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United States
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Forest Service

Alaska Region
R10-MB-146

August 1991

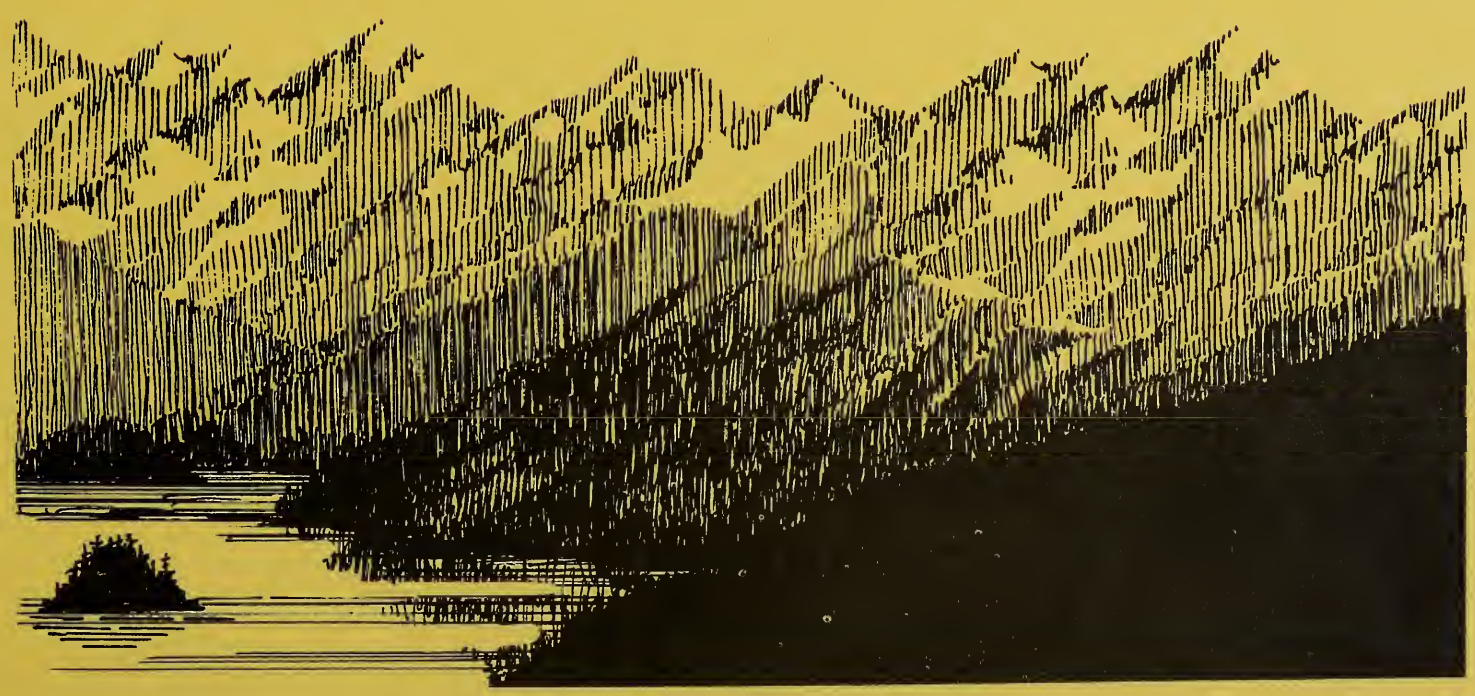


Tongass Land Management Plan Revision

Supplement to the
Draft Environmental
Impact Statement

Proposed Revised Forest Plan

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**Tongass Land
Management Plan
Revision**

Supplement to the
Draft Environmental
Impact Statement

Proposed Revised Forest Plan

TONGASS NATIONAL FOREST PROPOSED LAND AND RESOURCE MANAGEMENT PLAN

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Chapter 1

Introduction

CHAPTER 1 - INTRODUCTION

PURPOSE

The Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Tongass National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for different kinds of resource management.

The Forest Plan embodies the provisions of the National Forest Management Act, the implementing regulations, and other guiding documents. The multiple-use goals and objectives, and the land use prescriptions and standards and guidelines, constitute a statement of the Forest Plan's management direction. The projected outputs and rates of implementation, while a part of the overall goals and objectives, are dependent on the annual budget process.

This Forest Plan is a revision of the 1979 Tongass Land Management Plan and its subsequent amendments (1986, 1991).

RELATIONSHIP TO OTHER DOCUMENTS

This Forest Plan sets forth in detail the preferred alternative for managing the land and resources of the Tongass National Forest. The Plan is a result of extensive analysis that is addressed in the accompanying environmental impact statement (EIS). The planning process and the analysis procedures used to develop this Plan are described in the EIS. The EIS also describes other alternatives considered in the planning process, and discusses how the public issues identified during the process helped shape the alternatives, including the preferred alternative. Public issues were an integral part of developing the revised Forest Plan.

Specific activities and projects will be planned and implemented to carry out the direction in this Plan. The Forest will perform environmental analyses on these projects and activities. This subsequent environmental analysis will be tiered to the data and evaluations in the Plan and EIS.

Most existing resource management plans for the Tongass National Forest are already a part of, and consistent with, the Forest Plan, since this is a revision of an existing Plan. Several Wilderness Plans were developed since the 1986 amendment of the 1979 Forest Plan, and are incorporated here as part of the revised Plan. Further direction for Wilderness management is contained in Supplement 46 to Forest Service Manual 2320 and has been incorporated into the Forest Plan through the 1991 amendment. Off-highway vehicle (OHV) plans are developed on an as-needed basis. The Forest is designated open to OHV's unless site-specific closures are made. The Off-Road Vehicle Management Plan

for the Juneau Area (Juneau Ranger District, November 1985) is incorporated here by reference.

The Tongass Timber Reform Act (November 28, 1990) was enacted between release of the Forest Plan Revision DEIS (June, 1990) and its subsequent Supplement (September, 1991). This Act gave additional requirements and direction for the revised Tongass Forest Plan, some of which are included in the 1991 amendment. The incorporation of the requirements of the Act into the Forest Plan is discussed in Chapter 5 of this document, as well as in the Forest Plan Revision DEIS Supplement.

ORGANIZATION

What is Forest Planning? Let's compare it to something that is familiar: land use zoning for a community. In a community, certain areas are zoned for commercial uses (stores), industrial uses (factories), and residential areas (where homes may be built). Each of these "zones" has certain uses which may occur there, and others that may not. Many different uses may apply to the same zone. Some zoning requirements may apply only to specific areas of a zone.

In Forest Planning, we call the zoning process "*allocation or land allocation*." Certain areas of the Forest (*land use designations*) are zoned (*allocated*) for different uses. The description of the uses to which the land may be put and the activities which may occur there is called a *management prescription*. Each management prescription gives general direction on what may occur within the area covered by the corresponding land use designation, the standards for accomplishing each activity, and the guidelines on how to go about accomplishing the standards. These are called the "*Land Use Designation Standards and Guidelines*." Some of these standards and guidelines may be common to many areas of the Forest. These are called *Forest-wide Standards & Guidelines*.

(Note: The term "land use designation" is used throughout the document instead of "management area" as used in the 1990 DEIS. This is because the Tongass Timber Reform Act refers specifically to the management areas of the 1979 Forest Plan. These management areas, 141 in all, are considerably different than the ones in the 1990 DEIS, and the term land use designation is used to avoid confusion. The 1979 Forest Plan management areas are used to address the timber harvest "proportionality" requirement of the Act, as discussed in Chapter 5; their boundaries are displayed on the "No Action" Alternative map.)

Standards & guidelines are designed so that all activities are integrated to meet land allocation objectives. Standards and guidelines represent minimum achievement levels, but do not limit achievements: higher objectives may always be attained. For instance, if a land use prescription allows activities to visually dominate the landscape (*Visual Quality Objective: Modification*), then visual quality which is not dominating is always acceptable (*Visual Quality*

Objectives: Preservation through Partial Retention). Standards & guidelines are also intended to be used in conjunction with National and Regional policies, standards and guidelines contained in Forest Service manuals and handbooks, and the Alaska Regional Guide; they have been designed to be compatible with this other direction.

The location of land use designation boundaries (see map for Alternative P, the preferred alternative) is approximate due to the map scale used, and the programmatic nature of the allocations. Some boundary adjustments may be necessary as specific projects are implemented under the Plan. These adjustments will normally be made through Plan amendments.

The Forest Plan is organized into several chapters. After Chapter 1 (this introduction), Chapters 2, 3 and 4 present the management direction for the Forest. Chapter 2 lists the overall resource management goals, gives a description of the "desired future condition" of the Forest, and includes the specific objectives and resource schedules that will be used to achieve the goals as the Plan is implemented.

Chapter 3 includes a complete description of each management prescription, and Chapter 4 contains the Forest-wide standards and guidelines. The direction in these two chapters is used together for managing the uses and activities of the land use designations.

Chapter 5 discusses the Forest Plan implementation process, and includes the implementation requirements of the Tongass Timber Reform Act. The process used to amend or revise the Plan is also discussed. Chapter 6 is the monitoring and evaluation plan, and Chapter 7 is a glossary. Several appendices are also included.

FOREST LOCATION AND DESCRIPTION

The 17-million acre Tongass National Forest is located in Southeast Alaska, a part of the Alexander Archipelago, and occupies about seven percent of the State's area. The Tongass extends from Dixon Entrance in the south to Yakutat in the North, and is bordered on the east by Canada and on the west by the Gulf of Alaska. It extends approximately 500 miles north to south, and approximately 120 miles east to west at its widest point. Figure 1-1 is a vicinity map of the Tongass.

The Tongass includes a narrow mainland strip of steep, rugged mountains and icefields, and over one thousand offshore islands. Together, the islands and mainland equal nearly 11,000 miles of meandering shoreline, with numerous bays and coves. A system of seaways separates the many islands and provides a protected waterway called the Inside Passage. Federal lands comprise about 95 percent of Southeast Alaska, with about 80 percent in the Tongass National

**FIGURE 1-1
TONGASS NATIONAL FOREST VICINITY MAP**



Forest (and most of the rest in Glacier Bay National Park and Preserve). The remaining land is held in State, Native and private ownerships.

Most of the area of the Tongass is wild and undeveloped. About 65,000 people inhabit Southeast Alaska, most living in 33 communities located on island or mainland coasts. Only eight of the communities have populations greater than 1,000 persons. Most of these communities are surrounded by, or adjacent to, National Forest land. Just three towns are connected to other parts of the mainland by road: Haines and Skagway to the North, and Hyder to the south.

The economies of Southeast Alaska's communities are largely dependent on the Tongass National Forest to provide natural resources for uses such as fishing, timber harvesting, recreation, tourism, mining and subsistence. Maintaining the abundant natural resources of the Forest while also providing opportunities for their use is a major concern of Southeast Alaska residents.

Because of its immense size, the Tongass National Forest is divided into three Administrative Areas, each with its own Forest Supervisor: the Chatham Area with its Supervisor's Office at Sitka, the Stikine Area with its Supervisor's Office at Petersburg, and the Ketchikan Area with its Supervisor's Office in Ketchikan. There are nine Ranger Districts, with offices in Yakutat, Juneau, Hoonah, Sitka, Petersburg, Wrangell, Thorne Bay, Craig, and Ketchikan. There are also two National Monuments, Admiralty Island and Misty Fiords, with offices in Juneau and Ketchikan.

SUMMARY OF THE "AMS"

The supply and demand situation for major resources of the Forest was evaluated during the "analysis of the management situation" (AMS) in 1988 and 1989 (see Chapter 2 of the EIS), and then reevaluated after passage of the Tongass Timber Reform Act (TTRA) (November 1990). The maximum potentials for supplying selected major resources, plus the actual supplies under the existing Forest Plan, were determined. Maximum and existing-Plan resource potentials were determined for timber (first-decade timber harvest), fish (anadromous fish), recreation, wildlife (old-growth habitat) and wilderness (from existing unroaded areas).

Potential resource maximums, subject only to meeting all legal requirements, were determined for each resource separately (they could not all be achieved together). Following TTRA, these were:

- a. A maximum first-decade annual harvest level of as high as 704 million board feet (after the Tongass Timber Reform Act).
- b. A commercial fish habitat capability increased to about 115 million pounds per year during the first decade.

- c. Recreation capacity increased to about 4.7 million recreation visitor days annually.
- d. A maximum old-growth wildlife habitat retained after the first decade of 8.7 million acres.
- e. A maximum of 10.4 million acres of unroaded lands could be designated as wilderness.

The production of these same resources under the existing plan (adjusted for TTRA) is:

- a. The maximum annual harvest level is 451 million board feet (after the Tongass Timber Reform Act).
- b. Commercial fish habitat capability is about 115 million pounds per year.
- c. Recreation capacity is 4.7 million recreation visitor days annually.
- d. The maximum old-growth wildlife habitat that could be retained after the first decade is 8.5 million acres.
- e. A maximum of 10.4 million acres of unroaded lands could be designated as wilderness.

Resource potential (supply) is a general indication of how much of a particular resource might be available. Resource demand gives an indication of how much of a resource might be needed or desired. Resource demands are discussed in more detail in Chapter 3 of the EIS. A few key points are summarized here.

- a. *Fish* - The demand for commercial fish (about 95 percent of total demand) is expected to exceed current potentials for all species.
- b. *Recreation* - Recreation use is predicted to increase over the next decade, but will remain well below the Forest's current capacity of 4.7 million recreation visitor days.
- c. *Wildlife* - Hunting demand for old-growth-related game species is predicted to increase over the next decade.
- d. *Timber* - Market demand is expected to remain strong over the next decade, with the share of National Forest timber expected to be at least two-thirds of the total harvest in Southeast Alaska.
- e. *Wilderness* - Additional Wilderness for the Tongass was considered during debate on the Tongass Timber Reform Act, which added 0.3 million acres of Wilderness to the Tongass (for a total of 5.8 million acres). No additional Wilderness needs are anticipated for the next decade.

Chapter 2

Goals, Objectives and Resource Schedules

CHAPTER 2 - GOALS, OBJECTIVES AND RESOURCE SCHEDULES

INTRODUCTION

Chapters 2, 3 and 4 of the Forest Plan present the direction for managing the Tongass National Forest. The management direction of this revised Forest Plan conveys the intent of governing laws, regulations, policies, and the Regional Guide in the form of goals, objectives, practices, standards and guidelines, operational considerations, and output schedules of goods and services.

Management direction for the Forest consists of the following five integrated components:

Forest Management Goals - Multiple-use and other goals established in the planning process to aid in Plan development and to guide Forest management.

Desired Future Condition of the Forest - A description of how the Forest should appear in the future given full implementation of the revised Forest Plan. Two time periods, 10 years and 50 years, are used for specific resources where a measurable difference can be predicted.

Forest Management Objectives - The level of goods and services that is anticipated as the revised Plan is implemented, expressed as resource outputs and schedules.

Management Prescriptions - The management prescription for each land use designation is given. (The areas allocated to each land use designation for the Forest Plan are displayed on the Alternative P map in the map packet.) Each prescription includes an introduction, with goals and descriptions, and management practices, standards and guidelines by resource.

Forest-wide Standards and Guidelines - These are the standards and guidelines that apply to all, or most, areas of the Forest. Each management prescription includes a list of those that apply to that land use designation.

Chapter 2 includes the first three of these components. Together, these five components of Forest direction, along with the land use designation map, establish a management framework that governs the location, design, and scheduling of all Forest management activities and, within the framework of which, area and project-level planning is undertaken to achieve Forest Plan implementation.

Priority of Direction

Every effort has been made to achieve conformity between the components of management direction just described, and between Forest Plan direction and higher-level direction contained in law and regulation, the Forest Service manual and handbook, and the Alaska Regional Guide. If a conflict or discrepancy between direction should occur, the following priority among direction will apply:

1. Higher-level direction always takes precedence over any conflicting Forest Plan direction.
2. Between the components of Forest Plan management direction, the management prescription standards and guidelines for each land use designation take precedence over the Forest-wide standards and guidelines applied to that same designation, should any conflicts occur. Any summaries of these standards and guidelines (such as in "At-a-Glance," in the Comparison Table, or in the map legends) are not considered direction.
3. The standards and guidelines for each management prescription will always be applied, regardless of the levels of outputs or numbers of projects achieved, and regardless of actual budget allocations. To put it another way, all projects and activities must use the applicable standards and guidelines when implemented.
4. One purpose of monitoring and evaluation (see Chapter 6) is to assure that management direction is being carried out, and that the outputs and schedules are being achieved. If monitoring shows continued conflicts or problems in implementing the management direction, then a Forest Plan amendment may be necessary.

**FOREST
MANAGEMENT
GOALS**

Management direction for the Tongass National Forest was developed considering multiple-use goals for managing Forest resources. The goals presented below are broad in scope, and are responsive to public issues and resource opportunities. They provide the basis for the Forest management objectives and projected outputs of goods and services displayed later in this chapter.

**Rural
Development**

Emphasize opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska.

**Visual
Resource**

Provide Forest visitors with visually appealing scenery, with emphasis on most areas seen along the Alaska Marine Highway, State highways, and major Forest roads. In other areas, where landscapes are being altered by management activities, the activity may dominate the characteristic landscape.

Recreation

Provide a range of recreation opportunities consistent with public demand, with emphasis on recreation places identified as being popular with local users or important to the tourism industry.

Fish Habitat

Maintain or improve the aquatic biological productivity of all anadromous and important resident fish streams and lakes (Class I). In less important resident fish streams (Class II), maintain habitat capability to the extent practical.

**Wildlife
Habitat**

Maintain as much contiguous old-growth habitat as possible for old-growth associated species to ensure the maintenance of viable populations. Minimize adverse impacts from human activities through road and facility management.

Subsistence

Provide for the continuation of subsistence uses by all rural Alaska residents.

**Timber
Management**

Manage the timber resource to provide for the maximum production of sawtimber and other wood products within the capability of the land, while meeting the management requirements for other resources. Manage timber on an even-flow, long-term sustained yield basis in the most economically efficient manner. Seek to provide a timber supply consistent with local and regional needs.

Transportation	Develop and manage roads and utility system opportunities to support resource management objectives. Recognize opportunities for the development of utility systems.
Minerals	Emphasize the development of mineral resources in areas with high development potential. Encourage environmentally sound mineral exploration, development and reclamation in areas open to mineral entry while recognizing other resource needs and values. Provide for the environmentally sound exercise of valid existing rights in areas otherwise closed to mineral entry. Seek withdrawal of areas where mineral development is not allowed by a specific land use designation.
Wilderness and Roadless Areas	Maintain a wilderness setting consistent with ANILCA on the 5.8 million acres of Wilderness on the Tongass. Manage large, regionally-recognized roadless areas to retain their undeveloped character.
Wild and Scenic Rivers	Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National Wild and Scenic Rivers System.
Research	Continue to seek out and promote research opportunities that are consistent with identified information needs.
Air	Maintain the current air resource condition to protect the Forest's ecosystems from on- and off-Forest air emission sources.
Soils	Maintain soil productivity, and minimize soil erosion resulting from land-disturbing activities.
Water	Provide water of sufficient quality to meet or exceed Alaska State Water Quality Standards for designated beneficial uses.
Riparian	Maintain or improve riparian-dependent resources consistent with existing laws and regulations.
Wetlands	Maintain wetlands and their associated functions and values to the extent practicable.

**DESIRED FUTURE
CONDITION**

The present condition of the Tongass National Forest is described in Chapter 3 of the Supplemental Draft Environmental Impact Statement. As the Forest Plan is implemented, the condition of the Forest will change in some areas as a result of management activities, while other areas will remain essentially as they are today, subject only to natural processes. The application of any of the land use designations to a particular area carries with it certain desires for the future condition of that area. These future conditions are highlighted here.

**Unmodified
Environments**

The majority of Tongass National Forest land (about 60 percent) will be managed to emphasize natural values and to allow natural processes to determine future conditions:

- Lands within the Wilderness, Wilderness National Monument, Research Natural Area, Wild River and most Special Interest Area land use designations (LUD's) (about 35 percent of the Forest) will retain their (often extensive) unmodified natural environments, with a high degree of natural diversity and pristine scenic quality. Natural ecological processes have not been measurably altered by past activities, and will continue to evolve essentially without human influences.

- Lands within the Primitive Recreation, Old Growth, Legislated LUD II and Other Areas LUD's (about 25 percent of the Forest) will also retain their (often extensive) unmodified natural environments, natural diversity and pristine scenic quality. Natural ecological processes have not been measurably altered by past activities, and will continue to evolve essentially without human influences.

In these areas, future human activities will be limited to dispersed types of recreation, subsistence uses and scientific study. Motorized access will be limited to boats, aircraft and snowmachines. Recreation settings will retain their primitive character, and will offer a high degree of solitude. Wildlife and fish habitats will continue to evolve naturally (except for some fish and wildlife habitat improvement projects), and wildlife and fish populations will be affected only by subsistence activities, hunting and fishing. These areas will be unroaded, with the possible exception of limited road corridors that access other LUD's, or restricted-use roads to mining or utility sites.

**Near-Natural
Environments**

Another eight percent of Tongass National Forest land will be managed to allow a wider range of human activities in an environment where natural values still predominate:

- Lands within the Beach Fringe and Estuary, and Semi-primitive Recreation, LUD's, and most lands within the Stream and Lake Protection and Scenic River LUD's, will retain their largely unmodified natural environments, natural diversity and scenic quality. Natural ecological processes

have not been altered by past activities in most areas, although log transfer sites, evidence of timber harvest, roads and bridges may be present. These activities will continue to a limited degree, with timber harvest restricted to portions of the Stream and Lake Protection and Scenic River Land Use Designations.

In these areas, future human activities will include dispersed types of recreation, subsistence uses, a limited amount of timber harvest, and some additional road and log transfer facility construction. Motorized access, in addition to boats, aircraft and snowmachines, will include vehicles on a limited road system. Road uses will in most cases be for recreation purposes. Many recreation settings will retain their primitive character and offer a high degree of solitude; others will offer natural but roaded recreation opportunities. Wildlife and fish habitats will continue to evolve naturally in most areas, although some timber harvest will occur, and wildlife and fish populations will generally be affected only by hunting and fishing. Riparian habitat for fish and other riparian-associated resources will be maintained. Portions of some of these LUD's may have roads. Limited road corridors that access other LUD's, or restricted-use roads to mining or utility sites, may also be present.

Modified Environments

Twelve percent of Tongass National Forest land will be managed to allow a moderate amount of timber harvest that is either not visually evident to most forest visitors, or is designed to appear compatible with surrounding landscapes:

- Lands within the Scenic Viewshed, Modified Landscape and Recreation River LUD's will have modified natural environments, with diversity and scenic quality determined by moderate amounts of timber harvest. Natural ecological processes, in areas with suitable timberlands, will often be replaced by timber management, with tree stands of different sizes and ages that will undergo periodic timber harvest, thinning and other silvicultural practices. The landscape as viewed by most forest visitors (such as from marine transportation routes, travel corridors and developed recreation sites) will have a modified but still basically "natural" appearance.

In these areas, future human activities will include timber harvest and road construction (less for Recreation Rivers than for the other LUD's), dispersed and developed types of recreation, and subsistence uses. Motorized uses will include both logging and recreation traffic. Recreation settings will retain a fairly natural appearance within a somewhat modified landscape, and will usually be near roads with access by conventional motorized vehicles. Wildlife habitats will be modified by new roads and harvest units, and this may affect old-growth associated wildlife species. Natural diversity will gradually change to a human-made diversity, and in the future large areas within the Scenic Viewshed and Modified Landscape LUD's will present a mosaic of timber harvest units of varying sizes and ages, crossed by roads and interspersed with areas of old-growth and non-forest vegetation.

**Highly Modified
Environments**

Twenty percent of Tongass National Forest land will be managed to emphasize timber harvest or the potential for mineral development:

- Lands within the Timber Production and Minerals LUD's will have highly modified natural environments. Lands managed for timber harvest will have reduced natural diversity and scenic values; this may also be true of lands under the Minerals LUD, and portions of the Nonwilderness National Monument LUD, if mineral development occurs. Natural ecological processes, in areas with suitable timberlands, will be replaced by timber management, with tree stands of different sizes and ages that will undergo periodic timber harvest, thinning and other silvicultural practices. The landscape will have a highly modified appearance.

In these areas future human activities will dominate, and will include timber harvest, road construction and mining. Dispersed and developed types of recreation compatible with a highly modified setting will be available. Subsistence opportunities will be available, but will favor activities that rely on easy access. Motorized uses will include logging and recreation traffic, and mine equipment in localized areas. Recreation activities will usually be near roads with access by conventional motorized vehicles. Wildlife habitats will be modified by new roads, harvest units and mining activities, and this will likely affect old-growth associated wildlife species. Natural diversity will change to a human-made diversity, and in the future large areas within the Timber Production LUD will present a mosaic of timber harvest units of varying sizes and ages, crossed by roads and interspersed with areas of old-growth and non-forest vegetation.

**FOREST
MANAGEMENT
OBJECTIVES**

This section includes the objectives for implementing the Revised Forest Plan. The objectives include annual outputs and activities, listed in the following table, and also year-by-year resource projects, contained in several tables following the outputs and activities. Resource schedules for the next decade are included for recreation trails and facilities, wilderness plans and projects, wildlife projects, fish projects, timber sales, roads, and administrative facilities.

Resource Outputs, Activities, Effects and Costs ¹

Resource Output, Activity, Effect or Cost	Unit of Measure ²	First Decade	Fifth Decade
<i>Recreation Capacity (Recreation Opportunity Spectrum Classes)⁴</i>			
Primitive, and Semi-primitive Non-motorized	MRVD's	1,012	3
Semi-primitive Motorized	MRVD's	1,003	3
Roaded Natural and Roaded Modified	MRVD's	2,657	3
Total	M RVD's	4,672	3
<i>Trail Construction/Reconstruction⁴</i>	Miles	7	3
<i>Developed Site Construction/Reconstruction⁴</i>	PAOT's	137	3
<i>Visual Quality Objectives (excluding Wilderness)</i>			
Retention	M Acres	4,611	4,611
Partial Retention	M Acres	3,092	3,092
Modification	M Acres	1,141	1,141
Maximum Modification	M Acres	2,446	2,446
<i>Roadless Lands Remaining</i>	M Acres	14,802	13,503
<i>Wild and Scenic River Recommendations</i>			
Wild	Miles	249	3
Scenic	Miles	72	3
Recreational	Miles	85	3
<i>Research Natural Areas</i>	Number	23	3
<i>Special Interest Areas</i>	Number	20	3
<i>Experimental Forests</i>	Number	1	3
<i>Hunting and Fishing⁴</i>			
Brown Bear Hunting	Hunter Days	900	3
Black Bear Hunting	Hunter Days	2,600	3
Deer Hunting	Hunter Days	45,296	3
Sport Fishing Use	M WFUD's	175	181
<i>Wildlife Habitat Capability (Percent of 1954 Capability)</i>			
Deer	Percent	89	77
Brown Bear	Percent	96	94
Black Bear	Percent	97	89
Mountain Goat	Percent	99	99
Marten	Percent	90	81
Red Squirrel	Percent	95	91
Brown Creeper	Percent	59	48
Red-breasted Sapsucker	Percent	90	79
Hairy Woodpecker	Percent	80	67
Bald Eagle (Nesting)	Percent	92	92
Wolf	Percent	89	83
River Otter	Percent	93	93
Vancouver Canada Goose	Percent	91	82
<i>Allowable Sale Quantity⁴</i>	MMBF	418	399
	MMCF	100	100

Resource Outputs, Activities, Effects and Costs ¹ (continued)

Resource Output, Activity, Effect or Cost	Unit of Measure ¹	First Decade	Fifth Decade
<i>Precommercial Thinning</i> ⁴	Acres	7,778	3,900
<i>Productive Old Growth Retained at End of Decade (Percent of 1954 Acres)</i>			
Strata A	Percent	99	89
Strata B	Percent	95	79
Strata C	Percent	58	46
Strata D	Percent	54	49
Total	Percent	91	78
<i>Road Construction</i> ⁴	Miles	205	58
<i>Suitable Lands Scheduled for Timber Harvest (all decades)</i>	M Acres	1,649	1,649
<i>Timber Harvest by Method</i> ⁴			
Clearcut	Acres	15,600	16,600
Tree Selection	Acres	300	300
<i>Fisheries Improvement Projects</i> ⁴			
Projects	Number	25	³
Pounds of Fish (annual average)	MM pounds	4.7	³
Pounds of Fish (at full production)	MM pounds	19.9	³
<i>Wildlife Improvement Projects</i> ⁴			
Non-structural	Acres	13,800	³
Structural	# of Structures	385	³
<i>Total Forest Budget</i> ⁴	MM Dollars	106.6	³
<i>Payments to State</i> ⁴	MM Dollars	18.9	³
<i>Employment</i> ⁴			
Commercial Fish	Jobs	4,925	³
Timber Harvest	Jobs	4,350	³
Recreation/Tourism	Jobs	2,550	³
Mining and Mineral Development	Jobs	1,100	³
Other	Jobs	3,200	³
Total	Jobs	16,125	³
<i>Income</i> ⁴			
Commercial Fish	MM \$	161.6	³
Timber Harvest	MM \$	169.3	³
Recreation/Tourism	MM \$	68.8	³
Mining and Mineral Development	MM \$	56.7	³
Other	MM\$	99.5	³
Total	MM \$	555.9	³

¹ Figures are in average annual amounts where noted.

² The abbreviations mean: M = thousands; MM = millions; RVD = recreation visitor day; PAOT = persons at one time; WFUD = wildlife and fish user day; MMBF = million board feet

³ Not projected beyond the first decade.

⁴ Average annual.

TEN-YEAR RECREATION CAPITAL INVESTMENT PROGRAM

Trail Construction & Reconstruction

Project	Location	Miles	Cost	FY Tenta- tively Funded
Starrigaven Coop Trail	Chatham, SRD	.7	\$112,000	1991
Harbor Mt./Gavin Hill Phase I Reconstruction	Chatham, SRD	1.6	90,000	1991
Spaulding Meadow Reconstruction	Chatham, JRD	1.5	40,000	1991
Survey & Design Institute Phase IV	Stikine, WRD	N/A	9,000	1991
Cascade Creek Phase II Construction/Reconstruction	Stikine, PRD	2.0	60,000	1991
Survey & Design Sarkar Lake Portages	Ketchikan, TBRD	N/A	25,000	1991
Harbor Mt./Gavin Hill Phase II Reconstruction	Chatham, SRD	4.4	282,000	1992
Survey & Design, Montana Creek	Chatham, JRD	N/A	30,000	1992
Survey & Design Windfall Lake	Chatham, JRD	N/A	10,000	1992
Cascade Creek Phase III Construction/Reconstruction	Stikine, PRD	1.0	148,000	1992
Institute, Phase IV Reconstruction	Stikine, WRD	0.5	94,000	1992
Kunk Lake Reconstruction	Stikine, WRD	0.3	53,000	1992
Sarkar Lake Portages Construction	Ketchikan, TBRD	1.4	213,000	1992
Windfall Lake Reconstruction	Chatham, JRD	3.6	56,000	1993
Montana Creek Reconstruction	Chatham, JRD	6.0	180,000	1993
Survey & Design Auke Rec Picnic Area Trails	Chatham, JRD	N/A	74,000	1993
Cascade Creek Phase IV Construction/Reconstruction	Stikine, PRD	1.0	122,000	1993
Petersburg Creek Trail & Bridge Reconstruction	Stikine, PRD	10.2	150,000	1993

Trail Construction & Reconstruction (continued)

Project	Location	Miles	Cost	FY Tentatively Funded
Auke Rec Picnic Area Trails	Chatham, JRD	2.0	370,000	1994
Survey, Design, Construction Situk Weir	Chatham, JRD	3.0	60,000	1994-99
Survey, Design, Construction Shelikof Bridge	Chatham, SRD	0.1	80,000	1994-99
Survey, Design, Construction Mt. Edgecombe	Chatham, SRD	6.2	300,000	1994-99
Survey, Design, Construction Hamilton Creek	Stikine, PRD	0.5	73,000	1994-99
Survey, Design, Construction Crystal Mountain	Stikine, PRD	3.0	100,000	1994-99
Survey, Design, Construction McDonald Lake	Ketchikan, KRD	0.1	16,000	1994-99
Survey, Design, Construction Lower Deer Mountain	Ketchikan, KRD	1.0	243,000	1994-99
Additional trails to be identified through District recreation analyses	Various Areas	96.7	3,364,000	1994-99

Recreation Facility Construction & Reconstruction

Project	Location	Capacity (PAOT)	Cost Funded	FY Tentatively Funded
Auke Rec Picnic Area, Phase I	Chatham, JRD	150	\$436,000	1991
Auke Rec Picnic Area, Phase II	Chatham, JRD		65,000	1991
Survey & Design Mendenhall Campground	Chatham, JRD	N/A	80,000	1991
Eagle Beach Toilet Replacement	Chatham, JRD	2	25,000	1991
Starrigaven Coop Trail Facilities	Chatham, SRD		5,000	1991
Harbor Mt. Shelter	Chatham, SRD	5	8,000	1991
Shelikof Cabin	Chatham, SRD	5	34,000	1991
Salt Chuck Cabin	Stikine, PRD	7	30,000	1991
Kunk Lake Cabin	Stikine, WRD	5	24,000	1991
Tower Arms Cabin	Stikine, PRD	7	30,000	1991
Survey & Design Sarkar Lake Portage Facilities	Ketchikan, TBRD	N/A	2,000	1991
S.E. Alaska Public Lands Information Center	Ketchikan		2,984,000	1991
Auke Rec. Picnic Area Phase III	Chatham, JRD		1,476,000	1992
S.E. Alaska Public Lands Information Center	Ketchikan		3,265,720	1992
Sarkar Lake Portage Fac.	Ketchikan, TBRD		20,000	1992
Survey & Design Mendenhall Visitor Center	Chatham, JRD		600,000	1993
Mendenhall Campground Rehabilitation	Chatham, JRD	305	700,000	1993/94/95
Survey & Design Starrigaven Campground	Chatham, SRD	N/A	70,000	1994-99

Recreation Facility Construction & Reconstruction (continued)

Project	Location	Capacity (PAOT)	Cost Funded	FY Tentatively Funded
Starrigaven Campground Rehabilitation	Chatham, SRD	170	360,000	1994-99
Eagle Glacier Cabin	Chatham, JRD	6	16,000	1994-99
Auke Village Campground Rehabilitation	Chatham, JRD	60	280,000	1994-99
Survey & Design, Middle Situk Cabin	Chatham, YRD	N/A	10,000	1994-99
Middle Situk Cabin	Chatham, YRD	12	89,100	1994-99
Mendenhall Visitor Center	Chatham, JRD		15,000,000	1994-99
Woodpecker Cove Picnic Area	Stikine, PRD	10	80,000	1994-99
Survey & Design Ohmer Campground	Stikine, PRD	N/A	13,440	1994-99
Survey, Design, Construction Portage Cabin	Stikine, ?RD	6	48,000	1994-99
Survey & Design Wrangell Campground	Stikine, WRD	N/A	10,000	1994-99
Wrangell Campground Construction	Stikine, WRD	25	262,000	1994-99
Survey & Design RV Campground	Ketchikan, KRD	N/A	11,000	1994-99
RV Campground	Ketchikan, KRD	50	340,000	1994-99
Buoy Replacement	Ketchikan, ?RD	9	22,500	1994-99
Additional Recreation Facilities to be identified through District recreation analyses.	All areas	540	4,395,000	1994-99

WILDERNESS SCHEDULES AND PROJECTS

1. Complete Wilderness and Monument Wilderness Implementation Schedules (WIS's) as follows:

Wilderness Name	Complete by End of FY
Kootznoowoo Wilderness, Admiralty Island National Monument (Includes the Youngs Lake Addition)	92
Russell Fiord Wilderness	92
South Prince of Wales Wilderness	92
Stikine-LeConte Wilderness	92
West Chichagof-Yakobi Wilderness	92
Chuck River Wilderness	93
Coronation Island Wilderness	93
Kuiu Wilderness	93
Maurelle Islands Wilderness	93
Misty Fiords National Monument Wilderness	93
Petersburg Creek-Duncan Salt Chuck Wilderness	93
Tebenkof Bay Wilderness	93
Tracy Arm-Fords Terror Wilderness	93
Warren Island Wilderness	93
Endicott River Wilderness	94
Karta Wilderness	94
Pleasant-Lemusurier Islands-Inian Islands Wilderness	94
South Etolin Wilderness	94
South Baranof Wilderness	94

2. Complete the following trail and facility construction and rehabilitation projects as scheduled and funded in the current Capital Investment Program:

TRAILS

Wilderness	Project	Mile	Funds	Tentative FY Funded
Misty Fiords	Winstanley Lake Bridge Reconstruction	0.1	\$70M	1991
Misty Fiords	Upper Manzanita Trail Survey & Design	N/A	3M	1992
Misty Fiords	Upper Manzanita Trail Reconstruction	1.5	43M	1993
Misty Fiords	Nooya Bridge Survey & Design	N/A	3M	1992
Misty Fiords	Nooya Bridge	0.1	26M	1993
Petersburg-Duncan	Petersburg Trail & Bridge Reconstruction	2.0	150M	1993

FACILITIES

Wilderness	Project	POAT	Funds	Tentative FY Funded
Misty Fiords	Marine Buoy Replacement (3) (Manzanita, Nooya, & Bakewill)	9	\$22.5M	92
Misty Fiords	Saks/Fitzgibbon Cabin Construction	6	58M	92

TEN-YEAR WILDLIFE IMPLEMENTATION ACTION PROGRAM

Type of activity or project	<i>Chatham</i>	<i>Stikine</i>	<i>Ketchikan</i>
Threatened, Endangered & Sensitive Species:			
Sensitive Species Plans (Total for Decade)	10	10	8
Habitat Improvement:			
Acres/Year	200	100	500
Structures/Year	6	5	10
Support Development (Avg. Annual Cost)	\$44,000	\$35,000	\$50,000
Habitat Improvement (Avg. Annual Cost)	\$80,000	\$65,000	\$300,000
All Other Wildlife:			
Habitat Improvement (Acres/Year):			
Moose	500	400	500
Bear	6,400	0	0
Grouse	500	0	0
Waterfowl	50	100	50
Deer (2nd growth management)	1,300	1,200	2,000
Habitat Improvement (Structures/Year):			
Waterfowl	60	20	10
Snags/Cavity Nesting	100	20	0
Bear	20	0	0
Mountain Goat	10	0	0
Moose	5	0	0
Bald Eagle	100	0	0
Eyes on Wildlife	4	5	10

Source: Planning records May 31, 1991 (Stikine Area); June 3, 1991 (Chatham Area); May 1991 (Ketchikan Area).

SUMMARY OF FISH IMPROVEMENT PROJECTS¹

(Total projects for the decade)
(one year projects/multiple year projects)²

Project Type	Chatham	Stikine	Ketchikan	Total
Small instream structural ³	2/3	34/1	41/2	77/6
Watershed rehabilitation ³	8/0	0/0	3/0	11/0
Structural fish passage	15/0	8/1	38/0	61/1
Falls modification/barrier removal	3/0	2/1	6/0	11/1
Spawning channels	1/1	1/0	7/0	9/1
Rearing ponds/streams	1/3	8/0	7/0	16/3
Barren lake stocking	0/1	0/0	0/0	0/1
Coop. fish stocking (not barren lake)	3/3	1/11	1/6	5/20
Incubation boxes	1/1	2/0	0/0	3/1
Lake fertilization	0/2	0/1	2/4	2/7
In-lake structural ⁴	0/1	10/0	0/0	10/1
Total Projects	34/15	66/15	105/12	205/42

¹ This table lists potential projects. Most have not been through project-specific ground truthing or National Environmental Policy Act (NEPA) analysis. Some of the projects (the majority listed in 3/) may be considered rehabilitation rather than enhancement. Of the 247 projects, 23 projects are located in designated Wilderness.

²Some projects are completely implemented in a one-year period, while others may be recurring for a number of years. For instance, lake fertilization is usually a multi-year project.

³The majority of the watershed rehabilitation and small instream structural projects, which includes projects such as large woody debris and gabion placement, are designed to rehabilitate impacts resulting from past management activities.

⁴ In-lake structural projects are usually not for mitigation purposes. This generally will include falling trees into lakes from the lake margin or building artificial reefs.

SUMMARY OF FISH ENHANCEMENT PROJECT COSTS
(For Projects Constructed First Decade)

Administrative Area	Forest Service Cost	Cooperator's Cost	Maintenance¹	Monitoring¹
Chatham	5,900,000	2,600,000	560,000	1,100,000
Stikine	3,900,000	240,000	250,000	220,000
Ketchikan ²	25,900,000	1,700,000	4,700,000	3,400,000
TOTAL	35,700,000	4,540,000	5,510,000	4,720,000

¹ These costs represent those required through the life of the projects. Some of the maintenance and monitoring costs extend beyond the 10 year planning period.

² Cooperator's Costs for the Ketchikan Area were not determined. Therefore, Cooperator's Costs were assumed to be approximately 6 percent, the same as the Stikine Area. Because of the types of projects to be implemented on the Chatham Area, their proportion of Cooperator's Costs would be expected to be higher than either the Stikine or Ketchikan Areas'.

