

Chapter 4

Lists

List of Preparers

The following is a list of contributors to the Iyouktug Timber Sales Final Environmental Impact Statement (FEIS).

Interdisciplinary Team (IDT) – Current Members

Hans von Rekowski, Team Leader, Forester

Education: B.S., Forestry

Experience: 36 years Forest Service

Kent Barkhau, Silviculturist and Ecologist

Education: B.S., Forestry

Certified Silviculturist, Region 10

Experience: 28 years Forest Service

Marty Becker, Hydrologist

Education: B.S., Watershed Management

Experience: 11 years Forest Service

2 years additional professional experience

Sarah Brandy, Fisheries Biological Technician

Education: M.S., Master Environmental Science

B.S., Environmental Science

Experience: 4 years Forest Service

Chris Budke, Forestry Technician

Education: A.S., Forestry

Experience: 21 years Forest Service

2 years additional professional experience

Jacque Foss, Soil Scientist

Education: B.S., General Engineering and Soil Science

Experience: 5 years Forest Service

4 Lists

Barth Hamberg, Landscape Architect

Education: MLA, Master Landscape Architecture
B.S., Agricultural Economics
Experience: 24 years Forest Service

Brian Heinrichsen, Transportation Planner

Education: Forestry (4 years)
Experience: 36 years Forest Service

Patrick Heuer, Forester/Silviculturist

Education: B.S., Forest Management
Silviculture Certification US Forest Service
Experience: 19 years Forest Service

Rich Jennings, District Ranger/Reviewer

Education: B.S., Forest Management
Experience: 31 years Forest Service

Brad Kriekhaus, Botanist

Education: B.A., Psychology
Botany (3 years)
Experience: 19 years Forest Service

Virginia Lutz, Computer Specialist

Education: B.A., Biology
Experience: 19 years Forest Service:

Mary Beth Nelson, Recreation Planner

Education: B.S., Recreation Area Management
Experience: 25 years Forest Service:

Michelle Putz, Writer/Editor

Education: B.S., Biology
Experience: 17 years Forest Service

Janine (JT) Stangl, Wildlife Biologist

Education: M.S., Biology
B.S., Wildlife and Fisheries Management
Experience: 20 years Forest Service

Former IDT Members and Other Contributors

Forest Service employees and others contributed to the completion of this document through their assistance in support functions and as former IDT members.

Su Alexander, Regional Economist
James Baichtal, Geologist

Robin Beebee, Hydrologist
 Dennis Chester, Wildlife Biologist
 Geno Cisneros, Recreation Forestry Technician (Lands, Special Uses)
 Joseph E. Costa, Planning Engineer
 Jeremy Karchut, Archaeologist
 Rodd Kubitzka, Transportation Planner
 Jan Lerum, Information and Planning Group Leader
 Mark McCallum, Archaeologist
 Jack Oien, Planning Engineer
 Charles Parsley, Fisheries Biologist
 Trista Patterson, Research Economist
 Morgan Sandall, Engineer
 Cynthia Sever, Timber Planning Program anager
 Mike Shaffer, Civil Engineering Technician

List of FEIS Recipients

The following agencies, organizations, and individuals were provided with a copy of the Iyouktug Timber Sales Final Environmental Impact Statement.

Agencies

Alaska Department of Environmental Conservation
 Alaska Department of Fish and Game, Sitka Office, Habitat Division
 Alaska Department of Fish and Game, Juneau Office, Wildlife Conservation
 Alaska Department of Natural Resources
 Alaska Department of Natural Resources, Div. of Coastal & Ocean Management (formerly OPMP)
 Alaska Department of Natural Resources, Office of Habitat Management and Planning
 Alaska Department of Transportation
 (Alaska) State Historic Preservation Officer
 U.S. Environmental Protection Agency, Region 10
 National Marine Fisheries Service (NOAA)
 U.S. Army Corps of Engineers
 U.S. Department of the Interior, Office of Environmental Policy & Compliance
 U.S. Fish and Wildlife Service
 USDA Forest Service, Supervisor's Offices, Ketchikan, Petersburg, and Sitka
 USDA Forest Service, Regional Office, Juneau
 USDA Forest Service, Tongass National Forest, Admiralty National Monument
 USDA Forest Service, Tongass National Forest, Craig Ranger District
 USDA Forest Service, Tongass National Forest, Hoonah Ranger District
 USDA Forest Service, Tongass National Forest, Juneau Ranger District
 USDA Forest Service, Tongass National Forest, Ketchikan – Misty Fiords Ranger District
 USDA Forest Service, Tongass National Forest, Petersburg Ranger District
 USDA Forest Service, Tongass National Forest, Sitka Ranger District

4 Lists

USDA Forest Service, Tongass National Forest, Thorne Bay Ranger District
USDA Forest Service, Tongass National Forest, Wrangell District
USDA Forest Service, Tongass National Forest, Yakutat Ranger District

Tribes and Tribal Corporations

Angoon Community Association
Central Council Tlingit & Haida Indian Tribes of Alaska
Hoonah Indian Association
T&H Central Council
Huna Totem Corp.
Kootznoowoo, Inc.
Sealaska Corporation

Libraries

Alaska State Library
Angoon Public Library
Craig Public Library
Douglas Public Library
Elfin Cove Public Library
Haines Public Library
Hollis Public Library
Hoonah Public Library
Hyder Public Library
Juneau Public Library
Kake Community Library
Kasaan Community Library
Ketchikan Public Library
Kettleson Memorial Library
Mendenhall Valley Public Library
Pelican Public Library
Petersburg Public Library
Skagway Public Library
Stratton Library
Tenakee Springs Public Library
Thorne Bay Community Library
Wrangell Public Library
University of Minnesota, Forestry Library
USDA Forest Service, National Agricultural Library

Organizations and Businesses

Brown Bear Lodge
Cascadia Wildlands Project
Forget-Me-Not Outfitters
Greenpeace
Icy Strait Environmental Services, Gregory Streveler and Judy Brakel
Juneau Group of the Sierra Club
Sitka Conservation Society
Southeast Alaska Conservation Council
TECKK Outfitters
Tongass Conservation Society
Trout Unlimited

Public Officials and Offices

Mayor-City of Angoon
Mayor-City of Hoonah
Mayor-City of Pelican
Mayor-City of Tenakee Springs
United States Representative, Don Young
United States Senator, Frank Murkowski
United States Senator, Ted Stevens

Individuals

Paul Barnes
Bob Christensen
Wanda Culp
Ernestine Hanlon
Floyd Jim
Steve Lewis
James Makcovjak
Barbara Sachau
Allen Smith

List of FEIS Notifications

The following agencies, businesses, and organizations were sent a letter summarizing the EIS and notifying them of the website location of the Iyoutug Timber Sales Final Environmental Impact Statement.

Advisory Council on Historic Preservation
Federal Aviation Administration

4 Lists

Federal Highway Administration
U.S. Army Engineer, Pacific Ocean Division
U.S. Coast Guard
U.S. Department of Energy
USDA APHIS PPD/EAD
USDA Natural Resources Conservation Service, National Environmental Coordinator
Alaska Forest Association
Barney Johnson
Center for Biological Diversity, Tucson
D & L Woodworks
Icy Straits Lumber & Milling, Inc
Little Wood Products
Patrick Wickens
The Wilderness Society, AK Chapter
Woodbury Enterprises

Glossary

Access

The opportunity to approach, enter, and make use of public lands.

Access Management

Acquiring rights and developing and maintaining facilities needed by people to get to and move through public lands (physical attributes).

Alaska National Interest Lands Conservation Act (ANILCA)

Passed by Congress in 1980, this legislation designated 14 National Forest Wilderness areas in Southeast Alaska. The Alaska National Interest Lands Conservation Act of December 2, 1980, Public Law 96-487, 96th Congress, 94 Stat. 2371-2551, Section 810 requires evaluations of subsistence impacts before changing the use of these lands.

Alaska Native Claims Settlement Act (ANCSA)

Public Law 92-203, 92nd Congress, 85 Stat. 2371-2551. Approved December 18, 1971, Alaska Native Claims Settlement Act (ANCSA) provides for the settlement of certain land claims of Alaska Natives and for other purposes.

Alluvial Fan

A cone-shaped deposit of organic and mineral material made by a stream where it runs out onto a level plain or meets a slower stream.

Alternative

One of several plans or projects proposed for decision making.

Anadromous Fish

Anadromous fish (such as salmon, steelhead, and sea-run cutthroat trout) spend part of their lives in freshwater and part of their lives in saltwater.

Annualized Job

An annualized job is a full-time job lasting one year, or its equivalent. Annualized jobs are based on sawlog volume, no matter how long the project, and include direct employment jobs.

Aquatic Habitat Management Unit (AHMU)

A mapping unit that displays an identified value for aquatic resources. It is a mechanism for carrying out aquatic resource management policy. See also Stream Classes.

Area of Potential Effects

For this project, it is defined per the National Historic Preservation Act (1966) as the location(s) where ground disturbance may occur, including the total number of cutting units and proposed new road construction listed in the proposed action and all alternatives. The Area of Potential Effects also includes surrounding areas where indirect effects may alter the character or use of sites eligible to the National Register of Historic Places.

Background

The distant part of a landscape. The seen or viewed area located from 3 or 5 miles to infinity from the viewer. (See "Foreground" and "Middleground".)

4 Lists

Basal Area

Total cross-sectional area of a tree or stand of trees. This is measured in diameter at breast height (DBH) and can be expressed in either square feet per acre or square meters per hectare.

Beach Fringe

The area inland from saltwater shorelines, which is typically forested.

Best Management Practice (BMP)

Practices used for the protection of water quality. BMPs are designed to prevent or reduce the amount of pollution from nonpoint sources or other adverse water quality impacts while meeting other goals and objectives. BMPs are standards to be achieved, not detailed or site-specific prescriptions or solutions. BMPs as defined in the USDA Forest Service Soil & Water Conservation Handbook are mandated for use in Region 10 under the Tongass Timber Reform Act.

Biogeographic Province

Twenty-one ecological subdivisions of Southeast Alaska that are identified by generally distinct ecological, physiographic, and biogeographic features. Plant and animal species composition, climate, and geology within each province are generally more similar within than among adjacent provinces. Historical events (such as glaciers and uplifting) are important to the nature of the province and to the barriers that distinguish each province.

Biological Diversity (Biodiversity)

The variety of life in all its forms and at all levels. This includes the various kinds and combinations of: genes; species of plants, animals, and microorganisms; populations; communities; and ecosystems. It also includes the physical and ecological processes that allow all levels to interact and survive. The most familiar level of biological diversity is the species level, which is the number and abundance of plants, animals, and microorganisms.

Blowdown

See Windthrow.

Board Foot (BF)

A unit of wood 12" x 12" x 1". One acre of commercial timber in Southeast Alaska on the average yields 28,000-34,000 board feet per acre (ranging from 8,000-90,000 board feet per acre). One million board feet (MMBF) would be the volume of wood covering 1 acre 2 feet thick. One million board feet yields approximately enough timber to build 120 houses or 75,555 pounds of dissolving pulp.

Buffer

An area around a resource where timber harvest is restricted or prohibited. For example, the Tongass Timber Reform Act (TTRA) requires that timber harvest be prohibited in an area no less than 100 feet on each side of all Class I streams and Class II streams which flow directly into Class I streams. This 100-foot area is known as a "stream buffer".

Capability

An evaluation of a resource's inherent potential for use.

Clearcut

Harvesting method in which all trees are cleared in one cut. It prepares the area for a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as a separate age class in planning.

Coarse Canopy Old-growth Forest

Old-growth forest that has lower crown density (number of trees) and non-uniform crown sizes and heights, including large crowns and many canopy gaps. Coarse canopies are usually found on aspects where the forest is protected from winds that result in catastrophic blowdown events.

Code of Federal Regulations (CFR)

A codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

Connectivity

A measure of the extent that forest areas between or outside reserves provide habitat for breeding, feeding, dispersal, and movement.

Corridor

Connective links of certain types of vegetation between patches of suitable habitat which are necessary for certain species to facilitate movement of individuals between patches of suitable habitat. Also refers to transportation, utility rights-of-way, or yarding.

Cover

Refers to trees, shrubs, or other landscape features that allow an animal to partly or fully conceal itself.

Cruise

Refers to the general activity of determining timber volumes and quality as opposed to a specific method.

Cubic Foot (CF)

Equivalent to a cube of wood with 1-foot sides. The cubic foot volume is a measure of the total sound wood in a tree and is a more accurate depiction of wood volume than the board foot measure. This is usually referred to in CCF (hundred cubic feet).

Cultural Resources

The fragile and nonrenewable remains of human activity that are found in historic districts, sites, and buildings, and artifacts, and that are important in past and present human events.

Culturally Modified Tree

A tree that has been altered by human use as part of their traditional use of the forest, usually for the exploitation of bark and wood products.

Cumulative Effects

The impacts on the environment resulting from additional incremental impacts of past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over time.

4 Lists

Decommission

For NFS roads, decommissioning removes the road from the long-term forest road transportation system. Otherwise, the act of decommissioning is the same for all roads. Action on the ground for decommissioning ranges from blocking the entrance and removing drainage structures to obliterating the road, returning the natural contours, and replanting vegetation. The end result is the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1). See also Road Decommissioning.

