	22-30	0.0	0.1	0.1	0.5	3.9	4.6	67.4	28.0	29.4	15.4	1.30	1.56	0.063
	Bg2	30-43	0.1	0.1	0.3	2.3	21.6	24.4	59.6	16.0	26.4	9.4	1.32	1.45	0.032
	Bg3	43-52	0.6	0.2	0.4	2.0	21.2	24.4	62.7	12.9	26.6	7.8	1.35	1.38	0.007
	Bg4	52-63	0.1	0.1	0.4	0.8	20.8	22.2	64.3	13.5	29.0	7.8	1.35	1.40	0.012
	Bssg1	63-73	0.0	0.0	0.1	0.4	1.1	1.6	56.1	42.3	34.1	21.1	1.24	1.62	0.093
	Bssg2	73-80	0.1	0.1	0.2	0.3	1.0	1.7	49.5	48.8	41.0	23.5	1.17	1.69	0.130
Dundee [1]	Ap1	0-3	0.0	0.1	0.2	2.8	29.0	32.1	53.3	14.6	22.4	8.0	1.38	1.45	0.017
S96LA-107-001	Ap2	3-9	0.1	0.1	0.2	4.1	29.6	34.1	51.6	14.3	21.3	7.3	1.59	1.76	0.034
	Bt1	9-13	0.0	0.0	0.2	5.6	23.3	29.1	47.5	23.4	22.9	11.9	1.60	1.83	0.046
	Bt2	13-23	0.0	0.1	0.2	9.5	27.6	37.4	40.0	22.6	22.8	13.1	1.49	1.62	0.028
	Bt3	23-34	0.0	0.2	0.4	10.1	41.5	52.2	33.8	14.0	17.6	8.1	1.45	1.54	0.020
	Bg1	34-43	0.0	0.1	0.3	22.0	45.3	67.7	25.5	6.8	21.5	5.1	1.40	1.45	0.012
	Bg2	43-48	0.0	0.1	0.5	9.3	37.4	47.3	45.2	7.5	25.6	5.7	1.36	1.42	0.015
	Bg3	48-58	0.0	0.1	0.4	5.9	51.8	58.2	34.6	7.2	23.2	5.3	1.35	1.39	0.010
	Bg4	58-65	0.0	0.0	0.4	8.7	65.2	74.3	21.8	3.9	24.1	4.2	1.35	1.38	0.007
	Bg5	65-73	0.0	0.2	0.5	2.5	46.9	50.1	42.1	7.8	26.8	6.4	1.35	1.38	0.007
	Bg6	73-82	0.0	1.0	2.9	2.0	23.6	29.5	61.3	9.2	15.9	6.8	1.41	1.44	0.007
	C	82-89	0.0	2.1	8.2	40.5	27.6	78.4	13.1	8.5	11.1	4.9	1.31	1.34	0.008

See footnotes at end of table.