Chatham Area Fish Improvement Projects¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Cost ⁵
1991	HRD	Suntaheen Creek	Log Weir	1	Structure	5,000	
1991	JRD	Lauras Creek	Rock Fracturing for Steps	7	Acres	15,000	
1991	SRD	Fish Bay Creek	Watershed Improvement	10	Acres	20,000	
1991	SRD	Flat Cove Creek	Cooperative Fish Stocking	15	Acres	5,000	
1991	SRD	Indian River (Sitka)	Cooperative Fish Stocking	8	Acres	5,000	20,000
1991	SRD	Indian River (Tenakee)	Major Fishway	4	Structures	20,000	20,000
1991	SRD	Iris Meadows	Watershed Improvement	10	Acres	500	
1991	SRD	Lava Falls Creek	Steppass	2	Structures	10,000	
1991	SRD	Shelikof Creek	Watershed Improvement	10	Acres	500	
1991	SRD	St. John Baptist Bay Crk.	Watershed Improvement	10	Acres	20,000	
1991	SRD	Waterfall Cove	Barrier Modification	4	Acres	500	
1991-1992	HRD	Kennel Creek	Large Woody Debris Habitat Development	8	Acres	33,012	
1991-1992	SRD	Deer Lake	Lake Fertilization	1,954	Acres	190,000	160,000
1991-1994	SRD	Sulioia Lake	Cooperative Fish Stocking	1,880	Acres	10,500	29,000
1991-1996	YRD	Colorado Road	Rearing Ponds	15	Structures	133,000	
1991-1999	SRD	Indian River (Tenakee)	Cooperative Fish Stocking	135	Acres	180,000	180,000
1991-2000	SRD	Appleton Creek	Cooperative Fish Stocking	150	Acres	200,000	
1991-2000	SRD	Barren Lakes (various)	Cooperative Fish Stocking	10,000	Acres	200,000	800,000
1991-2000	SRD	Redoubt Lake	Fertilization	32,000	Acres	670,000	1,000,000
1992	HRD	Suntaheen Creek	Fish Ladder	1	Structure	175,000	
1992	JRD	Grindstone Creek	Steppass	1	Structure	50,000	
1992	SRD	Goon Dip River	Major Fishway	1	Structure	20,000	
1992	SRD	Sitkoh Creek	Watershed Improvement	10	Acres	20,000	
1992	SRD	Whiterock Creek	Watershed Improvement	2	Acres	10,000	

Notes:

¹ This table shows the projects anticipated for the Chatham Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² Ranger District or National Monument. ANM: Admiralty National Monument; HRD: Hoonah Ranger District; JRD: Juneau Ranger District; SRD: Sitka Ranger District; YRD: Yakutat Ranger District.

³ Number of acres or structures for multi-year projects are aggregated.

⁴ Anticipated Costs are those Forest Service costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, maintenance or cooperator's costs. These costs are shown in the Fish Project Cost Summary Table in this appendix, or in the following column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

⁵ Anticipated Cooperator's Costs include those costs that could be expected to be contributed by cooperators. Cooperators, in most cases, are either the Alaska Department of Fish and Game or the Regional Aquaculture Associations. Other projects may also have cooperators. In the case of fish stocking or fish stock development, most of these project types would probably not occur without cooperator expenditures.

Chatham Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs ⁵
1992-1996	YRD	Cannon Road	Rearing Ponds	11	Structures	89,000	
1992-1996	YRD	Colorado Road	Spawning Channels	5	Acres	104,000	
1992-1996	YRD	Redfield Lakes	Pond Access in Lakes Area	5	Acres	99,000	
1992-1996	YRD	Tawah Creek	Rearing Habitat Enhancement	69	Acres	54,000	
1993	ANM	Ward Creek	Fish Passage Structure	1	Structure	unknown	
1993	HRD	Featherduster Creek	Fish Ladder	1	Structure	60,000	
1993	HRD	Pavlof River	Rearing Pond	1	Structure	15,258	
1993	JRD	Chuck River	Incubation Boxes	1	Structure	3,500	
1993	SRD	Black River	Steppass	1	Structure	5,000	
1993	SRD	Nakwasina Creek	Watershed Improvement	10	Acres	20,000	
1993	SRD	Nakwasina Pass	Watershed Improvement	2	Acres	10,000	
1994	ANM	Wheeler Creek	Fish Passage Structure	1	Structures	800,000	
1994	JRD	Peterson Creek	Boulder Placement	2	Acres	2,000	
1994	SRD	Split Creek	Steppass	2	Structures	5,000	
1994	YRD	Dangerous River	Spawning Channel	4	Acres	14,000	
1994-2000	HRD	Lake Creek	Incubator Boxes	112	Structures	210,000	105,000
1995	ANM	Florence Creek	Fish passage	1	Structure	unknown	
1995	JRD	Carlson Creek	Steppass	1	Structure	50,000	
1995	SRD	Anita Creek	Barrier Modification	2	Acres	3,500	
1995	SRD	Kalinin Creek	Steppass	1	Structure	2,000	
1995-1996	HRD	Mud River	Large Woody Debris Habitat Development	6	Acres	14,000	
1995-1999	YRD	Slo-Flo Lake	Cooperative Sockeye Stocking	1,400	Acres	125,000	375,000
1996	JRD	Davidson Creek	Steppass	2	Structures	100,000	
1996	SRD	Sinitzin Creek	Steppass or Barrier Modification	1	Structure	2,000	
1997-1998	HRD	Otter Lake	Brush Habitat Development	12	Acres	20,000	

Notes: ¹ This table shows the projects anticipated for the Chatham Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² Ranger District or National Monument. ANM: Admiralty National Monument; HRD: Hoonah Ranger District; JRD: Juneau Ranger District; SRD: Sitka Ranger District; YRD: Yakutat Ranger District.

³ Number of acres or structures for multi-year projects are aggregated.

⁴ Anticipated Costs are those Forest Service costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, maintenance or cooperators' costs. These costs are shown in the Fish Project Cost Summary Table in this appendix, or in the following column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

⁵ Anticipated Cooperator's Costs include those costs that could be expected to be contributed by cooperators. Cooperators, in most cases, are either the Alaska Department of Fish and Game or the Regional Aquaculture Associations. Other projects may also have cooperators. In the case of fish stocking or fish stock development, most of these project types would probably not occur without cooperator expenditures.

Stikine Area Fish Improvement Projects¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs ⁵
1991	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	500
1991	PRD	Ohmer Creek	Fishing Pool Construction	2	Structures	10,000	
1991	WRD	District-wide	Lake Structures	10	Structures	15,000	
1991	WRD	Meter Blight	Fish Ladder	2	Structure	150,000	
1991	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	30,000	
1991-1992	PRD	Mitchell Creek	Fish Ladder	4	Structures	190,000	
1991-1993	WRD	Harding River	Barrier Modification	1	Structure	30,000	
1991-1994	PRD	Dean Creek	Stocking (for project built in 1982)	60,000	Acres	2,000	
1991-1994	WRD	Virginia Lake	Fish Stocking	2,400	Acres	60,000	80,000
1991-1995	WRD	Virginia Lake	Fertilization	3,000	Acres	125,000	125,000
1991-2000	WRD	Port Camden East & West	Incubation Box Stocking			150,000	100,000
1992	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1992	WRD	District-wide	Lake Structures	10	Structures	15,000	
1992	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1992	WRD	Salmander Creek	Barrier Modification	2	Structures	30,000	
1992	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	30,000	
1992-2000	PRD	Mitchell Creek	Stocking for Fish Ladder			80,000	40,000
1993	PRD	Cat Creek	Barrier Modification	2	Structures	100,000	
1993	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1993	PRD	Muddy River	Incubation Boxes	2	Structures	50,000	20,000
1993	PRD	Portage Creek	Fish Ladder	2	Structure	200,000	
1993	WRD	District-wide	Lake Structures	10	Structures	15,000	
1993	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1993	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	30,000	
1993-1994	PRD	Mitkof Island	Lake Stocking	unknown	Acres	10,000	10,000
1993-1996	PRD	Portage Creek	Stocking for Fish Ladder			80,000	40,000
1993-1997	WRD	Frosty Creek	Fish Ladder	2	Structures	400,000	80,000
1993-2000	PRD	Muddy River	Incubation Box Stocking			160,000	

Notes:

¹ This table shows the projects anticipated for the Stikine Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² PRD: Petersburg Ranger District; WRD: Wrangell Ranger District.

³ Number of acres or structures for multi-year projects are aggregated. Numbers of acres for most stocking projects were not available.

⁴ Anticipated Costs are those Forest Service costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, maintenance or cooperator's costs. These costs are shown in the Fish Project Cost Summary Table in this appendix, or in the following column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

⁵ Anticipated Cooperator's Costs include those costs that could be expected to be contributed by cooperators. Cooperators, in most cases, are either the Alaska Department of Fish and Game or the Regional Aquaculture Associations. Other projects may also have cooperators. In the case of fish stocking or stock development, most of these project types would probably not occur without cooperator expenditures.

Stikine Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs ⁵
1994	PRD	Brown's Creek	Fish Ladder	2	Structures	300,000	
1994	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1994	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
1994	WRD	District-wide	Lake Structures	10	Structures	15,000	
1994	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1994	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	15,000	40,000
1994-1997	PRD	Brown's Creek	Stocking for Fish Ladder			80,000	
1995	PRD	Duncan Creek	Fish Ladder	2	Structure	250,000	
1995	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1995	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
1995	WRD	District-wide	Lake Structures	10	Structures	15,000	
1995	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1995	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	15,000	
1995-1998	PRD	Duncan Creek	Stocking for Fish Ladder			80,000	40,000
1996	PRD	District-wide	Riparian Vegetation Management	3	Acres	30,000	
1996	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1996	PRD	Wolf Creek	Fish Ladder	1	Structure	175,000	
1996	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
1996	WRD	District-wide	Lake Structures	10	Structures	15,000	
1996	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1996	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	15,000	
1997	PRD	District-wide	Riparian Vegetation Management	3	Acres	30,000	
1997	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1997	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
1997	WRD	District-wide	Lake Structures	10	Structures	15,000	
1997	WRD	Various Locations	Riparian Vegetation Management	5	Acres	20,000	
1997	WRD	District-wide	Large Woody Debris Rehabilitation	1	Acre	15,000	
1997-2000	PRD	Muddy River	King Salmon Habitat Rehabilitation	4	Acres	60,000	

Notes:

¹ This table shows the projects anticipated for the Stikine Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² PRD: Petersburg Ranger District; WRD: Wrangell Ranger District.

³ Number of acres or structures for multi-year projects are aggregated. Numbers of acres for most stocking projects were not available.

⁴ Anticipated Costs are those Forest Service costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, maintenance or cooperator's costs. These costs are shown in the Fish Project Cost Summary Table in this appendix, or in the following column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

⁵ Anticipated Cooperator's Costs include those costs that could be expected to be contributed by cooperators. Cooperators, in most cases, are either the Alaska Department of Fish and Game or the Regional Aquaculture Associations. Other projects may also have cooperators. In the case of fish stocking or stock development, most of these project types would probably not occur without cooperator expenditures.

Stikine Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Cost ⁵
1998	PRD	District-wide	Riparian Vegetation Management	3	Acres	30,000	
1998	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1998	PRD	Man-made Hole	Spawning Channel	1	Structure	75,000	25,000
1998	PRD	Three-Mile Arm	Incubation boxes	10	Structures	60,000	50,000
1998	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
1998	WRD	District-wide	Lake Structures	10	Structures	15,000	
1998	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1998	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	15,000	
1998-2000	PRD	Three-Mile Arm	Stocking Incubation Boxes	3	Acres	45,000	30,000
1999	PRD	District-wide	Riparian Vegetation Management	1	Structure	30,000	
1999	PRD	Hillier Creek	Fish Ladder	2	Acres	200,000	
1999	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
1999	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
1999	WRD	District-wide	Lake Structures	10	Structures	15,000	
1999	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
1999	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	15,000	
1999-2000	PRD	Hillier Creek	Stocking for Fish Ladder	3	Acres	40,000	20,000
2000	PRD	District-wide	Riparian Vegetation Management	1	Structure	30,000	
2000	PRD	Gill Harbor Creek	Fish Ladder	1	Structure	200,000	
2000	PRD	Gill Harbor Creek	Stocking for Fish Ladder	2	Acres	20,000	
2000	PRD	Kuiu Island	Large Woody Debris Habitat Development	2	Acres	40,000	
2000	WRD	District-wide	Coho Rearing Ponds	2	Acres	20,000	
2000	WRD	District-wide	Lake Structures	10	Structures	15,000	
2000	WRD	District-wide	Riparian Vegetation Management	5	Acres	20,000	
2000	WRD	Various Locations	Large Woody Debris Rehabilitation	1	Acre	15,000	

Notes:

¹ This table shows the projects anticipated for the Stikine Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² PRD: Petersburg Ranger District; WRD: Wrangell Ranger District.

³ Number of acres or structures for multi-year projects are aggregated. Numbers of acres for most stocking projects were not available.

⁴ Anticipated Costs are those Forest Service costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, maintenance or cooperator's costs. These costs are shown in the Fish Project Cost Summary Table in this appendix, or in the following column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

⁵ Anticipated Cooperator's Costs include those costs that could be expected to be contributed by cooperators. Cooperators, in most cases, are either the Alaska Department of Fish and Game or the Regional Aquaculture Associations. Other projects may also have cooperators. In the case of fish stocking or stock development, most of these project types would probably not occur without cooperator expenditures.

Ketchikan Area Fish Improvement Projects¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs ⁵
1991	CRD	Cable Creek	Rearing Pond Development	1	Acre	5,000	
1991	CRD	Dog Salmon Creek	Fishpass Upgrade	1	Structure	70,000	
1991	CRD	Old Franks Lake	Fishpass	3	Structures	750,000	
1991	CRD	Santa Cruz	Barrier Removal	4	Acres	5,000	
1991	KRD	Traitor's Creek	Large Woody Debris Rehabilitation	3	Acres	20,000	
1991-1996	MNIM	Badger Lake	Stock Development			180,000	
1992	CRD	Cable Creek	Fish Ladder Modification	1	Structure	50,000	
1992	CRD	Camp Creek	Large Woody Debris/Gabion Placement	2	Acres	15,000	
1992	CRD	Cave Creek	Debris (Barrier) Removal	4	Acres	5,000	
1992	CRD	Dog Salmon Tributary	Barrier Removal	6	Acres	5,000	
1992	CRD	Rock Creek	Fish Passage (Culvert)	1	Structure	5,000	
1992	CRD	Soda Bay Lake	Large Woody Debris Enhancement	13	Acres	15,000	
1992	CRD	Twelve Mile Creek	Large Woody Debris Rehabilitation	6	Acres	30,000	
1992	MNIM	Byce Creek (Sportfish)	Rearing Habitat (Part 1)	10	Acres	150,000	
1992	MNIM	Hyder Creek	Stream Rehabilitation	10	Acres	50,000	
1992	MNIM	Marten River	Stock Development			50,000	
1992	MNIM	Salmon River	Off Channel Development	2	Acres	300,000	
1992	TRD	Big Lake	Fishpass	1	Structure	200,000	
1992	TRD	Lake Ellen Tributary	Large Woody Debris Rehabilitation	1	Acre	4,000	
1992	TRD	Rio Beaver Creek	Large Woody Debris Rehabilitation	2	Acres	16,000	
1992-1996	MNIM	Byce Creek (Sportfish)	Stock Development			100,000	
1993	CRD	Cable Creek	Large Woody Debris/Gabion Rehabilitation	10	Acres	30,000	
1993	KRD	Confusion Lake	Large Woody Debris Enhancement	40	Acres	20,000	
1993	KRD	Harriet Hunt/Perserverance	Lake Fertilization/Large Woody Debris Placement	440	Acres	80,000	
1993	KRD	Ward Creek	Fish Ladder	1	Structure	150,000	
1993	KRD	Ward Creek	Spawning Habitat	5	Acres	50,000	

Notes:

¹ This table shows the projects anticipated for the Ketchikan Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² Ranger District or National Monument. CRD: Craig Ranger District; KRD: Ketchikan Ranger District; MNM: Misty Fiords National Monument; TRD: Thorne Bay Ranger District.

³ Number of acres or structures for multi-year projects are aggregated.

⁴ Anticipated Costs are those costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, or maintenance. These costs are shown in the Fish Project Cost Summary Table in this appendix. Cooperator's costs are not identified specifically for projects on the Ketchikan Area, and are incorporated into this column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

⁵ Anticipated Cooperator's Costs include those costs that could be expected to be contributed by cooperators. Cooperators, in most cases, are either the Alaska Department of Fish and Game or the Regional Aquaculture Associations. In the case of the Ketchikan Area, cooperator's costs were not specifically identified for projects, and are incorporated into the previous column. Based on the average cooperator's contribution on the Stikine Area (about 6 percent of the project cost, on average), it is anticipated that the amount of \$1,700,000 will be contributed towards the projects. In the case of stock development, most of these project types would probably not occur without cooperator expenditures.

Ketchikan Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs
1993	TRD	Calder Creek	Large Woody Debris Rehabilitation	5	Acres	16,000	
1993	TRD	East Shaheen Lake	Fishpass	1	Structure	135,000	
1993	TRD	North Thorne River	Large Woody Debris Rehabilitation	1	Acre	7,000	
1993	TRD	Steelhead Creek	Large Woody Debris Rehabilitation	2	Acres	15,000	
1994	CRD	Fubar Creek	Large Woody Debris Rehabilitation	11	Acres	50,000	
1994	CRD	Harris River	Spawning Channel	1	Structure	400,000	
1994	CRD	Meares Passage	Gravel Catchments	1	Structure	5,000	
1994	CRD	Tracadero Creek	Large Woody Debris Rehabilitation	10	Acres	50,000	
1994	KRD	Bold Island	Coho Ponds Access	20	Acres	25,000	
1994	KRD	Coho Cove/Moth Bay	Small Instream Structures/Fishpass	10	Acres	75,000	
1994	KRD	Naha River	Fishpass	2	Structures	800,000	
1994	KRD	Saddle Lakes	Small Instream Structures/Fishpass	10	Acres	75,000	
1994	KRD	Smugglers Lake	Large Woody Debris Enhancement	85	Acres	20,000	
1994	MNIM	Bryce Creek (Sportfish)	Rearing Habitat (Part 2)	10	Acres	300,000	
1994	MNIM	Cheecats Creek	Fishpass (Non-structural)	60	Acres	500,000	
1994	MNIM	Moose Pond (Sportfish)	Rearing Development	5	Acres	100,000	
1994	TRD	Luck Lake Tributary	Large Woody Debris Rehabilitation	2	Acres	7,000	
1994	TRD	North Stoney Creek	Fishpass	1	Structure	770,000	
1994	TRD	Stoney Creek Drainage	Large Woody Debris Rehabilitation	40	Acres	120,000	
1994	TRD	West Shaheen Creek	Fishpass	1	Structure	150,000	
1994-1996	CRD	Harris River	Large Woody Debris Rehabilitation	30	Acres	75,000	
1995	CRD	Confusion Lake Creek	Fishpass	1	Structure	350,000	
1995	CRD	Kassa Inlet Creek	Fishpass	2	Structures	200,000	
1995	KRD	Low Lake	Large Woody Debris Placement	60	Acres	20,000	
1995	KRD	Salt Creek	Fishpass	1	Structure	200,000	
1995	MNIM	Choca Creek	Fishpass (Non-structural)	15	Acres	500,000	

Notes:

¹ This table shows the projects anticipated for the Ketchikan Area, as of March 1991. The table lists those projects which should begin sometime during the period 1991 to 2000. It should be considered a "strategic list," since many of the projects have not been ground-truthed (see notes associated with the Fish Project Summary Table in this appendix). Aggregate outputs, in terms of pounds of fish and recreation fishing days, are shown in the Environmental Impact Statement.

² Ranger District or National Monument. CRD: Craig Ranger District; KRD: Ketchikan Ranger District; MNM: Misty Fiords National Monument; TRD: Thorne Bay Ranger District.

³ Number of acres or structures for multi-year projects are aggregated.

⁴ Anticipated Costs are those costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, or maintenance. These costs are shown in the Fish Project Cost Summary Table in this appendix. Cooperator's costs are not identified specifically for projects on the Ketchikan Area, and are incorporated into this column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.

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Ketchikan Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location-Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs ⁵
1995	MNM	Riverside	Spawning Channel	4	Structures	100,000	
1995	MNM	Manzanita Lake	Fishpass	1	Structure	1,500,000	
1995	TRD	Alder Creek	Large Woody Debris Rehabilitation	2	Acres	20,000	
1995	TRD	Buster Creek	Large Woody Debris Rehabilitation	2	Acres	20,000	
1995	TRD	Staney Creek Drainage	Large Woody Debris Rehabilitation	40	Acres	120,000	
1995	TRD	Tunga Inlet Creek	Large Woody Debris Rehabilitation	2	Acres	12,000	
1995	TRD	Twin Island Lake	Fishpass	1	Structure	400,000	
1995	TRD	Vodatre Creek	Fishpass	1	Structure	200,000	
1995-1996	KRD	Ward Lake	Lake Fertilization	100	Acres	50,000	
1995-1997	CRD	Harris River	Instream Rehabilitation/Gabion Placement	120	Acres	360,000	
1995-1999	MNM	Cheecats Creek	Stock Development			75,000	
1995-1999	MNM	Riverside	Stock Development			75,000	
1996	KRD	Harriet Hunt Lake	Spawning Channel	1	Structure	100,000	
1996	KRD	Vixen Inlet	Fish Ladder	2	Structures	400,000	
1996	MNM	Choca Creek	Stock Development			40,000	
1996	MNM	Salmon River	Off Channel Development	15	Acres	100,000	
1996	MNM	Choca Creek	Fishpass	1	Structure	700,000	
1996	TRD	Big Creek	Large Woody Debris Rehabilitation	2	Acres	25,000	
1996	TRD	Chuck Lake Tributary	Large Woody Debris Rehabilitation	2	Acres	18,000	
1996	TRD	Flicker Creek	Large Woody Debris Rehabilitation	2	Acres	25,000	
1996	TRD	Logjam Creek	Large Woody Debris Rehabilitation	2	Acres	15,000	
1996	TRD	Staney Creek Drainage	Large Woody Debris Rehabilitation	40	Acres	120,000	
1996-1997	MNM	Badger Lake	Lake Fertilization	1,600	Acres	500,000	
1996-1999	KRD	Vixen Inlet	Stock Development			88,000	
1997	CRD	Biscuit Lagoon	Fishpass	1	Structure	350,000	
1997	CRD	Cave Creek	Fishpass	1	Structure	150,000	

Notes:

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- ² Ranger District or National Monument. CRD: Craig Ranger District; KRD: Ketchikan Ranger District; MNM: Misty Fjords National Monument; TRD: Thorne Bay Ranger District.
- ³ Number of acres or structures for multi-year projects are aggregated.
- ⁴ Anticipated Costs are those costs associated with actual implementation of the project. Not included in these costs are planning, monitoring, or maintenance. These costs are shown in the Fish Project Cost Summary Table in this appendix. Cooperator's costs are not identified specifically for projects on the Ketchikan Area, and are incorporated into this column. Many of these costs are based on a preliminary level of knowledge about the potential project and are likely to change based on environmental analysis and final design. In the case of multi-year projects, costs and number of acres or structures are shown for the entire capital investments for the project.
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Ketchikan Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs
1997	CRD	Kasook Inlet Creek	Fishpass	1	Structure	200,000	
1997	KRD	Orchard Lake	Lake Fertilization/Large Woody Debris Placement	1,000	Acres	90,000	
1997	KRD	Traitor Creek	Spawning Channel	1	Structure	250,000	
1997	KRD	Woodpecker Lake	Fish Passage	1	Structure	300,000	
1997	MNM	Blue Lagoon (Sportfish)	Rearing Development	12	Structures	120,000	
1997	MNM	Texas Creek	Instream Structures	8	Acres	55,000	
1997	MNM	Ella Lake	Fishpass	2	Structures	1,500,000	
1997	TRD	Logjam Creek	Large Woody Debris Rehabilitation	5	Acres	30,000	
1997	TRD	Smugglers Cove	Fishpass	1	Structure	500,000	
1997	TRD	Steelhead Creek	Fishpass	1	Structure	750,000	
1997	TRD	Trout Creek	Large Woody Debris Rehabilitation	1	Acre	10,000	
1997-2000	TRD	Neck Lake	Lake Fertilization	3,900	Acres	300,000	
1998	CRD	Aiken Creek	Fishpass	1	Structure	300,000	
1998	KRD	Long Lake	Fishpass	1	Structure	175,000	
1998	KRD	Reflection/Helm Lakes	Lake Fertilization/Large Woody Debris Placement	1,370	Acres	130,000	
1998	KRD	Wasta Creek	Large Woody Debris Rehabilitation	15	Acres	75,000	
1998	MNM	Red River	Fishpass	1	Structure	1,500,000	
1998	MNM	Saks Cove Creek	Fishpass	2	Structures	800,000	
1998	TRD	Logjam Creek	Large Woody Debris Rehabilitation	10	Acres	50,000	
1998	TRD	Neck Lake and Creek	Fishpass	1	Structure	550,000	
1998	TRD	Ratz Creek Drainage	Basin Rehabilitation	15	Acres	90,000	
1998	TRD	Sal Creek	Large Woody Debris Rehabilitation	2	Acres	15,000	
1998	TRD	Slide Creek	Basin Rehabilitation	15	Acres	45,000	
1999	CRD	Bobs Bay Log Jam	Barrier Removal	1	Acre	10,000	
1999	CRD	Kleete Inlet	Steppass	1	Structure	125,000	
1999	KRD	Gokachin Creek	Fish Passage	1	Structure	800,000	

Notes:

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Ketchikan Area Fish Improvement Projects (continued)¹

Anticipated Year(s)	RD ²	Location Description	Type of Project	Number ³	Acre/Structure	Anticipated Cost ⁴	Anticipated Cooperator's Costs ⁵
1999	KRD	Naha Lakes	Lake Fertilization/Large Woody Debris Placement	1,100	Acres	100,000	
1999	MINM	Red River	Stock Development			50,000	
1999	MINM	Sykes Creek	Fishpass	1	Structure	600,000	
1999	TRD	Gutchi Creek	Large Woody Debris Rehabilitation	2	Acres	30,000	
1999	TRD	Neck Lake	Spawning Channel	1	Structure	375,000	
1999	TRD	No Name Creek	Large Woody Debris Rehabilitation	2	Acres	35,000	
1999	TRD	Rush Creek	Fishpass	1	Structure	250,000	
1999	TRD	Slide Creek	Basin Rehabilitation	30	Acres	90,000	
1999	TRD	Warm Chuck Creek	Large Woody Debris Rehabilitation	1	Acre	10,000	
1999	TRD	Yatak Creek	Large Woody Debris Rehabilitation	2	Acres	30,000	
2000	KRD	Blind Pass Lake	Fishpass	1	Structure	185,000	
2000	KRD	Carrol River	Fish Passage	2	Structures	750,000	
2000	KRD	Lake Shelokum	Lake Fertilization/Large Woody Debris Placement	370	Acres	50,000	
2000	MINM	Dick's Creek	Fishpass	1	Structure	250,000	

Notes:

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The following projects are proposed for construction in order to interpret fisheries projects, or otherwise encourage Forest visitors to understand the fisheries resource on the Tongass:

Craig Ranger District: A recreation and fisheries interpretation site at Dog Salmon Creek (\$7,000).

Ketchikan Ranger District: Fish interpretation signs at fourteen recreation cabins (\$70,000).

Ketchikan Ranger District: A stream profile viewing station on Ward Creek (\$1,000,000).

Ketchikan Ranger District: A fish viewing platform at Ward Lake (\$100,000).

Ketchikan Ranger District: Interpretative signing at Ward Lake and Creek (5 structures - \$15,000).

TEN-YEAR TIMBER SALE SCHEDULE

Listed by Sale: 1991 - 2000
(as of 4/18/91)

Chatham Area

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
99	SEIS	APC	1991	356.0		(205 Enjoined)
1	Kelp Bay #1	APC	1992	127.0	C41,C43	293-294, 296-298,
2	SE Chichagof #1	APC	1993	127.0	C34,C37	230-234,236, 239,240-241, 246
3	Ushk Bay	APC	1994	89.0	C39,C40	279-281
4	Chicken/Neka	APC	1995	127.0	C27,C28, C29	193,196, 201-202,222,
5	Fish Katlian	APC	1996	127.0	C40	287-292, 299-301,313
6	Indian River	APC	1997	64.0	C30,C32	216,220-221
7	Windham	APC	1998	45.0	C13	69-70,72-74
8	Kennel Creek	APC	1999	70.0	C30	215,217-219
9	Homeshore	APC	2000	60.0	C18,C19	117-120
10	Kruzof	APC	2001	90.0	C44	303-307,309
11	Neka Mud	APC	2002	127.0	C29	193,196, 201-202, 222-229
12	Gilbert Bay	APC	2003	40.0	C10	57
13	Kelp Bay #2	APC	2004	98.0	C41,C43	293-294, 296-298
14	SE Chichagof #2	APC	2005	97.0	C34 C37	230-234,236, 239-246
15	Pt Houghton #1	APC	2006	45.0	C14	82-84
16	False Bay	APC	2007	64.0	C31	207-212
17	Two Goat	APC	2008	38.0	C13	75,77
18	Pt Houghton #2	APC	2008	38.0	C14	79-81,84
19	Freshwater	APC	2009	51.0	C30	213-215, 217-218

Stikine Area

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
1	North Kuiu (Cleared)	APC	1991	97.0	S04,S09	(70 Enjoined)
2	Frosty	Ind	1991	26.0	S33	524
3	Snow Cat	Ind	1991	3.5	S25	480
4	Twin	Ind	1991	3.6	S25	479
5	Old Hermit	Ind	1991	7.0	S25	478
6	Rynda Blowdown	Ind	1991	3.0	S18	455
7	Lost Joe	Ind	1991	4.6	S24	476,478
				----- 144.7		
8	Starfish/Fish Trap	Ind	1992	45.0	S23	464,467,468
				----- 45.0		
9	Northeast Kuiu	APC	1993	145.2	S04,S09	
10	Bohemia Mountain	Ind	1993	15.0	S10	424,442
11	Shamrock	Ind	1993	18.0	S11	429
12	Campbell	Ind	1993	14.8	S31	510
13	Midpoint	Ind	1993	5.0	S25	478
				----- 198.0		
14	Totem	Ind	1994	46.0	S11,S13,S20	429,432,436
15	Green Rocks	Ind	1994	15.0	S16	447,448
				----- 61.0		
16	Whiskey	Ind	1995	15.0	S16	448
17	5 Mile Creek	Ind	1995	15.0	S10	444,446
18	Big Foot	Ind	1995	10.0	S25	480
19	King George	Ind	1995	20.0	S23	462
				----- 60.0		
20	North Kuiu	APC	1996	116.2	S04	399-401,402, 421
21	High Valley	Ind	1996	15.0	S16	447
22	Mad Critter	Ind	1996	20.0	S26	501,502,504
23	Burnett	Ind	1996	15.0	S23	468
24	Blake	Ind	1996	10.0	S25	505
				----- 176.2		

Stikine Area (continued)

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
25	Dry Bay	Ind	1997	15.0	S35	483
26	Browns Cove	Ind	1997	20.0	S35	489
27	Chichagof	Ind	1997	15.0	S23	462,463
28	Kauken	Ind	1997	5.0	S33	525

				55.0		
29	Overlook	Ind	1998	20.0	S16	447,448,451
30	Nesbitt Reef	Ind	1998	20.0	S19	458

				40.0		
31	North Kuiu	APC	1999	116.2	S04,S09	
32	Frederick Point	Ind	1999	10.0	S16,S17	447,449
33	Port Houghton	Ind	1999	17.0	S01	87,89
34	Whaletail	Ind	1999	20.0	S23	470,471
35	Ground Hog	Ind	1999	10.0	S26	501,502

				173.2		
36	Upper Valley	Ind	2000	20.0	S13,S16	439,447
37	South Zarembo	Ind	2000	20.0	S19	458,459
38	Woronkoski	Ind	2000	10.0	S22	461
39	Hoya	Ind	2000	15.0	S31	520

				65.0		
40	Canal	Ind	2001	7.0	S31	521
41	Mad Bay	Ind	2001	15.0	S26	504
42	Ten Mile	Ind	2001	5.0	S25	505
43	Cape Fanshaw	Ind	2001	25.0	S01	85,86,87,88

				52.0		
45	East Kuiu	APC	2002	103.0	S09	417-419

				103.0		

Ketchikan Area

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
100	Lab Bay-Whale	KPC	1991	194.9	K01, K03	527-540, 549-551
31	Painted Peak	Ind	1991	4.0	K35	753
32	8400 Salvage	Ind	1991	2.5	K35	746,753,756
33	Santa Cruz	Ind	1991	17.8	K20	635,634
34	Salt Lake	Ind	1991	6.5	K14	592
35	Tuxekan N.	Ind	1991	4.4	K07	556
36	Shikat A-frame	Ind	1991	0.5	K07	556
37	No View	Ind	1991	1.2	K11	562
38	Gonzo II	Ind	1991	0.4	K15	
				----- 232.2		
101	Coffman Cove-Winter Harbor	KPC	1992	125.2	K07-K09	552-554, 571-574,577, 581-583,587, 589
102	Polk Inlet	KPC	1992	65.8	K17-K18	613,619-621
39	Shelter Cove	Ind	1992	18.0	K35	746,753
40	20 Mile	Ind	1992	11.5	K17	624
41	12 Mile	Ind	1992	11.5	K17	621,624
42	Scott Lagoon	Ind	1992	2.5	K07	756
43	Butter Cup	Ind	1992	2.4	K07	
44	Juhoo A-frame	Ind	1992	1.3	K07	
45	Francis Sal.	Ind	1992	0.4	K05	
				----- 238.6		

Ketchikan Area (continued)

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
103	Thorne Bay	KPC	1992	154.3	K05,K08-K10, K15	575-580,584- 586,588,590, 594-598
104	Margareta Bay	KPC	1993	11.5	K32	738,740
105	Heceta Island	KPC	1993	2.1	K11	561-562
1	Heceta	KPC	1993	31.6	K11	561,562,563
2	Polk Inlet	KPC	1993	30.1	K18	619,620
46	N. Saddle	Ind	1993	18.0	K39	747
47	S. McKenzie	Ind	1993	10.0	K18	618
48	W. McKenzie	Ind	1993	11.5	K18	618
49	Cape Pole	Ind	1993	1.5	K05	
50	Warren Canal	Ind	1993	2.3	K05	
51	Helmet	Ind	1993	0.9	K07	
52	Shield	Ind	1993	1.6	K07	
53	Karheen A-frame	Ind	1993	1.4	K07	
54	Hardscrabble	Ind	1993	2.9	K05	
55	Francis	Ind	1993	1.3	K05	
				----- 281.0		
3	Red Bay	KPC	1994	115.9	K01	529,530,533
4	Salmon Bay	KPC	1994	18.1	K02	534.2
5	Whale Pass	KPC	1994	72.2	K03	535,538,539, 540,549,550
56	Sea Level Ck	Ind	1994	16.0	K35	755
57	Beaver Creek	Ind	1994	12.6	K17	621
58	Pies Point	Ind	1994	4.6	K05	
59	Camp Point	Ind	1994	2.2	K05	
60	Captain A-frame	Ind	1994	0.5	K07	
61	Kwati	Ind	1994	1.5	K07	
62	Glacier	Ind	1994	4.0	K15	597.2
					----- 247.6	

Ketchikan Area (continued)

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
7	Marble Island	KPC	1995	15.0	K04	555
8	Naukati	KPC	1995	100.8	K07	554,2,571, 587,588
9	Staney	KPC	1995	100.8	K07	588,589
63	Upper Salt Ck	Ind	1995	24.0	K35	747
64	Indian Creek	Ind	1995	11.7	K17	622
65	Charley	Ind	1995	1.7	K05	
66	Edna	Ind	1995	1.5	K05	
67	Beach A-frame	Ind	1995	0.6	K04	
68	Speck A-frame	Ind	1995	0.2	K04	
69	Cutthroat	Ind	1995	4.0	K15	596
70	Lost	Ind	1995	1.0	K07	
				----- 261.3		
6	Calder	KPC	1996	70.7	K03	531,536
10	Sweetwater	KPC	1996	85.8	K08	552,553,573
14	Control Lake	KPC	1996	49.7	K15	576,596
71	Second Level	Ind	1996	16.0	K35	755
72	Little Coal Ck	Ind	1996	11.5	K18	612,613
73	Log Jam	Ind	1996	8.0	K08	577
74	Loft	Ind	1996	0.9	K07	
75	Snipe A-frame	Ind	1996	0.2	K04	
76	Middle	Ind	1996	3.2	K05	
				----- 246.0		
11	Logjam	KPC	1997	85.8	K08	577
12	Ratz	KPC	1997	105.3	K09	581,583,584
13	Winter Harbor	KPC	1997	42.1	K14	591,592,593
77	Carroll River	Ind	1997	25.0	K32, K35	744,746
78	North Dall	Ind	1997	11.5	K22	638,639
79	Control	Ind	1997	9.0	K15	596
80	Double A-frame	Ind	1997	0.7	K04	
81	Junction	Ind	1997	1.6	K05	
				----- 281.0		

Ketchikan Area (continued)

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
15	Fire Cove	KPC	1998	75.2	K32	737,739
16	Neets Bay	KPC	1998	45.1	K32	738
17	Shrimp Bay	KPC	1998	45.1	K32	733,737
18	Spacious	KPC	1998	30.1	K29	722,723
82	Noel	Ind	1998	25.0	K32	744
83	Waterfall Bay	Ind	1998	11.5	K22	648
84	Beaver River	Ind	1998	8.0	K15	597
85	Tip A-frame	Ind	1998	0.4	K04	
86	Charley Lake	Ind	1998	2.2	K05	
				----- 242.6		
19	Granite	KPC	1999	75.2	K30	716,717,719
21	Red Bay #2	KPC	1999	90.3	K01	529,530
87	Granite	Ind	1999	24.0	K30	719,717
88	Devil Lake	Ind	1999	11.5	K22	646,647
89	Forks	Ind	1999	9.0	K15	596,597
90	Scott A-frame	Ind	1999	0.3	K04	
91	Tongan	Ind	1999	1.4	K07	
				----- 211.7		
20	Union Bay	KPC	2000	45.1	K30	709,710
22	Turn Creek	KPC	2000	90.3	K03	531,536
28	Margaret	KPC	2000	45.1	K32	738
92	Snail Pt	Ind	2000	17.0	K30	722,723
93	Orchard Ck	Ind	2000	22.0	K32	737,744
94	Steelhead	Ind	2000	7.0	K15	595
95	Peep	Ind	2000	1.5	K07	
96	Cyrus A-frame	Ind	2000	1.9	K04	
				----- 229.9		
23	Naukati #2	KPC	2001	180.6	K07	554.2,571, 588,589
27	Port Alice	KPC	2001	1.6	K11	561,562,563
				----- 212.2		
24	Hatchery	KPC	2002	75.2	K08	574
25	Luck Lake	KPC	2002	127.9	K09	580,583,584, 585
				----- 203.1		

Ketchikan Area (continued)

Sale Number	Sale Name	Sale Type	Year Planned	Volume (MMBF)	Mgmt Area	VCU
26	Thorne Bay	KPC	2003	15.0	K10	586,598
29	Klu Bay	KPC	2003	37.6	K32	733
30	Vixen Inlet	KPC	2003	75.2	K29	710,718,720
107	Waterfall	KPC	2003	45.1	K21	630-632

				172.9		
106	SPOW	KPC	2004	105.3	K25	682-683, 691-699
108	Kete Inlet	KPC	2004	63.2	K21	685-689

				168.5		

TEN-YEAR ROADS IMPLEMENTATION ACTION PROGRAM

Recreation Road Construction/Reconstruction

Project	Location	Cost Funded	FY Funding Planned
Peterson Lake T.H. CCS	Chatham	20,000	1992
Peterson Lake T.H. CCS	Chatham	20,000	1993
Blue Lake Ramp	Chatham	65,000	1992
Hoonah Recreation Developments	Chatham	50,000	1992
Auke Rec Parking Lots	Chatham	1,300,000	1992-93
Mendenhall VC Parking	Chatham	400,000	1994
Mendenhall CG Reconstruction	Chatham	450,000	1993-95
Skater's Cabin Parking	Chatham	10,000	1993
Harbor Mountain Phase III	Chatham	1,200,000	1993
West Glacier Trailhead	Chatham	250,000	1993-95
Starrigavan Campground Roads	Chatham	156,000	1994-99
Auke Village CG	Chatham	150,000	1995
Situk Landing	Chatham	100,000	1995
Hoonah Rec II	Chatham	50,000	1994-99
Sawmill Cove Boat Launch	Chatham	100,000	1994-99
Sawmill Creek CG	Chatham	50,000	1994-99
Lena Beach Picnic Ground	Chatham	20,000	1999
Middle Ridge Trail Parking	Stikine	10,000	1992
Lower Salamander	Stikine	10,000	1992
Salamander Snow Parking	Stikine	10,000	1992
3 Lakes Trailhead Parking	Stikine	50,000	1992
Fools Pass Trailhead	Stikine	20,000	1993

Recreation Road Construction/Reconstruction (continued)

Project	Location	Cost Funded	FY Funding Planned
Long Lake Surfacing	Stikine	20,000	1993
Woodpecker	Stikine	50,000	1994-99
Wrangell Overlook	Stikine	72,000	1994-99
Wrangell Campground	Stikine	150,000	1994-99
Crystal Mountain Trailhead	Stikine	50,000	1994-99
Blind Slough Picnic Area Parking	Stikine	125,000	1992
Blind River Rapids	Stikine	250,000	1992
Raven Roost Trailhead	Stikine	55,000	1995
Seal Point Picnic Parking	Stikine	20,000	1996
Winter Snow Access	Stikine	400,000	1997
Ohmer Creek Campground Paving	Stikine	50,000	1999
ORV Trailheads	Stikine	60,000	2000
Point McCartney Picnic Parking	Stikine	50,000	2001
Road 6263 Trailhead Parking	Stikine	10,000	1992
Road 6273 Trailhead Parking	Stikine	10,000	1992
Lower Salamander Parking	Stikine	10,000	1992
Little Lake Snow Parking	Stikine	20,000	1992
Nemo Point Road Surfacing	Stikine	20,000	1993
Wrangell Overlook	Stikine	20,000	1993
Wrangell Campground	Stikine	206,000	1993
Fools Inlet Trailhead Parking	Stikine	10,000	1993
Overlook Recreation Parking (State Select Land, Partnership)	Stikine	10,000	1994
Pats Lake Recreation Parking (State Select Land, Partnership)	Stikine	10,000	1994

Recreation Road Construction/Reconstruction (continued)

Project	Location	Cost Funded	FY Funding Planned
Spur Road Trailhead Parking (State Land, Easement Required)	Stikine	10,000	1996
Deer Mtn Trailhead	Ketchikan	50,000	1992
POW Dog Salmon Trailhead, POW Old Franks Trailhead, and misc	Ketchikan	70,000	1992
Saplic Parking	Ketchikan	250,000	1992
Ketchikan RV Campground	Ketchikan	95,000	1994-99
Narrow Point Ramp Parking Area	Ketchikan	200,000	1994-99
Horsehoe Hole (Staney Creek)	Ketchikan	100,000	1994-99
Old Franks Vistas	Ketchikan	15,000	1994-99
Sarkar Rapids Parking	Ketchikan	60,000	1994-99
Staney Parking	Ketchikan	20,000	1994-99
Logjam Parking	Ketchikan	30,000	1994-99
Logjam Access Improvement	Ketchikan	70,000	1994-99
Hollis/Maybeso Campground	Ketchikan	200,000	1994-99
Twin Island Lake Parking	Ketchikan	100,000	1994-99

General Purpose Road Construction/Reconstruction

Project	Location	Cost Funded	FY Funding Planned
Replace log stringer Bridges	Chatham	500,000	1992
Kook Lake-Sitkoh	Chatham	1,200,000	1992
Replace Log Stringer Bridges	Chatham	500,000	1993
Hoonah RD Office Paving	Chatham	75,000	1993
Chatham SO Paving	Chatham	100,000	1994
Sitka RD Office Paving	Chatham	50,000	1994-99
Replace Log Stringer Bridges	Chatham	500,000/yr	1994-99
Bridge Replacements	Stikine	500,000	1992
Replace Log Stringer Bridges	Stikine	500,000	1993
Replace Log Stringer Bridges	Stikine	500,000/yr	1994-99
Thomas Bay Access ¹	Stikine	275,000	ASAP
Papkes Landing Parking ²	Stikine	20,000	1998
FDR 6265 Double Lane Upgrade MP 0.00 to MP 2.50	Stikine	750,000	1994
Roads 6267/6290 Loop Road	Stikine	700,000	1996
Roads 6290/6299 Loop Road	Stikine	700,000	1997
FDR 6265 Double Lane Upgrade MP 2.50 to MP 17.4	Stikine	3,000,000	1998
Roads 6259/50050 Loop Road	Stikine	1,000,000	1999
FDR 6270 Double Lane Upgrade	Stikine	50,000	1992
Shelter Cove Phase I	Ketchikan	2,000,000	1992
Coffman-Thorne Bay Reconstr.	Ketchikan	1,700,000	1992
Log Stringer Bridge Replace.	Ketchikan	1,000,000	1992
Shelter Cove Phase II	Ketchikan	2,000,000	1993
Replace Log Stringer Bridges	Ketchikan	1,000,000	1993

General Purpose Road Construction/Reconstruction (continued)

Project	Location	Cost Funded	FY Funding Planned
Ketchikan RD Office Paving	Ketchikan	75,000	1993
Shelter Cove Phase III	Ketchikan	4,000,000	1994-99
Replace Log Stringer Bridges	Ketchikan	1,000,00/yr	1994-99

¹Includes replacing one bridge, rerouting around two washouts, and provide suspension bridge access across upper Muddy River. Access is for wildlife management, routine silviculture activities, and recreation.