Deer Winter Range

Locations, usually at lower elevations, that provide food and shelter for Sitka black-tail deer under moderately severe to severe winter conditions, usually smaller and better defined than summer ranges.

Degradation

The general lowering of the surface of the land by erosive processes, especially by the removal of material through erosion and transportation by flowing water.

Detrimental Soil Disturbance

Areas where soil has been altered to the point where soil productivity has been reduced.

Developed Recreation

Recreation that requires facilities that, in turn, result in concentrated use of an area. Facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, and buildings.

Diameter Breast Height (DBH)

The diameter of a tree measured 4 feet 6 inches from the ground.

Direct Employment

The jobs that are immediately associated with the timber sale, including, for example, logging, sawmills, and pulp mills.

Direct Income

Direct income is calculated from total payments an individual receives from his or her employment in a particular job category, over a defined time period.

Diversity

The distribution and abundance of different plant and animal communities and species within the area controlled by the 1997 Forest Plan.

Draft Environmental Impact Statement (Draft EIS)

A statement of environmental effects for a major Federal action which is released to the public and other agencies for comment and review prior to a final management decision. Required by Section 102 of the National Environmental Policy Act (NEPA).

Eagle Nest Tree Buffer Zone

A 330-foot radius around eagle nest trees established in an agreement between the U.S. Fish and Wildlife Service and the Forest Service.

Ecological Subsections

Eighty-five terrestrial ecosystems mapped and described for Southeast Alaska and adjoining areas of Canada in Nowacki et al. 2001. These mid-size (10-1,000 mi²) terrestrial ecosystems

embody similar ecological characteristics (e.g. landforms, streams, vegetation, soils, and wetlands) and provide a practical basis for ecosystem management, planning, and research.

Ecosystem

A community of organisms and its physical setting. An ecosystem, whether a fallen log or an entire watershed, includes resident organisms, non-living components such as soil nutrients, inputs such as rainfall, and outputs such as organisms that disperse to other ecosystems.

Effects

Effects, impacts, and consequences as used in this environmental impact statement are synonymous. Effects may be ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historical, cultural, economic, or social, and may be direct, indirect, or cumulative.

Direct Effects: Results of an action occurring when and where the action takes place.

Indirect Effects: Results of an action occurring at a location other than where the action takes place and/or later in time, but in the reasonably foreseeable future.

Cumulative Effects: See Cumulative Effects (above).

Endangered Species

Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as Endangered in accordance with the 1973 Endangered Species Act. See also Threatened Species, Sensitive Species.

Endemic

Restricted to a particular locality. For example, a particular species or subspecies may occur on only one or a very few islands.

Epikarst

The upper surface of karst, consisting of a network of intersecting fissures and cavities that collect and transport surface water and nutrients underground.

Erosion

The wearing away of the land surface by running water, wind, ice, gravity, or other geological activities.

Estimated Mill Capacity

An estimate of the processing capability of the mill based on the amount of net sawlog volume that could be utilized by the mill, as currently configured, during a standard 250-day year, two shifts per day, annual operating schedule, not limited by the availability of employment, raw materials or market.

Estuary

For the purpose of this EIS process, estuary refers to the relatively flat, intertidal, and upland areas generally found at the heads of bays and mouths of streams. They are predominately mud and grass flats and are unforested except for scattered spruce or cottonwood.

4 Lists

Even-aged Management

The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of that age of the stand at harvest rotation age. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands.

Executive Order

An order or regulation issued by the President or some administrative authority under his or her direction.

Existing Visual Condition

A measurement of the visual quality and the visual effects associated with current management activities. EVC is a corporate GIS layer based on actual observation and reflects the amount of deviation from the natural landscape on a scale of 1-6, as follows:

Type 1: Natural: Areas in which only ecological change has taken place except for trails needed for access. Comparable VQO for Type 1 is Preservation.

Type 2: Natural Appearing: Areas in which changes in the landscape are not noticed by the average person unless pointed out. Comparable VQO for Type 2 is Retention.

Type 3: Slightly Altered: Areas in which changes in the landscape are noticed by the average forest visitor, but the natural appearance of the landscape still remains dominant. Comparable VQO for Type 3 is Partial Retention.

Type 4: Moderately Altered: Areas in which changes in the landscape are easily noticed by the average forest visitor and may attract some attention. The changes appear to be disturbances but resemble natural patterns. Comparable VQO for Type 4 is Modification.

Type 5: Heavily Altered: Areas in which change in the landscape are easily noticed by the average forest visitor and may attract some attention. They appear to be major disturbances. Comparable VQO for Type 5 is Maximum Modification.

Type 6: Drastically Altered: Areas in which changes in the landscape are in glaring contrast to the natural appearance. Almost all forest visitors would be displeased with the effect. They appear to be drastic disturbances. Comparable VQO for Type 6 is Unacceptable Modification.

Floodplain

That portion of a river valley, adjacent to the river channel, which is covered with water when the river overflows its banks at flood stages.

Foreground

The stand of trees immediately adjacent to a scenic area, recreation facility, or forest highway; area located less than 1/4 mile from the viewer. See also Background and Middleground.

Forest and Rangeland Renewable Resources Planning Act of 1976 (RPA)

Amended in 1976 by the National Forest Management Act. See RPA Assessment and Program.

Forest or Forested Land

Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use.

Forested Wetland

A wetland whose vegetation is characterized by an overstory of trees that are 20 feet or taller.

Forest Plan

The Tongass Land and Resource Management Plan, as revised, signed in 1997. This is the 10-year land allocation plan for the Tongass National Forest that directs and coordinates planning, the daily uses, and the activities carried out within the Forest.

Forest Transportation Atlas

A display of the system of roads, trails, and airfields of an administrative unit.

Forest Transportation Facility

A forest road or trail or an airfield that is displayed in a forest transportation atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system.

Forest Transportation System

The system of National Forest System roads, National Forest System trails, and airfields on National Forest System lands.

Fragmentation

An element of biological diversity that describes the natural condition of habitats in terms of the size of discrete habitat blocks or patches, their distribution, the extent to which they are interconnected, and the effects of management on these natural conditions. Also the process of reducing the size and connectivity of stands within a Forest.

Geographic Information System (GIS)

An information processing technology to input, store, manipulate, analyze, and display spatial and attribute data to support the decision-making process. It is a system of computer maps with corresponding site-specific information that can be electronically combined to provide reports and maps.

Geomorphology

The study of the forms of the land surface and the processes producing them. Also the study of the underlying rocks or parent materials and the landforms present which were formed in geological time.

Guideline

A preferred or advisable course of action or level of attainment designed to promote achievement of goals and objectives.

Habitat

The sum total of environmental conditions of a specific place occupied by an organism, population, or community of plants and animals.

4 Lists

Habitat Capability

The number of healthy animals that a habitat can sustain. Used in wildlife models to calculate rough population estimates for management indicator species.

Habitat Suitability Index (HSI)

This is a value assigned to a unit of land using a computerized model that related vegetative and geographic characteristic (e.g. stand volume, proximity to a stream or cliff, slope, aspect, etc.) to the land unit's value for a particular wildlife species. Values generally range from 0 to 1, with 1 being the best. The Habitat Capability Models used to generate HSIs were developed by interagency teams of biologists using the best available information including research results and best professional judgment.

Heritage Resources

See Cultural Resources.

Historic Property

Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion on the National Register, including artifacts, records, and material remains related to such a property or resource.

Hydric Soils

Soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Indirect Employment

The jobs in service industries that are associated with the timber sale including, for example, suppliers of logging and milling equipment.

Invasive Species

A species that is non-native (or alien) to the habitat under consideration, and whose purposeful or accidental introduction causes, or is likely to cause, economic or environmental harm or harm to human health.

Inventoried Roadless Area (IRA)

See Roadless Area.

Interdisciplinary Team (IDT)

A group of people with different backgrounds assembled to research, analyze, and write a project Environmental Impact Statement. The team is assembled out of recognition that no one scientific discipline is sufficiently broad enough to adequately analyze a proposed action and its alternatives.

Issue

A point, matter, or section of public discussion or interest to be addressed or decided.

Karst

Karst is a comprehensive term that applies to the unique topography, surface and subsurface drainage systems, and landforms that develop by the action of water on soluble rock; in the case of Southeast Alaska, limestone and marble. The dissolution of the rock results in the development of internal drainage, producing sinking streams, closed depressions, and other landforms such as sinkholes, collapse channels and caves.

Knudson-Vandenberg Fund (KV)

The portion of timber sale receipts collected and used for reforestation and other renewable resource projects on the sale area.

Land Allocation

The decision to use land for various resource management objectives to best satisfy the issues, concerns and opportunities and meet assigned Forest output targets.

Land Use Designation

A defined area of land to which specific management direction is applied, as specified in the 1997 Forest Plan.

Landslides

The moderately rapid to rapid downslope movement of soil and rock materials that may or may not be water-saturated.

Large Woody Debris (LWD)

A term used to describe logs, tree boles, rootwads, and limbs that are in or near the stream channel. Current usage of the term defines LWD as wood material equal to or greater than 0.1 meter in diameter and equal to or greater than 1 meter in length.

Logging Systems

Long-span cable: Single-span cable yarding system with a long corner exceeding 1,300 feet, horizontal distance. Typically, this includes a variety of live skyline systems, including standing skylines and running skylines where reach is long.

Short-span cable: All cable systems with a longer corner usually of not more than 1,300 feet, horizontal distance. Typically, this includes running skyline with a carriage and chokers, running skyline with grapple, live skyline with gravity return, and highlead.

Running skyline: A yarding system with three suspended moving lines, generally referred to as the main, haulback, and slack-pulling, that when properly tensioned will provide lift, travel, and control to the carriage; normally indicates a gantry type tower and a three-drum yarder.

Shovel: The process of forwarding logs from stump to landing by repeated swinging of logs by a hydraulic excavator-based log loader.

Helicopter: Flight path cannot exceed 40 percent downhill or 30 percent uphill; landings must be selected so there is adequate room for the operation and so that the helicopter can make an upwind approach to the drop zone.

MBF

A thousand board feet net sawlog and utility volume.

MMBF

A million board feet net sawlog and utility volume.

4 Lists

Management Indicator Species (MIS)

Species selected in a planning process that are used to monitor the effects of planned management activities on viable populations of wildlife and fish, including those that are socially or economically important.

Management Prescriptions

Management practices and intensity selected and scheduled for application on a specific area (e.g., a land use designation) to attain multiple use and other goals and objectives.

Management Requirement

Standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, and soil and water and diversity, to be met in accomplishing National Forest System goals and objectives (36 CFR 219.17).

Marine Access Facility (MAF)

A facility that is used for transferring commercially harvested logs to and from a vessel or log raft, or the formation of a log raft. It is wholly or partially constructed in waters of the United States and location and construction are regulated by the 1987 Amendments to the Clean Water Act. Formerly termed "log transfer facility (LTF)", "terminal transfer facility" or "log dump".

Maritime Climate

Weather conditions controlled by an oceanic environment characterized by small annual temperature ranges and high precipitation.

Middleground

The visible terrain beyond the foreground where individual trees are still visible but do not stand out distinctly from the landscape; area located 1/4 to 5 miles from the viewer. See also "Foreground" and "Background".

Mineral Soils

Soils consisting predominately of, and having its properties determined by, mineral material.

Minimum Viable Population

A population with the estimated numbers and distribution of reproductive individuals to maintain the population over time.

Mitigation

Measures designed to counteract environmental impacts or to make impacts less severe. These may include: avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments.

Mixed Conifer

In Southeast Alaska, mixed conifer stands usually consist of western hemlock, mountain hemlock, Alaska yellow-cedar, Western redcedar, and Sitka spruce species. Shore pine may occasionally be present depending on individual sites.

Model

A representation of reality used to describe, analyze, or understand a particular concept. A model may be a relatively simple qualitative description of a system or organization, or a highly abstract set of mathematical equations. A model has limits to its effectiveness, and is used as one of several tools to analyze a problem.

Monitoring

A process of collecting information to evaluate whether or not objectives of a project and its mitigation plan are being realized. Monitoring can occur at different levels: to confirm whether mitigation measures were carried out in the manner called for, to determine whether the mitigation measures were effective, or to validate whether overall goals and objectives were appropriate. Different levels call for different methods of monitoring.

Motor Vehicle

Any vehicle which is self-propelled, other than:

- (1) A vehicle operated on rails; and
- (2) Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area.

Multiple-aged Stands

An intermediate form of stand structure between even and uneven-aged stands. These stands generally have two or three distinct tree canopy levels occurring within a single stand.

Multiple Use

The management of all the various renewable resources of the National Forest System to be used in the combination that will best meet the needs of the American people.

Muskeg

In Southeast Alaska, a type of bog that has developed over thousands of years in depressions or flat areas on gentle to steep slopes. Also called peatlands.

National Environmental Policy Act (NEPA) of 1969

An Act to declare a national policy which will encourage productive and enjoyable harmony between humankind and the environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, to enrich the understanding of the ecological systems and natural resources important to the Nation, and to establish a Council on Environmental Quality (The Principal Laws Relating to Forest Service Activities, Agricultural Handbook 453. USDA Forest Service, 359 pp.).

National Forest Management Act (NFMA)

A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development.