Table 30.--Physical Test Data for Selected Soils--Continued

Soil name and sample number	Horizon	Depth	Particle-size distribution: Sand: Very coarse (2-1 mm)	Coarse (1-0.5 mm)	Medium (0.5-0.25 mm)	Fine (0.25-0.1 mm)	Very fine (0.1-0.05 mm)	Total (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<.002 mm)	Water content: 1/3-bar	15-bar	Bulk density: 1/3-bar	Oven-dry	COLE
		In	*Pct*								*Pct (wt)*		*g/cc*	*g/cc*	
Newellton [1]----- S96LA-107-003	Ap	0-7	0.0	0.0	0	0.2	1.2	1.4	37.7	60.9	29.5	24.6	1.43	1.91	0.101
	Bg1	7-12	0.0	0.0	0.1	0.3	0.8	1.2	38.3	60.5	34.5	26.4	1.32	1.82	0.113
	Bg12	12-16	0.0	0.0	0.1	0.2	0.3	0.6	57.5	41.9	35.1	22.6	1.28	1.68	0.095
	2BC	16-26	0.3	0.3	0.5	0.4	0.6	2.1	58.0	39.9	32.0	25.0	1.32	1.58	0.062
	2C1	26-34	0.1	0.1	0.3	2.1	39.6	42.2	45.6	12.2	16.5	6.8	1.33	1.42	0.022
	2C21	34-37	0.0	0.1	0.2	0.9	22.0	23.2	68.7	8.1	15.9	5.7	1.37	1.38	0.002
	2C22	37-50	0.1	0.1	0.3	1.8	38.3	40.6	54.0	5.4	15.7	3.7	1.35	1.37	0.005
	2C23	50-60	0.0	0.3	0.8	41.7	38.8	81.6	14.8	3.6	7.9	3.1	1.35	1.37	0.005
	2C24	60-67	0.1	0.4	0.9	39.7	48.1	89.2	7.0	3.8	7.9	3.4	1.36	1.39	0.007
	2C25	67-80	0.0	0.3	0.9	35.9	51.0	88.1	9.4	2.5	---	3.3	---	---	---
	2C26	80-100	0.0	0.1	1	27.3	59.8	88.2	8.7	3.1	7.4	3.3	1.40	1.41	0.002
Sharkey [2]------- S96LA-107-006	A1	0-6	0.0	0.1	0.2	0.3	1.1	1.7	18.7	79.6	42.3	31.1	1.16	1.85	0.167
	A2	6-13	0.0	0.0	0.0	0.2	1.0	1.2	17.4	81.4	41.7	33.5	1.13	1.78	0.164
	Bss1	13-19	0.0	0.0	0.0	0.4	1.4	1.8	18.1	80.1	45.4	32.9	1.09	1.81	0.184
	Bss2	19-25	0.0	0.0	0.0	0.4	2.1	2.5	18.1	79.4	45.1	32.4	1.12	1.87	0.186
	Bss3	25-33	0.0	0.0	0.0	0.5	2.5	3.0	18.1	78.9	46.3	31.7	1.12	1.85	0.182
	Bss4	33-45	0.0	0.0	0.0	0.4	2.2	2.6	20.3	77.1	47.0	31.8	1.11	1.87	0.190
	Bssy1	45-53	0.0	0.0	0.1	0.6	3.3	4.0	25.7	70.3	46.3	29.6	1.12	1.86	0.184
	Bssy2	53-63	0.1	0.1	0.1	0.8	6.7	7.8	35.3	56.9	34.7	25.1	1.29	1.90	0.138
	Btb1	63-77	0.0	0.1	0.0	1.8	13.7	15.6	41.1	43.3	28.8	21.8	1.45	1.88	0.090
	Btb2	77-86	0.0	0.1	0.2	5.8	28.9	35.0	33.1	31.9	24.9	16.9	1.51	1.78	0.056
Sharkey [3]------- S96LA-107-007	A1	0-6	0.0	0.1	0.1	0.2	0.8	1.2	17.7	81.1	40.7	35.5	1.19	1.83	0.154
	A2	6-12	0.0	0.0	0.1	0.4	1.5	2.0	17.5	80.5	38.5	38.2	1.24	1.84	0.141
	Bss1	12-20	0.0	0.0	0.1	0.4	2.0	2.5	16.2	81.3	37.1	31.3	1.25	1.82	0.133
	Bss2	20-30	0.0	0.0	0.1	0.6	2.5	3.2	18.6	78.2	41.5	30.0	1.17	1.83	0.161
	Bss3	30-37	0.0	0.0	0.1	0.4	2.6	3.1	16.9	80.0	42.3	31.2	1.18	1.87	0.166
	Bss4	37-45	0.0	0.0	0.1	0.5	2.5	3.1	19.3	77.6	39.6	30	1.23	1.87	0.150
	Bssy1	45-57	0.0	0.0	0.1	0.5	2.1	2.7	25.8	71.5	47.6	29.3	1.10	1.82	0.183
	Bssy2	57-65	0.0	0.0	0.1	0.7	4.1	4.9	28.8	66.3	42.7	27.0	1.18	1.87	0.166
	Btb1	65-75	0.0	0.1	0.2	1.4	11.9	13.6	38.6	47.8	28.4	21.7	1.45	1.86	0.087
	Btb2	75-89	0.1	0.1	0.3	8.5	31.9	40.9	30.6	28.5	25.8	14.1	1.51	1.74	0.048

See footnotes at end of table.