²This is an access point to National Forest land and resources. Funding would be used as seed money to get city and state to work with Forest Service on correcting a safety problem associated with Papkes Landing Log Transfer Facility.

Timber Road Construction/Reconstruction

Project	Location	Cost Funded	FY Funding Planned
Kelp Bay Augmentation	Chatham	1,000,000	1992
Augmentation for Bridges	Chatham	500,000	1992
Replace Log Stringer Bridges	Chatham	500,000	1993
North Chichagof Augmentation	Chatham	500,000/yr	1994-99
Augmentation for Bridges	Chatham	500,000/yr	1994-99
Log Transfer Facility	Chatham	800,000	1993
Log Transfer Facility	Chatham	800,000/yr	1994-99
Augmentation for Bridges	Stikine	400,000	1992
Replace Log Stringer Bridges	Stikine	400,000	1993
Bohemia Mountain Access	Stikine	3,100,000	1993
Bohemia Mountain	Stikine-PRD	1,920,000	1993
Shamrock	Stikine-PRD	1,280,000	1993
Midpoint	Stikine-WRD	400,000	1993
Totem	Stikine-PRD	2,768,000	1994
Whiskey	Stikine-PRD	480,000	1995

Timber Road Construction/Reconstruction (continued)

Project	Location	Cost Funded	FY Funding Planned
King George	Stikine-WRD	600,000	1995
Big Foot	Stikine-WRD	400,000	1995
APC (Kuiu)	Stikine-PRD	1,600,000	1996
Mad Critter	Stikine-WRD	960,000	1996
Burnett	Stikine-WRD	800,000	1996
Blake	Stikine-WRD	480,000	1996
Brown's Cove	Stikine-PRD	480,000	1997
Small Sales	Stikine-WRD	800,000	1997
Chichagof	Stikine-WRD	800,000	1997
Nesbitt Reef	Stikine-WRD	480,000	1997
Whale Tail	Stikine-WRD	1,200,000	1997
Ground Hog	Stikine-WRD	400,000	1997
Port Houghton	Stikine-PRD	800,000	1999
South Zarembo	Stikine-WRD	640,000	2000
Woronkofski	Stikine-WRD	80,000	2000
Hoya	Stikine-WRD	560,000	2000
Shady Grove	Stikine-WRD	560,000	2000
Bridge Augmentation	Stikine-Both	400,000/yr	1992-2000
Augmentation for Bridges	Ketchikan	500,000	1992
Replace Log Stringer Bridges	Ketchikan	500,000	1993
Brown Mt TS Augmentation	Ketchikan	200,000	1993
Harriet Hunt Public Works	Ketchikan	900,000	1993
Mckenzie TS#1	Ketchikan	300,000	1993
Mckenzie TS#2	Ketchikan	300,000	1993

Timber Road Construction/Reconstruction (continued)

Project	Location	Cost Funded	FY Funding Planned
Augmentation for Bridges	Ketchikan	500,000/yr	1994-99
Gold+Gallegon to Whale Pass Public Works	Ketchikan	3,000,000	1994-99
EI Cap-Calder Access Public Works	Ketchikan	2,000,000	1994-99
Cleveland #1 Public Works	Ketchikan	3,000,000	1994-99
Cleveland #2 Public Works	Ketchikan	2,000,000	1994-99
Carroll-Orchard Public Works	Ketchikan	2,000,000	1994-99
Carroll #1 Public Works	Ketchikan	3,000,000	1994-99
Craig TS #1 Augmentation	Ketchikan	300,000	1994-99
Ketchikan TS #1 Augmentation	Ketchikan	300,000	1994-99
Thorne Bay TS #1 Augmentation	Ketchikan	200,000	1994-99
Craig TS #2 Augmentation	Ketchikan	300,000	1994-99
Ketchikan TS #2 Augmentation	Ketchikan	300,000	1994-99
Thorne Bay TS #2 Augmentation	Ketchikan	200,000	1994-99
Craig TS #3 Augmentation	Ketchikan	300,000	1994-99
Ketchikan TS #3 Augmentation	Ketchikan	300,000	1994-99
Thorne Bay TS #3 Augmentation	Ketchikan	200,000	1994-99

Radio Repeater Sites

Project	Location	Cost Funded	FY Funding Planned
Rowan Bay Mtn (Stikine Area)			1992
Doolith Mtn (Private Land on W. Chich)			1993
Rainbow Glacier (Haines State Forest)			1993

TEN-YEAR FACILITIES IMPLEMENTATION ACTION PROGRAM

Capital Investment Program for Facilities

Project	Location	Cost	FY Funding Planned	Funding #/Code
Planning	Chatham SO	30,000	annually	1/FAO
Hoonah District Office	Chatham HRD	970,000	1992	2/FAO
4 Housing Units	Chatham HRD	460,000	1993	3/FAO
Sitka District Office	Chatham SRD	575,000	1994-2003	4/FAO
Lease/Purchase Office	Chatham SO	2,435,000	1994-2003	5/FAO
4-Plex	Chatham YRD	495,000	1994-2003	6/FAO
Warehouse	Chatham HRD	60,000 630,000	1992 1993	7/FAO
Flammable Storage	Chatham HRD	69,000	1994-2003	8/FAO
Cascade Cr. Shop Renovation/ Sprinkler System	Chatham SO	97,000	1994-2003	9/FAO
Cascade Cr. Replace Utility System	Chatham SO	35,000	1994-2003	10/FAO
4 Housing Units	Chatham HRD	460,000	1994-2003	11/FAO
Ranger Quarters	Chatham HRD	138,800	1994-2003	12/FAO
Angoon Shop & Fuel Storage	Chatham ANM	161,000	1994-2003	13/FAO
Skagway Office	Chatham JRD	66,000	1994-2003	14/FAO
14 Person Bunkhouse	Chatham SRD	725,000	1994-2003	15/FAO
Homeshore Workcenter 4 person Qtrs/Office	Chatham JRD	173,000	1994-2003	16/FAO
Office w/Host Center	Chatham YRD	265,000	1994-2003	17/FAO
16 Person Bunkhouse	Chatham JRD	977,000	1994-2003	18/FAO
Office w/Host Center	Chatham JRD	1,265,000	1994-2003	19/FAO
Pelican Field Camp	Chatham HRD	230,000	1994-2003	20/FAO
1 Trailer (Housing)	Chatham YRD	50,000	1992	21/PROJ

Capital Investment Program for Facilities (continued)

Project	Location	Cost	FY Funding Planned	Funding #/Code
8-Fathom Workcenter	Chatham HRD	60,000	1993	22/PROJ
1 Trailer (Kennel Creek)	Chatham HRD	115,000	1992	23/PROJ
Kelp Bay Housing	Chatham SRD	115,000	1993	24/PROJ
Boat Dock	Chatham SRD	230,000	1992	25/FRP
Boat Dock	Chatham HRD	230,000	1994-2003	26/FRP
Boat Dock Parking Pavement	Chatham SRD	18,000	1994-2003	27/FRP
Cascade Creek Cr. Workcenter Roadway Paving	Chatham SRD	58,000	1994-2003	28/FRP
Parking Lot Paving	Chatham JRD	40,000	1994-2003	29/FRP
Planning	Stikine SO	30,000	annually	1/FAO
Barracks	Stikine PRD	805,000	1994-2003	2/FAO
Lease/Purchase New Office	Stikine SO	2,932,000	1994-2003	3/FAO
Office	Stikine PRD	1,564,000	1994-2003	4/FAO
North Etolin Crew Quarters	Stikine WRD	276,000	1994-2003	5/FAO
Kake Crew Quarters	Stikine PRD	29,000	1994-2003	6/FAO
Roosevelt Harbor Crew Quarter	Stikine WRD	230,000	1994-2003	7/FAO
Thomas Bay Crew Quarters Ren	Stikine PRD	115,000	1994-2003	8/FAO
Kake Administrative Office	Stikine PRD	230,000	1994-2003	9/FAO
Host Area	Stikine PRD	276,000	1994-2003	10/PROJ
Duplex Access Carport	Stikine WRD	87,000	1992	11/PROJ
Compound Security Fence	Stikine WRD	30,000	1992	12/PROJ
Tonka Equipment Storage	Stikine PRD	87,000	1994-2003	13/PROJ
4-Plex Housing Unit	Stikine WRD	288,000	1994-2003	14/PROJ
Rowan Bay Trailer Replace	Stikine PRD	322,000	1994-2003	15/PROJ

Capital Investment Program for Facilities (continued)

Project	Location	Cost	FY Funding Planned	Funding #/Code
Compound Site Improvement	Stikine PRD	115,000	1994-2003	16/PROJ
Residence Assess/Carport	Stikine WRD	87,000	1994-2003	17/PROJ
Nursery Reconstruction	Stikine PRD	-	-	18/PROJ
Rowan Bay Utilities	Stikine PRD	91,000	1992	19/FFCP
Portage Bay Water System	Stikine PRD	46,000	1992	20/FFCP
Thomas Bay Utilities	Stikine PRD	46,000	1993	21/FFCP
St. Johns Utilities	Stikine WRD	46,000	1993	22/FFCP
Planning	Ketchikan SO	30,000	annually	1/FAO
Office	Ketchikan CRD	1,008,000	1992	2/FAO
Barracks & Remove Rsdce	Ketchikan CRD	510,000	1993	3/FAO
Residence Site Work	Ketchikan CRD	90,000	1993	4/FAO
Warehouse	Ketchikan CRD	853,000	1994-2003	5/FAO
Office Parking	Ketchikan CRD	99,000	1994-2003	6/FAO
Dock	Ketchikan CRD	81,000	1994-2003	7/FAO
Office Addition	Ketchikan TBRD	284,000	1994-2003	8/FAO
4-Plex	Ketchikan CRD	425,000	1994-2003	9/FAO
Duplex	Ketchikan CRD	322,000	1994-2003	10/FAO
Communications Shop	Ketchikan SO	178,000	1994-2003	11/FAO
Warehouse Site Paving & Storage	Ketchikan KRD	275,000	1994-2003	12/FAO
Polk Inlet Workcenter	Ketchikan CRD	15,000	1994-2003	13/FAO
Whale Pass Workcenter Barracks/12 Person Office Warehouse	Ketchikan TBRD	1,005,000	1994-2003	14/FAO

Funding Sources:

FAO - Fire, Administrative, and Other

FRP - Forest Road Program

PROJ - Project funds

FFCP - Federal Facilities Compliance Program

Chapter 3

Management Prescriptions

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CHAPTER 3 - MANAGEMENT PRESCRIPTIONS

INTRODUCTION

Chapters 2, 3 and 4 of the Forest Plan present the direction for managing the Tongass National Forest. The components of this direction are explained in the introduction to Chapter 2. This chapter (Chapter 3) includes the complete management prescription for each of the 22 land use designations used for the revised Forest Plan. The areas to which each land use designation is applied are shown on the preferred alternative (Alternative P) map.

To use this management prescription section, first find the area of the Forest you are interested in on the map. The map legend has the name and corresponding color of each land use designation. Then locate the management prescription for that designation (they have the same name) in the table of contents.

Each management prescription has three parts:

1. Goals and a brief overview (called "At-a-Glance").
2. A table which refers, by resource, to the *Forest-wide Standards & Guidelines* that apply. The Forest-wide standards and guidelines are included in Chapter 4. The order of the resources is shown in the table of contents.
3. The specific direction, called *Land Use Designation Standards & Guidelines*. The Land Use Designation standards & guidelines are grouped by resource, following the order established for the Forest-wide standards and guidelines. Resource codes are the same for both sets of standards and guidelines.

The following table will assist the reader in understanding the differences between the 22 management prescriptions. It gives a brief summary of the direction for selected resources. All applicable resources are not included.

Summary Comparison of Land Use Prescriptions

Land Use Designation	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Improvement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
Wilderness (WW)	Preservation, Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	When Compatible with Wilderness Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Improved
Wilderness National Monument (WM)	Preservation, Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	When Compatible with Wilderness Monument Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Improved
Nonwilderness National Monument (NM)	Retention, Partial Retention, Modification, Maximum Modification	Primitive, Semi-primitive Motorized and Non-motorized, Roded Natural, Roded Modified	Open for Traditional Access	When Compatible with Nonwilderness Monument Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Generally Maintained or Improved
Research Natural Area (RA)	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open, Restricted	When Compatible with RNA Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Improved if Compatible with RNA Objectives
Special Interest Areas (SA)	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open	When Compatible with SA Objectives	Not Suitable	Case-by-Case Basis	Natural Distribution and Abundance of Habitat	Open, or With-drawn, Subject to Valid Existing Rights	Maintained or Improved if Compatible with SA Objectives
Other Areas (OA)	Retention, Partial Retention, Modification, Maximum Modification	All	Open for Traditional Access	Allowed	Not Suitable	Case-by-Case Basis	Natural Distribution and Abundance of Habitat	Open	Maintained or Improved
Primitive Recreation (PR)	Retention	Primitive	Open for Traditional Access	When Compatible with Recreation Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Open	Maintained or Improved
Enacted Municipal Watersheds (MW)	Retention, Partial Retention, Modification, Maximum Modification	All	Open, Restricted	Generally Inconsistent	Not Suitable	Administrative Access on Case-by-Case Basis	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Improved

Summary Comparison of Land Use Prescriptions (continued)

Land Use Designation	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Improvement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
Old-Growth Habitat (OG)	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	Allowed	Not Suitable	Case-by-Case Basis	Natural Distribution and Abundance of Habitat	Open	Maintained or Improved
Semi-primitive Recreation (SP)	Retention, Partial Retention	Semi-primitive Motorized	Open	When Compatible with LUD Objectives	Not Suitable	Limited Transportation Network	Natural Distribution and Abundance of Habitat	Open	Maintained or Improved
Land Use Designation II (L2)	Retention	Primitive, Semi-primitive Motorized and Non-Motorized	Open for Traditional Access	Allowed	Not Suitable	Case-by-Case Basis	Natural Distribution and Abundance of Habitat	Open	Maintained or Improved
Wild Rivers (WR)	Retention	Generally Primitive	Open for Traditional Access	When Compatible with LUD Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Withdrawn, Subject to Valid Existing Rights	Maintained or Improved
Scenic Rivers (SR)	Retention, Partial Retention	Semi-primitive Motorized and Non-motorized	Open	When Compatible with LUD Objectives	Selection, Limited Even-aged Harvesting	Limited Transportation Network	All Ages of Habitat with Minor Reduction in Amount of Old Growth	Open	Located in Designation SL
Recreation Rivers (RR)	Retention, Partial Retention, Modification	All	Open	When Compatible with LUD Objectives	Selection, Moderate Even-aged Harvesting	Full Transportation Network	All Ages of Habitat with Moderate Reduction in Amount of Old Growth	Open	Located in Designation SL
Experimental Forests (EF)	Retention, Partial Retention, Modification Maximum Modification	All	Open, Restricted	Allowed	Not Suitable, Range of Harvesting Varies with Research Needs	Full Transportation Network	Habitats Vary Depending On Research Activities	Open	Generally Maintain or Improve
Scenic Viewshed (SV)	Retention, Partial Retention	All	Open	When Compatible with Visual Objectives	Selection, Moderate Even-aged Harvesting	Limited Transportation Network	All Ages of Habitats with Slow Reduction in Amount of Old Growth	Open	Located in Designation SL

Summary Comparison of Land Use Prescriptions (continued)

Land Use Designation	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Improvement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
Modified Landscape (ML)	Partial Retention, Modification	Roaded Natural and Modified	Open	Allowed	Group Selection, and Moderate or Intensive Even-aged Harvesting	Full Transportation Network	All Ages of Habitat with Slow Reduction in Amount of Old Growth	Open	Located in Designation SL
Timber Production (TM)	Modification, Maximum Modification	Roaded Natural and Modified	Open	Allowed	Intensive Even-aged Harvesting	Full Transportation Network	Early, Middle and Mature Habitats	Open	Located in Designation SL
Minerals (MM)	Modification, Maximum Modification	All	Open, Restricted	Allowed	Complete Range of Harvesting	Case-by-Case Basis	Habitats Vary Depending on Mining Development	Emphasized	Minimize Disburbance
Stream and Lake Protection (SL)	Retention, Partial Retention, Modification, Maximum Modification	Semi-primitive Motorized, Rural, Roaded Natural	Open	Encouraged	No Harvest, Selection, Moderate Even-aged Harvesting	Special Consideration	All Ages of Habitat with Majority of Old Growth Maintained	Open	Maintained or Improved
Beach Fringe and Estuary (BF)	Retention, Partial Retention	Semi-primitive Motorized and Non-motorized	Open	Allowed	Not Suitable, Second-Growth Management if Previously Harvested	Case-by-Case Basis	Natural Distribution and Abundance of Beach Fringe and Estuary Habitats	Open	Maintained or Improved
Transportation and Utility Systems (TU)	Retention, Partial Retention, Modification, Maximum Modification	Semi-primitive Motorized and Non-motorized, Roaded Natural, Roaded Modified	Open	Allowed	Not Suitable after Construction	Case-by-Case Basis	Habitats Vary Depending on Type of Development	Open or Withdrawn, Depending on Underlying Designation	Minimize Disturbance

WILDERNESS

Land Use Designation WW

The emphasis of this land use designation is to provide for: 1) the protection and perpetuation of essentially natural biophysical and ecological conditions in areas designated as components of the National Wilderness Preservation System consistent with the provisions of ANILCA, and 2) a high degree of remoteness from the sights and sounds of human activity and related opportunities for solitude and primitive recreation. Scientific study of natural ecosystem dynamics is encouraged using research methods which are appropriate for use in Wilderness settings.

The areas are characterized by extensive unmodified natural environments. Natural processes and conditions are not measurably affected by the past and current actions of users. The area provides extremely high probability for independence, closeness to nature, and self-reliance in an environment that offers a high degree of challenge and risk. Use of mechanized transport and motorized equipment is provided in ANILCA for the following purposes:

- Subsistence purposes by rural residents in accordance with Federal and State Regulations,
- Administrative purposes when specifically authorized by the Regional Forester, or for emergency situations,
- Other specified activities provided for in ANILCA,
- The use of motorboats, snowmachines during periods of snow cover, fixed-wing airplanes, and non-motorized surface transport methods for traditional activities that are legal and for travel to and from villages and homesites.

Wildernesses designated by the Tongass Timber Reform Act by amendment to Section 703 of ANILCA were established with the same purposes and with the same exceptions to the Wilderness Act as areas initially established by ANILCA. Therefore, they shall be managed under the same prescriptions and standards and guidelines as the original ANILCA Wildernesses.

At-a-Glance . . .

Cultural Resources	Scientific study of cultural resources may take place and interpretation is provided visitors in a manner consistent with other Wilderness objectives.
Facilities	Structures consist of those needed for the administration and protection of Wilderness resources and those needed for the health and safety of visitors and for fish enhancement and other activities specifically allowed by ANILCA.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire, to enhance natural ecological processes, is not presently used, but may be considered in the future.
Fish	Fish habitat improvement projects to meet the objectives of the Regional Comprehensive Salmon Plan are designed and maintained in a manner that minimizes adverse effects on wilderness values.
Forest Pests	Natural occurrences are allowed to play their normal role in the ecological succession. Scientific study of natural populations is encouraged using research methods appropriate for the wilderness setting and goals.

Land Uses	Structures and land uses consist of those authorized by ANILCA, including those permitted for subsistence uses, temporary facilities for the taking of fish and wildlife, existing air and water navigation aids, communication sites, weather, climate and fisheries research and monitoring sites, and those needed for specially authorized activities.
Minerals	Mineral activity is limited to claims on which valid existing rights have been established. The designated Wilderness is withdrawn from mineral entry subject to valid existing rights.
Recreation	A choice of primitive and semi-primitive recreation opportunities and experiences is provided through the application of the ROS setting criteria. These settings include appropriate degrees of solitude, risk and challenge associated with remote wildland environments. Motorized use is infrequent and associated with access to the Wilderness, public use cabins, and subsistence use within the Wilderness land use designation.
Soil and Water	Watersheds are managed in a natural condition.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent in some areas.
Transportation	Travel is primarily by trails or waterways and is essentially non-motorized except for the use of fixed-wing airplanes, motorboats, and snowmachines. Access is provided for as specified in ANILCA Sections 811, 1010, 1110, 1111, 1310, 1315(b) and 1323.
Tree Use	Activities are limited to subsistence use and beach log recovery, administrative use necessary for management and protection of wilderness values, and other uses specified in ANILCA. Taking of personal use wood will be limited to coastline beach logs which can be removed without roads or use of vehicles on uplands. The cutting down of trees in navigable rivers (sweepers) and the removal of trees from the banks is not compatible with Wilderness management objectives (the Stikine River being an exception), subject to regulation by the Secretary of Agriculture.
Visual Resource	All appropriate and allowed resource management activities are integrated in such a way that evidence of current human use is unnoticeable the following year, and natural biological processes are not adversely changed over time. Permitted structures blend with the natural landscape.
Wilderness	Manage all designated Wilderness to maintain an enduring wilderness resource while providing for public access and uses consistent with the purposes of the Wilderness Act of 1964 and the Alaska National Interest Lands Conservation Act of 1980 (ANILCA).
Wildlife	Human use of wildlife habitat is assessed and appropriate actions taken to prevent the degradation of wildlife species in the wilderness. Scientific study of indigenous species and their habitats is encouraged with emphasis on identifying their roles in ecosystem dynamics and on impacts of human uses.

Apply the following Forest-wide Standards & Guidelines located In Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	I-IV; VI-X	4-8
FACILITIES	FAC1 FAC23	I(A) All	4-18
FIRE	FIRE12	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST1 PEST2	I(A:1-2;B:1) All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All I,III-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111 REC112 REC122	All I(A-C);II(A) I,II;III;IV(B); VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1 TIM114	All VII(C,D)	4-72
TRAILS	TRAI1 TRAI2	I(A-E;F:1,3,5,6) All	4-81
TRANSPORTATION	TRAN	None	4-84
VISUAL RESOURCE	VIS1 VIS11 VIS12	I(A,B,D) I(A,B,F) I(B,C),II	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Enhancement

- A. Provide interpretive information concerning cultural resources within Wilderness to users in the form of exhibits and publications outside of the Wilderness.
 - 1. Cultural resources are available for scientific study to the extent that the study is consistent with the concept of Wilderness, the intent of the Wilderness Act, and cultural resource management objectives.
 - 2. Cultural resources are available for recreational, scenic, scientific, educational, conservation, and historic uses, consistent with management of Wilderness.

Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, and protection within the Wilderness.
 - 1. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 2. Identify, classify and evaluate known cultural resources.
 - 3. Identify cultural properties that require stabilization or other protective measures.

FACILITIES

Facilities Improvements: FAC2

- A. Construct no new permanent administrative facilities in the Wilderness.
- B. Limit administrative use to existing cabins, crew barges, or temporary structures.
- C. Continue the use and maintenance of only those existing structures needed for administrative use, or for the health and safety of wilderness visitors.
 - 1. When reconstruction of existing administrative sites is necessary, replace them with similar structures of compatible design.
 - 2. During all reconstruction or maintenance activity:
 - * Paint or stain structures to blend with the environment.
 - * Keep clearing of vegetation adjacent to the site to a minimum.
 - * Select materials that are natural in appearance.
- D. Temporary radio repeaters may be seasonally located in wilderness when necessary to provide essential communications for the health and safety of personnel involved in the administration of the area.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.

- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 - 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. As a general management practice, management-ignited prescribed fire will not be used in this land use designation. Should it become necessary to consider the use of management-ignited prescribed fire, FSM 2324 provides direction.
- B. Use natural ignitions to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

Planning

- A. Plan for fisheries in Wilderness consistent with ANILCA Section 1315(b) which recognizes the goal of restoring and maintaining fish production in the State of Alaska to optimum sustained yield levels and in a manner which adequately assures protection, preservation, enhancement, and rehabilitation of the wilderness resource. Subject to reasonable regulations, permanent improvements and facilities such as fishways, fish weirs, fish ladders, fish hatcheries, spawning channels, stream clearance, egg planting, and other accepted means of maintaining, enhancing, and rehabilitating fish stocks may be permitted. For this purpose, optimum sustained yield levels will be considered synonymous with the long-term harvest goals documented in the State of Alaska Comprehensive Salmon Plans and other state fisheries plans. Consult R-10 supplements to FSM 2632 and FSM 2320 for further details.
- B. Evaluate fish habitat improvement during project planning by considering: 1) availability of suitable non-wilderness opportunities; 2) effects on wilderness conditions, in general; 3) effects resulting from the introduction of species not indigenous to the watershed; 4) the appropriateness of structures both in type and scale to the Recreation Opportunity Spectrum Class (ROS) setting; and 5) the need to provide well-distributed fisheries that support sport and commercial fisheries, subsistence, and community stability.
- C. The need for wilderness aquaculture projects must be determined on a broad basis that includes the potential of private, State, and Federal nonwilderness projects.
- D. In planning stress, protection of fish habitat to prevent the need for mitigation.

Fish Habitat Improvement: FISH22

- A. Facilities shall be constructed in such a rustic manner as to blend into the natural character of the area and shall be limited to those essential to the project (ANILCA 1315(b)).
- B. Reasonable access, including the temporary use of motorized equipment shall be permitted, subject to reasonable regulation to maintain wilderness character, water quality, and fish and wildlife values of the area.

FOREST PESTS

Forest Pest Management: PEST1

- A. Natural occurrences are allowed to play their normal role in ecological succession.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (non-Recreation): LAND122

- A. Authorize only activities which are consistent with the Wilderness Act (as specifically allowed by ANILCA) and are otherwise in compliance with management direction of this plan. (Consult FSM 2700 and FSM 2320, Supp. 46.)
 - 1. Analyze proposals on a case-by-case basis.
 - 2. Permit only activities which will not adversely affect the purposes for which the Wilderness was established.
 - 3. Integrate special use management with the ROS so that approved uses and activities conform to adopted ROS criteria.
 - 4. Avoid authorizing uses which are not dependent upon Wilderness resources or uses for which reasonable alternative locations exist outside the Wilderness.
- B. New Special Use Cabins and related structures may be permitted by the Regional Forester in accordance with Section 1303(b)(1) of ANILCA under the following conditions:
 - 1. The permit is nontransferable and limited to a 5-year term.
 - 2. The determination is made that the proposed use, construction, and maintenance of the structure(s) are compatible with the purpose for which the Wilderness was established.
 - 3. The determination is made that the proposed cabin is either directly related to the administration of the Wilderness or the continuation of an ongoing use otherwise allowed in the Wilderness, where a) the applicant has no reasonable alternative site for constructing a cabin; and b) that the cabin is not to be used for private recreational use.
 - 4. The United States shall retain ownership of the cabin and related structures.
 - 5. Applicants must:
 - * Agree to vacate the structure(s) and remove all personal property upon nonrenewal or revocation of the permit within a reasonable time period established by the District Ranger.
 - * Acknowledge in writing that they have no interest in the real property on which the structure(s) are constructed.
 - * Submit with their applications a sketch or photograph, and a map of the proposed structure(s) showing the specific geographical location.

6. Special use permits will contain the following provision: "Chain-saws, generators or other motorized equipment shall not be used on the permit area unless specifically approved by the Regional Forester."
- C. Cabins and related structures which were in place on December 2, 1980, for which a valid authorization does not exist, may be authorized with a non-transferable renewable five-year special use permit by the Regional Forester for traditional and customary uses if the use is compatible with the purposes for which the Wilderness was established. No permit shall be issued for private recreational use. These permits shall be renewed until the death of the original permittee using the cabin as a dwelling. Revocation of the permit must be by the Regional Forester, after notice and hearing establish that continued use is causing, or may cause, significant harm to the principal purposes for which the Wilderness was established (ANILCA 1303(b)).
1. To qualify for an authorization the applicant must:
 - * Demonstrate by affidavit, bill of sale, or other documentation, proof of possessory interests or rights of occupancy in the cabin.
 - * Submit a list of all immediate family members.
 - * Submit a sketch or photograph and a map of the cabin and related structures showing its geographic location.
 - * Agree to vacate all structures and remove all personal property within a reasonable time period established by the District Ranger.
 - * Acknowledge, in writing, that there is no interest in the real property on which the cabin and structures are located and that any cabin or related structure constructed under the authority of the special use permit shall be the property of the United States.
 2. Special use permits will contain the following provision: "Chain-saws, generators or other motorized equipment shall not be used on the authorization area unless specifically approved by the Regional Forester."
 3. Cabins and associated structures which do not qualify for special use permit shall be removed by the owner. Cabins that remain will be posted as property of the United States. Such cabins which may be useful for emergency shelter must not be destroyed and may be designated by the Forest Supervisor as a public use cabin or posted for use as an emergency public shelter.
- D. Existing valid special use permits for cabins, homesites, or similar structures which were in effect on December 2, 1980, shall be renewed unless the Regional Forester finds, following notice to the permittee and after the permittee has had a reasonable opportunity to respond, that the permitted structure constitutes a direct threat or a significant impairment to the purpose for which the Wilderness was established. (ANILCA, Section 1303(d) and Section 101 (b).)
1. Authorizations in effect on December 2, 1980 will be considered for renewal in accordance with provisions of the existing authorization and reasonable regulations which may be prescribed.
 2. The structures authorized by these authorizations may be maintained, rehabilitated, modified, replaced, or removed, but not enlarged.

3. All modifications and replacement plans will require materials which blend and are compatible with the immediate and surrounding wilderness landscape.
 4. In the case of conflicts which could lead to termination of the permit, the permittee will be offered reasonable opportunity to correct the conflict.
 5. The special use permit may be transferred at the election or death of the original permittee. The original permittee is the one of record on December 2, 1980. This is a transfer of the authorization in effect on December 2, 1980; not the issuance of a new special use permit. The transfer may be accomplished following the normal procedures except that the special use permit will be amended to change the name of the permittee instead of issuing a new permit.
 6. The amendment will also contain the following tenure clauses:
 - * This permit is nontransferable, and a new permit will not be issued to any subsequent owner of the improvements or to any person holding any interest in the improvements.
 - * If the present permittee, herein named, ceases to have personal need for, or to make personal use of, the site for the purpose for which the permit is issued, this permit will terminate and the structures on the area shall be disposed of as provided in the conditions of the permit.
 - * No additional improvements shall be constructed without prior written approval of the Regional Forester.
 - * Chainsaws, generators, or other motorized equipment shall not be used on the permit area unless specifically approved by the Regional Forester.
- E. Provide for the continuance of existing and future establishment and use of temporary campsites, tent platforms, shelters and other temporary facilities and equipment directly related to and necessary for the taking of fish and wildlife in accordance with ANILCA (Sec. 1316). These temporary facilities will be regulated as follows:
1. Permits are limited to a period not to exceed one year, but may be renewed.
 2. Authorized facilities and/or equipment must be directly and necessarily related to the taking of fish and wildlife. Permits will only be issued when the following conditions are met:
 - * the facilities are needed as a practical necessity to conduct legal hunting, trapping, and fishing activities.
 - * the applicant has no practical alternative location outside the Wilderness.
 3. Does not include cabins.
 4. Does not include motorized forms of transportation other than snowmachines, motorboats, or fixed-wing airplanes.
 5. The specific location of temporary facilities will not cause physical resource damage, and should be located and designed to minimize conflicts with other users.
 6. Tent platforms, toilets, or other constructed facilities shall be located one-half mile, or more, from popular beaches, lakes, recreational boat anchorages (both developed and undeveloped) or other special recreation places as identified in the Forest Plan.
 7. Temporary camp facilities in wilderness will include at least the following conditions:

- * The time of occupancy will be limited to coincide with the hunting or fishing season for the species for which the temporary facility is being used.
 - * At the end of the specified occupancy, tents will be taken down and tent platforms laid flat. The toilet pits will be backfilled and unnecessary equipment removed from the site.
 - * Temporary structures will be built with materials which blend with and are compatible with the surrounding landscape.
 - * Temporary facilities will be screened from the water, and located so that they are unobtrusive as seen from trails and areas of public use.
8. The Forest Supervisor may determine, after adequate notice, that the establishment and use of new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purposes for which the Wilderness was established, including its wilderness character. Upon such determination the Forest Supervisor may deny the use or establishment of new facilities and equipment in accord with ANILCA (Sec. 1316 (b)).
- F. Allow reasonable access to, and operation and maintenance of existing air and water navigation aids, communication sites, and related facilities, as well as existing facilities for national defense purposes, weather, climate and fisheries research and monitoring. New facilities proposed for these activities and purposes, except communications sites, shall be permitted: 1) following consultation between the head of the Federal agency undertaking the establishment, operation, or maintenance, and the Regional Forester; and, 2) in accordance with such terms and conditions as may be mutually agreed upon in order to minimize the adverse effects of such activities on the wilderness resources (ANILCA, Section 1310).
1. Perform environmental analysis to evaluate the effects of such proposals on wilderness resources and to provide the basis for determining the necessary terms and conditions under which the use will be permitted.
 2. Mechanized transport and motorized equipment may be authorized where no other practical alternative exists.
 3. Forest Supervisors will consult with the permittees and jointly develop a Memoranda of Understanding, documenting procedures which will minimize impacts on the wilderness resources without unreasonably limiting the operation and maintenance of the proposed facilities.
- G. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located in this land use only after a search for TUS "Windows" has been exhausted.
- H. Onshore facilities such as waterlines, storage areas, and shoreties for mariculture shall not be permitted in Wilderness.

Landline Location and Maintenance: LAND231, LAND24

- A. Provide adequate marking for the public and Forest Service employees to distinguish land ownership.
1. Survey, mark, and post property lines of inholdings and adjacent private lands. Give highest priority to those landlines that are adjacent to private lands where activities or occupancies are likely to encroach on wilderness. The next priority is adjacent to trails,

canoe routes, and other Wilderness transportation corridors or areas of frequent human use.

- B. Provide adequate marking of wilderness boundaries to prevent encroachment of non-compatible activities from adjacent public lands.
- C. Determine survey, marking, and posting priorities by the degree to which adjacent land management is compatible with the Wilderness classified lands.

Land Ownership Adjustments: LAND26

- A. Retain National Forest lands and acquire private inholdings as opportunities arise.
 - 1. As opportunities arise, acquire private inholdings through donation, exchange, or purchase.
 - 2. Acquisition of private inholdings within the Wilderness is a continuing high priority.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

Forest Lands Withdrawn From Mineral Entry

- A. Forest lands within the Wilderness are withdrawn from mineral entry, subject to valid existing rights.
- B. Claimants with claims located within the Wilderness retain valid existing rights if such rights were established prior to the date that Wilderness lands were withdrawn from mineral entry.
- C. Permit reasonable access to mining claims in accordance with the provisions of approved plans of operation (ANILCA, Section 1110(b)).
- D. Section 1010 of ANILCA provides for the assessment of oil, gas, and other mineral potential on all public lands in Alaska. Core and test drilling for geologic information purposes, but excluding exploratory oil and gas test wells, may be authorized within Wilderness. Air access shall be permitted for such assessment activities.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to wilderness values to the extent practicable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. The use of motorized equipment may be authorized where no other practical alternative for access and project operation exist. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads (ANILCA, Section 1110 (b)).

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. To the degree consistent with the overall purposes of designation, provide a spectrum of wildland recreation opportunities which reflects the inherent ecological, cultural, historical, prehistorical, scientific and sociological conditions found within the Wilderness.
- B. Provide for established ROS opportunities and appropriate activities throughout the Wilderness, unless an area is specifically closed to public use. Protect the integrity of wilderness resources through integrated recreation project planning and implementation within the Wilderness.

1. Provide the existing recreation settings and opportunities unless activities and practices authorized by the Regional Forester cause a change in the ROS setting(s). Manage recreation use in a manner that is compatible with the long-term objectives of the Wilderness.
 2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines. Maintain the capability of the Wilderness to provide appropriate quality primitive recreation opportunities on a sustained basis.
 3. Allow overnight camping by the general public except in areas specifically closed to such use.
- C. Manage recreation use and activities to meet the appropriate levels of social encounters, on-site development, methods of access and visitor impacts indicated for the established ROS settings. (Consult National and Regional Handbooks.)
- D. Provide for general public use of the Wilderness in accordance with ANILCA provisions for the use of snowmachines (during periods of adequate snow cover), motorboats, fixed-wing airplanes, and nonmotorized surface transportation methods for traditional activities that are legal and for travel to and from villages and homesites (ANILCA Sec. 1110).
1. Traditional activities include, but are not limited to, recreation activities such as sportfishing, sporthunting, boating, sightseeing and hiking.
 2. Traditional activities, which are legal, shall be allowed to continue where such use has previously occurred. No proof of pre-existing use will be required in order to use a snowmachine, motorboat, or fixed-wing airplane. No permits will be required for the general public to use these specific types of motorized transport or any nonmotorized surface transportation methods for traditional activities that are legal, unless an area is specifically closed to public use. Such use is subject to reasonable regulation by the Regional Forester to protect natural and other values of the Wilderness from damage.
 3. Restrictions or closures of specific areas within the Wilderness to specific uses may be invoked by the Regional Forester following adequate public notice and public hearing, and the determination that such use would be detrimental to wilderness resource values. Closure of broad areas is not contemplated.
 4. Fixed-wing airplanes will be allowed to land on all suitable lakes, beaches, and icefields without permit unless the activity (i.e., commercial use) requires a permit.
 5. The landing of helicopters by the general public will be limited to specific sites designated by the Regional Forester. Designated landing sites will require proof of established repeated public use occurring prior to December 2, 1980 for the 12 original ANILCA wildernesses and prior to November 28, 1990 for the Wilderness Areas established by the Tongass Timber Reform Act.
- E. Maintain existing public use cabins and shelters at present or improved condition. Consider additional public use cabins and/or shelters when needed for health and safety purposes (ANILCA, Sec. 1315.(d)).
1. New cabin or shelter locations must be based on an analysis of public health and safety needs. The analysis shall include at least the following factors:

- * Ease of accessibility particularly in regard to timely pick-up of users by floatplane or boat or for emergency situations.
 - * Presence of natural hazards including weather, brown bears, and dangerous tide and currents.
 - * History of fatalities and life-threatening incidents in the area.
 - * Natural attractions that entice people to use a particular area.
2. Design of new or replacement cabins or shelters will use drawings approved by the Regional Forester for use in wilderness.
 3. Appurtenant structures to the cabin or shelter will be limited to a toilet and a woodshed.
 4. All structures shall be built of materials, which blend with, and are compatible with, the foreground and middleground landscape surrounding the site.
 5. Decisions to construct new cabins or relocate or move existing cabins must be supported by an environmental analysis.
 6. The Forest Supervisor will report any proposed public use cabin or shelter removal or additions in the Annual Wilderness Report for notification of the appropriate congressional committees (ANILCA Sec. 1315(d)).
- F. With the help of user groups, develop "no trace" camping and use programs that encourage the dispersal and use of durable campsites. Where dispersal is not feasible, develop designated campsites and encourage their use.

Establishment of Sub-unit Management Zones

- A. Establish special management zones within the Wilderness to deal with unique situations, or to integrate local issues and concerns with management activities, where necessary to better accomplish Wilderness management objectives.
1. The boundaries of subunits should generally be located on identifiable topographic features and/or coincide with an established Recreation Opportunity Spectrum classification (ROS) area.

Public Outfitter and Guide Services

- A. Special use authorizations permitting individuals or organizations to provide visitor services in Wilderness may be issued if there is demonstrated need for the service(s) and they are deemed appropriate for the area proposed. District Rangers will maintain a record of currently active authorizations.
1. In selecting persons to provide new visitor services, except for sportfishing and hunting guide activities, preference shall be given: 1) to the Native Corporation which the Regional Forester determines is most directly affected by the establishment of the subject Wilderness, and 2) to local residents (ANILCA, Section 1307).
 2. Outfitter and Guide permit holders may be authorized the use of reserved temporary campsites for specific dates within a use season. Reserved campsites shall not include structures such as tent platforms or equipment caches.
 3. Outfitter and Guide services for the taking of fish and wildlife may be allowed certain temporary camp facilities by ANILCA, Section 1316. (See Lands Section.)

SOIL AND WATER

Watershed Resource Improvements: S&W2

- A. Only undertake watershed improvements where deteriorated soil and hydrologic conditions caused by humans or their influences create a threat or loss of wilderness values or where such conditions could cause serious depreciation of important environmental qualities outside of the Wilderness. For exceptions, see the Fish section.
- B. Use, whenever possible, indigenous plant species and materials in implementing watershed improvements.