National Forest System Trail

A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

4 Lists

Native Selection

Application by Alaska Native corporations and individuals to a portion of the USDI Bureau of Land Management for conveyance of lands withdrawn in fulfillment of Native entitlements established under Alaska Native Claims Settlement Act (ANCSA).

Net Sawlog Volume

Tree or log volume suitable in size and quality to be processed into lumber. In Southeast Alaska, depending on the market, the volume may be processed as pulp or lumber.

No-action Alternative

The most likely condition expected to exist in the future if current management direction were to continue unchanged.

Non-forest Land

See Timber Classification

Notice of Intent (NOI)

A notice printed in the Federal Register announcing that an environmental impact statement will be prepared. The NOI must describe the proposed action and possible alternatives, describe the agency's proposed scoping process, and provide a contact person for further information.

Off-highway Vehicle

Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain.

Old Growth Forest

Ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of forest stand development that typically differ from earlier stages in a variety of characteristics which may include larger tree size, higher composition, and different ecosystem function. The structure and function of an old-growth ecosystem will be influenced by its stand size and landscape position and context.

Organic Soils

Soils that contain a high percentage (generally greater than 20 to 30 percent) of organic matter throughout the soil depth.

Parent Material

The unconsolidated and partially weathered material from which upper layers of soil developed.

Partial Cut

Any cutting in which only part of the stand is harvested. This may include thinning, selection, shelterwood, or an overstory removal. In the Iyoutug project, partial cut would occur through single tree selection harvesting of up to 25%, 40%, or 50% of the basal area in the stand: ST25, ST40, and ST50, respectively.

Patch

A non-linear surface area differing in appearance from its surroundings.

Peak Flow

The highest discharge of water recorded over a specified period of time at a given stream location. Often thought of in terms of spring snowmelt, summer, fall, or winter rainy season flows. Also called maximum flow.

Plant Association

A type of vegetation classification system based upon the climax plant community representing the endpoint of succession. A distinctive community of plants that have ecologically similar requirements.

Plant Communities

Aggregations of living plants having mutual relationships among themselves and to their environment. More than one individual plant community.

Population Viability

Ability of a population to sustain itself.

Precommercial Thinning

The practice of removing some of the trees of less than marketable size from a stand in order to achieve various management objectives. See also Thinning.

Process Group

A combination of similar stream channel types based on major differences in landform, gradient, and channel shapes.

Productive Old Growth (POG)

Old-growth forest capable of producing at least 20 cubic feet of wood fiber per acre per year, or having greater than 8,000 board feet per acre.

Project Record

A system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment

Public Participation

Meetings, conferences, seminars, workshops, tours, written comments, responses to survey questionnaires, and similar activities designed and held to obtain comments from the public about Forest Service activities.

Rare Plants

Rare plants are defined as those plants included on the Alaska Natural Heritage Program (ANHP) Vascular Plant Tracking List (ANHP, 2006) with a ranking of S1 or S2.

Reasonable Assurance of Windfirmness (RAW)

A managed area designed to contain windthrow within the area where timber harvest is allowed. It is used to protect Riparian Management Areas (RMAs) and adjacent stands.

Record of Decision

A document separate from but associated with an environmental impact statement which states the decision, identifies all alternatives, specifying which were environmentally preferable, and states whether all practicable means to avoid environmental harm from the alternative have been adopted, and if not, why not.

4 Lists

Recreation Opportunity Spectrum (ROS)

A land classification system with seven categories to designate land by its setting and the probable recreation experiences and activities it affords. Each class is defined in terms of the degree to which it satisfies certain recreation experience needs based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area and the relative density of recreation use. Three of the seven categories are represented in Iyouktug:

Semi-primitive Non-motorized – Natural or natural-appearing environment generally greater than 2,500 acres and between ½ mile and three miles from motorized travel routes.

Semi-primitive Motorized - Natural or natural-appearing environment generally greater than 2,500 acres within ½ mile of motorized travel routes.

Roaded Modified – Vegetative and landform alterations typically dominate the landscape. There is moderate evidence of other users on roads and little interaction with other users.

Reforestation

The natural or artificial restocking of an area with trees.

Regeneration

The process of establishing a new crop of trees on previously harvested land.

Reserve Trees

Merchantable or submerchantable trees and snags that are left within the harvest unit to provide biological habitat components over the rotation.

Resident Fish

Fish that are not anadromous and that reside in freshwater on a permanent basis. Resident fish include non-anadromous Dolly Varden char and cutthroat trout.

Responsible Official

The Forest Service employee who has the delegated authority to make a specific decision.

Restoration

The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. The concept of ecological restoration is forward-looking. Restoration focuses on reestablishing composition, structure and ecological processes to maintain or increase resilience of terrestrial and aquatic ecosystems in a dynamic, continually evolving world (ecology definition).

Revegetation

The re-establishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of reforestation or reseeding.

Riparian Area

Area with distinctive resource values and characteristics that contain elements of aquatic and riparian ecosystems, which can be geographically delineated.

Riparian Management Area (RMA)

The area including water, land and plants adjacent to perennial streams, lakes, and other bodies of water that is managed for the inherent qualities of the riparian ecosystem.

Riparian Ecosystem

Land next to water where plants that are dependent on a perpetual source of water occur.

Road

A motor vehicle route over 50 inches wide, unless identified and managed as a trail.

Designated Road, Trail, or Area: A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to Sec. 212.51 on a motor vehicle use map.

National Forest System Road: A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

Temporary Road: A road necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road that is not included in a forest transportation atlas. For National Forest System timber sales, temporary roads are constructed to harvest timber on a one-time basis, and are decommissioned after harvest operations are complete.

Unauthorized Road or Trail: A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. In the Iyouktug project roads are labeled as system or non-system in the current GIS layer. Non-system roads include roads that have been decommissioned as well as roads now called unauthorized roads. Thus, unauthorized roads in this EIS include some decommissioned roads.

Road Closure

See Road Storage.

Road Construction

Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction of a road.

Road Decommissioning

Activities that result in the stabilization and restoration of unneeded roads to a more natural state. The term generally refers to temporary roads constructed for timber harvests that have had stream courses restored, culverts removed, waterbars added where needed, and cut and fill slopes revegetated.

Road Maintenance

Periodic repairs to an existing road surface, brushing, and cleaning and repairing drainage features. These tasks are performed to keep the roads in the safe and useful condition for which they were designed. Repairs may be done as annual maintenance.

Road Maintenance Levels

Maintenance Level numbers 1 through 5 indicate the level of service and required maintenance for specific NFS roads, consistent with road management objectives and maintenance criteria, as

4 Lists

shown in FSH 7709.58, Section 12.3 – Transportation System Maintenance Handbook. For instance, Maintenance Level 1 is assigned to intermittent service roads and indicates basic custodial maintenance while the roads are closed to vehicular traffic. Maintenance Level 2 is assigned to roads for use by high-clearance vehicles such as log haul trucks and or administrative use, but not appropriate for passenger car traffic. These maintenance levels apply to the Iyouktug Timber Sale. Maintenance Levels 3, 4, and 5 indicate higher service level roads, surfaced or paved to accommodate passenger cars.

Road Storage

Storage is a term used only for NFS roads. The physical on-the-ground changes are similar to a decommissioned road; however, roads in storage are considered part of the long-term forest road transportation system and may be opened to vehicular traffic in the future. The process/action of storage involves closing a road to vehicle traffic and placing it in a condition that requires minimum maintenance to protect the environment and preserve the facility for future use. Drainage structures in live drains are completely removed to restore natural drainage patterns. Ditch relief culverts may be left in place and supplemented with deep water bars in order to minimize the cost of reusing the roads in the future.

Roadless Area

An area of undeveloped public land within which there are no improved roads maintained for travel by means of motorized vehicles intended for highway use. Inventoried roadless areas (IRAs) are undeveloped areas typically exceeding 5,000 acres that meet the minimum criteria for wilderness consideration under the Wilderness Act.

Rotation

The planned number of years (100-200 years in Alaska) between the time that a forest stand is regenerated and its next cutting at a specified stage of maturity.

Sacred Site

Any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

Sawlog

That portion of a tree that is suitable in size and quality for the production of dimension lumber collectively known as sawtimber.

Scheduled Lands

Land suitable and scheduled for timber production and which are in the land base for the calculation of the allowable sale quantity and long-term sustained yield timber capacity.

Scheduled Timber Harvests

Timber harvests done as part of meeting the allowable sale quality.

Scoping Process

Early and open activities used to determine the scope and significance of a proposed action, what level of analysis is required, what data is needed, and what level of public participation is

appropriate. Scoping focuses on the issues surrounding the proposed action, and the range of actions, alternatives, and impacts to be considered in an EA or an EIS.

Second Growth

Forest growth that has become established following some disturbance such as cutting, serious fire, or insect attack; even-aged stands that will grow back on a site after removal of the previous timber stand.

Sediment

Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.

Selection Cutting

A silviculture system used to create or maintain uneven-aged stands, usually by the periodic removal of groups of trees or individual trees. It is undertaken to provide periodic harvests while maintaining full residual stand growth rates. It attempts to develop a balanced uneven-aged stand structure, including the encouragement of regeneration by providing the cultural measures needed for tree growth and seedling establishment. The selection system refers to the programs used to create or maintain the stand, while the selection method refers to the way in which the stand is regenerated. The cutting usually involves a mixture of regeneration and improvement cuts. Selection cutting is not the same thing as selective cutting.

Sensitive Species

Plant and animal species which are susceptible or vulnerable to activity impacts or habitat alterations. Those species that have appeared in the Federal Register as proposed for classification or are under consideration for official listing as endangered or threatened species, that are on a non-official State list, or that are recognized by the Regional Forester as needing special management to prevent placement on Federal or State lists.

Silviculture

The science of controlling the establishment, composition, and growth of forests.

Soil Productivity

The capacity of a soil, in its normal environment, to produce a specific plant or sequence of plants under a specific system of management.

Sortyard

A location used to sort grades, types, and size of logs.

Spawning Area

The available area in a streamcourse which is suitable for the deposition and incubation of salmon or trout eggs.

Stand (Tree Stand)

An aggregation of trees occupying a specific area and sufficiently uniform in composition, age arrangement, and condition as to be distinguishable from the forest in adjoining areas.

Standard

A course of action or level of attainment required by the 1997 Forest Plan to promote achievement of goals and objectives.

4 Lists

State Historic Preservation Officer (SHPO)

State-appointed official who administers Federal and State programs for cultural resources.

Stocking

The degree of occupancy of land by trees as measured by basal area or number of trees and as compared to a stocking standard; that is, the basal area or number of trees required to fully use the growth potential of the land.

Stream Classes

Class I. Streams and lakes with anadromous (migrating from the ocean) or adfluvial (migrating from lakes) fish or fish habitat; or, high quality resident fish waters, or habitat above fish migration barriers known to provide reasonable enhancement opportunities for anadromous fish.

Class II. Streams and lakes with resident fish or fish habitat and generally steep (6 to 25 percent or higher) gradients where no anadromous fish occur, and otherwise not meeting class I criteria.

Class III. Streams are perennial and intermittent streams that have no fish populations or fish habitat, but have sufficient flow or sediment and debris transport to directly influence downstream water quality or fish habitat capability.

Class IV. Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to directly influence downstream water quality or fish habitat capability. Class IV streams are too small to be mapped on aerial photographs, thus they appear only where field mapping has taken place.

Stream Order

First-order streams are the smallest unbranched tributaries; second-order streams are initiated by the point where two first-order streams meet; third-order streams are initiated by the point where two second-order streams meet, and so on.

Structural Diversity

The diversity of forest structure, both vertically and horizontally, which provides for a variety of forest habitats such as logs and multi-layered forest canopy for plants and animals.

Stumpage

The value of timber as it stands uncut in terms of dollar value per thousand board feet.

Subsistence

Section 803 of the Alaska National Interest Lands Conservation Act defines subsistence use as "the customary and traditional uses by rural Alaska residents of wild renewable resources for direct, personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade."

Subsistence Use Area

Important subsistence use areas include the "most reliable" and "most often hunted" categories from the Tongass Resource Use Cooperative Survey (TRUCS) and from subsistence survey data from ADF&G, the University of Alaska, and the Forest Service, Region 10. Important use areas

include both intensive and extensive use areas for subsistence harvest of deer, furbearers, and salmon.

Substantive Comment

A comment that provides factual information, professional opinion, or informed judgment germane to the action being proposed.

Substrate

The type of material in the bed (bottom) of rivers and streams.

Succession

The ecological progression of community change over time, characterized by displacements of species leading towards a stable climax community.

Suitable

Commercial forest land identified as having both the biological capability and availability to produce industrial wood products.

Suitable Forest Land

Forest land for which technology is available that will ensure timber production without irreversible resource damage to soils, productivity, or watershed conditions, and for which there is reasonable assurance that such lands can be adequately restocked, and for which there is management direction that indicated that timber production is an appropriate use of that area.

Suspended Sediment

The very fine soil particles which remain in suspension in water for a considerable period of time without contact with the stream or river channel bottom.

Sustained Yield

The amount of renewable resources that can be produced continuously at a given intensity of management.

Thinning

The practice of removing some of the trees in a stand so that the remaining trees will grow faster due to reduced competition for nutrients, water, and sunlight. Thinning may also be done to change the characteristics of a stand for wildlife or other purposes. Thinning may be done at two different stages – Precommercial Thinning or Commercial Thinning (see definitions in this section).