Table 30.--Physical Test Data for Selected Soils--Continued

Soil name and sample number	Horizon	Depth	Particle-size distribution: Sand: Very coarse (2-1 mm)	Coarse (1-0.5 mm)	Medium (0.5-0.25 mm)	Fine (0.25-0.1 mm)	Very fine (0.1-0.05 mm)	Total (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<.002 mm)	Water content: 1/3-bar	15-bar	Bulk density: 1/3-bar	Oven-dry	COLE
		In	*Pct*								*Pct (wt)*		*g/cc*	*g/cc*	
Tensas [1]--------	Ap	0-4	0.0	0.0	0.1	1.1	7.2	8.4	32.3	59.3	30.9	22.2	1.37	1.87	0.109
S96LA-107-005	Btg1	4-11	0.0	0.0	0.1	1.0	5.8	6.9	32.9	60.2	33.7	24.2	1.32	1.81	0.111
	Btg2	11-19	0.0	0.0	0.1	0.6	3.4	4.1	43.6	52.3	32.5	22.6	1.29	1.81	0.120
	2Bg	19-30	0.1	0.2	0.2	0.8	9.8	11.1	55.5	33.4	29.1	16.1	1.38	1.71	0.074
	2Bw	30-33	0.0	0.1	0.2	7.1	38.5	45.9	32.6	21.5	20.6	10.9	1.41	1.54	0.030
	2Bg’	33-42	0.1	0.1	0.5	12.9	45.2	58.8	21.0	20.2	17.5	8.3	1.38	1.46	0.019
	2Bw’1	42-56	0.0	0.0	0.4	8.6	45.9	54.9	28.9	16.2	21.7	8.9	1.40	1.47	0.016
	2Bw’2	56-70	0.0	0.0	0.4	2.4	26.7	29.5	51.0	19.5	25.0	10.8	1.35	1.46	0.026
	2Bg’’1	70-76	0.1	0.1	0.2	1.0	12.1	13.5	58.3	28.2	28.8	15.5	1.35	1.52	0.040
	2Bg’’2	76-86	0.0	0.0	0.1	0.9	11.2	12.2	63.8	24.0	28.4	13.3	1.34	1.48	0.034
	2BCg	86-89	0.0	0.0	0.1	0.4	2.1	2.6	57.7	39.7	33.7	28.2	1.34	1.72	0.087

[1] This is the typical pedon for the series in Tensas Parish. For a description of the soil see the section “Detailed Soil Map Units” or “Soil Series and Their Morphology.”

[2] This pedon was sampled as a Sharkey soil but is not representative for the series in Tensas Parish (micro low). Lat. 32 degrees, 7 minutes, 21.00 seconds north and long. 91 degrees, 28 minutes, 15.00 seconds west.

[3] This pedon was sampled as a Sharkey soil but is not representative for the series in Tensas Parish (micro high). Lat. 32 degrees, 7 minutes, 21.00 seconds north and long. 91 degrees, 28 minutes, 15.00 seconds west.

Table 31.--Chemical Test Data for Selected Soils

[Dashes indicate that analyses were not made]