SUBSISTENCE

Subsistence: SUB

- A. Rural residents engaged in subsistence uses shall have reasonable access to subsistence resources. Appropriate use of snowmachines, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents shall be permitted, subject to reasonable regulation to protect wilderness resource values. The use of other mechanical/motorized equipment, such as chainsaws, is allowed by permit only.
- B. Subsistence wood gathering activities in Wilderness (primarily firewood and trolling poles) will be allowed, subject to reasonable regulations to protect wilderness resources. Cutting of green trees will be by permit and only if there is not a suitable source equally accessible outside the Wilderness.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable and withdrawn from the timber base.
- B. The following types of public uses may be authorized if done in a manner that minimizes impacts on the Wilderness:
 - * Beach log recovery on Wilderness coastlines is authorized by ANILCA, Section 1315(f). Permits will require that the recovery of logs be conducted from water without roads or use of vehicles on uplands, or use of chainsaws. Beachlog salvage is defined as the recovery of logs that have been lost in transit and washed up on beaches. Special provisions in ANILCA allow the recovery of logs from the coastline.
 - * Removal, or use of trees cut as part of some other authorized use within the Wilderness. For example, clearing for a fish ladder.
 - * Cutting of trolling poles on an emergency basis by fishermen using adjacent waters. A permit for this use is not required.
 - * Trees may be cut for use in construction and maintenance of authorized structures when it is not reasonably practical to obtain the necessary material from outside the Wilderness.
 - * Taking of personal use wood will be limited to beach logs on coastlines which can be removed without roads or use of vehicles on uplands. The cutting of down trees in navigable rivers (sweepers) and removal of trees from the banks is not compatible with Wilderness management objectives (the Stikine River being an exception).

TRAIL

Trail Activities: TRAI1

- A. Provide for a diversity of outdoor recreation trail and waterway opportunities which are appropriate for the ROS class and management intent of the Wilderness. Emphasize nonmotorized and nonmechanized par-

icipation in activities such as hiking, mountaineering, spelunking, cross-country skiing, canoeing and kayaking.

- B. Emphasize primitive and semi-primitive recreation opportunities which are in harmony with the natural environment and consistent with the intent and purposes of Wilderness Act and ANILCA.
- C. Emphasize trail systems that provide:
 - 1. Connected, multi-day trip opportunities for both land trails and water trails.
 - 2. Alpine trail systems with access from saltwater anchorages, cabins, local communities, and resorts.
 - 3. Loop trail systems in connection with public use cabins.
 - 4. Access from local communities to snowline where development of snowtrails is feasible.

Trail Administration: TRAI2

- A. Trails and associated waterways leading to and within Wildernesses often become the principal management tools for achieving management objectives. Construct and maintain trails and related facilities so that they contribute to desired conditions and appear to be an appropriate part of the Wilderness environment and not an intrusion upon it. (Consult FS Trails Management Handbook.)

TRANSPORTATION Transportation Operations: TRANS1

- A. New roads and new airstrips are not permitted, except to access surrounded state and private land and valid mining claims. Any transportation development in association with minerals extraction will be in accordance with an approved plan of operations, and subsequent annual work plans.
- B. Any existing roads in the Wilderness are closed to public use.
- C. Use of snowmachines, motorboats, fixed-wing airplanes and nonmotorized methods of surface transportation is permitted for traditional activities that are legal and for transportation to and from villages and homesites. (Consult ANILCA Section 1110 and Wilderness and Recreation Sections.)
- D. Provide adequate and feasible access for economic and other purposes to owners of land, including subsurface rights to land, valid mining claims, or other valid occupancies, which are effectively surrounded by Wilderness.
 - 1. The routes and types of access shall be practical in an economic sense; but do not necessarily have to be the most economically feasible alternative.
 - 2. District Rangers will work with the landowner, or his/her authorized representative, to work out reasonable solutions which will meet the intent of ANILCA (Sec. 1110(b) and 1323), while minimizing adverse impacts on wilderness resources and values.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Manage this land use designation to provide a natural-appearing landscape, where activities are not evident to the casual observer.
 - 1. Apply Forest-wide Standards & Guidelines for the Retention Visual Quality Objective. This objective defines the maximum limit of allowable change to the visual character of the area; less visible evidence of activities is acceptable.

2. Design allowed structures, campsites and heavily traveled trails to meet the Retention Visual Quality Objective.

WILDERNESS

Wilderness Resource Administration: WILD12

Wilderness Resource Management

- A. Manage all designated Wildernesses to maintain an enduring wilderness resource as provided by the Wilderness Act of 1964, while providing for public access and uses specifically allowed by the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (P.L. 96-487). Activities and practices authorized by ANILCA will be regulated or restricted in accordance with the special provisions of ANILCA, and only where it is determined that the effects of continued or expanded use are likely to cause one or more of the following:
 - * The degradation of the long-term natural processes in wilderness ecosystems.
 - * Be detrimental to the natural dynamics of the composition or structure of wilderness ecosystems.
 - * Be detrimental to identified objects of cultural, historic, prehistoric, and scientific interest.
- B. Use available opportunities to encourage and enlist public and private sector interest groups to work together in meeting wilderness management objectives. Emphasize programs which help in educating the using public in the appropriate conduct of activities and uses within Wildernesses (for example, "Leave No Trace.").
- C. To the extent practicable, the Forest Service will minimize the impacts of administrative activities on the Wilderness resources and visitors. Administrative activities include authorized use and wilderness resource related work being done by other agencies and cooperators. In developing project plans use the following guidelines:
 1. Encourage permittees and cooperators to minimize the use of mechanized vehicles and equipment to make their presence in the Wilderness as unobtrusive as possible even though authorized.
 2. The use of mechanized vehicles and equipment by the Forest Service and cooperators inside the Wildernesses is subject to the following conditions:
 - * *Aircraft:*
 - Fixed-wing airplanes may land on all suitable lakes, beaches, and icefields.
 - Evaluate the administrative use of helicopters on a case-by-case analysis of need and full consideration of all alternative options for access.
 - Use all aircraft in a manner to avoid adverse effects on the wilderness character and visitors.
 - To the extent possible, use established air routes.
 - Avoid low flights and continuous circling.
 - Plan work logistics to minimize the number of aircraft flights over the wilderness and landings within a specific area.
 - * *Motorboats on Rivers:*
 - Motorboats may be used on rivers for all administrative purposes.

- * *Motorboats on Freshwater Lakes:*
 - Outboard motors of 10 horsepower or less may be used for administering the Wilderness, gathering firewood for public use cabins, and transporting crews and equipment on lakes specified by the District Ranger.
- * *Chainsaws:*
 - Chainsaws may be used for trail maintenance and firewood cutting from September 10 through June 30 of the following year when authorized by the Forest Supervisor.
 - Chainsaws may be used for trail construction and reconstruction projects that have been specifically authorized in writing by the Regional Forester.
- * *Generators and Other Motorized Tools:*
 - May be used for construction/reconstruction projects when use has been specifically authorized in writing by the Regional Forester. They may not be used for normal maintenance work or in field camps except where specifically authorized by the Regional Forester.
- * *Snowmachines:*
 - May be used to administer Wilderness under the same snow conditions that public use is allowed.
- * *Exceptions:*
 - Aircraft and mechanized equipment may be used as needed for search and rescue purposes and law enforcement.
 - The temporary use of motorized equipment may be allowed for fisheries research, management, rehabilitation, and enhancement activities, when such use is authorized in the project environmental assessment or Decision Notice approved by the Forest Supervisor, or in the case of permanent facilities, the Regional Forester.
 - The use of chainsaws and power winches is allowed for clearing of navigational hazards along the Stikine River.

All other administrative activities must be completed using primitive non-motorized/nonmechanized methods unless specifically authorized by the Regional Forester.

WILDLIFE

Wildlife Habitat Improvement: WILD22

- A. The principal objective of wildlife habitat improvements is the protection or restoration of wilderness resources.

WILDERNESS NATIONAL MONUMENTS

Management Area WM

The emphasis of this land use designation is to provide: 1) management direction for the designated Wilderness portions of Admiralty Island and Misty Fiords National Monument Wildernesses, which protect objects of ecological, cultural, geological, historical, prehistorical, scientific interest, consistent with the provisions of ANILCA, and 2) for the protection and perpetuation of essentially primitive biophysical and ecological conditions in areas designated as components of the National Wilderness Preservation System. Scientific study of natural ecosystem dynamics is encouraged using research methods which are appropriate for use in National Monument Wilderness settings.

Admiralty Island National Monument Wilderness contains 937,459 acres and was established to protect its superlative combination of scientific and historic objects and values. The area reflects a unique island ecology, particularly that of wildlife.

Misty Fiords National Monument Wilderness contains 2,142,243 acres and was established to protect its extraordinary geologic features of scientific importance and unspoiled wildlife habitats and coastal ecosystems.

Both National Monuments contain Congressionally-designated Wilderness and non-wilderness National Forest System Lands. Management direction for the non-wilderness portions is provided in the Nonwilderness National Monuments land use designation.

Both Monument Wildernesses provide the visitor with an extremely high probability for experiencing independence, closeness to nature, and self-reliance associated with solitude and primitive recreation in an environment that offers a high degree of challenge and risk. Use of mechanized transport and motorized equipment is provided for by ANILCA for the following purposes:

- Subsistence purposes by rural residents in accordance with Federal and State Regulations,
- Administrative purposes, when specifically authorized by the Regional Forester or for emergency situations,
- Specific activities provided for in ANILCA, and
- The use of motorboats, snowmachines during periods of snow cover, fixed-wing airplanes, and nonmotorized surface transport methods for traditional activities that are legal and for travel to and from villages and homesites.

At-a-Glance . . .

Cultural resources	Scientific study of cultural resources is encouraged and interpretation is provided in a manner consistent with other Monument Wilderness objectives.
Facilities	Structures consist of those needed for the administration and protection of Monument Wilderness resources and those needed for the health and safety of visitors and other activities specially allowed by ANILCA.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire, to enhance natural ecological processes, is not presently used but may be considered in the future.

Fish	Fish habitat improvement projects to meet the objectives of the Regional Comprehensive Salmon Plan are designed and maintained in a manner that minimizes adverse effects on wilderness values.
Forest Pests	Natural occurrences are allowed to play their normal role in the ecosystem succession. Scientific study of natural populations is encouraged using research methods appropriate for the wilderness setting and goals.
Land Uses	Structures and land uses consist of those authorized by ANILCA, including: those permitted for subsistence uses, temporary facilities for the taking of fish and wildlife, existing air and water navigation aids, communication sites, weather, climate and fisheries research and monitoring sites, and those needed for specially authorized activities.
Minerals	Mineral activity is limited to claims on which valid existing rights have been established. The designated Monument Wilderness is withdrawn from mineral entry, subject to valid existing rights.
Recreation	A choice of primitive and semi-primitive recreation opportunities and experiences are provided through the application of the ROS setting criteria. These settings provide appropriate degrees of solitude, risk and challenge associated with remote wildland environments. Motorized use is infrequent and associated with access to the Monument Wilderness, public use cabins, and subsistence use within this land use designation.
Soil and Water	Watersheds are managed in a natural condition.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent in some areas.
Transportation	Travel is primarily by trails or waterways and is essentially non-motorized except for the use of fixed-wing airplanes, motorboats, and snowmachines. Access is provided for as specified in ANILCA Sections 811, 1010, 1111, 1310, 1315(b) and 1323.
Tree Use	Activities are limited to subsistence use and beach log recovery, administrative use necessary for management and protection of Monument Wilderness values and others uses in ANILCA. Taking of personal use wood will be limited to beach logs on coastlines which can be removed without roads or use of vehicles on uplands. The cutting of down trees in navigable rivers (sweepers) and removal of trees from the banks is not compatible with Wilderness management objectives subject to regulation by the Secretary of Agriculture.
Visual Resource	All appropriate and allowed resource management activities are integrated in such a way that evidence of current human use is unnoticeable the following year, and natural biological processes are not adversely changed over time. Permitted structures blend with the natural landscape.
Wilderness	Manage all designated Wilderness to maintain an enduring wilderness resource while providing for public access and uses consistent with the purposes of the Wilderness Act of 1964 and the Alaska National Interest Lands Conservation Act of 1980 (ANILCA). The National Monument Wilderness is managed in

the same manner and intent as the other Wildernesses on the Forest. (See Land Use Designation WW.)

Wildlife

Human use of habitat is assessed and appropriate actions taken to prevent the degradation of wildlife species in wilderness. Scientific study of indigenous species and their habitats is encouraged with emphasis on identifying their roles in ecosystem dynamics and on impacts of human uses.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	IV; VI-X	4-8
FACILITIES	FAC1 FAC23	I(A) All	4-18
FIRE	FIRE12	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST1 PEST2	I(A:1-2;B:1) All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All I,II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111 REC112 REC122	All I(A-C);II(A) I,II;III;IV(B); VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1 TIM114	All VII(C,D)	4-72
TRAILS	TRAI1 TRAI2	I(A-E;F:1,3,5,6) All	4-81
TRANSPORTATION	TRAN	None	4-84
VISUAL RESOURCE	VIS1 VIS11 VIS12	I(A,B,D) I(A,B,F) I(B,C),II	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Enhancement

- A. Provide interpretive information concerning cultural resources within Monument Wilderness to users in the form of exhibits and publications outside of the wilderness.
 - 1. Cultural resources are available for scientific study to the extent that the study is consistent with the concept of Monument Wilderness, the intent of the Wilderness Act, and cultural resource management objectives.
 - 2. Cultural resources are available for recreational, scenic, scientific, educational, conservation, and historic uses, consistent with management of Monument Wilderness.

Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and allocation within the Monument Wilderness.
 - 1. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 2. Identify, classify and evaluate known cultural resources.
 - 3. Identify cultural properties that require stabilization or other protective measures.

FACILITIES

Facilities Improvements: FAC2

- A. No new permanent administrative facilities will be constructed in the Monument Wilderness.
- B. Limit administrative use to existing cabins, crew barges, or temporary structures.
- C. Continue the use and maintenance of only those existing structures needed for administrative use, or for the health and safety of wilderness visitors.
 - 1. When reconstruction of existing administrative sites is necessary, replace them with similar structures of comparable design.
 - 2. During all reconstruction or maintenance activity:
 - * Paint or stain structures to blend with the environment.
 - * Keep clearing of vegetation adjacent to the site to a minimum.
 - * Select materials that are natural in appearance.
- D. Temporary radio repeaters may be seasonally located in wilderness, when necessary, to provide essential communications for the health and safety of personnel involved in the administration of the area.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent

land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.

- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 - 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. As a general management practice, management-ignited prescribed fire will not be used in this land use designation. Should it become necessary to consider the use of management-ignited prescribed fire, FSM 2324 provides direction.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

Planning

- A. Plan for fisheries in the Wilderness portions of the National Monuments consistent with ANILCA Section 1315(b) which recognizes the goal of restoring and maintaining fish production in the State of Alaska to optimum sustained yield levels and in a manner which adequately assures protection, preservation, enhancement, and rehabilitation of the wilderness resource. Subject to reasonable regulations, permanent improvements and facilities such as fishways, fish weirs, fish ladders, fish hatcheries, spawning channels, stream clearance, egg planting, and other accepted means of maintaining, enhancing, and rehabilitating fish stocks may be permitted. For this purpose, optimum sustained yield levels will be considered synonymous with the long-term harvest goals documented in the State of Alaska Comprehensive Salmon Plans and other state fisheries plans. Consult R-10 supplements to FSM 2632 and FSM 2320 for further details.
- B. Evaluate fish habitat improvement during project planning by considering: 1) availability of suitable non-wilderness opportunities; 2) effects on wilderness conditions, in general; 3) effects resulting from the introduction of species not indigenous to the watershed; 4) the appropriateness of structures both in type and scale to the Recreation Opportunity Spectrum Class (ROS) setting; and 5) the need to provide well-distributed fisheries that support sport and commercial fisheries, subsistence, and community stability.

- C. The need for wilderness aquaculture projects must be determined on a broad basis that includes the potential of private, State, and Federal nonwilderness projects.
- D. In planning stress, protection of fish habitat to prevent the need for mitigation.

Fish Habitat Improvement: FISH22

- A. Facilities shall be constructed in such a rustic manner as to blend into the natural character of the area and shall be limited to those essential to the project (ANILCA 1315(b)).
- B. Reasonable access, including the temporary use of motorized equipment shall be permitted, subject to reasonable regulation to maintain wilderness character, water quality, and fish and wildlife values of the area.

FOREST PESTS

Forest Pest Management: PEST1

- A. Natural occurrences are allowed to play their normal role in ecological succession.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (non-Recreation): LAND122

- A. Authorize only activities which consistent with the Wilderness Act or are specifically allowed by ANILCA and are otherwise in compliance with management direction of the Forest Plan. (Consult FSM 2700 and FSM 2320, Supp. 46.)
 - 1. Analyze proposals on a case-by-case basis.
 - 2. Permit only activities which will not adversely affect the purposes for which the Monument Wilderness was established.
 - 3. Integrate special use management with ROS so that approved uses and activities conform to adopted ROS criteria.
 - 4. Avoid authorizing uses which are not dependent upon Wilderness resources or uses for which reasonable alternative locations exist outside the Monument Wilderness.
- B. New Special Use Cabins and related structures may be permitted by the Regional Forester in accordance with Section 1303.(b)(1) of ANILCA under the following conditions:
 - 1. The permit is nontransferable and limited to a 5-year term.
 - 2. The determination is made that the proposed use, construction, and maintenance of the structure(s) are compatible with the purpose for which the Monument Wilderness was established.
 - 3. The determination is made that the proposed cabin is either directly related to the administration of the Wilderness or the continuation of an ongoing use otherwise allowed within the Monument Wilderness; where the applicant has no reasonable alternative site for constructing a cabin; and that the cabin will not be used for private recreational use.
 - 4. The United States shall retain ownership of the cabin and related structures.

5. Applicants must:
 - * Agree to vacate the structure(s) and remove all personal property upon nonrenewal or revocation of the permit within a reasonable time period established by the District Ranger.
 - * Acknowledge in writing that they have no interest in the real property on which the structure(s) are constructed.
 - * Submit with their applications a sketch or photograph and a map of the proposed structure(s) showing the specific geographical location.
 6. Special use permits will contain the following provision: "Chain-saws, generators or other motorized equipment shall not be used on the permit area unless specifically approved by the Regional Forester."
- C. Cabins and related structures which were in place on December 2, 1980, for which a valid permit does not exist, may be authorized by the Regional Forester for traditional and customary uses if the use is compatible with the purposes for which the Monument Wilderness was established. No permit shall be issued for private recreational use. These permits shall be renewed until the death of the original permittee using the cabin as a dwelling. Revocation of the permit must be by the Regional Forester, after notice and hearing establish that continued use is causing, or may cause, significant harm to the principal purposes for which the Monument Wilderness was established.
1. To qualify for a permit the applicant must:
 - * Demonstrate by affidavit, bill of sale, or other documentation, proof of possessory interests or rights of occupancy in the cabin.
 - * Submit a list of all immediate family members.
 - * Submit a sketch or photograph of the cabin and related structures showing its geographic location.
 - * Agree to vacate all structures and remove all personal property within a reasonable time period established by the District Ranger.
 - * Acknowledge, in writing, that there is no interest in the real property on which the cabin and structures are located and that any cabin or related structure constructed under the authority of the special use permit shall be the property of the United States.
 2. Special use permits will contain the following provision: "Chain-saws, generators or other motorized equipment shall not be used on the permit area unless specifically approved by the Regional Forester."
 3. Cabins and associated structures which do not qualify for special use permit shall be removed by the owner. Cabins that remain will be posted as property of the United States. Such cabins that may be useful for emergency shelter must not be destroyed and may be designated by the Forest Supervisor as a public use cabin or posted for use as an emergency public shelter.
- D. Existing valid special use permits for Cabins, Homesites, or Similar Structures which were in effect on December 2, 1980 shall be renewed unless the Regional Forester finds, following notice to the permittee and after the permittee has had a reasonable opportunity to respond, that the permit constitutes a direct threat or a significant impairment to the

purpose for which the Monument Wilderness was established (ANILCA, Section 1303(d) and Section 101 (b).)

1. Permits in effect on December 2, 1980 will be considered for renewal in accordance with provisions of the existing permit and reasonable regulations which may be prescribed.
 2. The improvements authorized by these permits may be maintained, rehabilitated, modified, replaced, or removed, but not enlarged.
 3. All modifications and replacement plans will require materials which blend and are compatible with the immediate and surrounding wilderness landscape.
 4. In the case of conflicts which could lead to termination of the permit, the permittee will be offered reasonable opportunity to correct the conflict.
 5. The special-use permit may be transferred at the election or death of the original permittee. The original permittee is the one of record on December 2, 1980. This is a transfer of the permit in effect on December 2, 1980; not the issuance of a new special use permit. The transfer may be accomplished following the normal procedures except that the special use permit will be amended to change the name of the permittee instead of issuing a new permit.
 6. The amendment will also contain the following tenure clauses:
 - * This permit is nontransferable, and a new permit will not be issued to any subsequent owner of the improvements or to any person holding any interest in the improvements.
 - * If the present permittee, herein named, ceases to have personal need for, or to make personal use of, the site for the purpose for which the permit is issued, this permit will terminate and the structures on the area shall be disposed of as provided in the conditions of the permit.
 - * No additional improvements shall be constructed without prior written approval of the Regional Forester.
 - * Chainsaws, generators, or other motorized equipment shall not be used on the permit area unless specifically approved by the Regional Forester.
- E. Provide for the continuance of existing and future establishment and use of temporary campsites, tent platforms, shelters and other temporary facilities and equipment directly related to and necessary for the taking of fish and wildlife in accordance with ANILCA (Sec. 1316). These temporary facilities will be administered as follows:
1. Permits are limited to a period not to exceed one year, but may be renewed.
 2. Authorized facilities and/or equipment must be directly and necessarily related to the taking of fish and wildlife. Permits will be issued only when the following conditions are met:
 - * The facilities are needed as a practical necessity to conduct legal hunting and fishing activities.
 - * The applicant has no practical alternative location outside the Wilderness.
 3. Does not include cabins.
 4. Does not include motorized forms of transportation other than snowmachines, motorboats, or fixed-wing airplanes.

5. The specific location of temporary facilities will not cause physical resource damage, and should be located and designed to minimize conflicts with other users.
 6. Tent platforms, toilets, or other constructed facilities shall be located one-half mile, or more, from popular beaches, lakes, recreational boat anchorages (both developed and undeveloped) or other special recreation places identified in the Forest Plan.
 7. Temporary camp facilities in Wilderness will include at least the following conditions:
 - * The time of occupancy will be limited to coincide with the hunting or fishing season for the species for which the temporary facility is being used.
 - * At the end of the specified occupancy, tents will be taken down and tent platforms laid flat. The toilet pits will be backfilled and unnecessary equipment removed from the site.
 - * Temporary structures will be built with materials which blend with and are compatible with the surrounding landscape.
 - * Temporary facilities will be screened from the water, and located so that they are unobtrusive as seen from trails and areas of public use.
 8. The Forest Supervisor may determine, after adequate notice, that the establishment and use of new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purposes for which the Wilderness was established, including its wilderness character. Upon such determination the Forest Supervisor may deny the use or establishment of new facilities and equipment in accord with ANILCA (Sec. 1316(b)).
- F. The following resorts were under permit prior to the establishment of the Monument Wildernesses. They will be administered in accord with ANILCA provisions as follows;
1. *Thayer Lake Lodge*. Section 503(j) of ANILCA provides that the special use permit for Thayer Lake Lodge shall be renewed as necessary for the longest of either: 1) 15 years after December 2, 1980; or 2) the lifetime of the permittee, as designated in such permit as of January 1, 1979, or the surviving spouse or child of such permittee, whoever lives longer, so long as the management of the lodge remains consistent with the purposes of the Admiralty Island National Monument.
 2. *Humpback Lake Chalet*. The resort special use permit in existence on December 2, 1980, authorized one rental cabin and appurtenant structures on Humpback Lake within Misty Fiords National Monument Wilderness. The continuation of this use is authorized by ANILCA, Section 1307(a). The existing improvements may be maintained, rehabilitated, modified, replaced or removed, but not enlarged. New cabin construction will not be allowed. Approval of exterior color schemes, materials, and designs shall use criteria that keep the improvements unobtrusive and compatible with the surroundings. The special use permit may be revised as appropriate, but the permittee must remain Sportsman Paradise Tours, the permittee on December 2, 1980. The use shall continue to be permitted so long as it remains a public recreation rental cabin, provides adequate public service, does not significantly threaten

any resource, and other terms and conditions of the permit are met.

- G. Allow reasonable access to, operation, and maintenance of existing air and water navigation aids, communication sites, and related facilities, as well as existing facilities for national defense purposes, weather, climate and fisheries research and monitoring. New facilities proposed for these activities and purposes, except communications sites, shall be permitted: 1) following consultation between the head of the Federal agency undertaking the establishment, operation, or maintenance, and the Regional Forester; and 2) in accordance with such terms and conditions as may be mutually agreed upon in order to minimize the adverse effects of such activities on the Monument Wilderness resources.
 - 1. Conduct environmental analysis to evaluate the effects of such proposals on Monument Wilderness resources and to provide the basis for determining the necessary terms and conditions under which the use will be permitted.
 - 2. Mechanized transport and motorized equipment may be authorized where no other practical alternative exists.
 - 3. Forest Supervisors will consult with the permittees and jointly develop Memoranda of Understanding, documenting procedures which will minimize impacts on the Monument Wilderness resources without unreasonably limiting the operation and maintenance of the proposed facilities.
- H. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.
- I. Onshore facilities such as waterlines, storage areas, and shoreties for mariculture shall not be permitted in Wilderness.

Landline Location and Maintenance: LAND231, LAND24

- A. Provide adequate marking for the public and Forest Service employees to distinguish land ownership.
 - 1. Survey, mark, and post property lines of inholdings and adjacent private lands. Give highest priority to those landlines adjacent to the private lands where activities or occupancies are likely to encroach into the Wilderness. The next priority is landlines adjacent to trails, canoe routes, and other Wilderness transportation corridors or areas of frequent human use.
- B. Provide adequate marking of Wilderness boundaries to prevent encroachment of non-compatible activities from adjacent public lands.
- C. Determine survey, marking, and posting priorities by the degree to which adjacent land management is compatible with the Wilderness Classified lands.

Land Ownership Adjustments: LAND26

- A. Retain National Forest lands and acquire private inholdings as opportunities arise.
 - 1. As opportunities permit, acquire private inholdings through donation, exchange, or purchase.

2. Acquisition of private inholdings within the Monument Wilderness is a continuing high priority.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

Forest Lands Withdrawn from Mineral Entry

- A. Forest lands within the Monument Wilderness are withdrawn from mineral entry.
- B. Claimants with claims located within the Monument Wilderness retain valid existing rights if such rights were established prior to the mineral withdrawal date.
- C. Permit reasonable access to mining claims in accordance with the provisions of approved plans of operation (ANILCA Section 1110(b)).
- D. Section 1010 of ANILCA provides for the assessment of oil, gas, and other mineral potential on all public lands in Alaska. Core and test drilling for geologic information purposes, but excluding exploratory oil and gas test wells, may be authorized within Monument Wilderness. Air access shall be permitted for such assessment activities.
- E. Section 503, 504, and 505 of ANILCA provide specific direction for minerals management in the National Monument.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to wilderness values to the extent practicable. Include mitigation measures that are compatible with the sale of proposed development and commensurate with potential resource impacts.
- B. The use of motorized equipment may be authorized where no other practical alternative for access and project operation exist. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads (ANILCA, Section 1110(b)).

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. To the degree consistent with the overall purposes of designation, provide a spectrum of wildland recreation opportunities that reflects the inherent ecological, cultural, historical, prehistorical, scientific and sociological conditions found within the Monument Wilderness.
- B. Unless an area is specifically closed to public use, provide for established ROS opportunities and appropriate activities throughout the Monument Wilderness. Protect the integrity of National Monument and Wilderness resources through integrated project planning and implementation within the Monument Wilderness.
 1. Provide the existing recreation settings and opportunities unless activities and practices authorized by the Regional Forester cause a change in the ROS setting(s). Manage recreation use in a manner that is compatible with the long-term objectives of the Monument.
 2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines. Maintain the capability of the Monument to provide appropriate quality primitive recreation opportunities on a sustained basis.

3. Allow overnight camping by the general public except in areas specifically closed to such use.
- C. Manage recreation use and activities to meet the appropriate levels of social encounters, on-site development, methods of access and visitor impacts indicated for the established ROS settings. (Consult National and Regional Handbooks.)
- D. Provide for general public use of the Monument Wilderness in accordance with ANILCA provisions for the use of snowmachines (during periods of adequate snow cover), motorboats, fixed-wing airplanes, and nonmotorized surface transportation method for traditional activities that are legal and for travel to and from villages and homesites (ANILCA Sec. 1110).
 1. Traditional activities include, but are not limited to, recreation activities such as sportfishing, sporthunting, boating, sightseeing and hiking.
 2. Traditional activities, which are legal, shall be allowed to continue where such use has occurred previously. No proof of pre-existing use will be required in order to use a snowmachine, motorboat, or fixed-wing airplane. Unless an area is specifically closed to public use, no permits will be required for the general public to use these specific types of motorized transport or nonmotorized surface transportation methods for traditional activities that are legal. Such uses are subject to reasonable regulation by the Regional Forester to protect natural and other values of wilderness from damage.
 3. Restrictions or closures of specific areas within the Monument Wilderness may be invoked by the Regional Forester following adequate public notice and public hearing, and when it is determined that such use would be detrimental to wilderness resource values. Closure of broad areas is not contemplated.
 4. Airplanes will be allowed to land on all suitable lakes, beaches, and icefields without permit unless the activity (i.e., commercial use) requires a permit.
 5. The landing of helicopters by the general public will be limited to specific sites designated by the Regional Forester. Designated landing sites will require proof of established repeated use occurring prior to December 2, 1980.
- E. Maintain existing public use cabins and shelters at present or improved condition. Consider additional public use cabins and/or shelters when needed for health and safety purposes (ANILCA, Sec. 1315.(d)).
 1. New cabin or shelter locations must be based on an analysis of public health and safety needs. The analysis shall include at least the following factors:
 - * Ease of accessibility particularly for timely pick-up of users by floatplane or boat or for emergency situations.
 - * Presence of natural hazards including weather, brown bears, and dangerous tide and currents.
 - * History of fatalities and life-threatening incidents in the area.
 - * Natural attractions that entice people to use a particular area.
 2. Design of new or replacement cabins or shelters will use drawings approved by the Regional Forester for Wilderness use.
 3. Appurtenant structures to the cabin or shelter will be limited to a toilet and a woodshed.

4. All structures shall be built of materials which blend with, and are compatible with, the foreground and middleground landscapes surrounding the site.
 5. Decisions to construct new cabins or relocate or move existing cabins must be supported by an environmental analysis.
 6. The Forest Supervisor will report any proposed public use cabin or shelter removal or additions in the Annual Wilderness Report for notification of the appropriate congressional committees (ANILCA Sec. 1315(d)).
- F. With the help of user groups, develop "no trace" camping and use programs that encourage the dispersal and use of durable campsites. Where dispersal is not feasible, develop designated campsites and encourage their use.

Establishment of Sub-unit Management Zones

- A. Establish special management zones within the Monument to deal with unique situations, or to integrate local issues and concerns with management activities, where necessary, to better accomplish Monument management objectives.
1. The boundaries of subunits should generally be located on identifiable topographic features and/or coincide with an established Recreation Opportunity Spectrum classification (ROS) area.

Outfitter and Guide Operations

- A. Special use authorizations permitting individuals or organizations to provide visitor services in Wilderness may be issued if there is demonstrated need for the service(s) and they are deemed appropriate for the area proposed. District Rangers will maintain a record of currently active authorizations.
1. In selecting persons to provide new visitor services, preference shall be given: 1) to the Native Corporation which the Regional Forester determines is most directly affected by the establishment of the subject Wilderness, and 2) to local residents.
 2. Outfitter and Guide permit holders may be authorized the use of reserved temporary campsites for specific dates within a use season. Reserved campsites shall not include structures such as tent platforms or equipment caches.
 3. Outfitter and Guide activities involved in the taking of fish and wildlife are allowed certain temporary camp facilities by ANILCA. (See Lands Section - LAND122.)

**SOIL AND
WATER**

Watershed Resource Improvements: S&W2

- A. Undertake watershed improvements only where deteriorated soil and hydrologic conditions caused by humans or their influences create a threat or loss of Monument Wilderness values or where such conditions could cause serious depreciation of important environmental qualities outside of the Monument Wilderness. For exceptions, see the Fish section.
- B. Whenever possible, use indigenous plant species and materials in implementing watershed improvements.

SUBSISTENCE

Subsistence: SUB

- A. Rural residents engaged in subsistence uses shall have reasonable access to subsistence resources. Appropriate use of snowmachines, motorboats, and other methods of surface transportation traditionally employed for such purposes by local residents shall be permitted, subject to reasonable regulation to protect Monument wilderness resource values. The use of other mechanical/motorized equipment, such as chainsaws, is allowed by permit only.
- B. Subsistence wood gathering activities in Monument Wilderness (primarily firewood and trolling poles) will be allowed, subject to reasonable regulations to protect wilderness resources. Cutting of green trees will be by permit and only if there is not a suitable source equally accessible outside the Monument Wilderness.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable and withdrawn from the timber base.
- B. The following types of uses may be authorized if accomplished in a manner that minimizes impacts on the Monument Wilderness:
 - * Beach log recovery on Monument Wilderness coastlines is authorized by ANILCA. Permits will require that the recovery of logs be conducted from water without roads or use of vehicles on uplands.
 - * Removal, or use of trees cut as part of some other authorized use within the Monument/Wilderness. For example, clearing for a fish ladder.
 - * Cutting of trolling poles on an emergency basis by fishermen using adjacent waters. Permits for this use are not required.
 - * Trees may be cut for use in construction and maintenance of authorized structures when it is not reasonably practical to obtain the necessary material from outside the Monument Wilderness.
 - * Taking of personal use wood will be limited to beachlogs on coastlines which can be removed without roads use of vehicles on uplands. The cutting of down trees in navigable rivers (sweepers) and removal of trees from the banks is not compatible with Wilderness management objectives (the Stikine River being an exception).

TRAILS

Trail Activities: TRAI1

- A. Provide for a diversity of outdoor recreation trail and waterway opportunities which are appropriate for the ROS class and management intent of the Monument Wilderness. Emphasize nonmotorized and nonmechanized participation in activities such as hiking, mountaineering, spelunking, cross-country skiing, canoeing and kayaking.
- B. Emphasize opportunities in primitive and semi-primitive opportunities which are in harmony with the natural environment and consistent with the intent and purposes of the management of the Monument Wilderness.
- C. Emphasize trail systems that provide:
 - 1. Connected, multi-day trip opportunities for both land trails and water trails.
 - 2. Alpine trail systems with quick access from saltwater anchorages, cabins, local communities, and resorts.

3. Loop trail systems in connection with recreation cabins.
4. Access from local communities to snowline where development of snowtrails is feasible.

Trail Administration: TRAI2

- A. Trails and associated waterways leading to and within Monument Wildernesses often become the principal management tools for achieving management objectives. Construct and maintain trails and appurtenant facilities so that they contribute to desired conditions and appear to be an appropriate part of the Monument Wilderness environment and not an intrusion upon it. (Consult the Forest Service Trails Management Handbook.)

TRANSPORTATION Transportation Operations: TRAN1

- A. New roads and new airstrips are not permitted, except to access surrounded state and private land and valid mining claims. Any transportation development in association with minerals extraction will be in accordance with an approved Plan of Operations, and subsequent annual work plans.
- B. Roads in this land use designation are closed to public use.
- C. Use of snowmachines, motorboats, fixed-wing airplanes and non-motorized methods of surface transportation is permitted for traditional activities that are legal for transportation to and from villages and home-sites (ANILCA, Section 1110).
- D. Provide adequate and feasible access for economic and other purposes to owners of land, including subsurface rights to land, valid mining claims, or other valid occupancies, which are effectively surrounded by Monument Wilderness.
 1. The routes and types of access shall be practical in an economic sense; but do not necessarily have to be the most economically feasible alternative.
 2. District Rangers will work with the landowner, or his/her authorized representative, to work out reasonable solutions which will meet the intent of ANILCA (Sec. 1110(b) and 1323), while minimizing adverse impacts on Monument Wilderness resources and values.

VISUALS

Visual Resource Operations: VIS1

- A. Manage this land use designation to provide a natural-appearing landscape, where activities are not evident to the casual observer.
 1. Apply Forest-wide Standards and Guidelines for the Retention Visual Quality Objective. This objective defines the maximum limit of allowable change to the visual character of the area; less visible evidence of activities is acceptable.
 2. Design allowed structures, campsites and heavily traveled trails to meet the Retention Visual Quality Objective.

WILDERNESS

Wilderness Resource Administration: WLNS12

Wilderness Resource Management

- A. Manage all designated Monument Wildernesses to maintain an enduring wilderness resource, as provided by the Wilderness Act of 1964, while providing for public access and uses specifically allowed by the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (P.L. 96-487). Activities and practices authorized by ANILCA will be regulated or restricted in accordance with the special provisions of ANILCA and only where it is determined that the effects of continued or expanded use are likely to cause one or more of the following:
- * Degradation of the long-term natural processes in Monument Wilderness ecosystems.
 - * Be detrimental to the natural dynamics of the composition or structure of Monument Wilderness ecosystems.
 - * Be detrimental to identified objects of cultural, historic, prehistoric, and scientific interest.
 - * A specific use is not in accordance with applicable law.
- B. Use available opportunities to encourage and enlist public and private sector interest groups to work together in meeting Monument and Wilderness management objectives. Emphasize programs which educate the using public in the appropriate conduct of activities and uses within Monument Wildernesses.
- C. To the extent practicable, the Forest Service will minimize the impacts of administrative activities on the Monument Wilderness resources and visitors. Administrative activities include authorized use and wilderness resource-related work being done by other agencies and cooperators. In developing project plans use the following guidelines:
1. Encourage permittees and cooperators to minimize the use of mechanized vehicles and equipment to make their presence in the Monument Wilderness as unobtrusive as possible even though authorized.
 2. The use of mechanized vehicles and equipment by the Forest Service and other agencies for the administration of the National Monument Wildernesses is subject to the following conditions:
 - * *Aircraft:*
 - Fixed-wing airplanes may land on all suitable lakes, beaches, and icefields.
 - The administrative use of helicopters will be evaluated on a case-by-case analysis of need and full consideration of all alternative options for access.
 - All aircraft will be used in a manner to avoid adverse effects on the Wilderness character and visitors.
 - Established air routes will be used to the extent possible.
 - Low flights and continuous circling will be avoided.
 - Work logistics will be planned to minimize the number of aircraft flights over the Wilderness and landings within a specific area.
 - * *Motorboats on Rivers:*
 - Motorboats may be used on rivers for all administrative purposes.

- * *Motorboats on freshwater lakes:*
 - Outboard motors of 10 horsepower or less may be used for administering the Wilderness, gathering firewood for public use cabins, and transporting crews and equipment on lakes specified by the District Ranger.

- * *Chainsaws:*
 - Allow chainsaws to be used for trail maintenance and firewood cutting from September 10 through June 30 the following year when authorized by the Forest Supervisor.
 - Allow chainsaws to be used for trail construction and reconstruction projects that have been specifically authorized in writing by the Regional Forester.

- * *Generators and Other Motorized Tools:*
 - Generators and other motorized tools may be used for construction/reconstruction projects only when use has been specifically authorized in writing by the Regional Forester. They may not be used for normal maintenance work or in field camps except where specifically authorized by the Regional Forester.

- * *Snowmachines:*
 - May be used to administer Wilderness under the same snow conditions that public use is allowed.

- * *Exceptions:*
 - Aircraft and mechanized equipment may be used as needed for search and rescue purposes.
 - The temporary use of motorized equipment may be authorized for fisheries research, management, rehabilitation, and improvement activities, when such use is authorized in the project environmental assessment or Decision Notice approved by the Forest Supervisor or, in the case of permanent facilities, the Regional Forester.

All other administrative activities must be completed using primitive non-motorized/nonmechanized methods unless specifically authorized by the Regional Forester in the project environmental assessment or Decision Notice.

WILDLIFE

Wildlife Habitat Improvement: WILD22

- A. The principal objective of wildlife habitat improvements must be the protection or restoration of the Monument Wilderness resources.

NONWILDERNESS NATIONAL MONUMENTS

Land Use Designation NM

The emphasis of this land use designation is to provide management direction for the nonwilderness portions of Admiralty Island and Misty Fiords National Monuments.

The nonwilderness portions of both Monuments are managed to facilitate the orderly development of significant mineral resources and to protect objects of ecological, cultural, geological, historical, prehistorical, scientific interest as specified in ANILCA and site-specific plans of operation. The long-term goal is to reclaim areas disturbed by mining activities to a natural condition to the extent practicable (ANILCA 503 (2)(a)).

Both National Monuments contain Congressionally-designated Wilderness and nonwilderness National Forest Lands. Management direction for the Wilderness portions is provided in the Wilderness National Monuments Land Use Designation. Admiralty Island National Monument contains 18,351 acres of non-wilderness National Forest lands. Misty Fiords National Monument contains 151,185 acres of nonwilderness National Forest lands.

Access by fixed-wing airplane, motorboat, or snowmachine and non-motorized methods of surface transportation for traditional activities, and for travel to and from villages and homesites is allowed by ANILCA.

At-a-Glance . . .

Cultural Resources	Scientific study of cultural resources is encouraged and interpretation is provided to visitors.
Facilities	Structures consist of those needed and authorized for the the extraction of mineral deposits, those permitted for subsistence uses, those facilities needed for specially authorized activities, and, for protection of Monument values.
Fish	Where affected by mining activities, fish habitats are maintained to the maximum extent feasible. Fish habitat improvement projects to meet the objectives of the Regional Comprehensive Salmon Plan and designed and maintained in a manner that minimizes adverse effects on wilderness values.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire, to enhance natural ecological processes, is not presently used but may be considered in the future.
Forest Pests	Natural occurrences are allowed to play their normal roles in the ecosystem succession. Scientific study of natural populations is encouraged using research methods appropriate for the Monument setting and goals.
Lands	Special use activities and structures needed to facilitate mineral operations may be present. Valid mining claims may be patented.