Threatened Species

Plant or animal species which is likely to become endangered throughout all or a significant portion of its range within the foreseeable future, as defined in the Endangered Species Act of 1973, and which has been designated in the Federal Register by the Secretary of the Interior as a Threatened Species. See also Endangered Species, Sensitive Species.

Threshold

The point or level of activity beyond which an undesirable set of responses begins to take place within a given resource system.

4 Lists

Tiering

Eliminating repetitive discussions of the same issue by incorporating by reference. The general discussion in an environmental impact statement of broader scope; e.g., this document is tiered to the Tongass Land and Resource Management Plan, as amended.

Timber Appraisal

Establishing the fair market value of timber by taking the selling value minus manufacturing costs, the cost of getting logs from the stump to the manufacturer, and an allowance for profit and risk.

Timber Classification

Forested land is classified under each of the land management alternatives according to how it relates to the management of the timber resource. The following are definitions of timber classifications used for this purpose.

Commercial Forest: Forest land tentatively suitable for the production of continuous crops of timber and that has not been withdrawn.

Nonforest: Land that has never supported forests and land formerly forested where use for timber production is precluded by development or other uses.

Forest: Land at least 10 percent stocked (based on crown cover) by forest trees of any size, or formerly having had such tree cover and not currently developed for nonforest use.

Suitable or Suitable Available: Land to be managed for timber production on a regulated basis.

Unsuitable: Forest land withdrawn from timber utilization by statute or administrative regulation (for example, wilderness), or identified as inappropriate for timber production in the Forest planning process.

Timber Harvest Unit

A timber harvest unit (or simply, "unit") is a portion of a timber sale within which Forest Service specifies for harvest all or part of the timber to meet the requirements of a timber sale contract.

Tongass Land and Resource Management Plan (Forest Plan)

The 10-year land allocation plan for the Tongass National Forest that directs and coordinates planning, the daily uses, and the activities carried out within the Forest.

Tongass Timber Reform Act (TTRA)

This Act (1990) requires annual appropriations for timber management on the Tongass National Forest, with a provision providing for the multiple use and sustained yield of all renewable forest resources.

Trail

A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.

Turbidity

An expression of the optical quality that causes light to be scattered and absorbed rather than transmitted in a straight line through the water sample. Turbidity is caused by the presence of suspended sediment.

Two-aged Management

A silvicultural method in which the majority of the trees in a harvest unit are cut in one entry, and the rest are left as residual tree, either singly or in patches. The residual trees remain unharvested to provide structural diversity and older-aged trees within the second-growth stand.

Understory

The trees and shrubs in a forest growing under the canopy or overstory.

Uneven-aged Management

Forest management techniques which simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Single tree selection and group selection harvest methods create or maintain uneven-aged stands. See also “Partial Cut”.

Unsuitable

See Timber Classification.

Utility Logs

Those logs that do not meet sawlog grade but are suitable for production of firm usable pulp chips.

Value Comparison Unit (VCU)

Areas which generally encompass a drainage basin containing one or more large stream systems; boundaries usually follow easily recognizable watershed divides. Established to provide a common set of areas where resource inventories could be conducted and resource interpretations made.

Viable Population

The number of individuals of a species required to ensure the long-term existence of the species in natural, self-sustaining populations adequately distributed throughout their region.

Viewshed

An expansive landscape or panoramic vista seen from a road, marine waterway, or specific viewpoint.

Visual Quality Objectives (VQO)

Measurable standards reflecting five different degrees of landscape alteration based upon a landscape's diversity of natural features and the public's concern for high scenic quality. The five categories of VQOs are:

Preservation: Permits ecological changes only. Applies to Wilderness areas and other special classified areas. Management activities are generally not allowed in this setting.

4 Lists

Retention: Provides for management activities that are not visually evident to the casual forest visitor.

Partial Retention: Management activities remain visually subordinate to the natural landscape.

Modification: Management activities may visually dominate the characteristics landscape. However, activities must borrow from naturally established form-line color and texture so that the visual characteristics resemble natural occurrences within the surrounding area when viewed in the middleground distance.

Maximum Modification: Management activities may dominate the landscape but should appear as a natural occurrence when viewed as background.

V-Notches

A deeply incised valley along some waterways that would look like a "V" from a cross-section. These abrupt changes in terrain features are often used as harvest unit or yarding boundaries.

Volume

Stand volume based on standing net board feet per acre by Scribner Rule.

Volume Strata

Categories of timber volume derived from the timber type data layer (TIMTYP) and the common land unit data layer (CLU). Three volume strata (low, medium, and high) are recognized in the Forest Plan.

Low Strata: The lowest range of volume for commercial forest land based on per-acre volume estimates. The Forest Plan estimated the low volume class strata to contain approximately 9.4 MBF/acre.

Medium Strata: The middle range of volume for commercial forest land based on per-acre volume estimates. The Forest Plan estimated the medium volume class strata to contain approximately 19.2 MBF/acre.

High Strata: The high range of volume for commercial forest land based on per-acre volume estimates. The Forest Plan estimated the high volume class strata to contain approximately 30.4 MBF/acre.

Watershed

The area that contributes water to a drainage or stream. Portion of the forest in which all surface water drains to a common point. Watersheds can range from a few tens of acres that drain a single small intermittent stream to many thousands of acres for a stream that drains hundreds of connected intermittent and perennial streams.

Wetland

Areas that are inundated by surface or groundwater frequently enough to support vegetation that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include: swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mudflats, and natural ponds. See the 1997 Forest Plan pp. 3-318 and 3-321 for detailed discussion on wetland type definitions.

Wildlife Analysis Area (WAA)

A division of land used by the Alaska Department of Fish and Game for wildlife analysis.

Wildlife Habitat

The locality where a species may be found and where the essentials for its development and sustained existence are obtained.

Windfirm

Trees that have been exposed to the wind throughout their life and have developed a strong root system or trees that are protected from the wind by terrain features.

Windthrow

The act of trees being uprooted by the wind. In Southeast Alaska, Sitka spruce and hemlock trees are shallow rooted and susceptible to windthrow. There are generally three types of windthrow:

Endemic: where individual trees are blown over;

Catastrophic: where a major windstorm can blow down hundreds of acres; and

Management Related: where the clearing of trees in an area make the adjacent standing trees vulnerable to windthrow.

Yarding

The process of conveying logs from the stump to a landing location.

4 Lists

Literature Cited

- Alaska Community Database, DCCED 2005, Community Information Summaries (CIS), <http://www.commerce.state.ak.us/dca/commdb/CIS.cfm>
- Alaska Department of Fish and Game (ADFG). 2007. Hunting and Trapping Emergency Order. Emergency Order No. 01-06-07. 4 pp.
- ADFG. 2006. Northern goshawks on the Tongass National Forest – summary of study findings related to forest management. Slide presentation from the Interagency Review of the Tongass National Forest Conservation Strategy Meeting, Ketchikan, Alaska. Found at <http://tongass-constratreview.net/Documents/Present7-Goshawk-LocalNewInfo.pdf>.
- ADFG. 2005. Brown bear management report of survey-inventory activities 1 July 2002-30 June 2004. Division of Wildlife Conservation. C. Brown editor. Juneau, Alaska. 331 pp.
- ADFG. 2004. Furbearer management report of survey-inventory activities 1 July 2000-30 June 2003. Division of Wildlife Conservation. C. Brown editor. Juneau, Alaska.
- ADFG. 2000. Southeast Alaska Unit 4 brown bear management strategy. Recommendation of a citizens and agency brown bear management advisory team. June 2000. Alaska Department of Fish and Game, Division of Wildlife Conservation. 47 pp. plus appendices. Available online at: http://www.alaskabears.alaska.gov/management/planning/planning_pdfs/u4rep.pdf
- Alexander, S.J. 2008. Tongass National Forest Timber Sale Procedures. USDA Forest Service, Region 10. White paper.
- Banner, A., P. LePage, J Moran, and A. de Groot (eds). 2005. The Hyp3 Project: pattern, process, and productivity in hypermaritime forests of coastal British Columbia—a synthesis of 7-year results. Page 24. B.C. Min. For., Res. Br., Victoria, B.C. Spec. Rep. 10. <http://www.for.gov.bc.ca/hfd/pubs/Docs/Srs/Srs10.pdf>
- Bartos, L. 1989. A new look at low flows after logging. Page 96-97 in: Proceedings: Watershed '89, A Conference on the Stewardship of Soil, Air, and Water Resources. Juneau, Alaska: USDA Forest Service.
- Ben-David, M., R. W. Flynn, and D. M. Schell. 1997. Annual and seasonal changes in diets of martens: evidence from stable isotope analysis. *Oecologia* 111:280-291.
- Bormann, B.T., H. Spaltenstein, M.H. McClellan, F.C. Ugolini, K. Cromack Jr, and S.M. Nay. 1995. Rapid soil development after windthrow disturbance in pristine forests. *Journal of Ecology* 83:747-757.
- Bosch, J. M. and J.D. Hewlett. 1982. A review of catchment experiments to determine the effect of vegetation changes on water yield and evapotranspiration. *Journal of Hydrology*, 55: 3-23.

- Boyce, D. A., Jr., R. T. Reynolds, and R. T. Graham. 2006. Goshawk status and management: what do we know, what have we done, where are we going? Pp 312-3325 in M. L. Morrison, editor. The northern goshawk: a technical assessment of its status, ecology, and management. Studies in Avian Biology No. 31, Cooper Ornithological Society.
- Brackley, Allen M.; Haynes, Richard W. In press. Timber products output and timber harvests in Alaska: an addendum. Res. Note. PNW-RN-XX. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. xx p.
- Brackley, Allen M.; Rojas, Thomas D.; Haynes, Richard W. 2006. Timber products output and timber harvests in Alaska: projections for 2005-25. Gen. Tech. Rep. PNW-GTR-677. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 33 p. <http://www.fs.fed.us/pnw/publications/gtrs.shtml>
- Brardinoni, F., M.A. Hassan, and H.O. Slaymaker. 2002. Complex mass wasting response of drainage basins to forest management in coastal British Columbia. *Geomorphology* 46:109-124.
- Brock, T., G. Nowacki, Shepherd, M., Pawuk, B., Hall, J., Thompson, R., 1999, Common wetland types in southeast Alaska, V3.0 (pocket field guide). Forest Service Alaska Region.
- Brooks, David J.; Haynes, Richard W. 1997. Timber products output and timber harvests in Alaska: projections for 1997-2010. Gen. Tech. Rep. PNW-GTR-409. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. <http://www.fs.fed.us/pnw/publications/gtrs.shtml>
- Bschor, Dennis, E. Regional Forester Memo. March 14, 2007. Limited Interstate Shipments of Unprocessed Sitka spruce and Western Hemlock Timber. U.S. Department of Agriculture Forest Service, Alaska Region.
- Budke, C. 2007. Local Logging Cost Information. Unpublished document
- Caouette, J. and E. J. DeGayner. 2005. Predictive mapping for tree sizes and densities in southeast Alaska. *Landscape and Urban Planning* 72:49-63.
- Caouette, John P., Kramer Marc G., Nowacki, Gregory J. 2000. Deconstructing the Timber Volume Paradigm in Management of the Tongass National Forest. USDA Forest Service Pacific Northwest Research Station. General Technical Report PNW-GTR-482.
- Cervený, L.K. 2007. Sociocultural effects of tourism in Hoonah, Alaska. Gen. Tech. Rep. PNW-GTR-734. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 115 p.
- Christian, L. et al. "Helicopter Logging Productivity on Harvesting Operations in Southeast Alaska, Using Ecologically Based Silvicultural Prescriptions." *West.J.App..For.*22(2) (2007).