Soil name and sample number	Horizon	Depth	Extractable bases: Ca	Extractable bases: Mg	Extractable bases: K	Extractable bases: Na	Extractable acidity	Cation-exchange capacity (NH_4OAc)	Base saturation (NH_4OAc)	Organic carbon	pH 1:2 $CaCl_2$	pH 1:1 H_20	Extractable aluminum	Extractable nitrogen
		In	*-----Milliequivalents----*				*Ppm*	*Pct*	*Pct*	*Pct*			*Ppm*	*Ppm*
Bruin [1]--------	Ap1	0-6	4.2	1.0	0.5	0.1	2.2	6.2	94	0.31	4.6	5.1	0.1	0.056
S96LA-107-002	Ap2	6-11	5.0	1.2	0.8	0.1	2.3	7.4	96	0.27	4.6	5.3	0.1	0.050
	Bw	11-20	8.4	2.1	0.1	0.2	2.1	11.4	95	0.17	5.4	6.3	---	0.047
	C1	20-28	5.8	1.8	0.3	0.0	1.6	8.0	99	0.11	5.9	6.7	---	0.033
	C2	28-36	11.1	5.1	0.1	0.2	1.5	15.8	104	0.22	6.9	7.4	---	0.055
	C3	36-41	10.7	5.1	0.5	0.2	1.0	12.8	129	0.22	7.4	8.1	---	0.048
	Ab	41-51	14.6	6.2	0.3	0.2	1.0	20.2	105	0.53	7.2	7.7	---	---
	Cb	51-57	11.8	5.6	0.6	0.0	1.1	17.7	102	0.33	7.5	8.0	---	---
	A'b	57-66	18.3	7.5	0.7	0.0	1.3	22.7	117	0.39	7.5	8.0	---	---
	C'1	66-71	13.1	5.8	0.5	0.3	1.1	15.3	129	0.22	7.5	8.0	---	---
	C'2	71-81	---	8.9	0.6	0.2	1.7	19.5	50	0.29	7.5	8.2	---	---
	B'w	81-91	---	26.0	0.3	0.2	2.3	25.8	103	0.37	7.5	8.0	---	---
Commerce [1]-----	Ap	0-7	16.8	4.3	0.4	0.2	1.7	17.2	126	0.95	7.1	7.4	---	0.129
S96LA-107-004	Bw1	7-15	18.1	4.9	0.4	0.0	1.2	19.0	123	0.68	7.4	7.9	---	0.096
	Bw2	15-22	21.7	6.3	0.7	0.0	2.0	24.0	120	0.51	7.5	8.1	---	0.084
	Bg1	22-30	22.5	6.6	0.1	0.3	1.9	24.6	120	0.50	7.5	8.0	---	0.086
	Bg2	30-43	---	6.8	0.1	0.0	0.5	15.7	44	0.26	7.5	8.1	---	0.054
	Bg3	43-52	---	4.4	0.1	0.3	0.7	13.4	36	0.20	7.6	8.4	---	---
	Bg4	52-63	---	5.1	0.1	0.3	0.1	14.0	39	0.24	7.6	8.2	---	---
	Bssg1	63-73	---	11.0	0.7	0.0	3.0	33.1	35	0.48	7.5	7.9	---	---
	Bssg1	73-80	---	11.2	0.8	0.6	1.1	36.7	34	0.49	7.5	7.8	---	---
Dundee [1]-------	Ap1	0-3	4.3	2.2	0.5	0.1	6.5	12.7	56	1.07	4.3	4.7	0.5	0.145
S96LA-107-001	Ap2	3-9	3.9	1.8	0.4	---	5.2	11.1	55	0.35	4.4	5.1	0.5	0.067
	Bt1	9-13	9.8	3.5	0.6	---	5.6	16.4	85	0.31	5.1	5.9	---	0.068
	Bt2	13-23	9.7	3.4	0.6	0.1	6.1	13.5	102	0.21	4.9	5.7	0.4	0.063
	Bt3	23-34	7.7	2.6	0.4	0.4	4.8	12.9	86	0.13	4.7	5.6	0.3	0.049
	Bg1	34-43	5.1	1.4	0.2	---	2.8	8.7	77	0.08	5.0	6.1	0.1	0.041
	Bg2	43-48	3.6	1.8	0.3	0.5	3.4	9.2	67	0.08	5.1	6.4	---	---
	Bg3	48-58	6.1	1.4	---	0.2	2.8	9.4	82	0.06	5.1	6.8	---	---
	Bg4	58-65	5.4	1.1	0.3	0.5	2.1	7.8	94	0.05	5.3	6.7	---	---
	Bg5	65-73	7.6	1.5	0.4	0.6	2.8	11.0	92	0.07	5.4	7.0	---	---
	Bg6	73-82	5.9	1.7	0.4	0.3	3.4	11.8	70	0.07	5.6	7.1	---	---
	C	82-89	6.5	1.6	0.4	0.3	2.1	8.4	105	0.05	5.8	7.0	---	---

See footnotes at end of table.