Minerals	Mineral activity is limited to claims on which valid existing rights have been established. The remainder of the designated Monument is withdrawn from mineral entry.
Recreation	To the degree consistent with the presence of the mining activity and the health and safety of Monument visitors, a spectrum of wildland recreation opportunities is provided that reflects the inherent ecological, historical, and sociological conditions found within the National Monuments Nonwilderness Areas.
Soil and Water	Emphasis is to maintain soil cover, minimize slope failure, and reduce the degree of risk from the potential effects of mass wasting associated with management activities.
Subsistence	Activities occur in accordance with Federal and State Regulations and may be seasonally prevalent in some areas.
Timber (Tree Use)	Activities are limited to subsistence use, beach log recovery, and administrative use related to the development and operation of the mining activities. Commercial timber harvest and sale is prohibited. Disposal of timber cleared for access and facility development will be handled through settlement sales. Taking of personal use wood will be limited to beach logs on coastlines which can be removed without roads or use of vehicles on uplands. The cutting of down trees in navigable rivers (sweepers) and removal of trees from the banks is not compatible with this land use designation.
Transportation	Roads are permitted only for mining-related purposes within the Monument, access to non-Federal lands, when appropriate, and for Transportation and Utility Corridors under ANILCA, Title XI. Public transportation facilities outside the active mining area consist of only a few miles of constructed trails. Travel is essentially nonmechanized except for authorized traditional motorized recreation access, authorized resource management projects, emergency situations and subsistence uses.
Visual Resource	Permitted structures blend with the natural landscape to the extent practicable. Authorized activities and facilities are located and designed to minimize their visual impact when viewed from other areas within the Monuments.
Wildlife	Human use of wildlife habitat is assessed and actions taken to prevent the degradation of Monument wildlife species. Scientific study of indigenous species and their habitats is encouraged with emphasis on identifying their roles in ecosystem dynamics and impacts of human uses.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC1 FAC23	I(A) All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11, CAVE MG&C12	All I;III-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111 REC112 REC122	All I,II(A) I,II;III; IV(B);VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1 TIM114	All VII(C,D)	4-72
TRAILS	TRAI1 TRAI2	I(A-E;F:1,3,5) All	4-81
TRANSPORTATION	TRAN	None	4-84
VISUAL RESOURCE	VIS	All	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory

- A. Activities which have the potential to affect cultural resources shall be in compliance with the National Historic Preservation Act, Section 106, 110.
- B. Inventory valid, existing mineral claims prior to the approval of a plan of operation for mineral activities.
- C. Inventory and evaluation may be done at the operator's discretion and cost; provided that the inventory and evaluation is accomplished under the supervision of a qualified cultural resource specialist and authorized by a special use authorization.
- D. Include as part of the plan of operation specific protective and/or mitigative measures to be taken by the operator who is responsible for the cost of any such protective or mitigative measures.

FACILITIES

Facilities Improvements: FAC2

- A. Retain and maintain administrative facilities needed for the protection and management of the National Monument.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 1. Use of mechanized equipment requires Regional Forester approval.
 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. As a general management practice, management-ignited prescribed fire will not be used in this land use designation. Should it become necessary to consider the use of management-ignited prescribed fire, FSM 2324 provides direction.

- B. Outside the activities mining area, prescribed fire may only be used to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

Planning and Mitigation

- A. In areas affected by mining, design management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA Section 505 (a).)
- B. Stress protection of fish habitat to prevent the need for mitigation. Mitigation, rehabilitation and monitoring of mining impacts to fish habitat or populations shall be identified in appropriate environmental documents, plans of operations, and updates and amendments to each. Stocking of sport fish will generally be employed only to reestablish indigenous stock depleted by human influences. Stocking of indigenous species in currently barren waters may be considered where appropriate to the purposes of Monument management.
- C. Mining impacts to fish habitat shall be mitigated by the mining operator. (Consult ANILCA Section 505 (b) for Quartz Hill.)

Planning Fish Enhancement

- A. Provide for fisheries habitat enhancement subject to the goal of restoring and maintaining fish production in the State of Alaska (Consult sections 507 and 1315(b) of ANILCA, and the Regional Comprehensive Salmon Plans). Consider the suitability of fish habitat enhancement, during project planning, by evaluating: 1) availability of suitable non-Monument, non-wilderness opportunities; 2) effects on Monument conditions in general; 3) effects on Monument ecosystems and desired solitude level due to an enhanced fishery resulting in increased recreation use; 4) effects on ecosystems due to the introduction of species not indigenous to the watershed; and, 5) the appropriateness of structures both in type and scale to the Recreation Opportunity Spectrum Class (ROS) setting.

Fish Habitat Improvement: FISH22

- A. Use construction techniques which are consistent with Monument management.
 - 1. Developments shall involve those facilities essential to operations and shall be constructed in such rustic manner as to blend into the natural character of the area. (Consult ANILCA Section 1315 (b).)
 - 2. Land disturbing activities necessary for construction will be temporary.

FOREST PESTS

Forest Pest Management: PEST1

- A. Natural occurrences are allowed to play their normal role in ecosystem succession.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Authorize special uses to facilitate mineral-related activities. Authorize other uses if they do not substantially conflict with mineral-related activities.
 - 1. Authorizations must be compatible with the purposes for which the area was established, subject to exceptions provided by the Alaska National Interest Lands Conservation Act (ANILCA).

Landline Location and Maintenance: LAND23, LAND24

- A. Provide adequate marking for the public and Forest Service employees to distinguish land ownership and land classification.
 - 1. Survey, mark, and post property lines to Wilderness or Monument standards along trails, canoe routes, and other transportation corridors or areas of frequent human use.
 - 2. Determine survey, marking, and posting priorities, by the degree to which adjacent land management is compatible with the management objectives of Monument lands.

Land Ownership Adjustments: LAND26

- A. Retain lands in Federal ownership; however, allow and assist in the process for valid mining claims embracing locatable commodities, to go to patent, subject to the requirements of ANILCA.
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and Utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Preparation: MG&C11

Resource Preparation

- A. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: MG&C12

Lands Withdrawn from Mineral Entry

- A. National Forest System lands within this land use designation are withdrawn from additional mineral entry (ANILCA, Section 503).
- B. Claimants with claims located in areas withdrawn from mineral entry retain valid existing rights if such rights are established prior to the date the area was withdrawn from mineral entry.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. The plans of operation for the Greens Creek and Quartz Hill projects describe the activities which will be conducted, the location and timing of those activities, and how the environment and resources in each area will be protected through compliance with federal and state requirements. (Consult ANILCA Sec. 503 and 504.)

- B. An annual work plan will be prepared for each calendar year. The annual plan will define activities for that year in a greater detail than is presented in the overall plan. Annual work plans for Greens Creek and Quartz Hill will be consistent with their general plans of operation, Record of Decision for both projects, and ANILCA. (Consult ANILCA Sec. 503 and 504.)
- C. In areas affected by mining, design management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA Section 505(a).)

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. To the degree consistent with the overall purposes of Monument management, provide a spectrum of wildland recreation opportunities which reflect the existing ecological, historical, and sociological conditions found within the Monument.
- B. Continue to provide for established ROS opportunities and appropriate activities throughout this land use designation area unless specifically closed to public use. Protect the integrity of Monument resources through integrated project planning and implementation within the Monument.
 - 1. Provide the existing recreation settings and opportunities unless scheduled activities and practices cause a change in the ROS setting(s). Manage recreation use in a manner that is compatible with the long-term objectives of the Monument.
 - 2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines. Maintain the capability of the Monument to provide appropriate quality recreation opportunities on a sustained basis.
- C. Manage and regulate public recreation use within this land use designation area in accordance with direction contained in the plans of operations for the respective mining operations. Outside the area covered by the plans of operations manage recreation use and activities to meet the appropriate levels of social encounters, on-site development, methods of access and visitor impacts indicated for the established ROS settings. (Consult National and Regional Handbooks.)
- D. Consider additional public use cabins and/or shelters when needed to meet recreation demand within the Monument.
- E. With the help of user groups, develop "no trace" camping and use programs to encourage the dispersal and use of durable campsites. Where dispersal is not feasible, develop designated campsites and encourage their use.

Establishment of Sub-unit Management Zones

- A. Where necessary to better accomplish non-Wilderness Monument management objectives, establish special management zones within the Monument to deal with unique situations, or to integrate local issues and concerns with management activities.

1. The boundaries of subunits should generally be located on identifiable topographic features and/or coincide with an established recreation opportunity classification (ROS) area.

SUBSISTENCE

Subsistence: SUB

- A. Traditional subsistence wood gathering activities (primarily firewood and trolling poles) in Monuments will be allowed, subject to reasonable regulations to protect Monument resources. Cutting of green trees will be by permit only. (Consult 36 CFR 225.10.) There will be no restrictions on cutting dead or down trees for subsistence use unless monitoring indicates such activity in a given area is detrimental to Monument resources.
- B. Assess the effect of continued existing subsistence uses on the long-term condition and natural succession of Monument ecosystems.

TIMBER

Timber Resource Planning: TIM112

- A. Commercial timber sales and harvesting are prohibited in the National Monument. Forested land is classified as unsuitable and withdrawn from the timber base. Any timber removal associated with mineral access and facility development is nonchargeable to the allowable sale quantity.
- B. Taking of personal use wood will be limited to beach logs on coastlines which can be removed without roads or use of vehicles on uplands. The cutting of down trees in navigable rivers (sweepers) and removal of trees from the banks is not compatible with this land use designation.

Timber Resource Improvements: TIM2

- A. Rehabilitation, including reforestation, will be accomplished as a function of mineral development and not with a timber management objective.

TRAILS

Trail Administration: TRAI2

- A. During the period of mining development and operation, trails within this land use designation will be planned and located to direct the public away from mining operations. Construct and maintain trails and related facilities so that they contribute to desired conditions and appear to be an appropriate part of the Monument environment and not an intrusion upon it. (Consult the Forest Service Trails Management Handbook.)

TRANSPORTATION

Transportation Operations: TRAN1

- A. New roads are not permitted, except for the following purposes: 1) to access valid mining claims and State or private lands not otherwise reasonably accessible; 2) for Transportation and Utility Corridors in accordance with ANILCA, Title XI.
- B. Further development of transportation systems in association with minerals extraction will be in accordance with an approved plan of operations, and subsequent annual work plans.

- C. Roads in this land use designation are closed to public use, unless opened by the mining operator.
- D. Use of snowmachines, motorboats, aircraft and non-motorized methods of surface transportation are permitted.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Manage the visual resource to be compatible with non-Wilderness Monument objectives.
 - 1. Adopted Visual Quality Objectives (VQO) will range from Retention, in those portions of the Monument without access, to Maximum Modification in those portions developed in connection with mineral activities. Site-specific VQO's will be identified in specific plans of operation for mineral operations.
 - 2. Develop rehabilitation plans following project completion considering the visual resource as seen from public travel routes and use areas.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Mitigation, rehabilitation and monitoring of mining impacts to wildlife habitats or populations shall be identified in environmental documents, plans of operations, and updates and amendments to each.

Wildlife Habitat Improvement: WILD22

- A. Wildlife habitat improvements must have as their principal objective the protection or restoration of the Monument resources.

RESEARCH NATURAL AREAS

Land Use Designation RA

The emphasis of this land use designation is to provide important ecological areas designed for research and education and/or to maintain natural diversity on National Forest System lands. Current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural physical and biological processes to prevail without human intervention. Research Natural Areas are for nonmanipulative research, observation, and study. They also may assist in carrying out provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act. An Establishment Report will be written for newly-proposed Research Natural Areas. It will be forwarded to the Chief of the Forest Service with a recommendation for approval. In the interim, prior to approval by the Chief, management emphasis is to maintain and protect the natural conditions which qualify these areas for research natural area status.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	No permanent administrative facilities are present. Temporary facilities may be present, if, they are compatible with Research Natural Area objectives.
Fire	Fire suppression and prescribed fire are used to protect and improve resources as determined in the Research Natural Areas' management plan.
Fish	Fish enhancement projects are constructed and maintained only if they are compatible with objectives for which the RNA was established.
Forest Pests	Pest prevention and suppression measures consistent with this land use designation may be implemented to protect ongoing research projects and adjacent resources.
Lands	Special use activities which will preserve the Research Natural Area in an unmodified condition or those which serve research purposes are allowed.
Minerals	Designated Research Natural Areas are withdrawn from mineral entry, subject to valid existing rights, in conformance of the Federal Land Policy and Management Act of 1976, Section 204.
Recreation	Recreation management allows only recreation settings and levels of recreation use which do not threaten or interfere with the objectives or purposes for which the Research Natural Area was established.
Soil and Water	Soil and water resources evolve in natural conditions.
Subsistence	Subsistence activities are allowed to occur which do not compromise or degrade the purposes for which the Research Natural Area was established.

Hearings and notices, as required by Section 810 of ANILCA, may be necessary.

Tree Use

Vegetation is allowed to evolve in natural undisturbed conditions. Personal use fuelwood and Christmas tree cutting activities are usually incompatible with the objectives of this land use designation.

Transportation

Locating roads in this land use designation is avoided.

Visual Resource

Visual character of the area is allowed to evolve naturally.

Wildlife

Wildlife habitats evolve in natural conditions. Wildlife habitat improvements are constructed and maintained only if they are compatible with the objectives which the RNA for was established.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	None	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND11,23-26 LAND122	All I,II(B,D),III,VII,IX	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All I,III-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111,112,121 REC122	All I,IV,VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	I(A-H)	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	None	4-84
VISUAL RESOURCE	VIS1 VIS11 VIS12	All I(A) I(D)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, interpretation, and allocation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. No permanent facilities are permitted. (Consult the Forest Service Manual for procedures for authorizing temporary physical improvements.)

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression action that minimizes fire suppression cost and resource damage. The action must meet the objective of the Research Natural Area Management Plan.
- B. Suppression tactics will be compatible with the Research Natural Area establishment objectives.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used if it is compatible with the Research Natural Area establishment objectives.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

- A. Plan the construction and maintenance of fish enhancement projects only if they are compatible with the objectives for which the Research Natural Area was established.

FOREST PESTS

Forest Pest Management: PEST1

- A. Pest prevention and suppression measures consistent with this land use designation may be implemented to protect ongoing research projects and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Allow only those activities which will preserve the Research Natural Area in an unmodified condition or, unless otherwise provided by law, those activities which serve research purposes. (Consult FSM 2700 and 4060.)
1. Coordinate all special use proposals with the responsible Station Director, to ensure compatibility with research objectives.
 2. Do not authorize activities which modify ecological processes.
 3. Do not permit roads, fences, or signs in a Research Natural Area, unless they contribute to the management objectives or the protection of the area.
 4. Do not authorize new buildings or buildings which currently exist, but are unauthorized.
 5. Only the Pacific Northwest Experiment Station Director, after consultation with the Forest Supervisor, can approve plans for temporary gauging stations and instrument shelters. Ensure that such plans contain provisions for tenure of the facility, actions to be taken, time limits for completion of actions, and identification of parties responsible for returning disturbed areas to a natural condition.
 6. Encourage the use of Research Natural Areas by scientists and educators. Refer research applicants to the responsible Station Director. The Station Director will execute permits and agreements for these uses.
 7. Do not allow road or trail development or special uses of a permanent nature, except for research purposes, unless otherwise provided by law.
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.

Land Ownership Administration: LAND123

- A. Request withdrawal from mineral entry, after establishment of a Research Natural Area.

Landline Location and Maintenance: LAND231, LAND24

- A. Clearly identify and monument, corners and boundary turning points, upon establishment of a Research Natural Area. (Consult FSM 4060.)

Land Ownership Adjustments: LAND26

- A. Retain National Forest lands and acquire private inholdings as opportunities arise.

**LAW
ENFORCEMENT**

Law Enforcement Activities: LAW

- A. Where a special closure is necessary to protect a Research Natural Area, recommend a closure order under provisions of 36 CFR 261.50.

Ensure that such orders incorporate the special closure provisions of 36 CFR 261.53. (Consult FSM 4060.)

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: MG&C11

Resource Preparation

- A. Prepare geologic, paleontologic, and historic mining interpretations of Research Natural Areas where appropriate.

Minerals and Geology Administration: MG&C12

Forest Lands Withdrawn from Mineral Entry

- A. Designated Research Natural Areas will be withdrawn from mineral entry, subject to valid existing rights.
- B. Reasonable access to mining claims with valid existing rights will be permitted in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals; reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.

RECREATION

Recreation Use Administration: REC122

- A. Provide only those specific types and intensities of recreation activities and opportunities that can be accommodated without endangering or altering the natural biological processes occurring within the RNA.
- B. Issue appropriate orders regulating public use within the area necessary to assure non-degradation of the natural environments for which the area was established.

SOIL AND WATER

Watershed Resource Improvement: S&W2

- A. Allow soil and water improvement measures only if they are compatible with the objectives for which the Research Natural Area was established.

SUBSISTENCE

Subsistence: SUB

- A. Allow customary and traditional subsistence uses that are compatible with the objectives for which the RNA was established.

TIMBER

Timber Resource Planning: TIM112

- A. Forested lands are classified as unsuitable.
- B. Personal use fuelwood and Christmas tree cutting activities are usually incompatible with the objectives of this land use designation.

TRANSPORTATION **Transportation Operations: TRAN1**
A. Do not allow road and trail development or special uses of a permanent nature except for research purposes unless otherwise provided by law.

VISUAL RESOURCE **Visual Resource Operations: VIS1**
A. Allow the visual character of the area to naturally evolve, with only ecological changes occurring.
1. Apply Forest-wide Standards and Guidelines for the Preservation Visual Quality Objective.

WILDLIFE **Wildlife Habitat Improvement: WILD22**
A. Plan the construction and maintenance of wildlife improvements only if they are compatible with the objectives for which the Research Natural Area was established.

Wildlife Habitat Maintenance: WILD23
A. Do not allow wildlife habitat maintenance within RNA's, unless compatible with the objectives for which the Research Natural Area was established.

SPECIAL INTEREST AREAS

Land Use Designation SA

The emphasis of this land use designation is to provide for the inventory, maintenance, interpretation, and protection of the existing characteristics and attributes of areas with cultural, scenic, geological, botanical, zoological, paleontological or other special features which qualify these areas for designation as unique within the National Forest. Included in the Special Interest Areas Land Use Designation are:

- * Cultural areas possessing prehistoric/historic sites, buildings, or artifacts of National Register of Historic Places Significance or having special cultural associations with Native Americans.
- * Scenic Areas comprised of landscapes of outstanding beauty or natural characteristics, such as glaciers, alpine, and areas of diverse vegetative patterns/coverage. These are areas which could be viewed for long durations from specific vantage points, such as developed recreation sites, trails, anchorages, travel routes, and communities.
- * Geological Areas having unique geologic features of the earth's development including caves, volcanic features, stratigraphic and structural features, and fossilized specimens of plants and animals.
- * Botanical Areas containing specimens or groups of plants, plant groups, and plant communities which are significant because of form, color, occurrence, habitat location, life history, arrangement, ecology, environment, rarity and/or other features.
- * Zoological Areas containing unique or significant animals, animal groups, or animal communities, habitat, location, life history, ecology, environment, rarity or other features.

Within this land use designation, resource values are available for public study, use, or enjoyment when adequate provisions for protection are available and the resource is suitable for the activity. The conditions of occupancy and use under which these areas will be managed are described in standards and guidelines for their unique resources. (Descriptions of proposed Special Interest Areas may be found in Appendix F.)

Each Special Interest Area may require unique management direction that is determined through individualized study and planning to determine further standards and guidelines consistent with its objectives.

At-a-Glance . . .

Cultural Resources	Cultural resources are located, evaluated, and protected. Use may be regulated to maintain or protect unique values.
Facilities	Interpretive facilities blend with and compliment the unique qualities of each area.
Fish	Fish improvement projects may be allowed where compatible with the purposes of the Special Interest Area.
Fire	Suppression actions and prescribed fire are used to protect and improve resources as determined by the Special Interest Area Management Plan.

Forest Pests	Forest pest management measures consistent with this land use designation are implemented to protect the unique features of the area.
Minerals	Natural conditions are maintained to perpetuate the unique qualities of the Special Interest Area. If mineral entry is not consistent with the objectives for which the Special Interest Area was established, mineral entry should be withdrawn, subject to valid existing rights.
Recreation	Use and interpretation are developed when adequate provisions for protection are available and the resource is suitable for the activity.
Soil and Water	Natural conditions are maintained to perpetuate the unique qualities of the Special Interest Area.
Subsistence	Subsistence use are allowed in accordance with Federal and State Regulations.
Timber	Forested land is classified as unsuitable. Cutting of trees is authorized for development and maintenance of interpretive services for Special Interest Areas. Forest resources are available and managed for traditional native cultural utilization. No timber harvest is scheduled. Personal use fuelwood and Christmas tree cutting activities are usually incompatible with the objectives of this land use designation.
Transportation	Roads and trails are not permitted unless they are compatible with the interpretive objectives for which the Special Interest Area was established.
Visual Resource	Integrity will be maintained in a natural-appearing visual condition that is compatible with the objectives for which the Special Interest Area was established.
Wildlife	Wildlife habitat improvement projects may be allowed where compatible with the purposes of the Special Interest Area.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11, CAVE MG&C12	All I; III-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN111,122,212 TRAN22,23 TRAN214	All All I-IV	4-84
VISUAL RESOURCE	VIS1,VIS12 VIS11	All I(B,C,G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory

- A. Identify significant cultural properties that include archaeological, historical, religious, or areas that contain specific forest resources of cultural value used for Native art and craft forms.

Evaluation and Protection

- A. Cultural Resource properties which are classified as Special Interest Areas under 36 CFR 294 shall be evaluated for the National Register of Historic Places and as a possible National Historic Landmark as established in 36 CFR 63.
 - 1. Establish the exterior boundary of cultural resource properties on the ground.
 - 2. Protect cultural resource properties from degradation from effects of management activities occurring within adjacent land use designations.
 - 3. Manage for the availability and use of forest products for traditional native cultural activities, while maintaining the physical and scientific integrity of the cultural resource properties.
 - 4. Provide interpretive devices to explain special features and protective regulations.
 - 5. Provide for interpretive activities that enhance the recreation experience, while protecting the unique values for which the cultural resource property was designated.
 - 6. Prevent the use of cultural resource property when national policy or sensitivity of unique values requires closure.

FACILITIES

Facilities Improvements: FAC2

- A. Allow administrative, interpretive, and information sites as needed to accomplish Special Interest Area objectives.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression action that minimizes fire suppression cost and resource damage. The action must meet the Special Interest Area Management Plan's objectives.
- B. Suppression tactics will be compatible with the objectives for which the Special Interest Area was established.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used if it is compatible with the Special Interest Area objectives.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used

in the land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

- A. Provide for public interpretation of fish habitats, habitat enhancement projects, and associated special fisheries conditions in appropriate Special Interest Areas.
- B. Allow fish enhancement projects if they are compatible with the purposes for which the Special Interest Area was established.

FOREST PESTS

Forest Pest Management: PEST1

- A. Pest prevention and suppression measures consistent with land use designation may be implemented to protect the area's special features and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Issue only those authorizations which will perpetuate the unique values that led to the designation or proposal to designate the Special Interest Area.
 - 1. Issue authorizations which will aid in the maintenance, improvement, and protection of the existing characteristics and attributes of the Special Interest Area.
 - 2. Analyze each proposal on a case-by-case basis, using an interdisciplinary process.
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area". Transportation and utility sites and corridors may be located within a Special Interest Area only after a search for TUS "Windows" has been exhausted.

Land Ownership Adjustments: LAND26

- A. Retain National Forest lands and acquire private inholdings as opportunities arise.

**MINERALS
GEOLOGY
CAVE**

Minerals and Geology Resource Preparation: MG&C11

Resource Preparation

- A. Prepare geologic, paleontologic, and historic mining interpretations of Special Interest Areas where appropriate.

Minerals and Geology Administration: MG&C2

Forest Lands Withdrawn from Mineral Entry

- A. Entry should be withdrawn, subject to valid existing rights, if not consistent with the objectives for which the Special Interest Area was established. (See DEIS Supplement - Special Interest Areas.)

- B. Permit reasonable access to mining claims with valid existing rights in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards & Guidelines to the location and construction of mining roads and facilities.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. Regulate use based on studies reflecting the effect of recreation activities on the unique features for which the Special Interest Area is established. Studies need only be done where a conflict may exist.
 - 1. Consider providing interpretation of the unique characteristics of the Special Interest Area.
 - 2. If studies indicate human use adversely affects the special features, regulate use to eliminate the adverse effects or reduce use to acceptable levels.
 - 3. Design and locate recreation-related structures to be compatible with characteristics of the area. Regulate user-created structures to avoid degradation of the unique character of the area. (Consult FS Recreation Site Development Handbook.)
 - 4. Restrict public motorized travel to designated travel routes except for powerboats operating on open water channels. (Consult FS Off-Road Vehicle Management Handbook.)
- B. Provide for inventoried ROS opportunities and activities within the Special Interest Area, unless public use is specifically restricted for resource protection. Continue to provide the spectrum of outdoor recreation opportunities indicated by the ROS inventory in accordance with the existing capabilities of the Special Interest Area.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable. Timber removal associated with development or maintenance of interpretation activities in Special Interest Areas is nonchargeable to the allowable sale quantity. Cedar and spruce, if not in conflict with Special Interest Area purposes, are available for continued traditional Native artistic use.
- B. Allow tree cutting for traditional Native use.
- C. Personal use wood and Christmas tree cutting activities are usually incompatible with the objectives of this land use designation.

TRANSPORTATION

Transportation Operations: TRAN1

- A. Provide and manage a transportation system compatible with, or which will improve the interpretation of, the unique values of the Special Interest Area. (See exceptions under the Lands and Minerals, Geology, and Caves sections of this prescriptions.)

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Maintain the visual integrity of the Special Interest Area. Design interpretive activities to blend with the natural setting.
 - 1. Apply Forest-wide Standards and Guidelines for the Retention Visual Quality Objective for interpretive purposes occasionally apply Partial Retention Visual Quality Objectives as necessary.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Provide for public interpretation of wildlife habitats and associated special wildlife conditions in appropriate Special Interest Areas.
- B. Allow wildlife improvement projects where they are compatible with the purposes for which the Special Interest Area was established.

OTHER AREAS

Land Use Designation

The emphasis of this land use designation is the stewardship and protection of lands for which there is no other specific land use emphasis. These lands may be rock, ice, muskeg, brush, grass, and forested lands classified as unsuitable for timber production. Most often, they will be managed in their existing natural condition.

Forest Service management of these areas consists primarily of law enforcement and maintenance of productivity. These areas are open to mineral entry. Generally, timber harvest does not occur. Roads are normally present only when they are necessary to access adjacent land use designations.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire, to improve natural ecological processes, is not presently used, but may be considered in the future.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries enhancement projects may occur.
Forest Pests	Pest prevention and suppression are encouraged to improve or maintain forest health in this and adjacent land use designations.
Minerals	Lands are open to mineral exploration and development.
Recreation	These areas are not generally managed intensively for recreation, however, a full range of recreation opportunities may occur.
Soil and Water	Land use activities are carried out in a manner which avoids serious and adverse impacts to soil and water quality. Watershed improvements may occur.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Timber	Forested lands are classified as unsuitable for timber production. Personal use wood and Christmas tree cutting activities are fully compatible with this land use designation.
Transportation	Construction of roads and trails may be permitted on a case-by-case basis.
Visual Resource	A variety of visual conditions may exist ranging from retention to maximum modification.

Wildlife

Management will emphasize natural conditions of wildlife habitats. Habitat improvement may occur.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	I-IV;VI-X	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1,VIS12 VIS11	All I(B-G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Enhancement

- A. Cultural resources are available for recreational, scenic, scientific, educational, conservation, and historic uses.
 - 1. Provide interpretive information concerning cultural resources located within this land use designation to users in the form of exhibits and publications generally located outside the land use designation.
 - 2. Cultural resources are available for scientific studies that are consistent with the primitive settings and activities, and cultural resource management objectives for the specific site.

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment in non-motorized areas requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 - 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.
 - 4. Mechanized fireline construction will avoid areas of important wildlife habitat such as meadows, bogs, and riparian areas.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management ignitions may be used as an acceptable means of fuels management and wildlife habitat improvement as long as its use is compatible with the standards for this land use designation.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FOREST PESTS

Forest Pest Management: PEST1

- A. Pest prevention and suppression are encouraged to maintain or improve forest health in this and adjacent land use designations.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

MINERALS GEOLOGY CAVES

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral exploration and development.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-art techniques for developing minerals to reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply Transportation Forest-wide Standards & Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Sec. 505 (a).)
 2. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 3. Reduce in height and/or design to have an irregular back line, quarry back walls visible from sensitive travel routes.
 4. Haul away, bury, burn or scatter vegetation removed from the project area when such vegetation is located adjacent to sensitive roads.

5. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
6. Use colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
7. Design mineral activities reclamation plans which leave the area in a natural-appearing condition.
8. Shape landform modifications to simulate naturally-occurring forms.
9. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Management and Operations: REC122

- A. On a case-by-case basis determine whether roads, trails, and other areas are open for semi-primitive motorized recreation activities.
 1. Unless part of a major transportation network, manage roads for high clearance and off-highway vehicles.
- B. Where roads, trails, and other areas are closed to motorized recreation activities or vehicles, provide semi-primitive non-motorized recreation opportunities.
 1. Permit use of snowmachines, motorboats, and airplanes for traditional activities.
- C. Small scale, rustic recreation facilities such as recreation cabins, shelters, and docks are allowed.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable.
- B. The following types of uses may be authorized when they meet land use designation objectives.
 - * Removal or use of trees for improvement of recreation opportunities, such as clearing for vistas, campsites, or trails.
 - * Removal, or use of trees cut as a part of some other authorized use within this land use designation, for example, clearing for a fish ladder or road.
 - * Trees may be cut for use in construction and maintenance of authorized structures when it is not reasonably practical to obtain the necessary material from outside the land use designation.
 - * Personal use wood and Christmas tree cutting activities are fully compatible with this land use designation.

Timber Sale Preparation: TIM114

- A. Salvage should be considered on a case-by-case basis.

TRANSPORTATION

Transportation Operations: TRAN1

- A. This land use designation represents a Transportation and utility system "Window" and provides opportunities for the future designation and location of Transportation and Utility Sites.
- B. On a case-by-case basis, roads may be constructed in this land use designation.
 1. Limit the design standards of forest development roads to those commensurate with the intended use.

2. Maintain as necessary to provide passage of planned traffic.

VISUALS

Visual Resource Operations: VIS1

- A. A variety of visual conditions may exist within this land use designation.
 1. Adopt the inventoried visual quality objectives, as modified by activities in adjacent land use designations.
 2. Visual quality objectives may range from retention to maximum modification.

PRIMITIVE RECREATION

Land Use Designation PR

The emphasis of this land use designation is to provide primitive recreation settings. The Primitive Recreation Land Use Designation is characterized by an extensive unmodified natural environment. It provides recreation opportunities associated with independence, closeness to nature, and self-reliance in an environment that offers a high degree of challenge and risk. Interaction between users is very infrequent and evidence of other users is minimal. Motorized use within the area is limited to boat, aircraft and snowmachines. Non-motorized travel is usually cross-country or on constructed trails. Most resource management activities are integrated in such a way that current human use, including subsistence activities, leaves no permanent or long-lasting evidence.

Recreation facilities may include developed trails, recreation cabins, floatplane docks, and other rustic structures. In addition, permitted roads, fish enhancements, transportation and utility systems, mines, and existing administrative facilities may also be present within this designation.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	No administrative facilities are constructed.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire, to improve natural ecological processes, is not presently used, but may be considered in the future.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries enhancement projects may occur.
Forest Pests	Pest prevention and suppression practices are implemented to maintain forest health in this and adjacent land use designations.
Minerals	Lands are open to mineral entry. Mineral activities are compatible with the objectives of this land use designation to the maximum extent feasible.
Recreation	This setting is managed to perpetuate essentially natural conditions and remoteness from modern human developments. Traditional motorized access occurs. Recreation use is managed to provide infrequent encounters and a high degree of solitude. Structures typically found in this land use designation consist of recreation cabins, necessary boat and/or floatplane docks, and temporary structures for subsistence uses and other structures compatible with the primitive setting and typically needed for specially authorized activities.

Soil and Water	Watersheds are managed in a natural condition. Where authorized activities occur, emphasize the use of indigenous plants and materials to stabilize the soil resource or to protect water quality.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Timber	Forested lands are classified as unsuitable. Timber harvest generally does not occur. Silvicultural treatments are limited to control of insects and disease. Taking of personal use wood will be limited to beach logs on coastlines which can be removed without roads or use of vehicles on uplands. The cutting down of trees in navigable rivers (sweepers) and removal of trees from the banks must be compatible with the management direction for fish habitat.
Transportation	There are no roads and few trails.
Visual Resource	Landscapes are managed to retain a natural-appearing visual condition where activities are not visually evident to the casual observer. Low visual-impact recreation facilities, cabins and other authorized structures and activities are acceptable.
Wildlife	Wildlife habitats are generally subject to ecological changes only. Indigenous species are maintained. Habitat improvement projects are acceptable if designed to emulate natural conditions and appearance.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	I-IV;VI-X	4-8
FACILITIES	FAC1 FAC23	I(A) All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C, MG&C11 MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111,112 REC122	All I-IV;VI-VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1 TIM114	All VI(C,D)	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	None	4-84
VISUAL RESOURCE	VIS1 VIS11 VIS12	All I(A,B) I(B,C),II	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Enhancement

- A. Cultural resources are available for recreational, scenic, scientific, educational, conservation, and historic uses.
 - 1. Provide interpretive information concerning cultural resources located inside this land use designation to users in the form of exhibits and publications located outside the land use designation.
 - 2. Cultural resources are available for scientific studies that are consistent with the primitive settings and activities, and cultural resource management objectives for the specific site.

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Construct no permanent facilities in this land use designation.
- B. Limit administrative use to existing cabins and temporary structures.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 - 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. As a general management practice, management-ignited prescribed fire will not be used in this land use designation. Should it become necessary to consider the use of management-ignited prescribed fire, FSM 2324 provides direction.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in the land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

Fish Enhancement

- A. Evaluate fish habitat improvement during project planning by considering: 1) effects resulting from the introduction of species not indigenous to the watershed; 2) the appropriateness of structures both in type and scale to the Primitive Recreation Opportunity Spectrum (ROS) setting; and 3) the need to provide well-distributed fisheries that support sport and commercial fisheries, subsistence, and community stability.

Fish Habitat Improvement: FISH22

- A. Design development to minimize impact on primitive setting.
- B. Construction techniques should be compatible with the primitive recreation setting.
- C. Evidence of necessary land-disturbing activities for construction should not be visible to the casual observer after 5 years.

FOREST PESTS

Forest Pest Management: PEST1

- A. Implement pest prevention suppression practices to maintain forest health in this and adjacent land use designations.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only those activities which leave no permanent or long-lasting evidence of human use and are otherwise consistent with recreation objectives.
 - 1. Permit temporary structures and major fisheries improvement projects (such as hatcheries) only if they are widely dispersed.
 - 2. Permitted activities and structures should not be visually evident from a sensitive viewpoint.
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral exploration and development. Mineral activities will be compatible with objectives of this land use designation to the maximum extent feasible.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to land use designation objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the emphasis of the Primitive Recreation land use designation. Apply the following management practices to reduce resource impacts.
 - 1. Design mineral activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Section 505 (a).)
 - 2. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 - 3. Reduce in height and/or design to have an irregular back line, quarry back walls visible from sensitive travel routes.
 - 4. Discourage use of motorized surface vehicles, except as provided in ANILCA, Section 1110(b), which assures adequate and feasible access for economic and other purposes.
 - 5. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 - 6. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive roads.
 - 7. Minimize the scale of spoil/disposal areas to the surrounding landscape as seen from sensitive view points.
 - 8. Use colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
 - 9. Design reclamation plans so minerals activities leave a natural-appearing condition.
 - 10. Shape landform modifications to simulate naturally-occurring forms.
 - 11. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. Provide for primitive recreation settings.
- B. Manage recreation use to meet the levels of social encounters, on-site development, and visitor impacts indicated for the following chart.

**ROS Class
Primitive**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed the Retention Visual Quality Objective. An existing visual condition of Preservation is fully compatible and encouraged.
Access	Cross-country travel and travel on non-motorized trails and on waterways is typical. Use of airplanes, helicopters, motorboats and snowmachines for traditional activities, subsistence, emergency search and rescue, and other authorized resource management activities may occur unless specifically restricted for safety and/or resource protection purposes.
Remoteness	No or infrequent sights and sounds of human activity are present. Setting is located more than 1.5 hours walking or paddling distance from any human developments other than marine travelways.
Visitor Management	On-site regimentation and controls are very rare. Signing is limited to directional information and safety needs. No on-site interpretive facilities are used and there is great opportunity for discovery on the part of the user.
On-site Recreation Development	Structures do not exceed Development Scale I except for public recreation cabins, and are maintained for appropriate levels of use.
Social Encounters	User meets less than 3 parties per day during trip. No other parties are within sight or sound of dispersed campsites or cabins.
Visitor Impacts	Visitor-caused impacts to resources are slight and usually not noticeable the following year. Site hardening is limited to boardwalk trails and necessary boat moorings or bearproof food caches and public recreation cabins.

**SOIL AND
WATER**

Watershed Resource Improvements: S&W2

- A. Use indigenous plants and materials to protect or improve the quality and/or quantity of the water resource or to stabilize soils.

TIMBER

Timber Resource Planning: TIM12

- A. Forested land is classified as unsuitable for timber harvest.
- B. Taking of personal use wood will be limited to beach logs on coastlines which can be removed without roads or use of vehicles on uplands. The cutting down of trees in navigable rivers (sweepers) and removal of trees from the banks must be compatible with the management direction for fish habitat.

TRANSPORTATION

Transportation Operations: TRAN1

- A. New roads are not permitted except to access valid mining claims (or as excepted under Lands). Any transportation development in associa-

- tion with minerals extraction will be in accordance with an approved Plan of Operations, and subsequent annual work plans.
- B. Existing roads in this land use designation are closed to public use.
 - C. Use of snowmachines, motorboats, and aircraft is permitted; however, restrictions may be imposed on a case-by-case basis.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Provide a visual condition in which activities are not visually evident to the casual observer.
 - 1. Apply Forest-wide standards and guidelines for the Retention Visual Quality Objective for authorized facilities and structures.

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ENACTED MUNICIPAL WATERSHEDS

Land Use Designation MW

The emphasis of this land use designation is to meet the State of Alaska's Water Quality Standards for domestic use for enacted municipal watersheds of Ketchikan, Sitka and Petersburg. These enacted municipal watersheds were established and are withdrawn from all forms of location, entry, or appropriation under the mineral and nonmineral land laws of the United States and set aside as municipal water-supply reserves for the use and benefit of the people of the three communities.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	Facilities are limited to those structures which are necessary to administer and supply water for domestic use.
Fire	All fires are suppressed using suppression action that minimizes suppression costs and resource damage. Prescribed fire may be used to maintain or improve the characteristics of the watershed.
Fish	Fish habitat projects may occur if they are determined to be compatible with the municipality's watershed management objectives.
Forest Pests	Pest suppression and prevention measures are implemented to protect the watershed and adjacent resources.
Lands	Special use authorizations are limited to those which support water development activities.
Minerals	These watersheds are withdrawn from mineral entry.
Recreation	Only recreation use authorized by the municipality is allowed.
Soil and Water	Soil and water protective measures are applied to protect the watersheds and water resources for domestic use. Soil and water improvement will occur on all disturbances that threaten the values for which the watersheds are managed.
Subsistence	Subsistence uses are allowed in accordance with applicable Federal, State, and municipal regulations.
Timber	Forested land is classified as unsuitable. There is no scheduled harvest, but timber may be salvaged at the request of the municipality under conditions which safeguard the quantity and quality of water. Personal use wood and Christmas tree cutting activities are usually incompatible with the objectives of this land use designation.

Transportation	Roads systems are limited to those which are necessary to administer the municipal watershed.
Visual Resource	Visual Quality Objectives are based on the management activities authorized in the watershed.
Wildlife	Wildlife habitats are managed for uses compatible with the municipality's watershed management objectives.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	None	4-18
FIRE	FIRE	All	4-19
FISH	FISH111,112	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C12	I	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111,112 REC122	All I,IV,VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	None	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1 TIM114	All VII(A,B)	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN111,122,212 TRAN22,23 TRAN214	All All I-IV	4-84
VISUAL RESOURCE	VIS	All	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment. Generally interpretation will occur outside this land use designation.

FACILITIES

Facilities Improvements: FAC2

- A. No Forest Service administrative facilities will be constructed. Facilities such as dams, reservoirs, pipelines, are consistent with the emphasis of enacted municipal watersheds.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment should be kept to a minimum.
 - 2. Rehabilitation of all suppression lines and other evidence of human presence will occur as soon as safe, but within one season after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. As appropriate, management-ignited prescribed fire will normally be used rather than mechanical treatment to reduce the fire hazard from timber salvage. Management-ignited prescribed fire may also be used to maintain or improve watershed characteristics as long as there is no adverse impact to water quality.
- B. Use natural prescribed fire to maintain or improve watershed characteristics. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH**Fish Habitat Planning: FISH112**

- A. Plan the construction and maintenance of fish improvement projects only if they are compatible with the municipal watershed objectives.
 - 1. Restrict fish improvement which results in reduced water quality for a municipality using the water from the affected stream.
 - 2. Consider future withdrawals for water supply when planning fish improvement projects.

FOREST PESTS**Forest Pest Management: PEST1**

- A. Emphasis is on maintenance or improvement of forest health. Implement pest suppression and prevention measures to protect the watershed and adjacent resources.
- B. Timber may be salvaged at the request of municipality.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS**Special Use Administration (Non-Recreation): LAND122**

- A. Manage special uses in accordance with applicable legislation establishing the watershed and to safeguard the quality and quantity of municipal water supplies. Limit uses to those which support the water development activities. Coordinate all proposals with affected municipalities and obtain written concurrence before issuing special use authorizations. (Consult 36 CFR 251.9, 36 CFR 251.35, and FSM 2700.)
 - 1. If otherwise allowed by applicable legislation establishing the watershed, analyze each proposal on a case-by-case basis, using an interdisciplinary process, to determine probable effects.
 - 2. Do not permit any activities which would lead to degradation of water quality below State of Alaska standards for domestic use.
 - 3. Terminate or bring into conformance, existing uses which are causing degradation of water quality below State of Alaska standards for domestic use.
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance" Area. Transportation and utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.