4 Lists

- Converse, P. 2006. Report Deer pellet-group surveys in Southeast Alaska. Federal Aid in Wildlife Restoration Annual Report. 1 July 2004-30 June 2005. Alaska Department of Fish and Game, Division of Wildlife Conservation. Douglas, AK.
- Cook, J.A., A.L. Bidlack, C.J. Conroy, J.R. Demboski, M.A. Fleming, A.M. Runck, K.D. Stone, S.O. MacDonald. 2001. A phylogeographic perspective on endemism in the Alexander Archipelago of southeast Alaska. *Biological Conservation* 97:215-227.
- Deal, R. L. 2007. Management strategies to increase stand structural diversity and enhance biodiversity in coastal rainforest of Alaska. *Biological Conservation* 137:520-532.
- Deal, R. L. 2006. Unpublished document.
- Deal, R. L. 2001. The effects of partial cutting on forest land communities of western hemlock-Sitka spruce stands in southeast Alaska. *Canadian Journal of Forestry Resources*. 31:2067-2097.
- Deal, R. L. and J. C. Tappeiner. 2002. The effects of partial cutting on stand structure and growth of western hemlock-Sitka spruce stands in southeast Alaska. *Forest Ecology and Management* 159(3):173-186.
- Department of Environmental Conservation (DEC). 2007. 18AAC 70 Water Quality Standards. Page 60. <http://www.dec.state.ak.us/water/wqsar/wqs/wqs.htm> . Dec. 28, 2006.
- Douglas, G.W., G.B. Straley, D. Meidinger, and J. Pojar. 1999. Illustrated Flora of British Columbia. Volumes 3 and 4: Dicotyledons. Crown Publishing. Victoria.
- Fadden, S. and C. Parsley. 2005. Summary of marten harvest FY2004-05 NE Chichagof Island. USDA Forest Service, Tongass National Forest, Hoonah, Alaska. 1 pp. Unpublished data.
- Federal Register. 2007. Published in the Federal Register, November 8, 2007. Vol. 72, No. 216. 18 pp.
- Flynn, R. W., L. Beier, S. Lewis, and G. Pendleton. 2007. Brown bear use of riparian and beach zones on northeast Chichagof Island: Implications for streamside management in Coastal Alaska. Wildlife Research Final Report. Alaska Department of Fish and Game, Division of Wildlife Conservation, Juneau, Alaska. 99 pp.
- Flynn, R. W., T. V. Schumacher and M. Ben-David. 2004. Abundance, prey availability and diets of American martens: Implications for the design of old-growth reserves in southeast Alaska. Wildlife Research Final Report. Alaska Department of Fish and Game, Division of Wildlife Conservation, Juneau, Alaska. December 2005. 50 pp.
- Foley, C., 2005. March 14, 2005 letter from Chris Foley (Alaska DEC) to Brian Kleinhenz approving modified East Port Frederick remediation plan.
- Furniss, M.J., T.D. Roelofs, and C.S. Yee. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats. Chapter 8: Road Construction and

- Maintenance. Meehan, W. R., editor. American Fisheries Society Special Publication 19: 297-323.
- Glaser, P.H. 2000. The Impact of Forestry Roads on Peatlands within the Tongass National Forest, Southeast Alaska. Unpublished Report, USDA Forest Service Juneau, Alaska.
- Gucinski, H., Furniss, M.J., Ziemer, R.R., Brookes, M.H., 2001. Forest roads: A Synthesis of Scientific Information. USDA Forest Service Pacific Northwest Research Station, General Technical Report. PNW GTR-509.
- Hanley, T.A., W.P. Smith, and S. M. Gende. 2005. Maintaining Wildlife Habitat in Southeastern Alaska: Implications of New Knowledge for Forest Management and Research. *Landscape and Urban Planning* 72: 113-133.
- Hanley, T.A. 1984. Relationships between Sitka Black-tailed deer and their habitat. USDA Forest Service Pacific Northwest Research Station. General Technical Report PNW-GTR-230. Portland, Oregon.
- Harr, R.D. 1986. Effects of clearcutting on rain-on-snow runoff in Western Oregon: a new look at old studies. *Water Resources Research*, Vol. 22, No. 7, pages 1095-1100.
- Harris, A.S. 1989. Wind in the Forests of Southeast Alaska and Guides for Reducing Damage. Gen Tech Rep. PNW-GTR-244. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Haynes, R.W.; Adams, D.M.; Alig, R.J.; Ince, P.J.; Mills, J.R.; Zhou, X. 2007. The 2005 RPA timber assessment update. Gen. Tech. Rep. GTR-PNW-699. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 212 p.
<http://www.fs.fed.us/pnw/publications/gtr699/>
- Haynes, R.W.; Brooks, D.J. 1990. An analysis of the timber situation in Alaska: 1970-2010. Gen. Tech. Rep. PNW-GTR-264. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 39 p.
- Hennon, P.E. 2006. Draft synopsis of yellow-cedar decline: 1-2.
- Hennon, P.E. and D. D'Amore. 2007. The mysterious demise of an ice-age relic: exposing the cause of yellow-cedar decline. *Pacific Northwest Research Station, Science Findings* 93:1-6.
- Hicks, B.J., Beschta, R. L., and Harr, R. D. 1991. Long-term Changes in Streamflow Following Logging in Western Oregon and Associated Fisheries Implication. *Water Resources Bulletin* 27(2): 217-226.
- Hicks, B.J., Hall, J.D., Bisson, P.A., and Sedell, J.R. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. Chapter 14: Responses of Salmonids to Habitat Changes. Meehan, W.R., editor. American Fisheries Society Special Publication 19: 483-518.

4 Lists

- Hodges, J. 2001. An aerial survey of wintering trumpeter swans in Southeast Alaska – February 2001. U.S. Fish and Wildlife Service. Juneau, Alaska.
- Housley, Robert., Alexander, Susan J., Vaughn Ken. May 29, 2007. Impact on Indicated Advertised Value of Limited Interstate Shipments of Unprocessed Sitka Spruce and Western Hemlock Timber. USDA Forest Service, Alaska Region. 3p. Unpublished document.
- Johnson, J. and E. Weiss. 2007. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southeastern Region, Effective June 1, 2007. Alaska Department of Fish and Game, Special Publication No. 07-06, Anchorage.
- Jones, J.A. 2000. Hydrologic processes and peak discharge response to forest removal, regrowth, and roads in 10 small experimental basins, western Cascades, Oregon. *Water Resources Research* 36 (9): 2621-2642.
- Jones, J.A. and G.E. Grant. 1996. Peak Flow Responses to Clear-cutting and Roads in Small and Large Basins, Western Cascades, Oregon. *Water Resources Research*, Vol. 32, No. 4: 959-974.
- Juday, G. P., R. A. Ott, D. W. Valentine, and V.A. Barber. Assessment of actual and potential global warming effects on forest of Alaska. Pages 121-126 from New England Regional Climate Change Impacts Workshops Summary Report. September 3-5, 1997. 6 pp.
- Kahklen K. and W. Hartsog. 1999. Results of Road Erosion Studies on the Tongass National Forest. USDA Forest Service, Juneau Forestry Sciences Lab. 47 pp.
- Kline, J. D. 2006. Defining and Economics Research Program to Describe and Evaluate Ecosystem Services. USDA Forest Service, Pacific Northwest Research Station. General Technical Report PNW-GTR-700. December. <http://www.fs.fed.us/pnw/publications/gtrs.shtml>
- Kramer M.G., Hansen A.J., Taper M.L., Kissinger E J. 2001. Abiotic Controls on Long-Term Windthrow Disturbance and Temperate Rain Forest Dynamics in Southeast Alaska. *Ecology*, Vol. 82, No. 10. (Oct., 2001), pp. 2749-2768.
- Johnson, J. and E. Weiss. 2007. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes-Southeastern Region, Effective June 1, 2007. Alaska Department of Fish and Game, Special Publication 07-06, Anchorage.
- Jones, J.A. 2000. Hydrologic processes and peak discharge response to forest removal, regrowth, and roads in 10 small experimental basins, western Cascades, Oregon. *Water Resources Research*, Vol 36, no. 9, Pages 2621-2642.
- Julin, K.R., and D. D’Amore. 2000. Tree Growth on Forested Wetlands after Clearcutting on the Tongass National Forest, Unpublished Report, USDA
- Landwehr, D. J. 1997. Soil Disturbance on the 89-94 FEIS long-term sale area. A compilation of reports. Ketchikan Area Watershed Group, unpublished.

- Landwehr, D.J. and G. Nowacki. 1999. Statistical Review of Soil Disturbance Transect Data Collected on the Ketchikan Area, Tongass National Forest. Unpublished white paper.
- Laurent, T.H. 1974. The Forest Ecosystem of Southeast Alaska-Forest Diseases. USDA General Technical Report PNW-23:1
- Lerum J. 2008. Predicting Likely Timber Purchases and Offer Levels. USDA Forest Service, Region 10, Tongass National Forest. White paper.
- MacDonald, S. O. and J. A. Cook. 1999. The mammal fauna of southeast Alaska. Fairbanks, Alaska. University of Alaska Museum.
- Matter, P. 2003. Iyouktug Roads Analysis Process on Northeastern Chichagof Island (IRAPs). Hoonah Ranger District, Tongass National Forest.
- McClellan, Michael. 2007. Alternative to Clearcutting Study - Unpublished Data.
- McClellan, M.H., T. Brock, and J. Baichtal. 2003. Calcareous fens in Southeast Alaska. USDA Forest Service Research note PNW-RN-536.
- Millennium Ecosystem Assessment. 2005. <http://www.millenniumassessment.org/en/index.aspx>
- Montgomery, David R. 1994. Road surface drainage, channel initiation, and slope instability. Water Resources Research, Vol. 30, No. 6, pages 1925-1932.
- Moore, R. Dan and S.M. Wondzell, 2005. Physical hydrology and the effects of forest harvesting in the Pacific Northwest: A review. Journal of the American Water Resources Association 41(4):763-784.
- Morse, Kathleen S. 2000. Responding to the market demand for Tongass timber. Management Bulletin R10-MB-413. Juneau, AK: U.S. Department of Agriculture, Forest Service, Alaska Region.
- National Marine Fisheries Service (NMFS). 1992. Recovery plan for the Steller sea lion (*Eumetopias jubatus*). Prepared by the Steller Sea Lion Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 92 pp. Found at <http://www.nmfs.noaa.gov/pr/pdfs/recovery/stellensealion.pdf>
- Nieland, J. 2004. Recreation Master Plan. Hoonah Ranger District, Tongass National Forest. 80 pp.
- Nowacki G. J., Kramer M.G. 1998. The effects of wind disturbance on temperate rain forest structure and dynamics of Southeast Alaska. Gen. Tech. Rep. PNW-GTR 421 U.S. Department of Agriculture, Portland, Oregon.
- Nowacki G., P. Krosse, G. Fisher, D. Brew, T. Brock, M. Shepard, W. Pawuk, J. Baichtal, E. Kissinger. 2001. Ecological Subsections of Southeast Alaska and Neighboring Areas of Canada. Pages 134-135. USDA FS Alaska Region R10-TP-75. October 2001.

4 Lists

- Ott, R.A. 1995. Interpretation of wind and treefall patterns at the site and landscape-level in the forests of Southeast Alaska: importance, techniques and application. Report to USFS FSL Juneau, Contract # P.O. 43-0109-5-0187.
- Ott, Robert A., Juday, Glenn P., Garvey, Timothy E., 1999. Conducting A Landscape-Level Wind Risk Assessment on Northeast Chichagof Island, Southeast Alaska, and its Potential Use for Forest Management. Society of American Foresters. SAF Publication SAF 99-01.
- Pacific Northwest Research Station. Science Findings. 2007. The Mysterious Demise of an Ice-age Relic: Exposing the cause of Yellow Cedar Decline. Issue 93. U.S. Department of Agriculture, Portland , Oregon.
- Parrent, D.J. 2006. Letter with enclosed Mill Capacity and Utilization Study, CY 2005. JEDC Wood Products Development Service.
- Parrent, D.J.; 2007. Tongass sawmill Capacity and production report for CY2006. Final Report October 11, 2007. JEDC Wood Products Development Service.
- Patric, J. H. 1966. Rainfall interception by mature coniferous forests of southeast Alaska. Journal of soil and water conservation.
- Paustian, Steven J., Anderson, K., Blanchet, D. Brady, S., Cropely, M., Edgington, J., Fryxell, J., Johnjack, G., Kelliher, D., Kuehn, M., Maki, S., Olson, R., Seesz, J., Wolanek, M. 1992. A channel type users guide for the Tongass National Forest, Southeast Alaska USDA Forest Service, Alaska Region R 10 Technical Paper 26. 179 pp.
- Perlack, R.D.; Wright, L.L.; Turhollow, A.F.; Graham, R.L.; Stokes, B.J.; Erbach, D.C. 2005. Biomass as feedstock for a bioenergy and bioproducts industry: the technical feasibility of a billion-ton annual supply. Oak Ridge, TN: U.S. Department of Energy and U.S. Department of Agriculture, Oak Ridge National Laboratory. 78 p.
- Phillips, S. and R. Silverman. 2007. Greater than Zero: Toward the Total Economic Value of Alaska's National Forest Wildlands. Draft paper prepared for The Wilderness Society. March.
- Schoen, J. W., Flynn, R. W., and L. Beier. 1992. Habitat capability model for brown bear in Southeast Alaska. Version 7.0. USDA Forest Service, Alaska Region. Juneau, AK. 36 pp.
- Schoen, J. W. and L. Beier. 1990. Brown bear habitat preferences and brown bear logging and mining relationships in Southeast Alaska. Alaska Department of Fish and Game, Juneau, Alaska. Project W-22_5 job 4.17R. 90 pp.
- Schoen, J.W. and M. D. Kirchoff. 1985. Seasonal distribution and home-range patterns of Sitka black-tailed deer on Admiralty Island, Southeast Alaska. J. Wildl. Manage. 49(1):96-103.
- Schoen, J.W.; Kirchoff, M.D.; Wallmo, O.C. 1984. Sitka black-tailed deer/old-growth relationships in Southeast Alaska: implications for management. In: Meehan, W.R.; Merrell, Jr., T.R.; Hanley, T.A., eds. Proceedings of the symposium on fish and wildlife relationships