Table 31.--Chemical Test Data for Selected Soils--Continued

Soil name and sample number	Horizon	Depth	Extractable bases: Ca	Extractable bases: Mg	Extractable bases: K	Extractable bases: Na	Ex-tract-able acid-ity	Cation-exchange capacity (NH$_4$OAc)	Base satura-tion (NH$_4$OAc)	Organic carbon	pH 1:2 CaCl$_2$	pH 1:1 H$_2$0	Ex-tract-able alum-num	Ex-tract-able nitro-gen
		In	*-----Milliequivalents----*				*Ppm*	*Pct*	*Pct*	*Pct*			*Ppm*	*Ppm*
Newellton [1]----	Ap	0-7	25.7	30.3	1.0	0.1	7.2	40.5	141	0.71	6.4	6.7	---	0.124
S96LA-107-003	Bg1	7-12	30.8	32.8	1.3	0.2	5.3	43.0	151	0.49	7.5	8.0	---	0.094
	Bg12	12-16	---	27.5	0.7	0.0	1.6	34.4	82	0.44	7.7	8.1	---	0.080
	2BC	16-26	---	8.1	1.5	0.3		32.0	31	0.29	7.4	8.2	---	0.048
	2C1	26-34	13.9	3.8	0.3	0.1	0.7	13.7	132	0.19	7.6	8.5	---	0.032
	2C21	34-37	---	4.0	0.6	0.1	0.1	11.2	42	0.10	7.7	8.6	---	---
	2C22	37-50	---	3.2	0.4	0.1	0.4	8.0	46	0.16	7.6	8.5	---	---
	2C23	50-60	---	3.3	0.3	0.1	0.9	6.6	56	0.33	7.5	8.4	---	---
	2C24	60-67	---	2.7	0.3	0.0	0.2	7.6	39	0.08	7.6	8.5	---	---
	2C25	67-80	---	2.5	0.0	0.1	0.1	5.4	48	0.12	7.6	8.4	---	---
	2C26	80-100	---	2.2	0.0	0.1		6.2	37	---	---	---		
Sharkey [2]------	A1	0-6	26.1	12.3	1.8	0.7	13.1	51.0	80	1.46	4.9	5.3	0.3	0.225
S96LA-107-006	A2	6-13	26.8	12.6	1.8	0.5	16.4	51.3	81	1.10	4.6	5.3	1.5	0.173
	Bss1	13-19	23.9	13.2	2.0	0.7	15.8	51.8	77	0.82	4.5	5.6	1.8	0.145
	Bss2	19-25	25.5	14.3	1.8	0.5	12.1	51.4	82	0.66	4.7	5.6	0.7	0.119
	Bss3	25-33	26.3	15.7	1.8	1.2	10.6	50.1	90	0.42	5.0	5.8	0.3	0.096
	Bss4	33-45	30.1	16.5	1.8	1.8	7.3	50.7	99	0.31	5.7	6.3	---	0.085
	Bssy1	45-53	29.7	16.0	1.9	1.9	5.2	47.7	104	0.26	6.3	6.2	---	---
	Bssy2	53-63	23.0	12.8	1.4	1.5	4.2	38.7	100	0.23	6.6	7.1	---	---
	Btb1	63-77	18.5	10.3	0.8	0.9	3.0	30.6	100	0.13	6.7	6.9	---	---
	Btb2	77-86	14.4	7.8	1.3	1.0	2.9	24.4	100	0.07	6.8	7.2	---	---
Sharkey [3]------	A1	0-6	30.1	12.7	2.9	0.4	15.8	50.8	91	1.32	4.8	5.8	0.5	0.196
S96LA-107-007	A2	6-12	23.7	12.8	2.1	0.6	17.7	51.6	76	1.00	4.5	5.2	1.1	0.161
	Bss1	12-20	24.2	13.7	1.9	1.1	17.2	52.0	76	0.65	4.3	4.6	0.7	0.127
	Bss2	20-30	24.3	13.2	1.3	1.3	13.3	49.4	79	0.51	4.5	4.6	0.3	0.099
	Bss3	30-37	25.8	14.5	1.3	1.2	13.1	50.8	81	0.41	4.6	5.4	0.1	0.090
	Bss4	37-45	26.4	14.7	0.3	1.4	10.5	49.7	84	0.33	4.9	5.1	0.3	0.085
	Bssy1	45-57	35.5	14.8	1.1	1.4	6.5	48.2	86	0.22	6.1	6.1	---	---
	Bssy2	57-65	29.1	13.7	0.9	1.8	4.6	43.7	110	0.25	6.6	6.5	---	---
	Btb1	65-75	19.4	11.0	0.0	1.0	4.1	33.3	104	0.17	6.8	6.9	---	---
	Btb2	75-89	12.5	7.3	0.0	1.0	2.3	22.2	94	0.08	6.8	7.2	---	---

See footnotes at end of table.