Land Ownership Adjustments: LAND26

- A. Protect municipal interests in land adjustment decisions. Unless otherwise prohibited by law, encourage actions which will result in landownership by the affected municipality.
 - 1. Dispose of lands only when allowed to by legislation designating the area.
 - 2. When disposal is contemplated, involve the affected municipality early in the process.
 - 3. Encourage selection of these lands by the State of Alaska, under the Statehood Act, for subsequent transfer to the municipal governing body.
 - 4. If legislation allows, consider exchange of these lands with the affected municipality.

5. Do not acquire lands for municipal watershed purposes.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Preparation: MG&C11
Resource Preparation

- A. Interpret geologic, paleontologic, and historic mining for Municipal Watersheds where appropriate.

Minerals and Geology Administration: MG&C12
Forest Lands Withdrawn from Mineral Entry

- A. Withdraw municipal watersheds from mineral entry subject to valid existing rights.

RECREATION

Recreation Use Administration: REC122

- A. Where allowed by the municipality, provide only those activities and levels of recreation use that can be accommodated without detriment to water quality and flow.
- B. In cooperation with the municipality, issue appropriate orders regulating public use within the watershed.

**SOIL AND
WATER**

Watershed Resource Planning: S&W112

- A. Comply with the State of Alaska's Water Quality Standards for domestic water.

Watershed Resource Improvement: S&W2

- A. Implement soil and water improvement projects on sites that are causing degradation of water quality.

SUBSISTENCE

Subsistence: SUB

- A. Permit subsistence activities in accordance with the Federal, State and local laws and regulations establishing the Municipal Watersheds.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable.
- B. No timber harvest is scheduled. Consider salvage harvest on a case-by-case basis at the request of the municipality. Volume harvested will not be considered part of the allowable sale quantity.
- C. Personal use wood and Christmas tree cutting activities are usually incompatible with the objectives of this land use designation.

TRANSPORTATION

Transportation Operations: TRAN1

- A. Allow roads needed for the routine operation, maintenance and improvement of the municipal water system and watershed. Allow roads to provide for timber salvage operations if in accordance with applicable legislation establishing the watershed and after consultation with the affected municipality. Other roads that are part of a state transportation system may occur in this area if no alternative route exists.

1. Conduct a transportation analysis to determine optimum road location and design standards to ensure minimum adverse impacts to the watershed.
2. Coordinate road management with the affected municipality. Access will be managed in accordance with the legislation establishing the watershed.
3. Road construction may occur if it is consistent with legislation designating the watershed and it can be accomplished without unacceptable degradation of water quality.

VISUALS

Visual Resource Operations: VIS1

- A. Consideration for the visual resource will be secondary to the objectives of the Municipal Watershed.
 1. Design management activities within the watershed to minimize visual impacts as seen from sensitive travel routes and use areas.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Wildlife habitats will be managed for uses compatible with the municipality's watershed management objectives.

OLD-GROWTH HABITAT

Land Use Designation OG

The emphasis of this land use designation is to maintain a diversity of habitat types including old-growth conifer habitats in their natural conditions to favor old-growth associated fish and wildlife resources. Generally, old-growth forest habitats will contain mature and overmature trees in a multi-layered canopy with standing dead and down material and a diversity and abundance of understory shrubs and herbs. Old-growth forest conditions begin to occur at a stand age of about 200 years on productive forest sites, with optimum conditions occurring between 500-1000 years depending on the species of trees in the stand. Old-growth habitats range from marginally forested types (such as mixed-conifer habitats and shore pine habitats) to the most productive western hemlock and Sitka spruce types found on well-drained soils. Due to the "patchy" or highly variable nature of the forests in Southeast Alaska, old-growth habitat areas will often be comprised of several old-growth forest types.

Old-growth areas may have second-growth stands (natural or previously harvested) managed to provide old-growth habitats in the future. These second-growth stands will not be old-growth habitat until they are a minimum of 200 years old.

[Note: Old-growth habitats are found in many of the other land use designations.]

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	No permanent administration facilities are present. Temporary facilities will be present if compatible with old-growth management objectives.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries improvement projects may occur.
Forest Pests	Pest prevention and suppression measures consistent with this land use designation may be implemented to manage the old-growth component and adjacent resources.
Lands	Special use activities compatible with old-growth habitat objectives may be present.
Minerals	Lands are open to mineral entry. Mineral activities should be compatible with the objectives of this land use designation.
Recreation	Recreation uses are managed consistent with the inventoried ROS Class compatible with maintaining habitat conditions and wildlife populations.

Soil and Water	Soil and water resources are generally subject to natural changes only.
Subsistence	Subsistence use is allowed in accordance with applicable Federal and State regulations. Opportunities for harvesting wildlife and fish resources will be maintained or improved.
Timber	Forest land is classified as unsuitable and withdrawn from the timber base. Personal use wood from beach log salvage is compatible with this land use designation. Upland use is discouraged, but if allowed, is limited to locally-determined areas.
Transportation	Roads are located outside this land use designation to the extent practicable.
Visual Resource	Management activities are generally not evident to the casual observer, except in occasional areas where management activities will be subordinate to the characteristics landscape.
Wildlife	Wildlife habitats will evolve in natural old-growth conditions.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	None	4-18
FIRE	FIRE12	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111,111-1 TIM114	All VII,IX	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1,VIS12 VIS11	All I(B,G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Allow no permanent administration facilities. Temporary facilities are allowed if they are compatible with land use designation objectives.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. Suppression Strategy

All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards for this land use designation, such as soil and watershed concerns.
 - 1. Avoid cutting snags except to ensure the safety of firefighting resources and where the accomplishment of suppression objectives would be adversely compromised if snags were left standing.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire is acceptable if its use will maintain old growth characteristics.
- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Planning: FISH112

- A. Emphasize the protection and improvement of fish habitat and populations.

FOREST PESTS

Forest Pest Management: PEST1

- A. Pest prevention and suppression measures consistent with this land use designation may be implemented to protect the old-growth component and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only activities (such as tent platforms, minor waterlines, minor powerlines, etc.) which are compatible with land use designation objectives.

MINERALS GEOLOGY CAVE

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to land use designation objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Section 505 (a).)
 2. Take advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 3. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 4. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 5. Use colors that simulate those found in the characteristic landscape.
 6. Revegetate disturbed areas in accordance with project plans.
 7. Apply timing restrictions to minerals activities as needed during critical wildlife mating, hatching, and migrating periods.
 8. Design reclamation plans so minerals activities leave a natural-appearing condition.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. Regulate recreation use based on studies reflecting the effect of recreation activities on wildlife resources and habitat. Studies need only be done where a conflict may exist.
 - 1. If studies indicate human use adversely affects habitat, regulate use to eliminate the adverse effects or reduce use to acceptable levels.
 - 2. Design and locate recreation-related structures to be compatible with habitat needs. Regulate user-created structures to avoid degradation of habitat.
 - 3. Regulate off-highway vehicle use to prevent degradation of habitat or adverse disturbance of populations.
- B. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of this land use designation.
 - 1. Provide the existing recreation settings and opportunities until scheduled activities and practices cause a change in the ROS setting(s). Manage recreation use in a manner that is compatible with the objectives of old-growth habitat.
 - 2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines. Maintain the land use designation's capability to provide appropriate quality recreation opportunities on a sustained basis.

SOIL AND WATER

Watershed Resource Improvements: S&W2

- A. Only undertake watershed improvements where deteriorated soil and hydrologic conditions create a threat to the values for which the old-growth habitat is managed. Rehabilitation or stabilization projects must enable the area to retain its natural appearance, harmonize with the environment, and have no substantial adverse effect on the old-growth habitat.

TIMBER

Timber Resource Planning: TIM112

- A. Forest land is classified as unsuitable.
- B. Personal use wood from beach log salvage is compatible with this land use designation. Upland use is discouraged, but allowed if limited to locally determined areas.

Timber Sale Preparation: TIM114

- A. Although the exception, salvage of dead or down material will be limited to the results of catastrophic events (such as windthrow.) Salvage sales must be compatible with the objectives of the Old-growth Habitat Land Use Designation as determined through the environmental analysis process. Stands once salvaged will be managed to achieve old-growth habitat characteristics.

TRANSPORTATION

Transportation Operations: TRAN1

- A. This land use designation represents a Transportation and Utility Systems (TUS) "Avoidance Area." Transportation and utility sites or corri-

dors may be located within this land use designation only after a search for "Windows" has been exhausted.

- B. If no alternative is available, road corridors may be designated to provide access for management activities in this or adjacent land use designations.
 - 1. Perform integrated logging system and transportation analysis to determine if other practical routes avoiding this land use designation exist. Consider impacts to fish and wildlife and enforcement costs of road closures in the analysis. If no practical alternative routes exist, locate, design, construct, and manage roads in a manner which will minimize adverse effects on fish and wildlife. If roads are placed within this land use designation, clearing widths should be kept to a minimum.
 - 2. Develop road locations and road management objectives. Give special attention to wildlife needs and the anticipated effects of human use on the habitat and populations using the habitat during the development of road management objectives. Roads will be used for the specific management activity for which they were built and designated closed for all other uses, unless a need is demonstrated to keep them open.
 - * Provide recreational access where consistent with wildlife objectives.
 - 3. To meet the visual quality objective of Retention, special consideration must be given to minimizing apparent landform modification (as seen from sensitive travel routes) during road location, design, and construction.
- C. Sites for log transfer facilities will be considered in this land use designation only if no other practical alternative exists.
 - 1. To meet the visual quality objective of Retention, special consideration must be given to minimizing apparent landform modification (as seen from sensitive travel routes) during log transfer facility location, design, and construction.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Maintain or improve visual character of the area over time to resemble the old-growth forest. Activities will not be evident to the casual observer.
 - 1. Apply Forest-wide for the Retention Visual Quality Objective.

WILDLIFE Wildlife Habitat Planning: WILD112

- A. Allow previously harvested or natural second-growth areas which have been designated to become future old-growth habitats to naturally evolve into old-growth habitats, or provide second-growth management to accelerate attainment of old-growth characteristics. (See Wildlife Enhancement:WILD222.)

Wildlife Enhancement: WILD22

- A. Timber stands may be managed for purposes of wildlife habitat development rather than for a silvicultural objective. Wildlife habitat enhancement activities may include thinning of young stands, release and weeding, pruning, and fertilization.

1. Encourage understory shrubs and forbs through early thinnings. Use 16-18 foot leave tree spacing as a guideline.
2. Maintain 10-15 percent of stands in well-distributed 2-acre openings.

SEMI-PRIMITIVE RECREATION

Land Use Designation SP

The emphasis of this land use designation is to provide semi-primitive recreation settings. This setting is characterized by predominantly natural or natural-appearing environments. It provides recreation opportunities associated with a moderate degree of independence, closeness to nature, and self-reliance in an environment that requires challenging motorized or non-motorized forms of transportation. Interaction between users is infrequent and evidence of past use by other users may be present. Roads that provide access to adjacent land use designations may pass through this one.

Where semi-primitive motorized recreation opportunities are permitted, roads, trails and areas designated for motorized travel may be present. Motorboat access to marine shorelines and bays, or the use of small motorboats on freshwater lakes and streams, commonly occurs.

Where semi-primitive non-motorized recreation opportunities are permitted, travel is primarily cross-country or on trails and waterways. Usually there are no roads, but those that exist may be obliterated, closed, or restricted seasonally, consistent with the recreation objectives. The use of traditional forms of motorized access, such as airplanes and motorboat use of lakes and streams, commonly occurs.

At-a-Glance . . .

Cultural resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	Administrative and other authorized structures are located and designed to reduce adverse effects on recreation opportunities.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire, to improve natural ecological processes, is not presently used, but may be considered in the future.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries enhancement projects may occur.
Forest Pests	Pest prevention and suppression measures consistent with this land use designation may be implemented to protect the recreational settings and adjacent resources.
Minerals	Lands are open to mineral entry. Mineral activities should be compatible with the objectives of this land use designation to the maximum extent feasible. Mitigation of effects on recreation and visual resources are emphasized.
Recreation	The setting is managed to provide a natural-appearing environment generally remote from human developments. Traditional motorized access occurs. In some areas motorized recreation opportunities are provided. Recreation use is

managed to provide low to moderate numbers of encounters between visitors. Small scale, rustic recreation facilities such as recreation cabins, shelters, and docks may exist.

Soil and Water

Land use activities are carried out in a manner which avoids serious and adverse impacts to soil and water quality.

Subsistence

Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.

Tree Use

Forested lands are classified as unsuitable. Silvicultural treatment is conducted only to maintain or improve the desired recreation opportunity or to control insects and disease. Salvage, although the exception in this land use designation, is limited to the results of catastrophic events, and must be compatible with semi-primitive recreation objectives. Personal use wood from beach log salvage is fully compatible with this land use designation. Cutting on the upland is discouraged, but if allowed, is limited to designated areas.

Transportation

The transportation system within the area may include foot or ski trails, and trails for motorized recreation. Existing low standard roads may be managed for high clearance and off-highway vehicles subject to off-highway vehicle management plans. Location and design of roads required to access adjacent land use designations should consider compatibility with or improvement to the semi-primitive recreation opportunities. Roads and trails may be closed or seasonally restricted.

Visual Resource

All activities within the area are integrated in such a way that they are subordinate to the characteristic landscape. Landscape rehabilitation is used to restore existing landscapes to a desirable visual quality.

Wildlife

Habitat management emphasizes maintenance of late successional stages, although early to middle successional stages may occur. Habitat improvement may occur.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	I-IV;VI-X	4-8
FACILITIES	FAC1 FAC23	I(A) All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111,112 REC122	All I-IV;VI,VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111,111-1 TIM114	All VII(B-D);IX	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN111,122,212,22,23 TRAN214	All I(A,B,D-F);II-IV	4-84
VISUAL RESOURCE	VIS1,12 VIS11	All I(B,C,G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Enhancement

- A. Cultural resources are available for recreational, scenic, scientific, educational, conservation, and historic uses.
 - 1. Provide interpretive information concerning cultural resources located within this land use designation to users in the form of exhibits and publications located outside of this land use designation.
 - 2. Cultural resources are available for scientific studies that are consistent with the primitive settings and activities, and cultural resource management objectives for the specific site.

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Design and locate administrative and non-recreation structures to reduce adverse effects on recreation opportunities.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment in non-motorized areas requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 - 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

4. Mechanized fireline construction will avoid important wildlife habitat areas such as meadows, bogs, and riparian areas.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management Ignitions may be used as an acceptable means of fuels management and wildlife habitat improvement so long as its use is compatible with the standards and guidelines of this land use designation.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FOREST PESTS

Forest Pest Management: PEST1

- A. Forest pest management activities emphasize maintenance of forest health. Pest prevention and suppression measures consistent with this land use designation may be implemented to protect recreational opportunities and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. This land use designation represents a Transportation and Utility System "Window" and provides opportunities for the future designation and location of Transportation and Utility sites.
- B. Permit only facilities and uses consistent with semi-primitive recreation land use designation objectives.

**MINERALS
GEOLOGY
CAVE**

Minerals and Geology Administration: MG&C2

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral exploration and development.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved Plan of Operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.

1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Sec. 505 (a).)
2. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
3. Quarry back walls visible from sensitive travel routes should be reduced in height and/or designed to have an irregular back line.
4. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive roads.
5. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive view points.
6. Utilize colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
7. Design reclamation plans so mineral activities leave a natural-appearing condition.
8. Shape landform modifications to simulate naturally-occurring forms.
9. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Management and Operations: REC122

- A. On a case-by-case basis determine whether roads, trails, and other areas are suitable and open for motorized recreation activities and incorporate in Off-Highway Vehicle (OHV) Plans.
 1. Unless part of a major transportation network, roads are managed for high clearance and off-highway vehicles.
- B. Where roads, trails, and other areas are closed to motorized recreation activities or vehicles, provide semi-primitive non-motorized recreation opportunities.
 1. Use of snowmachines, motorboats, and airplanes for traditional activities is permitted.
- C. Permit small scale, rustic recreation facilities such as recreation cabins, shelters, docks.
 1. During all construction activity:
 - *Minimize site modification.
 - *Minimize vegetation clearing adjacent to the site.
 - *Use colors found in the natural environment.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable.
- B. The following types of uses may be authorized when they meet land use designation objectives.
 - * Removal or use of trees for improvement of recreation opportunities, such as clearing for vistas, campsites, or trails.
 - * Removal, or use of trees cut as a part of some other authorized use within this land use designation. For example, clearing for a fish ladder, or road.
 - * Trees may be cut for use in construction and maintenance of authorized structures when it is not reasonably practical to obtain the necessary material from outside this land use designation.

- * Personal use wood from beach log salvage is fully compatible with this land use designation. Cutting on the upland is discouraged, but if allowed, is limited to designated areas.

Timber Sale Preparation: TIM114

- A. Salvage, of dead and down material although the exception, will be limited to the result of catastrophic events (such as windthrow.) Site-specific analysis will determine if salvage is compatible with objectives of this land use designation.

TRANSPORTATION Transportation Operations: TRAN1

- A. Where semi-primitive motorized recreation opportunities are emphasized, existing low standard roads are generally managed for use by high clearance or all-terrain vehicles, snowmobiles or motorcycles subject to an approved Off-Highway Vehicle Management Plan. Generally, new roads are not constructed in this area, except to link existing roads or provide access to adjacent land use designations.
 - 1. Limit the design standards of forest development roads to those commensurate with the intended use.
 - 2. Maintain as necessary to provide passage of planned traffic.
 - 3. Locate and design new roads to consider semi-primitive recreation opportunities in this land use designation.
- B. Where semi-primitive non-motorized recreation opportunities are emphasized, provide foot or cross-country ski trails. Close or obliterate existing roads except for transportation system links.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Design resource activities to remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color or texture common to the landscape. New form, line, color, or texture will be subordinate to the characteristic landscape.
 - 1. Apply Forest-wide standards and guidelines for the Partial Retention Visual Quality Objective.

LUD II

Land Use Designation LUD

The Tongass Timber Reform Act (November 28, 1990) designated 12 areas within the Tongass National Forest to be managed in perpetuity under the Land Use Designation II (LUD II) of the 1979 Tongass Land Management Plan. This LUD II prescription provides the direction for these 12 areas.

Areas allocated to LUD II are to be managed in a roadless state to retain their wildland character, but this would permit wildlife and fish habitat improvement and primitive recreation facility development.

Commercial timber harvesting is not permitted. Timber can be salvaged only to prevent significant damage to other resources. Examples are removal of windfall in an important fish stream or control of an epidemic insect infestation.

Personal use of wood is allowed for cabin logs, fuelwood, float logs, trolling poles, and other similar uses.

Water and power developments are permitted if they can be designed to retain the overall primitive characteristics of the allocated area.

Roads will not be built except to serve authorized activities such as mining, power, and water developments, aquaculture developments, transportation needs determined by the State of Alaska, and vital Forest transportation system linkages.^{1/}

Mineral development is subject to existing laws and regulations.

Use of snowmobiles, motorboats and airplanes on freshwater is permitted; however, restrictions may be imposed on a case-by-case basis if such use becomes excessive.

Permanent improvements such as fishways, fish hatcheries, or aquaculture sites may be built. Appropriate landscape management techniques will be applied in the design and construction of such improvements to minimize impacts on recreation resources.

Major concentrated recreation facilities will generally be excluded.

^{1/} Vital Forest transportation system linkages refer to necessary additions to the permanent road network; such linkages may be built through LUD II areas when either no other feasible land or water routes exist to access adjacent LUD III or LUD IV areas or when it can be demonstrated that the routing through the LUD II area is clearly environmentally preferable and site-specific mitigation measures can be designed to minimize the impact of the road on the surrounding LUD II area. A clear need to build such linkages must be demonstrated through a comparative analysis of transportation alternatives during the NEPA process and must be approved by the Area Forest Supervisor, in consultation with the other Tongass Forest Supervisors.

At-a-Glance . . .

Cultural Resources Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the land use designation objectives.

Facilities	Permanent improvements such as fishways, fish hatcheries, or aquaculture sites may be built. Appropriate landscape management techniques are applied in the design and construction of such improvements to minimize impact on recreation resources.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. The use of prescribed fire, to improve natural processes, is not presently used, but may be considered in the future.
Fish	Aquatic biological habitat productivity is maintained or improved. Improvements such as fishways, fish hatcheries, or aquaculture sites may be built. Appropriate landscape management techniques are applied in the design and construction of such improvements to minimize impacts on recreational resources.
Forest Pests	Pest prevention and suppression measures may be implemented to protect resources within LUD II areas and resources in adjacent areas.
Lands	Water and power developments are permitted if they can be designed to retain the overall primitive characteristics of this land allocation.
Minerals	Mineral development is subject to existing laws and regulations.
Recreation	Use of snowmobiles, motorboats, and airplanes on freshwater is permitted; however, if use becomes excessive, restrictions may be imposed on a case-by-case basis. Major concentrated recreation facilities are generally excluded.
Soil and Water	Land use activities are carried out in a manner which avoids serious and adverse impacts to soil and water quality. Watershed improvement may occur.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Timber	Commercial timber harvest is not permitted and forested land in this land use designation is classified as unsuitable. Timber can be salvaged only to prevent significant damage to other resources. Examples are removal of windfall in an important fish stream or control of an epidemic insect infestation. Personal use of wood is allowed for cabin logs, firewood, float logs, trolling poles, and other similar uses.
Transportation	Roads will not be built except to serve authorized activities such as mining, power and water developments, aquaculture developments, transportation needs determined by the State of Alaska, and vital Forest transportation linkages.
Visual Resource	Landscapes are managed to retain a natural-appearing visual condition where activities are not visually evident to the casual observer. Authorized activities and improvements may not meet this visual quality objective.
Wildlife	Wildlife habitats requiring the maintenance of late successional vegetation stages dominate, although early to middle successional stages may occur. Habitat improvement is permitted.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111,112 REC122	All I-IV;VI-VII	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1 TIM114	All VII(B-D)	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN111,122,212 TRAN22,23 TRAN214	All All I(A,B,D-F);II-IV	4-84
VISUAL RESOURCE	VIS1 VIS11 VIS12	All I(A,B,F) I(B,C,D),II	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Enhancement

- A. Cultural resources are available for recreational, scenic, scientific, educational, conservation, and historic uses.
 - 1. Provide interpretive information concerning cultural resources located within this land use designation to users in the form of exhibits and publications located outside of LUD II.
 - 2. Cultural resources are available for scientific studies that are consistent with the primitive settings and activities, and cultural resource management objectives for the specific site.

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Administrative Facilities: FAC2

- A. No permanent administrative facilities will be constructed in this land use designation except in conjunction with the development of a permanent road.
- B. Limit administrative use to existing cabins and temporary structures.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment in non-motorized areas requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.

3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used for fuels management, insect and disease protection and wildlife habitat improvement.
- B. Use natural ignitions only to perpetuate natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

Fish Enhancement

- A. Improvements such as fishways, fish hatcheries, or aquaculture sites may be built. Appropriate landscape management techniques will be applied in the design and construction of such improvements to minimize impacts on recreational resources.

FOREST PEST

Forest Pest Management: PEST1

- A. Pest prevention and suppression measures consistent with this land use designation may be implemented to protect these and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted. The exception is for water and power developments which are permitted if they can be designed to retain the overall primitive characteristics of the allocated area.
- B. Permit only those activities which leave no permanent or long-lasting evidence of human use and are otherwise consistent with the wildland character.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral exploration and development.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.

- C. Permit reasonable access to mining exploration and development in accordance with the provisions of an approved Plan of Operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads.
- C. Design mineral exploration and development activities to be compatible with the emphasis on maintaining the wildland character of the LUD II land use designation. Apply the following management practices to reduce resource impacts.
 - 1. Design mineral activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Section 505 (a).)
 - 2. Design mineral activities to maintain the present and continued productivity of wildlife habitat to the maximum extent feasible.
 - 3. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 - 4. Quarry back walls visible from sensitive travel routes should be reduced in height and/or designed to have an irregular back line.
 - 5. Discourage use of motorized surface vehicles, except as provided for in ANILCA, Section 1110(b), which assures adequate and feasible access for economic and other purposes.
 - 6. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 - 7. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive roads.
 - 8. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 - 9. Use colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
 - 10. Design reclamation plans so minerals activities leave a natural-appearing condition.
 - 11. Shape landform modifications to simulate naturally-occurring forms.
 - 12. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. This land use designation generally provides primitive and semi-primitive recreation opportunities (ROS) requiring wildland character.
 - 1. Primitive recreation facilities, such as recreation cabins, boat docks, moorings and trails may be constructed and maintained.
- B. Major concentrated recreation facilities will generally be excluded.
- C. If a transportation link is constructed through this land use designation, recreation facilities needed to serve the traveling public, to reduce impacts of recreation use to adjacent wildlands, or to provide interpretation, may be constructed in proximity to the transportation link.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable. Commercial timber harvesting is not permitted. Timber can be salvaged only to prevent significant damage to other resources. Examples are removal of windfall in an important fish stream or control of epidemic insect infestations.
- B. Personal use of wood is allowed for cabin logs, fuelwood, float logs, trolling poles, and other similar uses. Use free use regulations (36 CFR 223.10). Personal use is subject to mitigating impacts on other resources.

TRANSPORTATION

Transportation Operations: TRAN1

- A. Existing roads are generally closed to highway vehicular use. Any proposed roads will use the following guidelines.
 - 1. Allow Forest transportation system linkages including roads and transfer facilities. Vital Forest transportation system linkages refer to necessary additions to the permanent road network. Such linkages may be built through LUD II areas when either: 1) no other feasible land or water routes exist to access adjacent land use designations, or 2) when it can be demonstrated that the routing through the LUD II area is clearly environmentally preferable and site-specific mitigation measures can be designed to minimize the impact of the road on the surrounding LUD II area. A clear need to build such linkages must be demonstrated through a comparative analysis of transportation alternatives through the NEPA process and must be approved by the Forest Supervisor, in consultation with the other Tongass Forest Supervisors.
 - 2. Roads, other than vital transportation linkages, will not be built except to serve authorized activities such as mining, power and water developments, aquaculture developments, transportation needs determined by the State of Alaska.

VISUAL RESOURCE

Visual Resource Operations: VIS1

- A. Landscapes are managed to retain a natural-appearing visual condition, where activities are not visually evident to the casual observer.
 - 1. Apply Forest-wide Standards and Guidelines for the Retention Visual Quality Objective.
 - 2. Authorized activities and improvements may not meet the Retention Visual Quality Objective, based on project analysis. However, seek to mitigate visual impacts through location, siting, design or coloring of structures.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Wildlife habitats will generally evolve in natural successional stages, although early to middle successional stages may occur. Habitat improvement is permitted.

WILD RIVERS

Land Use Designation WR

The emphasis of this land use designation is to maintain, enhance and protect the free-flowing character and the outstandingly remarkable values of rivers which qualify the river corridor to be considered eligible for inclusion in the National Wild and Scenic Rivers System.

Wild Rivers are intended to remain as a "vestige of primitive America" with the river corridor, within 1/4 mile of the ordinary high water mark on each side of the river, essentially natural and unmodified. Management maintains or improves this undeveloped character, and prevents the degradation or loss of the fish and wildlife, scenic, recreational, cultural, historic, ecologic or other values which are determined to be outstandingly remarkable. This land use designation may provide recreation opportunities that afford a high degree of independence, closeness to nature and self reliance in an unmodified natural setting.

Interaction between users is infrequent and evidence of resource management activities and other users is minimal. Motorized use within the area may be permitted for boat and aircraft access, snowmachines, and construction and maintenance of rustic facilities. Non-motorized land travel is usually cross-country or on constructed trails, and there are generally no roads.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	Structures consist of those needed for the administration and protection of Wild River resources and those needed for health and safety of visitors and enhancement and related activities allowed by ANILCA.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Suppression and rehabilitation are used to protect the free-flowing character and the outstandingly remarkable values of Wild Rivers.
Fish	Indigenous species are maintained. Habitat improvement projects may be allowed.
Forest Pests	Forest pest management measures consistent with this land use designation may be implemented to protect the character and outstandingly remarkable values of Wild Rivers.
Minerals	Wild River segments are withdrawn from mineral entry within 1/4 mile of the ordinary high water mark on each side of the river, subject to valid existing rights. Mineral operations on valid existing rights are subject to regulations prescribed by the Secretary of Agriculture to protect the river. Reasonable access is permitted.

Recreation	Use is managed to perpetuate essentially natural biophysical conditions. Motorized recreation use is limited to traditional access methods. Forest Service public use cabins, boat and/or floatplane landings, and other primitive recreation facilities may be present.
Soil and Water	Water quality and flow are maintained to protect the river's outstandingly remarkable values.
Subsistence	Subsistence opportunities are perpetuated consistent with the protection of the outstandingly remarkable values identified for the river.
Timber	Forested land is classified as unsuitable. Timber harvest is prohibited. Silvicultural treatments are limited to control of insects and disease. Taking of personal use wood is limited to beach logs on the portion of the river influenced by tidal action, which can be removed without roads or the use of vehicles on uplands. The cutting down of trees in navigable rivers (sweepers) and the removal of trees from the banks is generally not compatible with the Wild River management objectives, subject to regulation by the Secretary of Agriculture.
Transportation	Infrequent constructed trails and trail bridges may be constructed. Generally, no roads are present.
Visual Resource	Landscapes are managed to allow ecological changes only, except for low visual-impact recreation facilities, cabins or infrequent fish or wildlife management activities and other authorized structures which are compatible with the primitive character of the corridor.
Wildlife	Indigenous species are maintained. Habitat projects are designed to emulate natural conditions and appearance.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	None	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C,CAVE	All	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC111,REC121 REC112 REC122	All I(A,B,D);II(A) I,II(A,B)	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1	All	4-72
TRAILS	TRAI TRAI12	I(B-E;F:1-3,5,6) All	4-81
TRANSPORTATION	TRAN	None	4-84
VISUAL RESOURCE	VIS1 VIS11 VIS12	I(A-E) I(B,G) I(B-C)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Construct no new administrative facilities and interpretive centers within the river corridor.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment in non-motorized areas requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.
 - 3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used to emulate natural ecological processes.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

Fish Enhancement

- A. Indigenous species are maintained.
- B. Fisheries enhancement projects may be allowed. Evaluate fish habitat improvement during project planning by considering:
 - 1. Effects on the primitive character of the area resulting from an enhanced fishery resulting in increased recreation use.
 - 2. Effects on Wild River ecosystems due to the introduction of species not indigenous to the watershed.
 - 3. The appropriateness of structures both in type and scale to the primitive and natural character of the area.

Fish Habitat Improvement: FISH22

- A. Use construction techniques which are consistent with the ROS setting.
 - 1. Land-disturbing activities necessary for construction will be temporary.
 - 2. Design development to minimize impact on the primitive character of the corridor.

FOREST PESTS

Forest Pest Management: PEST1

- A. Implement Pest prevention and suppression measures consistent with this land use designation to protect the character and values of Wild Rivers.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only those uses consistent with management objectives. (Consult the Land and Resource Management Planning Handbook 1909.12, Chapter 8.)
 - 1. Do not authorize water supply dams and major diversions.
 - 2. Do not permit development of hydroelectric power facilities for 1) projects exempted from licensing by the Federal Energy Regulatory Commission or 2) projects on Rivers designated through sections 2,3, and 5(a) of the Wild and Scenic Rivers Act. The Forest Service will recommend to FERC that a project on a river found eligible and suitable for inclusion in Wild and Scenic Rivers System should not be licensed because it is inconsistent with the purposes for which the National Forest was created or acquired and, if necessary, impose conditions on any license issued for a project on that river that fully protect its outstandingly remarkable characteristics and free-flowing nature.
 - 3. Maintain the natural appearance and primitive character of the river area. Do not authorize flood control dams, levees, or similar structures, in the channel or river corridor.
 - 4. Do not authorize new structures that would have a direct adverse effect on river values.
 - 5. Transportation and utility corridors will be allowed in accordance with ANILCA, Title XI. This land use designation represents a Transportation and Utility Systems (TUS) "Avoidance Area".

Transportation and utility sites and corridors may be located within this land use designation only after a search for windows has been exhausted.

6. Allow motorized access in accordance with ANILCA Sections 811 and 1110(b).

Land Ownership Administration: LAND123

- A. Retain National Forest lands. Acquire private inholdings in the river corridor as opportunities arise.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Administration: MG&C12

Wild Rivers

- A. Forest lands within 1/4 mile of the river are withdrawn from mineral entry subject to valid existing rights.
- B. Permit reasonable access to valid existing claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to land use designation objectives to the extent feasible. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral development activities on valid existing claims to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Section 505(a).)
 2. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 3. Quarry back walls visible from sensitive travel routes should be reduced in height and/or designed to have an irregular back line.
 4. Prohibit use of motorized surface vehicles, except as provided in ANILCA, Section 1110(b), which assures adequate and feasible assess for economic and other purposes.
 5. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 6. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive travel routes.
 7. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 8. Utilize colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
 9. Apply timing restrictions to instream activities as needed to protect fisheries habitat and mitigate adverse disturbance of stream sediments.

10. Use sedimentation traps as needed to mitigate adverse stream sedimentation and meet State and Federal Water Quality Regulations.
11. Design reclamation plans so minerals activities leave a natural-appearing condition.
12. Shape landform modifications to simulate naturally-occurring forms.
13. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. To the degree consistent with the overall purposes of designation, provide primitive wildland recreation opportunities which reflect the inherent ecological, historical, and sociological conditions found within the river corridors and adjacent lands.
- B. Provide for Primitive ROS experience opportunities and activities throughout the river corridor. Protect the integrity of river resources through integrated project planning and implementation.
 1. Manage recreation use in a manner that is compatible with the long-term objectives of this land use designation.
- C. Manage recreation use and activities to meet the appropriate levels of social encounters, on-site development, methods of access and visitor impacts indicated for the ROS settings. (Consult FSH ROS Handbook.)
- D. Minor, rustic, recreation facilities, including public recreation cabins, floatplane and boat docks, trails and trail bridges may be constructed in the river corridor.

Wild River Management

- A. Manage all designated Wild River segments to maintain an enduring wildland and free-flowing river resource, while providing for access and use consistent with the purposes of the Wild and Scenic Rivers Act, as amended, and the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (P.L. 96-487). Traditional activities and practices authorized by ANILCA will be regulated or restricted only where it is determined that the effects of continued or expanded use is likely to cause one or more of the following:
 1. The degradation of the long-term successional changes in wildland and water ecosystems. Adequate determination of the cumulative effects of activities and equipment use must be demonstrated as well as site-specific or singular effects.
 2. Be detrimental to the natural dynamics of the composition or structure of wildland and water ecosystems.
 3. Be detrimental to identified objects of cultural, historic, prehistoric, and scientific interest.
 4. Be detrimental to the ROS setting conditions or where the cumulative effects of various activities are likely to become detrimental to those settings.
 5. A specific use is not in accordance with applicable law.
- B. Use every available opportunity to encourage and enlist public and private sector interest groups to work together in meeting Wild River management objectives. Emphasize programs which help in educating

the public in the appropriate conduct of activities and uses within Wild River corridors.

SOIL AND WATER

Watershed Resource Improvements: S&W2

- A. Only undertake watershed improvements within 1/4 mile each side of the river where deteriorated soil or hydrologic conditions create a threat to the values for which the river is managed. Use, whenever possible, indigenous plant species and materials in implementing land treatment measures to protect or improve the quality and/or quantity of the water resource or when stabilizing or improving the productivity of the soil resource. (Consult FSM 2350 and 2520.)

SUBSISTENCE

Subsistence: SUB

- A. Allow traditional wood gathering activities in Wild River corridor for subsistence uses, subject to reasonable regulations to protect Wild River resources.

TIMBER

Timber Resource Planning: TIM112

- A. Forested land is classified as unsuitable.
- B. Silvicultural treatments are limited to control of insect & disease.
- C. Salvage harvest of dead or down material may occur. Removal of naturally-occurring dead trees in and along the river shoreline, including sweepers extending into the river from the bank should consider the protection of the outstandingly remarkable values and fish habitat in accordance with agreements with the State.
- D. Taking of personal use wood is limited to beach logs on the portion of the river influenced by tidal action, which can be removed without roads or use of vehicles on uplands.

TRANSPORTATION

Transportation Operations: TRAN1

- A. Do not permit new roads, except to access valid mining claims or as TUS corridors in accordance with ANILCA Title XI.
- B. Close roads in this land use designation to public use.
- C. Permit continued existing use of snowmachines, motorboats, and aircraft; however, restrictions may be imposed on a case-by-case basis to protect outstandingly remarkable river values.

VISUAL RESOURCE

Visual Resource Operations: VIS1

- A. Provide a natural visual condition, where only ecologic changes to the visual character are allowed.
 - 1. Apply Forest-wide Standards and Guidelines for the Preservation Visual Quality Objective within the river corridor.

WILDLIFE

Wildlife Habitat Improvement: WILD22

- A. Allow wildlife habitat improvements where their principal objective is the protection or restoration of Wild River resources.

SCENIC RIVERS

Land Use Designation SR

The emphasis of this land use designation is to maintain, enhance and protect the free-flowing character and the outstandingly remarkable values of river segments which qualify the river to be considered eligible for inclusion in the National Wild and Scenic Rivers System as a Scenic River. The exterior boundaries of this land use designation are established to assure adequate protection for the inherent conditions which qualified a river segment for consideration, generally a corridor 1/4 mile each side of the ordinary high water mark of the river.

The Scenic River land use designation is managed to protect and enhance the outstandingly remarkable fish and wildlife, scenic, recreational, historic, cultural or other values identified for the river. Moderate levels of existing development, including roads which cross the river but are generally screened from the river banks, are allowed. New development and uses must not degrade the values which qualify the river to be considered eligible. Recreation facilities of a rustic design, including boat access, cabins, access roads leading to the river and trails are appropriate. The area is managed to provide a waterway and associated shorelines where activities are not visually evident to the casual observer. The Scenic River land use designation may provide recreation opportunities which meet high expectations for scenic quality associated with an essentially natural-appearing environment and a free-flowing river.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the land use designation objectives.
Facilities	Administrative and recreation facilities are screened from the river. Non-recreation special use structures may occur if they meet visual quality objectives and do not degrade the outstandingly remarkable values.
Fire	Suppression and rehabilitation actions and prescribed fire are used to maintain the free-flowing character and the outstandingly remarkable values of Scenic Rivers.
Fish	Aquatic biologic habitat productivity is maintained or improved. Fisheries enhancement projects may occur.
Forest Pests	Forest health will be maintained or improved to protect the free-flowing character and the outstanding remarkable values of Scenic Rivers.
Lands	To the extent of Forest Service authority, no development of hydroelectric power facilities is permitted. New structures that would have a direct adverse effect on river values are not authorized. National Forest System lands may not be disposed of or exchanged. Private lands within the designated river corridor are acquired as opportunities arise.
Minerals	Lands are open to mineral entry subject to regulations prescribed by the Secretary of Agriculture to protect the free-flowing character and outstandingly remarkable values of the river. Existing and new activity must minimize surface

disturbance, sedimentation, air pollution, visual impairment, and meet applicable State Water Quality Standards. Reasonable access is permitted.

Recreation

Recreation facilities are designed to be compatible with the visual quality objectives for this land use designation. Recreation opportunities range from roaded natural to primitive.

Soil and Water

Emphasis is to maintain high water quality and adequate flow to protect the outstandingly remarkable values. Soil cover is maintained and slope failure associated with management activities is minimized. Instream structures, artificial bank stabilization, and modification of channels are generally not permitted. The standards and guidelines of the Stream and Lake Protection Land Use Designation apply in this area, subject to meeting visual quality objectives.

Subsistence

Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.

Timber

Forested lands are classified as suitable, but harvest activities in the corridor will be limited to ensure compliance with visual standards and guidelines. Personal use woodcutting is compatible with this land use designation provided that management objectives are met. Cutting within 100 feet of the river is discouraged. The cutting of down trees in rivers (sweepers) must be compatible with the management direction for fish habitat and protect the outstandingly remarkable characteristics of the river.

Transportation

Roads generally screened from the river and infrequent road and trail crossings (bridges) may be present. Trails paralleling the river are acceptable.

Visual Resource

As seen from the river and its shorelines, roads or recreation facilities, management activities are generally not evident to the casual observer.

Wildlife

Management emphasizes maintenance of late successional stages, although early and middle successional stages may occur. Habitat improvement may occur and is designed to be visually compatible with this land use designation objectives.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W1111,1112,112	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S11	All	4-68
TIMBER	TIM	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN111,122,212 TRAN22,23 TRAN214	All All I-IV	4-84
VISUAL RESOURCE	VIS1,VIS12 VIS11	All I(C,F,G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Administrative and authorized non-recreation facilities should not be evident as viewed from the river and its banks.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards and guidelines for this land use designation, such as soil, water, and visual resource.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire must meet the retention VQO and meet all soil and water quality standards.
 - 1. All activity fuels will be treated to meet the retention VQO within one season following timber harvest.
- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Planning: FISH112

- A. Provide for public interpretation of fish habitats, habitat enhancement projects and special fisheries conditions in appropriate Scenic Rivers.

FOREST PESTS

Forest Pest Management: PEST1

- A. Maintain or improve forest health through pest prevention and suppression practices.

1. Allow sanitation and salvage of infested timber to protect the character and the outstanding remarkable values of the Scenic River.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only those uses consistent with management objectives. (Consult the Land and Resource Management Planning Handbook.)
 1. Do not authorize water supply dams and major diversions.
 2. Do not permit development of hydroelectric power facilities for: 1) projects exempted from licensing by the Federal Energy Regulatory Commission or 2) projects on Rivers designated through sections 2,3, and 5(a) of the Wild and Scenic Rivers Act. The Forest Service will recommend to FERC that a project on a river found eligible and suitable for inclusion in Wild and Scenic Rivers System should not be licensed because it is inconsistent with the purposes for which the National Forest was created or acquired and, if necessary, impose conditions on any license issued for a project on that river that fully protect its outstandingly remarkable characteristics and free-flowing nature.
 3. Do not authorize flood control dams and levees.
 4. Roads may occasionally bridge river areas. Permit short stretches of conspicuous, or longer stretches of inconspicuous and well-screened, roads or railroads, on a case-by-case basis, depending upon intended use.
 5. Do not authorize new structures that would have a direct adverse effect on river values.
 6. Allow transportation and utility corridors in accordance with ANILCA, Title XI. This land use designation represents a Transportation and Utility Systems (TUS) "Avoidance Area." Transportation and utility sites or corridors may be located within this land use designation only after a search for "windows" has been exhausted.
 7. Allow motorized access in accordance with ANILCA, Sections 811 and 1110(b).