- in old-growth forests; 1982; Juneau, AK. American Institute of Fisheries Research Biologists.
- Smith, W. P. 2005. Evolutionary diversity and ecology of endemic small mammals of southeastern Alaska with implications for land management planning. *Landscape and Urban Planning* 72 (2005) 135-155.
- Smith, W. P., S.M. Gende, and J.V. Nichols. 2005. Correlates of microhabitat use and density of *Clethrionomys gapperi* and *Peromyscus keeni* in temperate rain forest of southeast Alaska. *Acta Zoologica Sinica* 51(6): 973-988.
- Stangl, J. T. 2007. Interagency biologist recommendation for old-growth reserves in the Iyouktug timber sales project area. USDA Forest Service, Tongass National Forest, Sitka, Alaska. 18 pp.
- Sullivan, K., Lisle, T., Dolloff, C., Grant, G., and Reid, L. 1987. Streamside Management, Forestry and Fisheries Interactions. Chapter 3: Stream Channels: The Link Between Forests and Fishes. Salo, E. O. and T. W. Cundy, editors. Institute of Forest Resources, University of Washington, Seattle WA, 39-97.
- Suring, L. H., Rodney W. Flynn and Eugene J. DeGayner. 1992. Habitat capability model for marten in southeast Alaska: winter habitat. Version 5.0. Distributed by the U.S. Department of Agriculture Forest Service, Alaska region, Juneau, Alaska. July 1992.
- Suring, L. H., E. J. DeGayner, R.W. Flynn, M. D. Kirchhoff, J. W. Schoen, and L. C. Shea. 1992. Habitat capability model for Sitka black-tailed deer in southeast Alaska: winter habitat. Version 6.5. Distributed by the U.S. Department of Agriculture Forest Service, Alaska region, Juneau, Alaska. July 1992.
- Swanston, D.N. and D.A. Marion. 1991. Landslide response to timber harvest in southeast Alaska. In Proceedings of the Fifth Interagency Sedimentation Conference. Federal Energy Regulations Commission. Las Vegas, Nevada.
- Titus, K. and L. Beier. 1999. Suitability of stream buffers and riparian habitat for brown bears. *Ursus* 11:149-156.
- USDA Forest Service. 2008a. Tongass Land and Resource Management Plan. R10-MB-603b. USDA Forest Service, Alaska Region.
- USDA Forest Service. 2008b. Tongass Land and Resource Management Plan Final Environmental Impact Statement and Record of Decision, Plan Amendment. R10-MB-603a. USDA Forest Service, Alaska Region.
- USDA Forest Service. 2007a. Tongass Land and Resource Management Plan Amendment Draft Environmental Impact Statement. R10-MB-602 (all volumes). USDA Forest Service, Alaska Region.

4 Lists

- USDA Forest Service. 2007b. Federal Subsistence Board News Release. Federal Subsistence Board closes doe hunting on Federal land within the Northeast Chichagof Control Use Area. 1 pp.
- USDA Forest Service. 2007c. Federal Subsistence Board News Release. Federal Subsistence Board closes doe hunting on Federal land within Unit 4 of Southeast Alaska. 1 pp.
- USDA Forest Service. 2007d. Decision Memo, Invasive weed control or eradication by manual or mechanical methods. Tongass National Forest, Hoonah and Sitka Ranger Districts.
- USDA Forest Service. 2007e. Tongass National Forest Annual Monitoring and Evaluation Report for Fiscal Year 2006.
- USDA Forest Service 2007f. Amendment #1 to the Second Amended Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Heritage Resource Management on National Forests in the State of Alaska. Agreement 02MU-111001-076.
- USDA Forest Service. 2006a. Forest Service Region 10. Soil Quality Monitoring. FSM 2554 R-10 Amendment No. R-10 2500-2006-1 May 2006.
- USDA Forest Service. 2006b. Tongass National Forest Annual Monitoring and Evaluation Report for Fiscal Year 2005.
- USDA Forest Service. 2006c. Tongass Land and Resource Management Plan Amendment Draft Environmental Impact Statement. R10-MB-602 (all volumes). USDA Forest Service, Alaska Region.
- USDA Forest Service. 2006d. Soil and Water Conservation Handbook. FSH 2509.22. Forest Service Handbook, Juneau, Alaska.
- USDA Forest Service. 2006e. Decision Memo, Timber Stand Improvement 2006. Tongass National Forest, Sitka and Hoonah Ranger Districts.
- USDA Forest Service. 2005a. Memo to Carol Gourlate from JT Stangl date May 2, 2005. Re: False Island and Iyouktug Project Meeting with Alaska Department of Fish and Game. 5 pp.
- USDA Forest Service. 2005b. Letter from Forrest Cole date May 25, 2005. Subject: Timber harvest project environmental analysis. 4 pp.
- USDA Forest Service. 2005c. Couverden Timber Sales FEIS and ROD. Tongass national Forest R10-MB-532c.
- U.S. Forest Service. 2004. Tongass National Forest Annual Monitoring and Evaluation Report for Fiscal Year 2004.
- USDA Forest Service. 2003a. Supplemental Environmental Impact Statement. Juneau, Alaska: U.S. Department of Agriculture, Forest Service, Alaska Region, Tongass National Forest. R10-MB-481a.
- USDA Forest Service. 2003b. Forest Wide Roads Analysis Process. Tongass National Forest.

- USDA Forest Service. 2002a. Second Amended Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation and the Alaska State Historic Preservation Officer Regarding Heritage Resource Management on National Forests in the State of Alaska. Agreement 02MU-111001-076.
- USDA Forest Service. 2002b. Decision Notice, Finding of No Significant Impacts, Hoonah Ranger District Access and Travel Management Plan (signed January 16, 2002). Hoonah Ranger District, Tongass National Forest.
- USDA Forest Service. 2002c. Memorandum of understanding between USDA Forest Service and the USDI Fish and Wildlife Service, Alaska region. 6 pp.
- USDA Forest Service. 2001. Hoonah Ranger District Access and Travel Management Plan Environmental Assessment. Hoonah Ranger District, Tongass National Forest.
- USDA Forest Service. 2000. Forest Service Roadless Area Conservation. Final Environmental Impact Statement pp S-16-18.
- USDA Forest Service. 1998. Tongass National Forest Land and Resource Management Plan, Implementation Policy Clarification, August 1998. USDA Forest Service, Ketchikan, Alaska.
- USDA Forest Service. 1997a. Tongass Land Management Plan Revision, Final Environmental Impact Statement and Record of Decision. R10-MB-338 (all volumes). USDA Forest Service, Alaska Region.
- USDA Forest Service. 1997b. Land and Resource Management Plan, Tongass National Forest. R10-MB-338dd.
- USDA Forest Service Alaska Region. 1979. Visual character types of Alaska National Forest lands. 61 pp.
- USDI. 2007. Letter to Mr. Denby S. Lloyd, Commissioner, Alaska Department of Fish and Game from Peter J. Probasco, Assistant Regional Director, Subsistence. Enclosure: Staff Analysis Special Action request WSA07-05.
- Walters, D. and B. Prefontaine. 2005. Stream Temperature Monitoring Report 1997-2002, Prince of Wales Island, Alaska. USDA Forest Service Report to the Thorne Bay Ranger District.
- Warren, D.D. 2006. Production, prices, employment, and trade in Northwest forest industries, all quarters 2004. Res. Bull. PNW-RB-250. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 165 p.
<http://www.fs.fed.us/pnw/publications/rbs.shtml>
- Warren, D.D. 2007. Production, prices, employment, and trade in Northwest forest industries, all quarters 2005. Res. Bull. PNW-RB-254. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 165 p.
<http://www.fs.fed.us/pnw/publications/rbs.shtml>

4 Lists

- Wemple, B.C. et al. 1996. Channel Network Extension by Logging Roads in Two Basins, Western Cascades, Oregon. Water Resources Bulletin. American Water Resources Association V 32 NO.6.
- Whitman, J. 2004. A preliminary analysis of Chichagof Island marten (*Martes americana*) harvest, 2003-2004. Alaska Department of Fish and Game, Fairbanks, Alaska. 9 pp. Unpublished data.
- Wilson, B. 2002. Updated 2006. Cedar Harvest on the Tongass National Forest. Alaska Region Forest Management.
- Yeo, J. J., and J. M. Peek. 1992. Habitat selection by female Sitka black-tailed deer in logged forests of Southeastern Alaska. *J. Wildl. Manage.* 56(2):253-261.
- Zeimer R.R. and D.N. Swanston. 1977. Root strength changes after logging in Southeast Alaska. USDA Forest Service, Pacific Northwest Research Station, PNW-306.

Index

A

access · 2-2
 Alaska Department of Fish and Game (ADFG) · 1-13, 2-3, 3-2, 3-137, 4-3, 4-24, 4-29, 4-30, 4-32, 4-34, 4-36, 4-38, 4-40
 Alaska Department of Labor · 3-39
 Alaska Department of Natural Resources · 4-3
 Alaska Marine Highway · 3-28, 3-108, 3-151
 Alaska National Interest Lands Claims Act (ANILCA) · 1-22, 2-17, 3-6, 3-39, 3-136, 3-137, 3-138, 3-141, 3-189, 4-7, 4-24
 Alaska Water Quality Standards · 3-189
 alternative development · 2-4
 anadromous fish · 3-81, 3-163, 3-176, 3-177, 4-7, 4-24, 4-34
 Army Corps of Engineers (ACOE) · 1-21, 4-3

B

Bald and Golden Eagle Protection Act · 1-22
 bald eagle · 3-27, 3-79, 3-80
 beach fringe · 3-7, 3-8, 3-17, 3-74, 3-90
 Best Management Practices (BMP) · 1-21, 2-2, 2-15, 2-17, 2-19, 2-20, 3-4, 3-135, 3-151, 3-155, 3-159, 3-168, 3-171, 3-175, 3-179, 3-181, 3-184, 3-189, 3-190, 3-191, 3-192, 4-8
 biological diversity · 1-10, 2-14, 3-4, 4-8, 4-13, 4-32
 brown bear · 2-18, 3-27, 3-70, 3-80, 3-81, 3-82, 3-83, 4-28, 4-30, 4-32, 4-36, 4-37
 brown creeper · 3-83, 3-84

C

cabin · 3-28, 3-36, 3-102
 cable yarding · 3-40
 chinook · 3-177, 3-180
 Clean Air Act · 1-22, 3-190
 Clean Water Act · 1-21, 1-22, 2-19, 3-167, 3-175, 4-16
 clearcutting · 1-5, 1-8, 2-8, 2-10, 2-11, 2-12, 2-21, 3-5, 3-8, 3-16, 3-21, 3-23, 3-33, 3-34, 3-35, 3-39, 3-40, 3-41, 3-71, 3-73, 3-74, 3-83, 3-84, 3-85, 3-86, 3-91, 3-92, 3-93, 3-95, 3-97, 3-100, 3-101, 3-103, 3-107, 3-109, 3-110, 3-111, 3-118, 3-119, 3-121, 3-125, 3-132, 3-164, 3-170, 3-173, 4-9, 4-12, 4-33
 Coastal Zone Management Act (CZMA) · 1-22, 1-23, 3-6, 3-190
 Code of Federal Regulations (CFR) · 1-24, 3-3, 3-6, 3-68
 coho · 3-163, 3-177, 3-178, 3-180
 commercial fishing · 3-28, 3-38, 3-46
 competition · 3-48, 3-127, 3-129, 3-130, 3-131, 3-175, 4-25

Council on Environmental Quality (CEQ) · 1-1, 1-12, 2-7, 3-3, 3-6, 3-68, 4-17
 crab · 3-137, 3-177
 cultural resources · 1-22, 3-4, 3-174, 4-24
 cumulative effects · 1-11, 1-19, 1-20, 3-1, 3-3, 3-5, 3-8, 3-21, 3-36, 3-51, 3-55, 3-67, 3-79, 3-83, 3-85, 3-94, 3-95, 3-97, 3-104, 3-107, 3-111, 3-125, 3-128, 3-135, 3-141, 3-146, 3-152, 3-158, 3-168, 3-169, 3-173, 3-175, 3-179, 3-185

D

deer · 1-16, 1-18, 1-21, 2-7, 2-9, 2-17, 2-22, 2-23, 2-24, 2-25, 3-7, 3-8, 3-16, 3-17, 3-18, 3-19, 3-20, 3-21, 3-22, 3-27, 3-32, 3-33, 3-34, 3-70, 3-71, 3-85, 3-86, 3-87, 3-88, 3-89, 3-91, 3-92, 3-93, 3-94, 3-105, 3-137, 3-138, 3-139, 3-140, 3-141, 3-182, 3-189, 4-10, 4-25, 4-32, 4-33, 4-36, 4-37, 4-40
 desired condition · 1-4, 1-5, 1-7, 1-8, 1-10, 2-4, 3-98, 3-111, 3-112, 3-125
 diversity · 1-4, 1-10, 3-16, 3-21, 3-24, 3-26, 3-27, 3-28, 3-29, 3-33, 3-73, 3-74, 3-80, 3-91, 3-94, 3-122, 4-6, 4-8, 4-10, 4-16, 4-24, 4-27, 4-32, 4-37
 distance zone · 1-10, 3-103
 disturbance · 2-8
 Dolly Varden · 3-163, 3-177, 3-178, 4-20