Table 31.--Chemical Test Data for Selected Soils--Continued

Soil name and sample number	Horizon	Depth	Extractable bases: Ca	Extractable bases: Mg	Extractable bases: K	Extractable bases: Na	Ex- tract- able acid- ity	Cation- exchange capacity (NH4OAc)	Base satura- tion (NH4OAc)	Organic carbon	pH 1:2 $CaCl_2$	pH 1:1 H_2O	Ex- tract- able alum- num	Ex- tract- able nitro- gen
		In	*-----Milliequivalents----*				*Ppm*	*Pct*	*Pct*	*Pct*			*Ppm*	*Ppm*
Tensas [1]-------	Ap	0-4	26.2	7.5	1.0	0.2	12.4	37.9	92	1.77	5.3	5.5		0.216
S96LA-107-005	Btg1	4-11	20.8	7.6	1.5	0.6	11.2	37.8	81	0.80	4.7	5.5	0.8	0.135
	Btg2	11-19	18.3	7.7	1.0	0.6	10.5	35.7	77	0.41	4.6	5.3	1.3	0.092
	2Bg	19-30	16.9	5.7	0.8	0.2	6.8	25.3	93	0.26	4.7	5.5	0.6	0.060
	2Bw	30-33	10.2	4.1	1.1	0.2	4.8	18.3	85	0.20	4.8	5.7	0.4	0.062
	2Bg’	33-42	9.2	3.7	0.6	0.6	4.0	16.4	86	0.20	4.8	5.7	0.3	0.051
	2Bw’1	42-56	7.9	3.3	0.6	0.2	3.4	13.7	88	0.15	5.1	6.0	---	---
	2Bw’2	56-70	9.8	4.3	0.0	0.2	3.1	16.9	85	0.15	5.3	6.3	---	---
	2Bg’’1	70-76	13.3	6.2	0.9	0.3	4.0	23.3	89	0.17	5.5	6.1	---	---
	2Bg’’2	76-86	11.1	5.1	1.0	0.3	3.5	20.0	88	0.17	5.5	6.4	---	---
	2BCg	86-89	16.5	8.5	1.2	0.7	4.2	30.5	88	0.22	5.6	6.4	---	---

[1] This is the typical pedon for the series in Tensas Parish. For a description of the soil see the section “Detailed Soil Map Units” or “Soil Series and Their Morphology.”

[2] This pedon was sampled as a Sharkey soil but is not representative for the series in Tensas Parish (micro low). Lat. 32 degrees, 7 minutes, 21.00 seconds north and long. 91 degrees, 28 minutes, 15.00 seconds west.

[3] This pedon was sampled as a Sharkey soil but is not representative for the series in Tensas Parish (micro high). Lat. 32 degrees, 7 minutes, 21.00 seconds north and long. 91 degrees, 28 minutes, 15.00 seconds west.

Table 32.--Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Borrow pits	Thermic Aquents
Bruin	Coarse-silty, mixed, superactive, thermic Oxyaquic Eutrudepts
Bruno	Sandy, mixed, thermic Typic Udifluvents
Commerce	Fine-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts
Crevasse	Mixed, thermic Typic Udipsamments
Dowling	Very-fine, smectitic, nonacid, thermic Vertic Endoaquepts
Dundee	Fine-silty, mixed, active, thermic Typic Endoaqualfs
Goldman	Coarse-silty, mixed, active, thermic Aquic Hapludalfs
Levees	Thermic Arents
Newellton	Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Fluvaquentic Epiaquepts
Oil-waste land	Very-fine, smectitic, thermic Typic Epiaquerts
Sharkey	Very-fine, smectitic, thermic Chromic Epiaquerts
Tensas	Fine, smectitic, thermic Chromic Vertic Epiaqualfs
Tunica	Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Vertic Epiaquepts

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