Land Ownership Administration: LAND123

- A. Retain National Forest lands. Acquire private inholdings as opportunities arise.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

- D. Mineral activity must be conducted in a manner which minimizes surface disturbance, sedimentation, air pollution, visual impairment, and applicable State Water Quality Standards.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 - 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Section 505(a).)
 - 2. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 - 3. Quarry back walls visible from sensitive travel routes should be reduced in height and/or designed to have an irregular back line.
 - 4. Discourage use of motorized surface vehicles, except as provided in ANILCA, Section 1110(b), which assures adequate and feasible access for economic and other purposes.
 - 5. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 - 6. Haul away, bury, burn or scatter vegetation removed from the project area when vegetation is located adjacent to sensitive roads.
 - 7. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 - 8. Use colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
 - 9. Apply timing restrictions to instream construction as needed to protect fisheries habitat and mitigate adverse disturbance of stream sediments.
 - 10. Use sedimentation traps as needed to mitigate adverse stream sedimentation and meet State and Federal water quality regulations.
 - 11. Design reclamation plans so minerals activities leave a natural-appearing condition.
 - 12. Shape landform modifications to simulate naturally occurring forms.
 - 13. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of this land use designation as indicated by the ROS inventory.
 - 1. Provide the existing recreation settings and opportunities compatible with the protection of the outstandingly remarkable values

of the river. Manage recreation use in a manner compatible with the long-term land use designation objectives.

2. Recreation facilities such as boat access points, trails, public recreation cabins, and infrequent minor facilities such as picnic areas and designated camping areas are appropriate.

SOIL AND WATER

Watershed Resource Improvements: S&W2

- A. Undertake watershed improvements within the river corridor only where deteriorated soil or hydrologic conditions create a threat to the values for which the river is managed. Use, whenever possible, indigenous plant species and materials in implementing land treatment measures to protect or improve the quality and/or quantity of the water resource or when stabilizing or improving the productivity of the soil resource. (Consult FSM 2350 and 2520.)

SUBSISTENCE

Subsistence: SUB

- A. Allow traditional wood gathering activities for subsistence uses in Scenic Rivers, subject to reasonable regulations to protect Scenic River resources.
- B. Subsistence use occurs in accordance with applicable Federal and State regulations.

TIMBER

Timber Resource Planning: TIM112

- A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.
- B. Personal use woodcutting is compatible with this land use designation provided that management objectives are met. Cutting within 100 feet of the river is discouraged. The cutting of down trees in navigable rivers (sweepers) must be compatible with the management direction for fish habitat and protect the outstandingly remarkable characteristics of the river.

Timber Resource Coordination: TIM113

- A. Project analysis, development of environmental documents and design for timber activities will protect the outstandingly remarkable values within the river corridor.
- B. The Sale Area Improvement analysis will coordinate Knutson-Vandenburg (K-V) funds for recreation and timber objectives. Essential reforestation will have highest priority for funds; other land use designation objectives will have next priority.

Timber Sale Preparation: TIM114

- A. Timber harvest activities may include both even-aged and uneven-aged silvicultural methods. Project analysis will recognize the effects of color, tone, texture, line, slope, size, and edge on the scenic viewshed.
- B. The following guidelines provide direction for timber harvest activities to meet Visual Quality Objectives (VQO's) and Visual Absorption Capability (VAC) settings. These conditions are approximate estimates for planning purposes and should be referred to as a guideline during project analysis. Ground conditions may indicate a need to be more

restrictive or relaxed in scheduling harvest to meet the intent of the Visual Quality Objective.

1. *Retention* - The retention visual quality objective requires that timber harvest activities are not evident to the casual Forest visitor.
 2. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape.
- C. The following table provides specific visual mitigation measures appropriate to timber management.
1. Cumulative visual disturbance reflects the maximum percent of a visual viewshed allowed to be in a disturbed condition at any time. These estimates are appropriate for planning purposes. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.

**Guidelines for Timber Harvest Activities
Specific to
Visual Quality Objectives and Visual Absorption Capability Settings**

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance*	Height to Adjacent Mature Stand	Logging Slash**
Retention - Low VAC	single tree or group selection (less than 2 acres)	8%	50%	Would not be evident 2 years after project completion.
Retention - Intermediate VAC	single tree or small clearcut (appx. 5 - 15 acres)	10%	50%	no limit
Retention - High VAC	small clearcut (appx. 15 - 30 acres)	10%	30%	no limit
Partial Retention - Low VAC	group selection or small clearcut (appx. 5-10 acres)	8%	35%	Would not be evident 5 years after project completion.
Partial Retention - Intermediate VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Partial Retention - High VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit

- C. Salvage harvest of dead or down material may occur. Removal of naturally-occurring dead trees in and along the river shoreline, including "sweepers" extending into the river from the bank should consider

the protection of outstandingly remarkable values and fish habitat in accordance with agreements with the State on the management of navigable waters.

TRANSPORTATION Transportation Operations: TRAN1

- A. Develop and manage the transportation system in a manner compatible with Scenic River classification.
 - 1. Allow the construction of Forest Development Roads which provide access to the river. Roads may occasionally bridge the river.
 - 2. Locate and design roads which, except for short segments or at bridge crossings, are not evident to the casual observer traveling on the river. Long stretches of conspicuous and well-travelled roads paralleling the riverbank are not allowed.
 - 3. Encourage the perception of remoteness by limiting the design standards of Forest Development Roads to those necessary to accommodate single use or a controlled mix of traffic (i.e., Traffic Service Level C or D).
 - 4. Consider the recreation emphasis of this land use designation during development of road management objectives.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Maintain or improve the visual character of the river segments which qualified the river as a scenic river.
- B. Apply Forest-wide Standards & Guidelines for the Retention Visual Quality Objective in the foreground as seen from the river, roads, and trails, and Partial Retention for all other areas within the corridor.
- C. Locate and design recreation facilities and other authorized activities within the river corridor in a manner most compatible with the Retention Visual Quality Objective. Recreation facilities visible from the river generally are limited to those providing access to water-based recreation opportunities, such as fishing access points, trails, and boat launch facilities. Other recreation facilities, such as cabins, are generally screened from view from the river.

RECREATION RIVERS

Land Use Designation RR

The emphasis of this land use designation is to maintain, improve and protect the essentially free-flowing character and outstandingly remarkable values which qualify the river to be considered eligible for inclusion in the National Wild and Scenic Rivers System as a Recreational River.

Management seeks to maintain the outstandingly remarkable fish and wildlife, scenic, recreational, historic, cultural and ecologic values identified for the river corridor within 1/4 mile of the ordinary high water mark each side of the river. The area may include significant human development, residences, roads and highways, and minor existing modifications to the waterway including diversion dams. Major water resource projects are not authorized. The area may include landscapes in a variety of visual conditions. Activities and structures may be dominant in some areas, but harmonize and blend with the generally natural-appearing environment to provide a pleasing setting for recreation activities. This land use designation may provide recreation opportunities where the interaction between users may be moderate to high with evidence of current and past use prevalent. Roads are designed for conventional motorized vehicles. Facilities may exist for boat or aircraft use.

Permitted motorized use within the area may include boats, aircraft, snowmachines, construction and maintenance of needed facilities, and established subsistence uses. Motorized land travel for recreation purposes may be restricted. All scheduled resource management activities are integrated in such a way that the recreation and water quality values remain paramount.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with land use designation objectives.
Facilities	Structures are located and designed to compliment and facilitate area management.
Fire	Suppression actions and prescribed fire are used to maintain the scenic quality of this land use designation.
Fish	Aquatic biological habitat productivity is maintained or improved. Projects may be identified and implemented which create or improve angling opportunity or that help meet the objectives of the Interagency Regional Salmon Plans.
Forest Pests	Forest health is maintained or improved to protect the values of Recreation Rivers.
Lands	No development of hydroelectric power facilities is permitted for: 1) projects exempted from licensing by the Federal Energy Regulatory Commission or 2) projects on Rivers designated through Sections 2, 3, and 5(a) of the Wild and Scenic Rivers Act. The Forest Service will recommend to FERC that a project on a river found eligible and suitable for inclusion in Wild and Scenic Rivers System not be licensed because it is inconsistent with the purposes for which

the National Forest was created or acquired and, if necessary, impose conditions on any license issued for a project on that river that fully protect its outstandingly remarkable characteristics and free-flowing nature.

Minerals	Lands are open to mineral entry subject to regulations prescribed by the Secretary of Agriculture. Existing and new activity must minimize surface disturbance, sedimentation, air pollution, visual impairment, and meet State Water Quality Standards. Reasonable access is permitted.
Recreation	Use and activities are managed for the safety and convenience of the user, and protection and interpretation of the river resources. Experiences may include those requiring moderate isolation to those influenced by humans in a modified setting. Recreation facilities may include campgrounds, picnic areas, and interpretive sites and similar facilities.
Soil and Water	Land use activities are carried out in a manner which controls sediment and protects water quality. Existing low dams, diversion works, and flood control works may remain; but new structures which affect the free-flowing character of the river are generally prohibited.
Subsistence	Subsistence use occurs in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Timber	Forest land is classified as suitable. Silvicultural treatment is integrated with site and area development to provide healthy tree stands, vegetative diversity, and forage production for indigenous wildlife populations. Insect and disease control, and landscaping are performed to maintain the aesthetic value of both existing recreation and potential recreation sites.
Transportation	Design and location of roads and facilities provide for conventional motorized use. User safety and opportunities for non-motorized recreation activities may be provided by restricting motorized use to designate routes and areas. Both motorized and non-motorized trail opportunities may be provided.
Visual Resource	All management activities within the area are integrated in such a way that the natural environment and landscape characteristics remain predominant, although existing developments may occasionally dominate the landscape. Visual enhancement activities are aimed at maintaining diversity and harmony in the landscape.
Wildlife	Emphasis is on maintaining healthy and productive habitat conditions for indigenous species and improving wildlife viewing opportunities.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11, CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN111,122,212 TRAN22,23 TRAN214	All All I-IV	4-84
VISUAL RESOURCE	VIS1, VIS12 VIS11	All I(C,D,F,G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, interpretation, and allocation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Allow the location of administrative facilities and public information centers in the river corridor providing they do not have adverse effects on the values this land use designation is intended to protect.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards and guidelines for this land use designation, such as soil, water, and visual.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire must meet the partial retention VQO and meet all soil and water quality standards.
 - 1. All activity fuels will be treated to meet the partial retention VQO within one season following timber harvest.
- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Planning: FISH112

- A. Provide for public interpretation of fish habitats, habitat enhancement projects, and associated special fisheries conditions in appropriate recreation rivers.

FOREST PESTS

Forest Pest Management: PEST1

- A. Maintain or improve forest health through pest prevention and suppression practices. These practices are implemented in compliance with recreation objectives.
 - 1. Encourage hazard tree management in developed areas.
 - 2. Salvage and sanitation of infested timber is permitted.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only those uses consistent with management objectives. (Consult the Land and Resource Management Planning Handbook 1909.12, Chapter 8.)
 - 1. Allow existing low dams, diversion works, rip rap, and other minor similar instream structures, to remain. Generally, prohibit new structures of this nature.
 - 2. Permit no development of hydroelectric power facilities for: 1) projects exempted from licensing by the Federal Energy Regulatory Commission or 2) projects on rivers designated through sections 2, 3, and 5(a) of the Wild and Scenic Rivers Act. The Forest Service will recommend to FERC that a project on a river found eligible and suitable for inclusion in Wild and Scenic Rivers System should not be licensed because it is inconsistent with the purposes for which the National Forest was created or acquired and, if necessary, impose conditions on any license issued for a project on that river that fully protect its outstandingly remarkable characteristics and free-flowing nature.
 - 3. Permit maintenance of existing flood control structures. Do not authorize new ones.
 - 4. Consider authorizing construction of roads, trails, or railroads, on a case-by-case basis. They may be authorized on one, or both, river banks and there may be several bridge crossings and numerous river access points. Permit new structures as necessary and appropriate.
 - 6. Transportation and utility corridors will be allowed in accordance with ANILCA, Title XI. This land use designation represents a Transportation and Utility Systems (TUS) "Avoidance Area." Transportation and utility sites or corridors may be located within this land use designation only after a search for "Windows" have been exhausted.
 - 7. Allow motorized access in accordance with ANILCA, Sections 811 and 1110(b).

Land Ownership Administration: LAND123

- A. Retain National Forest lands. Acquire private inholdings as opportunities arise.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to land use designation objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Section 505 (a).)
 2. Take advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 3. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive travel routes.
 4. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 5. Utilize colors that simulate those found in the characteristic landscape.
 6. Apply timing restrictions to instream construction as needed to protect fisheries habitat and mitigate adverse disturbance of stream sediments.
 7. Use sedimentation traps as needed to mitigate adverse stream sedimentation and meet State and Federal Water Quality regulations.
 8. Design reclamation plans so minerals activities leave a natural-appearing condition.
 9. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of this land use designation as indicated by the ROS inventory.
 1. Provide the existing recreation settings and opportunities until scheduled activities and practices cause a change in the ROS setting(s). Manage recreation use in a manner that is compatible with the long-term objectives of this land use designation.

2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines. Maintain the capability of this land use designation to provide appropriate quality recreation opportunities on a sustained basis.
3. Provide recreation facilities consistent with the ROS setting. Where possible, major facilities should be screened from the river. On-site interpretation may be provided.

SOIL AND WATER

Watershed Resource Improvements: S&W2

- A. Undertake watershed improvements within the river corridor where deteriorated soil or hydrologic conditions exist. Use, whenever possible, indigenous plant species and materials in implementing land treatment measures to protect or improve the quality and/or quantity of the water resource or when stabilizing or improving the productivity of the soil resource. (Consult FSM 2350 and 2520.)

TIMBER

Timber Resource Planning: TIM112

- A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.
- B. Personal use woodcutting is compatible with this land use designation provided that management objectives are met. Cutting within 100 feet of the river is discouraged. The cutting of down trees in navigable rivers (sweepers) must be compatible with the management direction for fish habitat and the protection of the outstandingly remarkable characteristics of the river.

Timber Resource Coordination: TIM113

- A. Project design, analysis, and development of environmental documents for timber activities will emphasize the outstandingly remarkable values.
- B. The Sale Area Improvement analysis will coordinate Knutson-Vandenburg (K-V) funds for recreation and timber objectives. Reforestation will have highest priority for funds; other land use designation objectives will have next priority.

Timber Sale Preparation: TIM114

- A. Timber harvest activities may include both even-aged and uneven-aged silvicultural systems. Project analysis will recognize the effects of color, tone, texture, line, slope, size, and edge on the scenic viewshed.
- B. Salvage harvest of dead or down material may occur. Removal of naturally-occurring dead trees in and along the river shoreline, including sweepers extending into the river from the bank should consider the protection of the outstandingly remarkable values and fish habitat in accordance with agreements with the State relative to management of navigable waters.
- C. The following guidelines provide direction for timber harvest activities to meet Visual Quality Objectives (VQO) and Visual Absorption Capability (VAC) settings. These estimates are appropriate for planning purposes and should be referred to as guidelines. Ground conditions may

indicate a need to be more restrictive or relaxed in scheduling harvest to meet the intent of the Visual Quality Objective.

1. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape.
2. *Modification* - Management activities may dominate the characteristic landscape, yet will be designed to borrow from form and line found in the naturally occurring landscape.
3. Cumulative visual disturbance reflects the maximum allowable percent of a visual viewshed to be in a disturbed condition at any one point in time.

**Guidelines for Timber Harvest Activities
Specific to
Visual Quality Objectives and Visual Absorption Capability Settings**

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance*	Height to Adjacent Mature Stand	Logging Slash**
Partial Retention - Low VAC	group selection or small clearcut (appx. 5-10 acres)	8%	35%	Would not be evident 5 years after project completion.
Partial Retention - Intermediate VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Partial Retention - High VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - Low VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Modification - Intermediate VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - High VAC	clearcut (appx. 80 - 100 acres)	25%	5 feet	no limit

TRANSPORTATION Transportation Operations: TRAN1

- A. Develop and manage the transportation system in a manner compatible with Recreation River classification.
 1. Allow the construction of Forest Development Roads. The river may be readily accessible by road. Roads may parallel the river bank and be conspicuous in places when viewed from the river.
 2. If accessible for public use, design roads to accommodate passenger cars and open them to public use, although traffic controls may be used during periods of high use (i.e., design to Traffic Service Level C or above).

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Design activities to be subordinate to the characteristic landscape when viewed from the river, roads, and recreation facilities by utilizing existing form, line, color and texture found in the landscape. In other areas, management activities may dominate the characteristic landscape.
 - 1. Apply Forest-wide Standards and Guidelines for the Partial Retention Visual Quality Objective in areas viewed from the river, roads, and recreation facilities. Less visible evidence of activities is acceptable. In other areas, apply the Modification Visual Quality Objective. These objectives define the maximum limit of allowable change to the visual character of the area;
 - 2. Use materials that are compatible with colors and textures found in the characteristic landscape.

EXPERIMENTAL FORESTS

Land Use Designation EF

The emphasis of this Land Use Designation is the management of the Maybeso Experimental Forest on Prince of Wales Island.

Experimental Forests are intended to provide a variety of long-term opportunities for forest research and demonstration essential to managing forest resources. They are administered by the Pacific Northwest Experiment Station in coordination and cooperation with the Ranger District on which they are located. Experimental Forests are located in a setting designed to satisfy research purposes and must be large enough to study the effects of alternative management. The experimental forest will have a development plan, separate from the Forest Plan, designed to achieve the desired research. This plan will be developed by the Pacific Northwest Experiment Station in cooperation and coordination with the appropriate Ranger District. The Ranger District shall be responsible for preparing and administering any timber sales included in the Development Plan.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	Facilities which are necessary for ongoing research and its interpretation are allowed as specified in the individual Experimental Forests' development plan.
Fire	Suppression strategies and prescribed fire are used to protect and improve resources as determined in the Experimental Forest's Development Plan.
Fish	Fish habitat enhancement projects may be present to provide research into the benefits of such projects. Other enhancement projects may occur if they are compatible with the Experimental Forest's establishment objectives.
Forest Pest	Pest suppression activities are coordinated with the Pacific Northwest Research Station and comply with the Experimental Forest Development Plan.
Lands	Special use authorizations may be issued if consistent with the research objectives. National Forest lands are retained and private inholdings may be acquired as opportunities arise.
Minerals	Depending upon the research objectives of the individual Experimental Forest, the Forest may be withdrawn from mineral entry, subject to valid existing rights.
Recreation	Recreation settings and levels of recreation use are allowed which do not interfere with the ongoing research. Interpretive activities which educate the public about Forest Management and different silvicultural systems and their effects are encouraged.

Soil and Water	Soil and water resources may be altered, and treatment measures applied, in experimental activities to assess their impacts.
Subsistence	All subsistence activities which do not interfere with the ongoing research in the Experimental Forest may occur.
Timber	Forested land is classified as unsuitable. Harvest conducted for research purposes is not chargeable to the allowable sale quantity. Timber harvest as specified in the development plan is allowed for research and demonstration purposes. Evidence of logging may be quite noticeable in some portions of this land use designation, while other portions will appear unharvested. A variety of age classes may be present in the overall area. Personal use wood and Christmas tree cutting activities are limited to the provisions within the Development Plan of the Experimental Forest.
Transportation	Roads and trails may be developed to facilitate and interpret the ongoing research in this land use designation.
Visual Resource	A range of visual conditions may be present in this land use designation. The visual condition of the experimental forest will reflect the types of research being conducted.
Wildlife	Wildlife habitat improvement projects may be present to provide research into the benefits of such projects. Other improvement projects occur if they are compatible with the establishment objectives of the Experimental Forest. Wildlife habitats may be treated to assess the impacts of vegetation management upon wildlife populations.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C	All	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W1111,1112	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS	All	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 1. Identify, classify, and evaluate known cultural resources.
 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 3. Identify cultural properties that require stabilization or other protective measures.
 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Allow facilities as needed to accomplish Experimental Forest objectives.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression action that minimizes fire suppression cost and resource damage. The action must meet the objectives of the Experimental Forest's Development Plan.
- B. Suppression tactics will be compatible with the Experimental Forest's objectives.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used if it is compatible with the Experimental Forest's objectives.
- B. Use natural ignitions only to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in the land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

- A. Fish habitat may be managed differently than identified in the riparian-oriented management prescriptions to help meet the Experimental Forest's research objectives. In some cases, Forest-wide direction listed under FISH112 and FISH122 may not apply.
- B. Fish enhancement projects may occur if they are compatible Experimental Forest's establishment objectives. Fish habitat manipulation may also occur to provide research into the costs, benefits, and effects of such manipulations.

FOREST PESTS

Forest Pest Management: PEST1

- A. Coordinate pest suppression activities with the Pacific Northwest Research Station and with the Experimental Forest's Development Plan.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Issue only those special use authorizations consistent with Experimental Forest's research objectives.
 - 1. Coordinate all proposed new uses with the responsible PNW Station Director to ensure compatibility with research objectives. Obtain approval of the Station Director prior to issuing new authorizations. (Consult FSM 2700.)
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.

Land Ownership Adjustments: LAND26

- A. Retain National Forest lands and acquire private inholdings as opportunities arise.

MINERALS GEOLOGY CAVES

Minerals and Geology Administration: MG&C12

Forest Lands Withdrawn from Mineral Entry

- A. Depending on the research objectives, portions or all of the Experimental Forest may be withdrawn from mineral entry.
- B. Claimants with claims located within this land use designation retain valid existing rights if such rights were established prior to the withdrawal date.
- C. Permit reasonable access to mining claims with valid existing rights in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent feasible. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of this land use designation.
 - 1. Provide the existing recreation settings and opportunities that can be accommodated without adverse effect on research objectives, until scheduled activities and practices cause a change in the ROS setting(s).

2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines.
3. Issue appropriate orders regulating public use within the area, as necessary, to protect ongoing research activities.

SOIL AND WATER

Watershed Resource Planning: S&W112

- A. Soil and water resources may be temporarily altered by experimental activities to assess the impacts of such activities upon soil productivity, water quality and quantity, and fish populations and habitat.

Watershed Resource Improvement: S&W2

- A. Soil and water treatment measures may occur if they are compatible with Experimental Forest's establishment objectives. Different treatments may occur to provide information on benefits, costs, and effects of such treatments.

SUBSISTENCE

Subsistence: SUB

- A. Allow all subsistence activities which do not interfere with the research occurring in this land use designation. Allow firewood gathering only if it is compatible with research and demonstration activities.

T, E & S

Threatened, Endangered & Sensitive: TE&S

Sensitive Species

- A. Sensitive species habitats may be manipulated with planned research activities to assess the impacts of forest management activities/programs upon sensitive species habitats and populations.

TIMBER

Timber Resource Planning: TIM112

- A. Forest lands are classified as unsuitable and harvest will not be chargeable to the allowable sale quantity. Timber activities, including harvest and cultural treatment, will only take place for demonstration and research purposes as specified in each Experimental Forest's Development Plan.
- B. Personal use and Christmas tree cutting activities are limited to the provisions within the Development Plan of the Experimental Forest.

TRANSPORTATION

Transportation Operations: TRAN1

- A. Provide and manage the transportation system as needed to accomplish the Experimental Forest objectives.
- B. Roads may be constructed through the Experimental Forest to access other land use designations, unless they would interfere with research objectives.

VISUALS

Visual Resource Operations: VIS1

- A. Consideration for the visual resource will be secondary to the objectives of the Experimental Forest.

1. In the Development Plan, identify the visual quality objectives which may range from Preservation to Maximum Modification.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Wildlife habitat management and research will be identified in the Experimental Forest's Development Plan.

SCENIC VIEWSHED

Land Use Designation SV

The emphasis of this land use designation is to provide scenic landscapes, vistas, and travel corridors in areas viewed from roads used primarily for recreational driving, trails, major marine travel routes, recreation sites and popular bays and anchorages where forest visitors have high expectations for scenic quality. Recreation facilities may be present.

This land use designation may also include landscapes which have been modified in the past. However, the intent of future management is to restore and maintain scenic quality. Management activities in the visual foreground are not evident to the casual observer and are subordinate to the characteristic landscape in the middleground and background views. Timber harvest activities are typically small and affect only a small percentage of a viewshed.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the land use designation's objectives.
Facilities	Log transfer facilities, cabins, or administrative sites are designed to be compatible with form, line and color found in the characteristic landscape.
Fire	Suppression actions and prescribed fire are used to maintain the scenic quality of this land use designation.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries improvement projects may occur. The Stream and Lake Protection Land Use Designation applies along riparian areas.
Forest Pests	Pest prevention and suppression measures are implemented to maintain or enhance scenic quality and forest health.
Lands	Special use structures may be present if consistent with land use designation intent.
Minerals	Lands are open to mineral entry. Visual standards and guidelines minimize or reduce the visual impact of mining activities, although visual quality objectives may not be met during mineral development. Post-development reclamation seeks to meet visual objectives.
Recreation	Recreation experiences may range from those requiring a primitive setting to those obtainable in a roaded natural setting.
Soil and Water	Emphasis is on maintenance of high water quality. Soil cover is maintained and slope failure associated with management activities is minimized.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent.

Timber	Suitable forested lands are available for harvest, however, harvest activities are limited to ensure compliance with visual standards and guidelines. Personal use woodcutting activities are compatible with this land use designation provided that management objectives are met.
Transportation	Roads and trails may be present and are designed and constructed to be compatible with elements found in the characteristic landscape. They may enhance recreational opportunities.
Visual Resource	Management activities are not apparent to the observer in the foreground and are subordinate to the characteristic landscape in the middle to background distances.
Wildlife	Management emphasizes maintenance of late successional stages, although early and middle successional stages may occur. Habitat improvement may occur and is designed to be visually compatible.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	AII	4-2
BIODIVERSITY	BIO	AII	4-3
CULTURAL	CULT	AII	4-8
FACILITIES	FAC	AII	4-18
FIRE	FIRE	AII	4-19
FISH	FISH	AII	4-20
FOREST PESTS	PEST	AII	4-25
LANDS	LAND	AII	4-26
LAW ENFORCEMENT	LAW	AII	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11, CAVE MG&C12	AII II-VI	4-39
OLD-GROWTH FOREST	OLD	AII	4-44
RECREATION	REC	AII	4-45
RIPARIAN	RIP	AII	4-60
RURAL DEVELOPMENT	RUR	AII	4-61
SOIL AND WATER	S&W	AII	4-62
SPECIAL INTEREST AREAS	SIA	AII	4-65
SUBSISTENCE	SUB	AII	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	AII	4-68
TIMBER	TIM	AII	4-72
TRAILS	TRAI	AII	4-81
TRANSPORTATION	TRAN	AII	4-84
VISUAL RESOURCE	VIS1,12 VIS11	AII I(B,C,F,G)	4-92
WETLANDS	WET	AII	4-97
WILDLIFE	WILD	AII	4-98

Apply the following Land Use Designation and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory

- A. Provide cultural resource assistance to the timber and engineering programs. Coordination includes participation and support for environmental documentation, pre-sale inventory, evaluation, assessment, monitoring and protection of cultural resources during sale activities.
 1. Inform the Area Cultural Resource Specialist of all proposed sales by year and location (at a minimum of) one year in advance for review to determine survey needs and intensity.
 2. The Area Cultural Resource Specialist shall provide input on known or predicted cultural resource site density in proposed sale areas and make recommendations to protect cultural resources and facilitate of sale activities through long-range planning.
 3. Cultural resource clearance shall be accomplished on areas of the selected alternative prior to the advertisement of the sale and the sale shall proceed only after the SHPO consultation process has been completed and the cultural resource clearance has been approved by the Forest Supervisor.
 - * Accomplish cultural clearance for Independent Timber Sale Program on areas of the selected alternative before sale implementation. Implementation is defined as the advertising of the sale.
 - * Accomplish cultural clearance for Long-Term Sale Programs prior to implementation. Implementation is defined as the time the unit release is signed for cutting units and roads and at the time the development plan is approved for camps and log transfer facilities.
 - * Release no unit, road, camp, or facility development plan for signature or approval, or sanction any ground-disturbing activity before the compliance process is completed for the relevant portion of the undertaking.
 4. Inventory and evaluation may be accomplished at the timber sale operator's discretion and cost provided that the inventory and evaluation is accomplished under the supervision of a qualified Cultural Resource Specialist authorized by a special use authorization.
 5. Include as part of the Clearance Report specific protective and/or mitigative measures to be taken by the operator who is responsible for the cost of any such protective or mitigative measures.
 6. Include in each contract, permit, or lease a statement of the operating conditions required to protect cultural resources in the sale area. Also include the pertinent clause notifying the operator of his or her responsibility to protect marked sites when working in the sale area and the operators liability for damage.
 7. Mark cultural resources sites within or adjacent to the sale area prior to the implementation of the sale.
 8. Provide training in the recognition, monitoring, and protection of cultural resources for all persons responsible for on-the-ground

administration of timber/engineering contracts, authorizations or leases.

9. Suspension of any work in the vicinity of a previously undiscovered cultural resource site shall be implemented by the project administrator to avoid potential site damage. The Forest Supervisor shall notify the State Historic Preservation Office (SHPO) and authorize resumption of work only after the consultation process has been completed. The project administrator shall keep the contractor, permittee, or lessee informed of anticipated delays in work resumption.

FACILITIES

Facilities Improvements: FAC2

- A. Meet the visual quality objectives for this land use designation when siting and constructing facilities for administrative use.
 1. *Retention*: Structures and clearing should not be visually evident to the casual observer from the sensitive viewpoints.
 2. *Partial Retention*: Structures and clearing should be subordinate to the landscape character of the area.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards for the land use designation, such as soil, water quality, and visual quality.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire must meet the retention VQO and meet all soil and water quality standards.
 2. Treat all activity fuels to meet the retention VQO within one season following timber harvest.
- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Improvements: FISH22

- A. Meet the visual quality objectives in the design and construction of fish habitat improvements and aquaculture facilities.
 1. Facilities shall be constructed of materials which blend with, and are compatible with, the immediately surrounding landscape.

FOREST PEST

Forest Pest Management: PEST1

- A. Design timber stand improvement, sanitation, salvage, and pest suppression measures in forest pest management activities to be consistent with visual and forest health objectives.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (non-Recreation): LAND122

- A. Allow construction of structures only when visual quality objectives can be achieved.
1. Permit only structures which will not be evident to observers when viewed in the foreground distance from road corridors, marine travel routes, recreation sites, or other high use areas. In the middle to background distance, design structures to be subordinate to the characteristic landscape.
 2. Specify that materials and fabrication techniques for all new facilities be compatible with form, color and texture found in the immediately surrounding landscape.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Preparation: MG&C11

- A. Require a visual assessment and visual resource assistance with site planning and design of minerals activities.

Minerals and Geology Administration: MG&C12

A. *Forest Lands Open to Mineral Entry*

1. Forest lands within this land use designation are open to mineral entry.
2. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and Forest Service Mining Regulations 36 CFR 228.
3. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

B. *Plan of Operations*

1. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
2. Apply Transportation Forest-wide Standards & Guidelines to the location and construction of mining roads.
3. Design mineral activities to be compatible with the emphasis of this land use designation. Apply the following management practices to meet visual quality objectives. come here
 - a. Recognize the effects of color, tone, texture, line, size, and edge on the scenic viewshed.
 - b. Locate material disposal sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 - c. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 - d. Quarry back walls visible from sensitive travel routes should be limited in height and/or designed to have an irregular back line.

- e. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive viewpoints.
- f. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
- g. Utilize colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
- h. Shape landform modifications to simulate naturally-occurring forms.
- i. Revegetate disturbed areas in accordance with project plans.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of this land use designation.
- B. Provide a spectrum of recreation opportunities consistent with the objectives of this land use designation.
 - 1. Where possible, management activities should avoid change to the current recreation setting and opportunities, unless analysis indicates a need to provide a different recreation opportunity.
 - 2. In locations where scheduled activities change the recreation setting(s), manage the changed setting(s) and opportunities in accordance with the appropriate ROS guidelines.
 - 3. Seek to maintain the recreation experience along existing trail corridors by minimizing road crossings and clearing directly adjacent to the trail.

SOIL AND WATER

Watershed Resource Planning: S&W112

- A. Delineate the location of soil and water protection areas on appropriate project maps to insure their recognition, proper consideration, and protection of the sale area.
- B. Manage nondesignated domestic water use watersheds for multiple use while providing water suitable for human consumption within State Water Quality Standards and water supply regulations.

Watershed Resource Improvements: S&W2

- A. Implement soil and water improvement projects on nondesignated domestic water use watersheds at a level to prevent degradation of water quality below State of Alaska's Water Quality Standard for domestic use.

TIMBER

Timber Resource Planning: TIM112

- A. Suitable forested land is available for harvest.

Timber Resource Coordination: TIM113

- A. Visual objectives will be emphasized in the analysis, the development of environmental documents, and the design and implementation of silvicultural activities.

- B. The Sale Area Improvement analysis will coordinate Knutson-Vandenburg (K-V) funds for recreation and timber objectives. Essential reforestation will have highest priority for funds; other land use designation objectives will have lower priorities.
- C. Personal use woodcutting activities are compatible with this land use designation provided that management objectives are met.

Timber Sale Preparation: TIM114

- A. Timber harvest activities may include both even-aged and uneven-aged silvicultural systems. Project analysis will recognize the effects of color, tone, texture, line, slope, size, and edge on the scenic viewshed.
- B. The following guidelines provide direction for timber harvest activities to meet Visual Quality Objectives (VQO) and Visual Absorption Capacity (VAC) settings. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.
 - 1. *Retention* - The retention visual quality objective requires that timber harvest activities are not evident to the casual Forest visitor.
 - 2. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape.
- C. The following table provides specific visual mitigation measures appropriate to timber management.
 - 1. The ability to attain the adopted Visual Quality Objective is dependent on many variables. Visual Absorption Capacity (VAC) is an estimate of the relative ability of a landscape to absorb management activities. VAC ratings of High, Intermediate, and Low were derived from the Revision Database for analysis purposes. A Low VAC setting generally has steep slopes, with little landscape variety, while a High VAC setting is relatively flat and/or has a high degree of variety in the landscape.

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.
- 2. The unit sizes in the following table provide guidance to the project IDT. Each landscape setting is different, and should be evaluated on a case-by-case basis. There may be instances where the visual objective can be attained while the unit size is greater than the guideline, and there also may be instances where the unit size must be smaller to meet the intent of the Visual Quality Objective.

3. Cumulative visual disturbance reflects the maximum allowable percent of a viewshed to be in a disturbed condition at any one point in time. During project analysis, these percents should be referred to as a guideline. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.
4. Tree limbs, root wads, and tree stumps may require secondary treatment to meet the Retention and Partial Retention VQO. For timber sales and road construction contracts, use appropriate clauses which would address these concerns. Brush disposal funds may be appropriate to use in these settings.

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash
Retention - Low VAC	single tree or group selection (less than 2 acres)	8%	50%	Would not be evident 2 years after project completion.
Retention - Intermediate VAC	single tree or small clearcut (appx. 5 - 15 acres)	10%	50%	no limit
Retention - High VAC	small clearcut (appx. 15 - 30 acres)	10%	30%	no limit
Partial Retention - Low VAC	group selection or small clearcut (appx. 5-10 acres)	8%	35%	Would not be evident 5 years after project completion.
Partial Retention - Intermediate VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Partial Retention - High VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit

5. Seek to minimize impacts to areas directly adjacent to developed recreation facilities (such as cabins and campgrounds) through scheduling and location of harvest activities.

TRANSPORTATION Transportation Operations: TRAN1

- A. Where transportation systems are developed and managed, they will meet the following guidelines.
 - 1. To meet the visual quality objectives, special consideration must be given to minimizing apparent landform modification (as seen from sensitive travel routes) during road and log transfer facility location, design, and construction.
 - 2. Perform integrated logging system and transportation system analysis to determine the least cost facility (considering cost of construction, maintenance and hauling) and design standards necessary to meet land use designation objectives.
 - 3. If the need to restrict access is identified during project interdisciplinary review, roads will be closed, either seasonally or yearlong, to minimize adverse effects on fish and wildlife.
 - 4. Provide recreational access where appropriate.
 - 5. Seek to avoid road crossings on existing trails or locating the road parallel to the trail. Should no other reasonable alternative exist, minimize site disturbance visible from the trail. Rock source development should be located away from the trail to the extent possible while meeting the objectives of this land use designation.

VISUALS

Visual Resource Operations: VIS1

- A. Manage areas to maintain scenic quality as seen from roads and trails, major marine travel routes, recreation sites, popular bays and anchorages, and areas routinely viewed at low elevation from small aircraft.
 - 1. Apply the Retention Visual Quality Objective (VQO) for lands in the foreground distance zone, and Partial Retention VQO for lands in the middleground distance zone. These objectives define the maximum limit of allowable change to the visual character of the area; less visible evidence of activities is acceptable.
 - 2. Perform viewshed analysis in conjunction with project development to provide direction for retaining or creating a visually attractive landscape over time.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Utilize existing inventories and evaluate the need for further project-specific inventories of wildlife habitat conditions during project analysis.
 - 1. Select Management Indicator Species (MIS) appropriate to the project area for project analysis. (See also Wildlife Forest-wide Standards & Guidelines).
- B. Coordinate all activities with consideration for the needs of wildlife, within the overall objectives of this land use designation.
 - 1. Use the habitat needs of MIS to evaluate opportunities for, and consequences on, wildlife.
 - 2. In project planning, consider opportunities to allow for the elevational migration of wildlife.
 - 3. Consider silvicultural techniques which establish and prolong understory forb and shrub production in critical habitat areas. Such techniques can include prescribed burning, precommercial thinning, canopy gaps, and uneven-aged management.

- C. Coordinate road management with the needs of wildlife, when practicable.

Wildlife Habitat Improvement: WILD22

- A. Design and implement wildlife habitat improvement projects to meet the visual quality objectives.

MODIFIED LANDSCAPES

Land Use Designation ML

The objective of this land use designation is to provide a mix of management options, while minimizing the visibility of development activities in the foreground and allowing more development in the middle and background distances. The desired future condition is that of a multi-aged forest landscape where activities are designed to borrow from, and relate to, features found in the characteristic landscape.

At-a-Glance . . .

Cultural Resource	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the land use designation objectives.
Facilities	Administrative facilities are constructed to be compatible with the visual objectives of the land use designation.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. The use of prescribed fire, to improve natural ecological processes, is not presently used, but may be considered in the future.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries enhancement projects may occur. The Stream and Lake Protection Land Use Designation applies along riparian areas.
Forest Pests	Integrated pest management principles are applied to the extent necessary to maintain the scenic quality of the area and the health of the forest.
Minerals	Lands are open to mineral entry. Although visual quality objectives may be exceeded during mineral development, visual standards and guidelines minimize or reduce the visual impact of mining activities. Post-development reclamation seeks to meet visual objectives for the area. Access for minerals is coordinated with timber sale road location when practicable.
Recreation	Recreation experiences typically range from semi-primitive motorized to those found in a roaded natural setting.
Soil and Water	Emphasis is on the maintenance of high water quality. Soil cover is maintained and slope failure associated with management activities is minimized.
Subsistence	Subsistence use is allowed in accordance with applicable Federal and State regulations.

Timber	Suitable forested land is available for timber harvest. Timber harvest may include both even-aged and uneven-aged silvicultural systems designed to meet the visual and timber objectives. Personal use woodcutting activities are compatible with this land use designation provided that management objectives are met.
Transportation	A network of roads may be developed in association with timber harvest activities while meeting the visual quality objectives of the land use designation.
Visual Resource	As seen in the foreground, management activities are subordinate to the characteristic landscape. In the middle to background distances, activities may dominate the seen area, but are designed to be compatible with form, line, color and texture found in the landscape.
Wildlife	A wide variety of successional stages provide a full range of wildlife habitat conditions. Silvicultural treatment provides healthy tree stands, vegetative diversity, and forage production for wildlife populations.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	CAVE, MG&C11 MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1,12 VIS11	All I(C,D,F,G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory

- A. Provide cultural resource assistance to the timber and engineering programs. Coordination includes participation and support for environmental documentation, pre-sale inventory, evaluation, assessment, monitoring and protection of cultural resources during sale activities.
 1. Inform the Area Cultural Resource Specialist of all proposed sales by year and location (at a minimum of) one year in advance for review to determine survey needs and intensity.
 2. The Area Cultural Resource Specialist shall provide input on known or predicted cultural resource site density in proposed sale areas and make recommendations to protect cultural resources and facilitate of sale activities through long-range planning.
 3. Cultural resource clearance shall be accomplished on areas of the selected alternative prior to the advertisement of the sale and the sale shall proceed only after the SHPO consultation process has been completed and the cultural resource clearance has been approved by the Forest Supervisor.
 - * Accomplish cultural clearance for Independent Timber Sale Program on areas of the selected alternative before sale implementation. Implementation is defined as the advertising of the sale.
 - * Accomplish cultural clearance for Long-Term Sale Programs prior to implementation. Implementation is defined as the time the unit release is signed for cutting units and roads and at the time the development plan is approved for camps and log transfer facilities.
 - * Release no unit, road, camp, or facility development plan for signature or approval, or sanction any ground-disturbing activity before the compliance process is completed for the relevant portion of the undertaking.
 4. Inventory and evaluation may be accomplished at the timber sale operator's discretion and cost provided that the inventory and evaluation is accomplished under the supervision of a qualified Cultural Resource Specialist authorized by a special use authorization.
 5. Include as part of the Clearance Report specific protective and/or mitigative measures to be taken by the operator who is responsible for the cost of any such protective or mitigative measures.
 6. Include in each contract, permit, or lease a statement of the operating conditions required to protect cultural resources in the sale area. Also include the pertinent clause notifying the operator of his or her responsibility to protect marked sites when working in the sale area and the operators liability for damage.
 7. Mark cultural resources sites within or adjacent to the sale area prior to the implementation of the sale.
 8. Provide training in the recognition, monitoring, and protection of cultural resources for all persons responsible for on-the-ground

administration of timber/engineering contracts, authorizations or leases.