E

economics · 1-13, 1-14, 1-19, 2-7, 2-10, 2-12, 2-22, 3-4, 3-20, 3-37, 3-39, 3-40, 3-42, 3-45, 3-47, 3-48, 3-104, 3-117, 3-186, 4-2
 employment · 1-4, 1-17, 2-22, 3-37, 3-38, 3-39, 3-45, 3-46, 3-98, 4-7, 4-10, 4-14
 endangered species · 1-12, 2-17, 3-70, 3-71, 3-143, 3-188
 Environmental Protection Agency (EPA) · 1-1, 1-21, 1-23, 3-3, 3-146, 3-180, 3-189, 4-3, 4-10, 4-17
 erosion · 2-6, 2-17, 3-129, 3-130, 3-165, 3-172, 4-10, 4-11, 4-34
 Essential Fish Habitat (EFH) · 3-181, 3-189
 estuary · 2-13, 3-7, 3-11, 3-27, 3-67, 3-80, 3-84, 3-102, 3-137, 3-147, 3-173-163, 3-177, 3-178, 4-11
 even-aged management · 3-40, 3-118, 3-119, 3-124, 4-16

F

Federal Cave Resource Protection Act · 3-189
 Federal Subsistence Board · 3-137
 financial efficiency analysis · 3-46
 finfish · 3-137
 fish habitat · 2-17, 3-27, 3-29, 3-30, 3-33, 3-34, 3-102, 3-138, 3-163, 3-164, 3-165, 3-168, 3-169, 3-171, 3-172,

4 Lists

3-174, 3-175, 3-176, 3-177, 3-179, 4-24
fishing · 3-28, 3-38, 3-46, 3-105, 3-106, 3-139, 3-146, 3-176
floodplain · 3-26, 3-28, 3-80, 3-169, 4-12
forest habitat · 1-10, 3-7, 3-83, 3-138, 4-24
forest health · 3-124, 3-125
Forest Plan · 1-1, 1-4, 1-5, 1-6, 1-7, 1-8, 1-11, 1-13, 1-18, 1-19, 1-20, 1-21, 1-24, 2-1, 2-2, 2-3, 2-4, 2-5, 2-7, 2-8, 2-9, 2-13, 2-14, 2-16, 2-17, 2-18, 2-19, 2-23, 3-1, 3-2, 3-3, 3-4, 3-5, 3-7, 3-8, 3-11, 3-12, 3-17, 3-21, 3-22, 3-26, 3-28, 3-39, 3-40, 3-48, 3-50, 3-65, 3-67, 3-71, 3-72, 3-77, 3-79, 3-80, 3-86, 3-94, 3-96, 3-98, 3-99, 3-100, 3-108, 3-109, 3-110, 3-111, 3-112, 3-113, 3-115, 3-126, 3-135, 3-136, 3-137, 3-140, 3-141, 3-143, 3-146, 3-148, 3-164, 3-167, 3-179, 3-181, 3-188, 3-189, 3-191, 3-192, 4-10, 4-13, 4-15, 4-17, 4-23, 4-26, 4-28
Forest Practices Act · 3-6

G

Game Management Unit (GMU) · 3-72, 3-137
geology · 2-23, 3-3, 3-24, 3-58, 3-59, 3-160, 4-8
goshawk · 2-2, 2-18, 2-20, 2-23, 3-15, 3-17, 3-22, 3-27, 3-143, 3-146, 3-147, 3-148, 3-149, 4-30, 4-31

H

habitat capability · 1-10, 1-21, 2-10, 2-25, 3-20, 3-22, 3-72, 3-73, 3-74, 3-79, 3-86, 3-88, 3-91, 3-92, 3-93, 3-94, 3-96, 3-97, 3-137, 3-138, 3-140, 3-149, 4-24, 4-36, 4-37
helicopter · 1-4, 1-13, 1-17, 1-22, 2-3, 2-4, 2-5, 2-6, 2-8, 2-10, 2-11, 2-18, 2-21, 2-25, 2-26, 3-5, 3-17, 3-18, 3-19, 3-20, 3-31, 3-32, 3-33, 3-34, 3-35, 3-37, 3-40, 3-41, 3-42, 3-47, 3-48, 3-53, 3-63, 3-73, 3-74, 3-77, 3-82, 3-84, 3-85, 3-91, 3-92, 3-93, 3-100, 3-101, 3-103, 3-107, 3-109, 3-110, 3-111, 3-118, 3-119, 3-122, 3-131, 3-132, 3-145, 3-178, 4-15
heritage resource · 2-15, 2-23, 3-65, 3-66, 3-67, 3-69, 3-192
heritage site · 2-15, 3-67
Hoonah · 1-1, 1-2, 1-12, 1-14, 1-21, 2-13, 2-15, 2-16, 3-27, 3-28, 3-38, 3-45, 3-49, 3-50, 3-55, 3-56, 3-57, 3-65, 3-66, 3-67, 3-68, 3-69, 3-81, 3-99, 3-101, 3-102, 3-103, 3-104, 3-105, 3-106, 3-108, 3-137, 3-139, 3-145, 3-146, 3-151, 3-152, 3-154, 3-160, 3-178, 4-3, 4-4, 4-5, 4-32, 4-35, 4-39
Hoonah Indian Association (HIA) · 1-14, 2-13, 2-14, 2-15, 3-66, 3-67, 3-69, 4-4
humpback whale · 2-23, 3-133, 3-134
hunter demand · 3-130, 3-131
hunting · 1-8, 3-28, 3-51, 3-66, 3-67, 3-80, 3-81, 3-94, 3-105, 3-106, 3-136, 3-137, 3-138, 3-139, 3-146
hydrology · 3-51, 3-59, 3-60, 3-168, 3-184, 4-1, 4-30, 4-35

I

income · 1-17, 2-22, 2-26, 3-37, 3-45, 3-46, 3-47, 3-48, 3-

68, 3-98, 3-192
intertidal · 3-67, 4-11
irretrievable commitments · 3-4
irreversible commitments · 3-4

J

job · 1-17, 2-22, 2-26, 3-37, 3-45, 3-46, 4-7, 4-36
Juneau · 1-12, 3-39, 3-66, 3-104, 3-137, 3-139, 4-3, 4-4, 4-5, 4-30, 4-32, 4-33, 4-34, 4-36, 4-37, 4-38

K

karst · 2-16, 2-23, 3-24, 3-26, 3-29, 3-30, 3-34, 3-35, 3-36, 3-58, 3-59, 3-60, 3-61, 3-63, 3-64, 3-128, 3-160, 3-189, 4-11, 4-14
Ketchikan · 1-24

L

Land Use Designation (LUD) · 1-2, 1-4, 1-7, 1-8, 1-9, 1-10, 1-11, 1-18, 1-19, 1-20, 2-13, 2-14, 3-2, 3-7, 3-11, 3-15, 3-80, 3-98, 3-99, 3-100, 3-103, 3-109, 3-111, 3-112, 3-113, 4-15, 4-16
landslide · 3-129, 3-131, 3-134, 3-165, 3-176, 4-37
log transfer facility (LTF) also called MAF · 1-5, 1-21, 2-16, 3-40, 3-67, 3-102, 3-144, 3-154, 3-190, 4-16
logging camp · 1-21, 3-66, 3-154, 3-190
logging system · 2-1, 2-4, 2-12, 3-47, 3-113, 3-117, 3-125
long-term productivity · 3-4

M

Management Indicator Species (MIS) · 2-23, 2-24, 3-70, 3-83, 3-84, 3-85, 3-138, 3-139, 3-140, 3-144, 4-14, 4-16
marine environment · 3-145, 3-146
marine mammal · 3-146
Marine Mammal Protection Act · 1-22, 3-146
marine resource · 3-65, 3-192
market demand · 1-4, 1-8, 3-188
martens · 1-19, 2-18, 3-16, 3-17, 3-27, 3-33, 3-70, 3-71, 3-72, 3-73, 3-74, 3-75, 3-77, 3-78, 3-79, 3-83, 3-84, 3-85, 3-91, 3-94, 3-95, 3-97, 3-118, 3-119, 3-121, 4-32, 4-37, 4-40
mass wasting · 4-31
minerals · 3-4
mining · 3-38, 3-51, 3-66, 3-144, 4-36
mitigation (and mitigation measure) · 1-6, 1-24, 2-1, 2-19, 2-18, 3-4, 3-16, 3-54, 3-70, 3-110, 3-131, 3-132, 3-168, 3-184, 4-17
Modified Landscape · 3-106
monitoring · 1-6, 1-21, 2-1, 2-19, 2-20, 3-4, 3-26, 3-57, 3-67, 3-68, 3-129, 3-168, 3-180, 3-189, 4-17, 4-38, 4-39
multiple use · 1-19, 1-20, 3-128, 4-16, 4-26

muskeg · 3-108, 3-113, 3-183, 3-185, 4-17

N

National Environmental Policy Act (NEPA) · 1-1, 1-19, 1-23, 1-24, 3-3, 3-6, 3-37, 3-67, 3-68, 3-177, 4-10, 4-17
 National Forest Management Act (NFMA) · 1-6, 1-20, 1-23, 2-18, 3-4, 3-128, 3-188, 4-12, 4-17
 National Historic Preservation Act (NHPA) · 1-13, 1-23, 3-65, 3-66, 3-67, 3-68, 3-188, 3-191, 4-7
 National Marine Fisheries Service (NMFS) · 3-181, 3-191
 National Register of Historic Places (NRHP) · 3-65, 3-66
 Notice of Intent (NOI) · 1-12, 4-18

O

old-growth · 1-2, 1-5, 1-6, 1-7, 1-8, 1-10, 1-13, 1-16, 2-3, 2-6, 2-8, 2-9, 2-14, 2-22, 3-2, 3-7, 3-8, 3-9, 3-11, 3-12, 3-17, 3-21, 3-27, 3-33, 3-34, 3-77, 3-79, 3-80, 3-83, 3-85, 3-86, 3-91, 3-98, 3-99, 3-100, 3-103, 3-109, 3-116, 3-118, 3-120, 3-124, 3-137, 3-147, 4-9, 4-18, 4-19, 4-32, 4-36, 4-37
 Old-Growth Reserves (OGR) · 2-3, 2-9, 3-11, 3-12, 3-15, 3-17, 3-18, 3-20, 3-21, 3-23, 3-80, 3-83, 3-84, 3-87, 3-148
 overstory removal · 4-18
 otter · 3-79, 3-80
 outfitters and guides · 3-47, 3-98

P

past timber harvest · 2-18, 3-130, 3-185
 peregrine falcon · 3-146, 3-147
 patch · 4-9, 4-18
 permit · 1-21, 2-15, 2-18, 3-136, 3-150, 4-21
 planning record · 2-17, 3-122
 preferred alternative · 2-1
 precommercial thinning · 3-116, 3-126
 productive forest · 3-126, 3-147
 productive old growth (POG) · 1-16, 2-3, 2-18, 2-22, 2-24, 2-25, 3-5, 3-7, 3-8, 3-11, 3-12, 3-13, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-21, 3-22, 3-70, 3-71, 3-73, 3-77, 3-78, 3-79, 3-81, 3-83, 3-84, 3-85, 3-91, 3-93, 3-95, 3-97, 3-138, 3-147, 3-148, 3-149, 4-19
 proposed action · 1-12, 1-13, 1-18, 2-2, 2-4, 3-1, 3-5, 3-6, 3-15, 3-45, 3-52, 3-66, 3-68, 3-136, 3-151, 3-177, 3-178, 3-179, 3-181, 4-7, 4-14, 4-18, 4-22
 public comments · 1-16, 2-4
 public involvement · 1-12, 3-1
 purpose and need · 1-20, 2-6, 2-7, 3-45

R

Record of Decision (ROD) · 1-5, 1-6, 2-5, 2-8, 2-10, 2-11, 2-12, 3-137, 3-141, 3-152, 3-188, 4-19, 4-39

Recreation Opportunity Spectrum (ROS) · 3-98, 3-99, 3-100, 3-104, 4-20
 reforestation · 4-15, 4-20
 regeneration · 3-16, 3-17, 3-33, 3-98, 3-100, 3-106, 3-107, 3-117, 3-118, 3-119, 3-120, 3-121, 3-122, 3-124, 3-125, 4-20, 4-23, 4-27
 renewable resource · 3-4, 3-136, 4-15, 4-17, 4-24, 4-25
 resident fish · 1-20, 4-20, 4-24
 riparian · 2-2, 2-4, 2-14, 2-15, 2-24, 3-7, 3-8, 3-11, 3-15, 3-17, 3-18, 3-19, 3-20, 3-22, 3-30, 3-50, 3-71, 3-72, 3-79, 3-80, 3-81, 3-82, 3-84, 3-96, 3-113, 3-137, 3-160, 3-164, 3-170, 3-176, 3-188, 3-191, 3-192, 4-16, 4-20, 4-21, 4-32, 4-37
 riparian area · 2-2, 2-14, 3-8, 3-71, 3-79, 3-80, 3-170, 3-191, 3-192, 4-16
 riparian management area (RMA) · 2-15, 3-15, 3-17, 3-30, 3-50, 3-79, 3-82, 3-164, 3-168, 4-21
 Rivers and Harbors Act · 1-23
 road construction · 1-5, 1-16, 1-17, 1-18, 1-20, 1-18, 2-5, 2-7, 2-11, 2-12, 2-16, 2-21, 2-22, 2-24, 2-25, 2-26, 3-5, 3-7, 3-18, 3-20, 3-21, 3-22, 3-23, 3-24, 3-32, 3-40, 3-42, 3-45, 3-47, 3-51, 3-53, 3-54, 3-55, 3-66, 3-78, 3-97, 3-129, 3-139, 3-148, 3-152, 3-157, 3-175, 3-178, 3-179, 3-186, 3-191, 3-192, 4-7
 Road Management Objective (RMO) · 1-6, 3-152, 3-153, 3-154, 3-155, 4-21
 roadless area/s · 1-7, 1-19, 3-25, 4-22
 roads · 1-5, 1-6, 1-8, 1-13, 1-15, 1-17, 1-19, 1-21, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-10, 2-11, 2-12, 2-14, 2-16, 2-17, 2-18, 2-19, 2-21, 2-25, 3-4, 3-5, 3-20, 3-24, 3-28, 3-29, 3-30, 3-31, 3-32, 3-33, 3-34, 3-35, 3-36, 3-40, 3-41, 3-45, 3-49, 3-54, 3-55, 3-60, 3-63, 3-64, 3-67, 3-72, 3-78, 3-79, 3-81, 3-82, 3-83, 3-97, 3-99, 3-101, 3-110, 3-111, 3-128, 3-129, 3-130, 3-132, 3-133, 3-134, 3-139, 3-150, 3-151, 3-152, 3-153, 3-154, 3-155, 3-156, 3-157, 3-158, 3-159, 3-160, 3-165, 3-166, 3-169, 3-170, 3-172, 3-173, 3-174, 3-175, 3-178, 3-179, 3-183, 3-184, 3-185, 3-186, 3-190, 3-191, 3-193, 4-10, 4-13, 4-20, 4-21, 4-22, 4-33, 4-34, 4-35, 4-38, 4-40

S

salmon · 3-71, 3-80, 3-82, 3-137, 3-163, 3-167, 3-176, 3-177, 3-178, 3-180, 4-7, 4-23, 4-25
 sawtimber · 4-22
 scenic quality · 3-108, 4-27
 scoping · 1-12, 1-14, 1-16, 1-17, 2-2, 2-4, 2-8, 3-68, 3-192, 4-18, 4-22, 4-23
 second-growth · 3-85, 3-124, 3-147, 4-27
 sediment · 1-20, 3-59, 3-60, 3-160, 3-164, 3-165, 3-169, 3-170, 3-173, 3-175, 3-178, 3-179, 4-23, 4-24, 4-25, 4-27
 selection · 3-6, 3-15, 3-16, 3-18, 3-20, 3-31, 3-32, 3-40, 3-41, 3-73, 3-77, 3-82, 3-84, 3-91, 3-93, 3-96, 3-118, 3-119, 3-121, 3-122, 3-125, 3-127, 3-132, 3-168, 3-170, 3-173, 4-18, 4-23, 4-27, 4-40
 sensitive species · 2-18, 3-24, 3-26, 3-27, 3-49, 3-50, 3-51, 3-55, 3-70, 3-71, 3-146
 shellfish · 3-137
 significant restriction · 1-6, 2-17, 2-23, 3-136, 3-138, 3-141
 silviculture · 2-23, 3-40, 3-49, 3-113, 3-119, 3-120, 3-190,

4 Lists

4-2, 4-23
Sitka · 1-2, 1-13, 1-16, 1-24, 2-24, 3-1, 3-7, 3-20, 3-22, 3-27, 3-41, 3-42, 3-50, 3-66, 3-70, 3-85, 3-91, 3-93, 3-102, 3-113, 3-114, 3-119, 3-122, 3-138, 3-139, 3-140, 3-182, 9, 4-3, 4-5, 4-10, 4-16, 4-29, 4-31, 4-33, 4-34, 4-36, 4-37, 4-40
small timber sale · 3-21, 3-22, 3-23, 3-36, 3-78, 3-83, 3-85, 3-93, 3-95, 3-97, 3-107, 3-149, 3-185
sockeye salmon · 3-177, 3-180
soil · 2-3, 2-16, 2-19, 2-20, 2-23, 3-4, 3-5, 3-8, 3-24, 3-26, 3-51, 3-59, 3-63, 3-64, 3-114, 3-116, 3-128, 3-129, 3-130, 3-132, 3-133, 3-134, 3-135, 3-160, 3-164, 3-183, 3-184, 3-185, 3-186, 3-189, 3-190, 4-1, 4-8, 4-10, 4-11, 4-15, 4-16, 4-18, 4-23, 4-25, 4-28, 4-30, 4-34, 4-35, 4-36, 4-38
sort yard · 3-190
Special Interest Area · 3-26, 3-36, 3-58
species composition · 1-18, 3-3, 3-42, 3-113, 3-117, 3-119, 3-120, 3-121, 3-122, 3-126, 4-8
standards and guidelines · 1-8, 1-11, 1-13, 1-19, 1-20, 2-1, 2-3, 2-9, 2-13, 2-17, 2-18, 3-7, 3-11, 3-15, 3-17, 3-40, 3-72, 3-77, 3-78, 3-79, 3-80, 3-82, 3-84, 3-119, 3-136, 3-146, 3-147, 3-148, 3-159, 3-179
State Historic Preservation Officer (SHPO) · 2-15, 3-65, 3-68, 3-188, 4-3, 4-24, 4-39
steelhead trout · 3-163
Steller sea lion · 2-22, 3-144, 3-145, 3-146, 4-35
strata · 1-21, 3-8, 3-12, 3-43, 3-71, 3-115, 3-125, 4-28
stream buffer · 3-35, 3-81, 3-118, 3-120, 3-168, 3-179, 4-8, 4-37
stream class · 3-7, 3-160
stream crossing · 2-2, 2-8, 2-24, 3-29, 3-30, 3-34, 3-154, 3-157, 3-165, 3-166, 3-167, 3-170, 3-171, 3-172, 3-173, 3-175, 3-176
stream habitat · 3-8, 3-145
structure · 3-15, 3-16, 3-17, 3-18, 3-21, 3-33, 3-71, 3-73, 3-78, 3-79, 3-84, 3-91, 3-113, 3-116, 3-117, 3-124, 3-126, 3-190, 4-14, 4-17, 4-18, 4-23, 4-24, 4-32, 4-35
subsistence · 1-6, 1-10, 1-14, 1-18, 2-17, 2-23, 3-2, 3-2, 3-6, 3-24, 3-27, 3-34, 3-38, 3-51, 3-65, 3-68, 3-85, 3-98, 3-105, 3-136, 3-137, 3-138, 3-139, 3-140, 3-141, 3-150, 3-151, 3-160, 3-189, 4-7, 4-24
suitable land · 2-1, 3-114
sustained yield · 1-8, 3-128, 4-22, 4-26

T

Tenakee Springs · 4-4, 4-5
tentatively suitable · 3-130, 4-264
thinning · 3-21, 3-78, 3-83, 3-85, 3-91, 3-93, 3-95, 3-97, 3-116, 3-119, 3-120, 3-149, 4-18, 4-19, 4-25
timber harvest · 1-1, 1-5, 1-10, 1-11, 1-16, 1-17, 1-18, 1-19, 1-20, 1-23, 2-7, 2-8, 2-9, 2-11, 2-12, 2-14, 2-17, 2-22, 2-25, 2-26, 3-5, 3-7, 3-12, 3-15, 3-24, 3-30, 3-32, 3-34, 3-37, 3-38, 3-39, 3-41, 3-45, 3-47, 3-48, 3-51, 3-53, 3-55, 3-56, 3-60, 3-63, 3-67, 3-71, 3-73, 3-74, 3-77, 3-82, 3-86, 3-87, 3-91, 3-92, 3-93, 3-96, 3-104, 3-105, 3-107, 3-108, 3-110, 3-111, 3-112, 3-115, 3-116, 3-117, 3-122, 3-124, 3-125, 3-129, 3-130, 3-133, 3-134, 3-139, 3-141, 3-146, 3-148, 3-149, 3-150, 3-153, 3-157, 3-158, 3-159,

3-160, 3-164, 3-165, 3-166, 3-169, 3-176, 3-179, 3-184, 3-185, 3-186, 3-188, 3-190, 3-191, 4-8, 4-21, 4-22, 4-26, 4-37, 4-38
timber harvest economics · 3-37
timber management · 1-8, 1-10, 3-39, 3-83, 3-114, 3-115, 4-26
timber production and Timber Production · 1-7, 1-8, 1-10, 2-5, 3-4, 3-98, 3-99, 3-103, 3-109, 3-111, 3-112, 3-113, 4-22, 4-25, 4-26
timber sales · 1-8, 1-11, 1-17, 1-18, 2-12, 2-13, 2-26, 3-3, 3-37, 3-46, 3-48, 3-60, 3-150, 3-151, 4-21, 4-37
timber supply · 2-7, 2-9, 3-39, 3-45
Tlingit · 3-28, 3-65
Tongass Land and Resource Management Plan (see *Forest Plan*) · 1-1, 1-6, 3-15, 3-58, 3-152, 3-190, 4-13, 4-26, 4-37, 4-38, 4-39
Tongass National Forest · 1-1, 1-4, 1-5, 1-6, 1-8, 1-11, 1-12, 1-19, 1-20, 1-21, 1-23, 2-5, 2-13, 2-20, 2-26, 3-2, 3-5, 3-37, 3-39, 3-47, 3-50, 3-53, 3-70, 3-86, 3-94, 3-147, 3-152, 3-166, 3-190, 4-3, 4-4, 4-13, 4-26, 4-30, 4-31, 4-32, 4-33, 4-34, 4-35, 4-36, 4-37, 4-38, 4-39, 4-40
Tongass Timber Reform Act (TTRA) · 1-19, 1-23, 1-24, 3-188, 4-8, 4-26
tourism · 1-10, 3-28, 3-38, 3-46, 3-80, 3-98, 3-102, 3-104, 3-105, 3-106, 3-107
trails · 1-10, 3-8, 3-20, 3-88 4-12, 4-13
transportation · 1-23, 2-1, 2-5, 2-24, 2-27, 3-40, 3-47, 3-48, 3-138, 3-150, 3-154, 3-157, 3-158, 3-191, 4-2, 4-3, 4-9, 4-10, 4-13, 4-21, 4-22, 4-24
tribal government · 1-15, 3-65, 3-66
trout · 3-163, 3-177, 3-178, 4-7, 4-20, 4-23
turbidity · 4-27

U

uneven-aged management · 3-125
U.S. Coast Guard · 4-6
U.S. Fish and Wildlife Service (USFWS) · 1-13, 2-3, 4-3, 4-10, 4-34

V

Value Comparison Unit (VCU) · 1-2, 3-2, 4-27
vegetation · 2-16, 2-18, 2-23, 3-8, 3-15, 3-21, 3-40, 3-49, 3-78, 3-83, 3-85, 3-91, 3-93, 3-95, 3-97, 3-101, 3-102, 3-107, 3-109, 3-110, 3-111, 3-113, 3-114, 3-117, 3-125, 3-126, 3-127, 3-129, 3-133, 3-134, 3-160, 3-164, 3-183, 3-184, 4-9, 4-10, 4-11, 4-13, 4-16, 4-19, 4-28, 4-30
viable population · 1-10, 2-14, 2-18, 2-22, 3-8, 4-16
viewshed · 1-7, 1-8, 1-10, 2-17, 3-80, 3-98, 3-103, 3-109, 4-27
Visual Quality Objective (VQO) · 2-17, 3-108, 3-109, 3-110, 3-111, 4-12, 4-27
volume class · 1-21, 3-15, 3-17, 3-19, 3-84, 3-115, 4-28
volume strata · 1-21, 3-8, 3-12, 3-43, 3-72, 3-84, 3-86, 3-87, 3-115, 3-123, 3-124, 4-28

W

water quality · 2-15, 3-4, 3-59, 3-63, 3-64, 3-146, 3-160, 3-164, 3-168, 3-170, 3-171, 3-172, 3-173, 3-174, 3-175, 3-176, 3-179, 3-180, 4-8, 4-24

waterfowl · 3-94, 3-137

western hemlock · 3-41, 3-108, 3-113, 4-16, 4-329

wetlands · 1-21, 1-22, 2-15, 2-17, 2-24, 3-5, 3-26, 3-53, 3-160, 3-177, 3-182, 3-183, 3-184, 3-185, 3-186, 3-187, 3-190, 3-192, 4-11, 4-28, 4-34

whales · 3-144, 3-145, 3-146

wilderness · 1-6, 2-26, 3-2, 3-24, 3-29, 4-7, 4-22, 4-26, 4-27

wildlife habitat · 1-8, 1-10, 1-17, 2-22, 2-26, 3-16, 3-24, 3-27, 3-29, 3-30, 3-33, 3-34, 3-119, 3-182

wind disturbance · 3-116, 4-35

windfirmness · 1-18, 3-118, 3-168

windthrow · 3-126

winter habitat · 1-16, 2-7, 2-10, 3-7, 3-21, 3-27, 3-34, 3-71, 3-72, 3-85, 3-86, 3-87, 3-91, 3-92, 3-93, 4-37

winter range · 2-24, 2-25, 3-7, 3-17, 3-19, 3-20, 3-87

Y

yellow-cedar (Alaska yellow-cedar) · 1-18, 2-23, 3-46, 3-113, 3-114, 3-116, 3-119, 3-121, 3-122, 3-123, 3-126, 4-16, 4-33

4 Lists

Page left blank intentionally.