9. Suspension of any work in the vicinity of a previously undiscovered cultural resource site shall be implemented by the project administrator to avoid potential site damage. The Forest Supervisor shall notify the State Historic Preservation Office (SHPO) and authorize resumption of work only after the consultation process has been completed. The project administrator shall keep the contractor, permittee, or lessee informed of anticipated delays in work resumption.

FACILITIES

Facilities Improvements: FAC2

- A. Locate and construct facilities for administrative use to meet the visual quality objective.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only the the standards and guidelines for this land use designation, such as soil, water quality, and visual quality.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire must meet the partial retention VQO and meet all soil and water quality standards and guidelines.
 1. Treat all activity fuels will be treated to meet the partial retention VQO within one season following timber harvest.
- B. Natural ignitions will not be used in this land use designation.

FOREST PESTS

Forest Pest Management: PEST1

- A. Forest pest management activities emphasize forest health through pest suppression and prevention.
 1. Encourage timber stand improvement, sanitation, and salvage.
 2. Prevent or suppress insect and disease outbreaks by evaluating chemical, cultural, mechanical, biological or "no action" alternatives.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Authorize only those development activities compatible with land use designation objectives. Avoid issuing or limit the duration of permits for uses which require natural surroundings.

1. Permit only activities which can be designed to meet the Partial Retention VQO in the foreground and Modification VQO in the middle to background distance.
- B. This land use designation represents a Transportation and Utility Systems (TUS) "Window" and provides opportunities for the future designation and location of transportation and utility sites or corridors.

Landline Location and Maintenance: LAND231, LAND24

- A. Provide adequate landline marking for Forest Service contractors.
 1. Prior to Forest Service management activities, survey, mark, and post the boundary of National Forest lands to Forest Service Standards, where there is a risk of trespass.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

- A. *Forest Lands Open to Mineral Entry*
 1. Forest lands within this land use designation are open to mineral entry.
 2. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
 3. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.
- B. *Plan of Operations*
 1. Use state-of-the art techniques for developing minerals, to reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
 2. Apply appropriate Transportation Forest-wide Direction and to the location and construction of mining roads and facilities.
 3. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 4. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Sec. 505 (a).)
 5. Take advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 6. Quarry back walls visible from sensitive travel routes should be reduced in height and/or designed to have an irregular back line.
 7. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive travel routes.
 8. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 9. Utilize colors that simulate those found in the characteristic landscape.
 10. Revegetate disturbed areas in accordance with project plans.
 11. Apply timing restrictions to minerals activities as needed during critical wildlife mating, calving, and migrating periods.

12. Shape landform modifications to simulate naturally occurring forms.
13. Design reclamation plans so minerals activities leave a natural-appearing condition.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Provide a spectrum of outdoor recreation opportunities consistent with the objectives of the land use designation.
 1. Where possible, management activities avoid change to the recreation places unless analysis indicates a need to provide a different recreation opportunity.
 2. In locations where scheduled activities occur the recreation setting(s) may change to the semi-primitive motorized, roaded natural, and rural modified ROS classes.
 3. Seek to maintain the recreation experience along existing trail corridors by minimizing road crossings and clearing directly adjacent to the trail.
 4. Seek to minimize impacts to areas directly adjacent to developed recreation facilities (such as cabins and campgrounds) through scheduling and location of harvest activities.

SOIL AND WATER

Watershed Resource Planning: S&W112

- A. Delineate the location of high hazard soils, riparian, and other sensitive areas on project maps to insure their recognition, proper consideration, and protection on the sale area.
- B. Manage nondesignated domestic water use watersheds for multiple use while providing water suitable for human consumption within State Water Quality Standards and water supply regulations.
- C. Apply Best Management Practices (BMP's) to all land-disturbing activities to protect the beneficial uses of water from non-point sources of pollution. (Note: Appendix C of this plan includes a summary of Best Management Practices which are found in Chapter 10 of the Soil and Water Conservation Handbook, 2502.22). Also consult FSM 2530, Forest-wide Standards and Guidelines for Facilities, Transportation, U.S. Army Corps of Engineers Regulations (33 CFR 323.4) and the Clean Water Act.

Watershed Resource Improvements: S&W2

- A. Accomplish soil and water improvement projects on nondesignated domestic water use watersheds to prevent degradation of water quality below the State of Alaska's Water Quality Standard for domestic use.

TIMBER

Timber Resource Planning: TIM112

- A. Suitable forested land is available for harvest.
- B. Personal use woodcutting activities are compatible with this land use designation provided that management objectives are met.

Timber Resource Coordination: TIM113

- A. The Sale Area Improvement plan will coordinate Knutson-Vandenburg (K-V) funds for recreation and timber objectives. Reforestation will have highest priority for funds; other land use designation objectives will have lower priorities.

Timber Sale Preparation: TIM114

- A. Timber harvest activities may include both even-aged and uneven-aged silvicultural systems. Project analysis will recognize the effects of color, tone, texture, line, slope, size, and edge on the characteristic landscape.
- B. The following guidelines provide direction for timber harvest activities to meet Visual Quality Objectives (VQO) and Visual Absorption Capacity (VAC) settings. The guidelines define the maximum allowable disturbance for timber harvest. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.
 1. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape.
 2. *Modification* - This VQO allows management activities to dominate the seen area. In the design of timber harvest activities, utilize features found in the existing landscape to minimize overall visual disturbance.
- C. The table below provides specific visual mitigation measures appropriate to timber management.
 1. The ability to attain the adopted Visual Quality Objective is dependent on many variables. Visual Absorption Capacity (VAC) is an estimate of the relative ability of a landscape to absorb management activities. A Low VAC setting generally has steep slopes, with little landscape variety, while a High VAC setting is relatively flat and/or has a high degree of variety in the landscape.
 2. The unit sizes provide guidance to the project IDT. Each landscape setting is different and should be evaluated on a case-by-case basis. There may be instances where the visual objective can be attained while the unit size is greater than the guideline, and there also may be instances where the unit must be smaller to meet the intent of the Visual Quality Objective.
 3. Cumulative visual disturbance reflects the maximum allowable percent of a viewshed to be in a disturbed condition at any one point in time. During project analysis, these percents should be referred to as a guideline. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the assigned Visual Quality Objective.
 4. Tree limbs, root wads, and tree stumps may require secondary treatment to meet the Partial Retention VQO in the foreground distance. For timber sales and road construction contracts, use clauses which address these concerns. Brush disposal funds may be appropriate to use in these settings.

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash
Partial Retention - Low VAC	group selection or small clearcut (appx. 5 - 10 acres)	8%	35%	Would not be evident 5 years after project completion.
Partial Retention - Intermediate VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Partial Retention - High VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - Low VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Modification - Intermediate VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - High VAC	clearcut (appx. 80 - 100 acres)	25%	5 feet	no limit

- D. Project analysis will evaluate the opportunity to maintain the existing proportion of old-growth strata for wildlife diversity within the contiguous land use designation.
- E. Provide for windfirm boundaries. To design for windfirmness, consider conditions such as soils, local wind patterns, tree height and size, and other site-specific factors.

Timber Stand Improvement: TIM25

- A. Timber stand improvement activities that meet the visual and timber objectives of the land use designation may be used.
- B. Continue evaluation of commercial thinning opportunities in second-growth stands on the Forest for enhancing timber growth and development, while improving the visual quality and habitat conditions for wildlife. Evaluation will be provided as part of the Alaska Region Second-Growth Management Program.

TRANSPORTATION Transportation Operations: TRAN1

- A. Where transportation systems are developed and managed, they will meet the following guidelines.
 - 1. To meet the visual quality objective of Partial Retention, give special consideration to minimizing apparent landform modification (as seen from sensitive travel routes) during road and log transfer facility location, design, and construction.

2. Perform integrated logging system and transportation system analysis to determine the least cost facility (considering cost of construction, maintenance and hauling) and design standards necessary to meet land use designation objectives.
3. Give special emphasis to maintaining wildlife habitat values, especially during road location and development of road management objectives.
 - * If the need to restrict access is identified during project interdisciplinary review, roads will be closed, either seasonally or year-long, to minimize adverse effects on fish and wildlife.
4. Provide recreation access where appropriate.
5. Seek to avoid road crossings on existing trails or locating the road parallel to the trail. Should no other reasonable alternative exist, minimize site disturbance visible from the trail. Rock source development should be located away from the trail to the extent possible while meeting the objectives of this land use designation.

**VISUAL
RESOURCE**

Visual Resource Operations: VIS1

- A. In foreground settings, design management activities to be subordinate to the characteristic landscape. Management activities may dominate areas seen in the middle to background distance. In all settings, activities should utilize existing form, line, color and texture found in the characteristic landscape.
 1. Apply the Partial Retention Visual Quality Objective in the foreground distance. In the middle to background, apply the Modification VQO. These objectives define the maximum limit of allowable change to visual character of the area; less visible evidence of activities is acceptable.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Utilize existing inventories and evaluate the need for further project-specific inventories of wildlife habitat conditions during project analysis.
 1. Select Management Indicator Species (MIS) appropriate to the project area for project analysis. (See also Wildlife Forest-wide Standards & Guidelines.)
- B. Coordinate all activities with consideration for the needs of wildlife, within the overall objectives of this land use designation.
 1. Use the habitat needs of MIS to evaluate opportunities for, and consequences on, wildlife.
 2. In project planning, consider opportunities to allow for the elevational migration of wildlife.
 3. Consider silvicultural techniques which establish and prolong understory forb and shrub production in critical habitat areas. Such techniques can include prescribed burning, precommercial thinning, canopy gaps, and uneven-aged management.
- C. Coordinate road management with the needs of wildlife, when practicable.

TIMBER PRODUCTION

Land Use Designation TM

The emphasis of this land use designation is for timber production. The primary objective is to manage the area, using silvicultural techniques, to maintain and promote industrial wood production. These lands will be managed to advance conditions favorable for the development of the timber resource and for maximum long-term timber production.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	Permanent administrative facilities are constructed to be compatible with this land use designation objective.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire may be used for silvicultural site preparation, wildlife habitat improvement, and insect and disease protection.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries enhancement projects may occur. The Stream and Lake Protection Land Use Designation applies along riparian areas.
Forest Pest	Forest pest management activities emphasize forest health through pest prevention and suppression.
Minerals	Lands are open to mineral entry. Access is coordinated with timber sale road location when practicable.
Recreation	Semi-primitive motorized, roaded natural, and roaded modified recreation opportunities will generally result after timber harvest activities.
Soil and Water	Emphasis is on the maintenance of high water quality, maintaining soil cover, minimizing slope failure, and reducing the degree of risk and potential effects from mass-wasting resulting from timber harvest and road construction.
Subsistence	Subsistence use is allowed in accordance with applicable Federal and State regulations.
Timber	Suitable forested land is available for timber harvest. Timber harvest may include both even-aged and uneven-aged silvicultural methods, although clearcutting is likely to be the dominant method. Silvicultural treatment is integrated with site and area development to provide healthy tree stands and to give consideration for vegetative diversity and forage production for wildlife.

Personal use wood and Christmas tree cutting activities are fully compatible with this land use designation.

Transportation

All forested lands scheduled for harvest will eventually be accessed.

Visual Resource

The characteristic landscape may be dominated by harvest activities. Although harvest activities may dominate the seen area, they are designed with consideration for existing form, line, and texture found in the landscape.

Wildlife

A wide variety of vegetative conditions, including early, middle, and late successional stages provides a full range of wildlife habitat conditions.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1,12 VIS11	ALL I(D-G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with land use designation objectives.

- A. Provide cultural resource assistance to the timber/engineering programs. Coordination includes participation and support for environmental documentation, pre-sale inventory, evaluation, assessment, monitoring and protection of cultural resources during sale activities.
 1. Inform the Area Cultural Resource Specialist of all proposed sales by year and location (at a minimum of) one year in advance for review to determine survey needs and intensity.
 2. The Area Cultural Resource Specialist shall provide input on known or predicted cultural resource site density in proposed sale areas and make recommendations to protect cultural resources and facilitate sale activities through long-range planning.
 3. Accomplish Cultural resource clearance on areas of the selected alternative prior to the advertisement of the sale. The sale shall proceed only after the SHPO consultation process has been completed and the the cultural resource clearance has been approved by the Forest Supervisor.
 - * Accomplish Cultural clearance for Independent Timber Sales on areas of the selected alternative before sale implementation. Implementation is defined as the advertising of the sale.
 - * Accomplish Cultural clearance for Long-Term Sale Programs accomplished prior to implementation. Implementation is defined as the time the unit release is signed for cutting units and roads and at the time the development plan is approved for camps and log transfer facilities.
 - * Release no unit, road, camp, or facility development plan for signature or approval, or sanction any ground-disturbing activity before the compliance process is completed for the relevant portion of the undertaking.
 4. Inventory and evaluation may be accomplished at the operator's discretion and cost provided that the inventory and evaluation is accomplished under the supervision of a qualified Cultural Resource Specialist authorized by a special use authorization.
 5. Include as part of the Clearance Report specific protective and/or mitigative measures to be taken by the operator who is responsible for the cost of any such protective or mitigative measures.
 6. Include in each contract, permit, or lease a statement of the operating conditions required to protect cultural resources in the sale area. Also include the pertinent clause notifying the operator of his or her responsibility to protect marked sites when working in the sale area and the operators liability for damage.
 7. Mark cultural resources sites within or adjacent to the sale area prior to the implementation of the sale.

8. Provide training in the recognition, monitoring, and protection of cultural resources for all persons responsible for on-the-ground administration of timber/engineering contracts, authorizations, permits or leases.
9. Suspension of any work in the vicinity of a previously undiscovered cultural resource site shall be implemented by the project administrator to avoid potential site damage. The Forest Supervisor shall notify the State Historic Preservation Office (SHPO) and authorize resumption of work only after the consultation process has been completed. The project administrator shall keep the contractor, permittee, or lessee informed of anticipated delays in work resumption.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards and guidelines for the land use designation, such as soil and water.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used for fuels management, insect and disease protection, silvicultural site preparation, and wildlife habitat improvement.
- B. Natural ignitions will not be used in this land use designation.

FOREST PESTS

Forest Pest Management: PEST1

- A. Forest pest management activities emphasize forest health through pest suppression and prevention.
 1. Encourage timber stand improvement, sanitation, and salvage.
 2. Evaluate chemical, cultural, mechanical, biological and "no action" to prevent insect and disease outbreaks.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Authorize only those uses which are compatible with land use designation objectives. Avoid issuing, or limit the duration of, permits for uses which require natural surroundings.
- B. This land use designation represents a Transportation and Utility Systems (TUS) "Window" and provides opportunities for the future designation and location of transportation and utility sites or corridors.

Landline Location and Maintenance: LAND231, LAND24

- A. Provide adequate landline marking for Forest Service contractors.
 - 1. Prior to Forest Service management activities, survey, mark, and post the boundary of National Forest lands, to Forest Service standards, where there is risk of trespass.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Preparation: MG&C11

Resource Preparation

- A. Coordinate the location of timber and mining transportation systems when practical.
- B. Coordinate with claimant to ensure the location of timber sale units and roads across a mining claim do not interfere with mining activities, markers, and improvements.

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Work with claimant to develop a plan of operations that is compatible with the emphasis of this land use designation. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts. Apply the following management practices to reduce resource impacts.
 - 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Sec. 505 (a).)
 - 2. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
 - 3. Take advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 - 4. Revegetate disturbed areas in accordance with project plans.
 - 5. Design reclamation plans so minerals activities leave a natural-appearing condition.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of this land use designation.
 - 1. Provide the existing recreation settings and opportunities until scheduled activities and practices change in the ROS setting(s). Manage recreation use in a manner that is compatible with the timber production objectives.

2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) with the appropriate ROS guidelines (generally roaded modified).
3. Seek to maintain the recreation experience along existing trail corridors by minimizing road crossings and clearing directly adjacent to the trail.
4. Seek to minimize impacts to areas directly adjacent to developed recreation facilities (such as cabins and campgrounds) through scheduling and location of harvest activities.

SOIL AND WATER

Watershed Resource Planning: S&W112

- A. Delineate the location of high hazard soils, riparian, and other sensitive areas on project maps to insure their recognition, proper consideration, and protection on the sale area.
- B. Manage nondesignated domestic water use watersheds for multiple use while providing water suitable for human consumption under of State Water Quality Standards and water supply regulations.
- C. Apply Best Management Practices (BMP's) to all land-disturbing activities as a process to protect the beneficial uses of water from non-point sources of pollution. (Note: Appendix C of this plan includes a summary of Best Management Practices which are found in Chapter 10 of the Soil and Water Conservation Handbook, 2502.22). Also consult FSM 2530, Forest-wide Standards and Guidelines for Facilities, Transportation, U.S. Army Corps of Engineers Regulations (33 CFR 323.4) and the Clean Water Act.

Watershed Resource Improvements: S&W2

- A. Accomplish soil and water improvement projects on nondesignated domestic water use watersheds to prevent degradation of water quality below the State of Alaska's Water Quality Standard for domestic use.

TIMBER

Timber Resource Planning: TIM112

- A. Timber management is emphasized. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.
- B. Personal use wood and Christmas tree cutting activities are fully compatible with this land use designation.

Timber Resource Coordination: TIM113

- A. Emphasize silvicultural objectives in project analysis, development of environment documents, and design as well as other resource consideration deemed appropriate by the responsible official.
- B. The Sale Area Improvement Plan will coordinate K-V funds for timber and other resource improvement projects. Priority will be for timber management objectives.

Timber Sale Preparation: TIM114

- A. Locate and design timber harvest activities primarily to meet silvicultural objectives. Include integration of other resources objectives, particularly wildlife and vegetative diversity, if they do not have a significant adverse impact on the timber resource goals. Even-aged and uneven-

aged silvicultural systems are available, although clearcutting is the predominant harvest method.

- B. The following guidelines provide direction for timber harvest activities to meet Visual Quality Objectives (VQO) and Visual Absorption Capacity (VAC) settings. The guidelines define the maximum allowable disturbance for timber harvest. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.
 1. *Modification* - This VQO allows management activities to dominate the seen area. In design of timber harvest activities, use features found in the existing landscape to minimize overall visual disturbance.
 2. *Maximum Modification* - This VQO allows management activities to dominate the seen area. In timber harvest activities, design activities to resemble natural occurrences as viewed in the background distance zone.
- C. The table below provides specific visual mitigation measures appropriate to timber management.
 1. The ability to attain the adopted Visual Quality Objective is dependent on many variables. Visual Absorption Capacity (VAC) is an estimate of the relative ability of a landscape to absorb management activities. A Low VAC setting generally has steep slopes, with little landscape variety, while a High VAC setting is relatively flat and/or has a high degree of variety in the landscape.
 2. The unit sizes provide guidance to the project IDT. Each landscape setting is different and should be evaluated on a case-by-case basis. There may be instances where the visual objective can be attained while the unit size is greater than the guideline, and there also may be instances where the unit must be smaller to meet the intent of the Visual Quality Objective.
 3. Cumulative visual disturbance reflects the maximum allowable percent of a viewshed to be in a disturbed condition at any one point in time. During project analysis, these percents should be referred to as a guideline. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the assigned Visual Quality Objective.

4. The following criteria represent the maximum allowable disturbance for timber harvest:

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash
Modification - Low VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Modification - Intermediate VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - High VAC	clearcut (appx. 80 - 100 acres)	25%	5 feet	no limit
Maximum Modification - Low VAC	clearcut (appx. 50 - 75 acres)	50%	5 feet	no limit
Maximum Modification - Intermediate & High VAC settings	clearcut (appx. 80 - 100 acres)	50%	5 feet	no limit

5. Cumulative timber dispersion reflects the maximum allowable percentage of a geographic area that may be included in an opening at any one point in time. For efficiency, the maximum is the aggregated percentage over 3 consecutive decades. During project analysis, refer to these percentages as guidelines. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of timber dispersion.
- D. Final harvest will be equal to or greater than 95 percent of CMAI - culmination of mean annual increment (the age at which the volume increment for a stand of trees has achieved its highest mean volume).
 - E. Consult Forest-wide Timber Standards and Guidelines for maximum sizes of created openings.
 - F. Provide for windfirm boundaries. To design for windfirmness, consider conditions such as soils, local wind patterns, tree height and size, and other site-specific factors.
 - G. Special consideration will be required in the design of harvest units adjacent to land use designations which limit or prohibit timber activities. Where the chance of windthrow in adjacent stands is increased by timber harvest, measures will be taken to contain the windthrow within the timber production land use designation.

TRANSPORTATION Transportation Operations: TRAN1

- A. Develop and manage cost-effective transportation systems which integrate resource requirements consistent with land use designation direction.
 - 1. Perform integrated logging system and transportation system analysis to determine the least cost facility (considering cost of construction, maintenance and hauling) and design standards necessary to meet land use designation objectives.
 - 2. If the need to restrict access is identified during project interdisciplinary review, roads will be closed, either seasonally or yearlong, to minimize adverse effects on fish and wildlife.
 - 3. Consider future recreational access in location and design of roads.
 - 4. Seek to avoid road crossings on existing trails or locating the road parallel to the trail. Should no other reasonable alternative exist, minimize site disturbance visible from the trail. Rock source development should be located away from the trail to the extent possible while meeting the objectives of this land use designation.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. Timber management activities may dominate the visual character of the landscape.
 - 1. Apply Forest-wide Standards and Guidelines for the Modification VQO in the foreground distance and Sensitivity Level I travel routes, and the Maximum Modification Visual Quality Objective for the middle to background distance for all other areas seen from the marine highway system and for arterial and collector roads that are connected to communities. This objective defines the maximum limit of allowable change to the visual character of the area; less visible evidence of activities is acceptable.
 - 2. Consider roadside clean up as a mitigation measure when recreational use is included as a road management objective for the proposed road.
 - 3. In areas visible from sensitive travel routes (roads, trails or marine), incorporate landscape design techniques in the planning process to the extent that they are compatible with the objectives of this land use designation.

WILDLIFE Wildlife Habitat Planning: WILD112

- A. Utilize existing inventories and evaluate the need for further project-specific inventories of wildlife habitat conditions during project analysis.
 - 1. Select Management Indicator Species (MIS) appropriate to the project area for project analysis. (See also Wildlife Forest-wide Standards & Guidelines.)
- B. Coordinate all activities with consideration for the needs of wildlife, within the overall objectives of this land use designation.
 - 1. Use the habitat needs of MIS to evaluate opportunities for, and consequences on, wildlife.
- C. Coordinate road management with the needs of wildlife, when practicable.

MINERALS

Land Use Designation MM

The emphasis of this land use designation is to encourage and facilitate the prospecting, exploration, development, mining, and processing of locatable mineral resources in areas with the highest potential for minerals development in an environmentally sensitive manner.

Prior to the initiation of mineral activities, lands will be managed under the initial land use designation (the original color on the map). When minerals activities are initiated, surface occupancy and use will be regulated in such a manner to consider minerals development as well as other existing high-valued resources. Any non-mineral project proposals or authorizations for the initial land use designation will address the high potential of mineral development.

The minerals management prescription will be applied upon receipt of a plan of operations for minerals activities which result in significant surface disturbance associated with exploration or mining. Those portions of the initial land use designation not identified for mineral activity in a Notice of Intent or an approved plan of operations will continue to be managed under the initial land use prescription. After mineral operations are completed, management direction will usually revert to the initial land use designation (the color on the map) to the extent possible.

At-a-Glance . . .

Cultural Resources	Locate, evaluate, and protect significant cultural resources. Interpretation may be provided when it is compatible with the land use designation objectives.
Facilities	Generally, administrative facilities may be co-located with facilities authorized in the plan for operations.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. Prescribed fire may be used for silvicultural site preparation, wildlife habitat improvement, and insect and disease protection.
Fish	Mineral management activities are designed to maintain the present and continued fish productivity of anadromous fish and other foodfish habitat to the maximum extent feasible.
Forest Pests	Maintain forest health by applying forest pest management practices consistent with land use designation objectives.
Lands	Generally, special uses are authorized which facilitate mineral-related activities. Alternative facility designs and locations, including off-site locations, are authorized. Generally, non-mineral development related uses are authorized if they do not substantially conflict with present or anticipated mineral-related activities.

Minerals	Locatable minerals management activities are emphasized. Management should facilitate the prospecting, exploration, development, mining, and processing of mineral resources.
Recreation	New investments in recreation facilities are limited to those compatible with mineral developments. Recreation settings are managed in a manner as compatible as possible with the initial land use designation.
Soil and Water	Mineral management activities are designed to maintain the present and continued productivity of soil and water resources to the maximum extent feasible. Apply Best Management Practices to meet State Water Quality Standards.
Subsistence	Subsistence use is allowed in accordance with applicable Federal and State regulations.
Timber	Timber land suitability is based on the initial land use designation. Where the initial land use designation allows timber harvest, scheduled timber harvest may be coordinated with mining activities. Personal use woodcutting activities are based on the underlying land use prescription until the mineral prescription is implemented. After implementation, access for personal use wood and Christmas trees will be subject to the provisions of a plan of operations.
Transportation	Reasonable access is authorized, consistent with other resource values, to allow for the exploration and development of mineral resources.
Visual Resource	The characteristic landscape may be dominated by activities associated with mineral development. Although minerals activities may dominate the seen area, they are designed with consideration for existing form, line, and texture found in the landscape.
Wildlife	Mineral management activities are designed to maintain the present and continued productivity of wildlife habitat to the maximum extent feasible.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	IV;VI-X	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1,12 VIS11	All I(B-G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Project Clearance/Inventory

- A. Provide cultural resource assistance to the minerals program for environmental documentation, inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Notify the Area Cultural Resource Specialist when a Notice of Intent or plan of operations is received in order for the Specialist to determine inventory and evaluation needs.
 - 2. Complete inventory and evaluation prior to the approval of the plan of operations.
 - 3. Inventory and evaluation may be expedited under special use authorization at the operator's discretion and cost provided that the inventory and evaluation is accomplished under the supervision of a qualified Cultural Resource Specialist approved by the Forest Service.
 - 4. Include as part of the plan of operations, specific protective and/or mitigative measures to be taken by the operator. The operator is responsible for the cost of any such protective or mitigative measures.

FACILITIES

Administrative Facilities: FAC

- A. Generally, co-locate administrative facilities with facilities authorized in the plan of operations.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards and guidelines for this land use designation.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited prescribed fire may be used for fuels management, insect and disease protection, silvicultural site preparation and wildlife habitat improvement.

- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Planning: FISH112

Planning/mitigation

- A. Maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA Sec. 505 (a).)
- B. Stress protection of fish habitat to prevent the need for mitigation. Mitigation, rehabilitation and monitoring of mining impacts to fish habitat or populations shall be identified in environmental documents and plans of operation.
- C. Consider the need to maintain instream flows for fish during the development of minerals management activities.

FOREST PESTS

Forest Pest Management: PEST1

- A. For Land Use Designations that permit timber harvest, emphasize timber stand improvement, sanitation, salvage, and pest suppression measures consistent with the land use designation objectives.
- B. For Land Use Designations that do not permit timber harvest, pest prevention and suppression measures consistent with this land use designation may be implemented to protect these and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Generally, authorize special uses to facilitate mineral-related activities.
 - 1. Evaluate alternative facility designs and locations (including off-site) which consider: 1) amount of land disturbance; 2) effects on other resources; and, 3) effects resulting from human use.
- B. Generally, authorize non-mineral development related uses if they do not substantially conflict with present or anticipated mineral-related activities.
 - 1. Use temporary or annual permits which maintain options for future mineral development.
- C. This land use designation represents either a Transportation and Utility Systems (TUS) "Window" or "Avoidance Area" depending upon the TUS category of the initial land use designation.

MINERALS GEOLOGY CAVES

Minerals and Geology Resource Preparation: MG&C11

Resource Preparation

- A. Minerals management activities are emphasized. Management should facilitate the prospecting, exploration, development, mining, and processing of mineral resources in areas with the highest potential for development.
- B. Prior to the initiation of mineral activities, manage these lands under their initial land use designation in the Forest Plan. With the initiation of mineral activities, apply reasonable regulation of surface occupancy

- and use to manage the mineral development to be as compatible as possible with the initial land use designation.
- C. The minerals land use prescription will apply upon receipt of a Notice of Intent or a plan of operations. Those portions of the initial land use designation not identified for mineral activity in a Notice of Intent or an approved plan of operations will continue to be managed under the initial land use designation. After mineral operations are completed, lands allocated under the minerals prescription will usually revert to the initial land use designation to the extent possible.
 - D. Project analysis, design, and development of environmental documents will include resource coordination.

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.

Plan of Operations

- A. Use state-of-the-art techniques to develop mineral resources, while reducing impacts to other resources to the maximum extent feasible. The economic practicality of the protection measures must be considered while planning mineral activities. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Prior to the initiation of mineral development, provide recreation settings and opportunities consistent with the initial land use designation.
 - 1. Any new investment in recreation facilities must consider the potential negative effects of those facilities on the economics of future minerals development.
- B. With the initiation of mineral development, manage the recreation setting in a manner as compatible as possible with the initial land use designation.
 - 1. Provide the existing recreation settings and opportunities until scheduled activities and practices change the ROS settings. Manage recreation use in a manner that is compatible with the mineral objectives.
 - 2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) with the appropriate ROS guidelines (generally Roded Modified).
 - 3. Seek to maintain the recreation experience along existing trail corridors by minimizing road crossings and clearing directly adjacent to the trail.
 - 4. Seek to minimize impacts to areas directly adjacent to developed recreation facilities (such as cabins and campgrounds) through scheduling and location of harvest.
 - 5. Consider regulating recreation use and access to mitigate for the minerals development.

6. Regulate public use of mining access roads and development areas based on the initial ROS class, unless recreation analysis indicates a need for a modified ROS class.
7. Protect existing recreation facilities and trails from adverse effects of mineral development to the extent possible.

SOIL AND WATER

Watershed Resource Planning: S&W112

- A. For use in designing mineral management activities, delineate the location of important soil and water protection areas on project maps to insure their recognition, proper consideration, and protection on the project area.
- B. Manage watersheds for beneficial uses consistent with State Water Quality Standards. Apply Best Management Practices to control non-point sources of water pollution.
- C. Design mineral management activities to maintain the present and continued productivity of soil and water resources to the maximum extent feasible.
- D. Stress protection of soil and water resources to prevent the need for mitigation. Mitigation, rehabilitation and monitoring of mining impacts to soil and water resources shall be identified in environmental documents and plans of operation.

TIMBER

Timber Resource Planning: TIM112

- A. Timber land suitability is based on the initial land use designation.
- B. For areas where the initial land use designation allows timber harvest, suitable forested land is available for harvest and is included in the allowable sale quantity, although any timber associated with mineral access and facility development is nonchargeable to the allowable sale quantity.
- C. For the portions of this land use designation with initial direction that does not allow timber harvest, the forested land is classified as unsuitable and withdrawn from the timber base.
- D. Personal use woodcutting activities will be based on the underlying management prescription until the mineral prescription is implemented. After implementation, access for personal use wood and Christmas trees will be subject to the provisions in the plan of operations.

Timber Resource Coordination: TIM113

- A. Project analysis, development of environmental documents and project design will facilitate the probable future mineral development to the maximum extent feasible.
- B. Prior to the initiation of mineral management activities, the Sale Area Improvement Plan will coordinate K-V funds for timber and other resource improvement projects.

Timber Sale Preparation: TIM114

- A. Where possible, coordinate the location and design of timber harvest activities with planned or potential mineral development.

TRANSPORTATION**Transportation Operations: TRAN1**

- A. Authorize reasonable access, consistent with other resource values, to allow for the exploration and development of mineral resources.
- B. Any transportation development in association with minerals extraction will be in accordance with an approved plan of operations, and subsequent annual work plans.
- C. Roads in this land use designation may be closed to public use.
- D. Apply Best Management Practices in the development and maintenance of transportation facilities.

VISUAL RESOURCE**Visual Resource Operations: VIS1**

- A. Prior to the initiation of mineral development, manage for visual quality according to the initial land use designation.
- B. With the initiation of mineral development, apply Forest-wide Standards and Guidelines for Modification in the foreground distance and for the Maximum Modification VQO in the background distance from the marine highway system and arterial and collector roads that are connected to communities (Sensitivity level 1 travel corridors). The objective defines the maximum limit of allowable change to the visual character of the area: less evidence of visual change is acceptable.
 1. Incorporate landscape design techniques to reduce adverse visual impact in areas visible from sensitive travel routes.

WILDLIFE**Wildlife Habitat Inventory: WILD111**

- A. Prior to the development of minerals management activities, establish or use existing baseline wildlife inventories.

Wildlife Habitat Planning: WILD112

- A. Maintain the present and continued productivity of wildlife habitat to the maximum extent feasible.
- B. Address protection of wildlife habitat to prevent the need for mitigation. Mitigation, rehabilitation and monitoring of mining impacts to wildlife habitat or populations shall be identified in environmental documents and plans of operation.
- C. Coordinate road management with the needs of wildlife.

STREAM AND LAKE PROTECTION

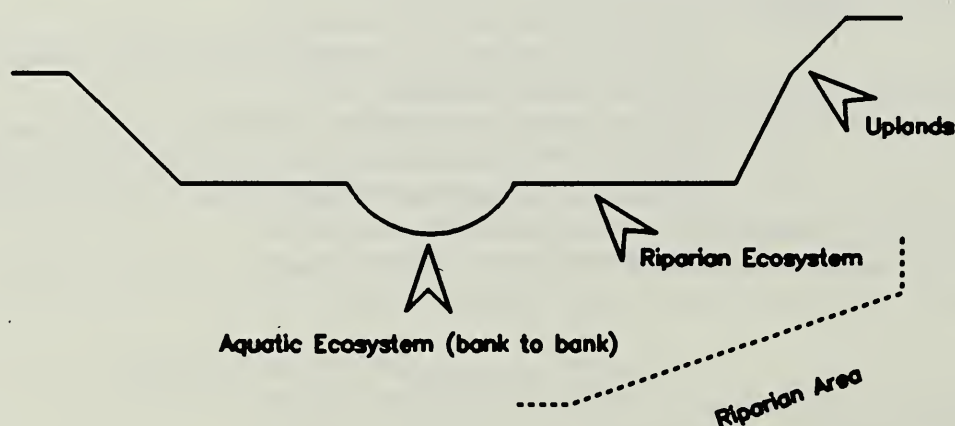
Land Use Designation SL

The emphasis of this land use designation is to maintain riparian habitat for fish and other riparian-associated resources. This land use prescription applies to areas comprised of aquatic and riparian ecosystems, including riparian streamsides, lakes, and floodplains, with distinctive resource values and characteristics. This area also includes the zones of interaction between the riparian and upland terrestrial ecosystems through exchanges of energy, nutrients, and plant and animal species. It may also include landslide, erosion, and windthrow hazard areas associated with streams and riparian areas. Conflicts in management activities are settled in favor of the riparian-associated fish and wildlife species.

A wide variety of vegetative conditions and types are normally present, often benefiting a variety of riparian-associated wildlife species. Often, the area will provide snags for wildlife, maintain large trees for riparian-associated species and brown bear bedding areas, provide waterfowl habitats associated with riparian areas, and provide wildlife travel corridors.

The Stream and Lake Protection land use description is applied where more development-oriented management would otherwise normally occur. At a minimum, the land area encompassed by this designation includes: 1) the riparian area required to meet the National Forest Management Act's implementing regulations for fish habitat and water quality; and, 2) the land area in which the commercial timber harvest restrictions of the Tongass Timber Reform Act (P.L. 101-931) are applied. Risks of effects to riparian resources are reduced by extending the Stream and Lake Protection land use designation to beyond the area required by law.

Riparian-related definitions are indicated in the following schematic:



At-a-Glance . . .

- Cultural Resources** Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
- Facilities** Facilities are permitted which are needed for the administration of the Stream and Lake Protection land use prescription and which do not significantly reduce the capability of the area to maintain fish or wildlife habitat or water quality.

Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and minimizes the impact to water quality and fish habitat.
Fish	Habitat, including its protection, rehabilitation, and improvement, is emphasized. This emphasis includes management of the riparian area for the maintenance of stream banks, water quality, large woody debris, pools, and streambeds for resident and anadromous fish species and for downstream fisheries.
Forest Pests	Forest pest management principles are applied to maintain or improve forest health and the condition of the aquatic and riparian ecosystems.
Lands	Activities dependent upon the riparian area, and which meet the fish, wildlife and water quality objectives for riparian areas, may be present.
Minerals	Lands are open to mineral entry. Mineral management activities are designed to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible.
Recreation	Management of recreation use reduces or prevents adverse impact to riparian soils, stream banks, and wildlife and fish habitat. Recreation facilities that provide access to the water, such as trails and boat launches, may be constructed; other facilities should be located outside this land use designation.
Soil and Water	Significant adverse impacts to the riparian habitat or soil and water resources are avoided. Best Management Practices are used to assure the protection of water quality and riparian habitat and to minimize the effects of activities on the beneficial uses of water.
Subsistence	Subsistence use occurs in accordance with applicable Federal and State regulations. Opportunities for harvesting fish and wildlife are maintained or improved.
Timber	Commercial timber harvest is prohibited within no less than 100 feet in width on each side of all Class I streams and on those Class II streams which flow directly into Class I streams. In other areas, commercial timber harvest is allowed where it is not in conflict with the maintenance or improvement of riparian-associated resources. Personal use wood is compatible with this land use designation provided that land use designation management objectives are met. Cutting within 100 feet of Class I streams and Class II streams which flow directly into Class I streams is discouraged.
Transportation	Transportation developments are located outside of this land use designation to the extent practicable. Developments should not impair the production and migration of anadromous fish.
Visual Resource	Visual quality may vary based on the Visual Quality Objectives for the adjacent land use designation.
Wildlife	Manage for old-growth characteristics habitat for riparian-associated wildlife species in anadromous and high value resident fish (Class I) stream and lake areas.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11, CAVE MG&C12	All II-VI	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1,12 VIS11	All I(B-G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Permit facilities which are needed for the administration of the Stream and Lake Protection land use designation and which do not significantly reduce the capability of the area to: 1) maintain fish or wildlife habitat, or 2) protect water quality for beneficial uses.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance and minimize the impact on water.
 - 1. Erosion control measures to restore damage resulting from fire suppression activity will occur as soon as practical.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management-ignited treatment of fuels will be compatible with the standards and guidelines for this land use designation.
- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Planning: FISH112

Emphasis:

- A. Emphasize maintenance and improvement of fish habitat and populations by integrating aquatic and terrestrial ecosystems management. The objective for management in this land use designation is to design activities that do not result in any decrease in anadromous, adfluvial, or high value resident sport fish habitat capability.

Objectives for management affecting fish habitat

- A. Maintain or improve fish habitat capability in channel process groups.
 - 1. *Stream Class I and Class II streams that flow directly into Class I streams:* Maintain or improve aquatic biological productivity within each individual Class I stream system.
 - 2. *Other Stream Class II:* Maintain habitat capability for resident fish populations, and for downstream Class I stream systems, to the extent practicable.
 - 3. *Stream Class III:* Maintain water quality for downstream Class I and II stream systems.
- B. Maintain natural stream bank and stream channel processes.
 - 1. *Stream Class I and Class II streams that flow directly into Class I streams.* Maintain or improve anadromous, adfluvial, and high value resident sport fish habitat capability by providing natural or improved cover/pool ratio, pool-riffle sequences, and habitat features, such as stable large woody debris. Design management activities to maintain stream bank, channel and floodplain integrity.
 - 2. *Other Stream Class II:* Maintain habitat capability for resident fish populations, to the extent practicable, by providing natural or improved cover/pool ratio, pool-riffle sequences, and habitat features, such as stable large woody debris. Design management activities to maintain stream bank, channel and floodplain integrity. Avoid impacts to downstream Class I streams.
 - 3. *Stream Class III:* Design management activities to maintain stream bank, channel and floodplain integrity. Avoid impacts to downstream Class I and Class II streams.
- C. Maintain natural and beneficial quantities of large woody debris (LWD) over the short and long-term.
 - 1. *Stream Class I and Class II streams that flow directly into Class I streams.* Maintain anadromous, adfluvial, and high value resident sport fish habitat capability by providing for natural and beneficial volumes of LWD for rearing and spawning, stream energy dissipation, and sources of organic matter to the stream ecosystem. Use biological and physical characteristics of the stream to determine size classes and distribution.
 - 2. *Other Stream Class II:* Maintain habitat capability for resident fish populations, to the extent practicable, by providing LWD, and by designing for future sources at volumes determined by channel type biological and physical characteristics.
 - 3. *Stream Class III:* Maintain LWD in channels and banks to prevent changes in natural stream bank and stream channel processes.
- D. Maintain water quality to provide for fish production.
 - 1. *Stream Classes I, II, and III:* Prevent adverse effects to rearing and spawning habitat. Maintain anadromous, adfluvial, and high value sport fish habitat capability, as well as capability for other resident fish populations, to the extent practicable. Assure no chronic sediment input following soil-disturbing activities. Prevent adverse impacts to fish habitat downstream by minimizing siltation.
 - 2. Implement applicable Best Management Practices. (See Appendix C).
- E. Maintain or improve water temperature at a level to optimize salmonid populations.

1. *Stream Class I and Class II streams that flow directly into Class I streams.* Maintain optimum salmonid summer stream temperatures at between 50 and 68°F or at natural levels. Manage watersheds and riparian streamsides to attain optimum stream temperature regimes.
 2. *Other Stream Class II:* Maintain water temperatures below 68°F, or at natural levels, to maintain habitat capability for resident fish populations, to the extent practicable. Manage watersheds and riparian streamsides to maintain water temperature standards and guidelines for downstream Class I streams.
 3. *Stream Class III:* Manage watersheds and riparian streamsides to maintain water temperature standards and guidelines for downstream Class I and II streams.
- F. Maintain or improve primary or secondary stream biological production in second-growth forests.
1. *Stream Class I and Class II streams that flow directly into Class I streams.* Maintain natural or improved primary and secondary biological production in streams to provide for full biological potential of anadromous and adfluvial fish habitat and high quality resident sport fisheries.
 2. *Other Stream Class II:* Manage vegetation and biological productivity to maintain habitat capability for resident fish populations to the extent practicable, and to maintain nutrient sources for downstream waters.
 3. *Stream Class III:* Manage vegetation to provide maintenance of nutrient sources to downstream waters.
- G. Maintain fish passage through stream crossing structures.
1. *Stream Class I and Class II streams that flow directly into Class I streams.* Maintain or improve the opportunities for adult and juvenile anadromous and adfluvial sport fish migration. (Consult the Aquatic Habitat Management Handbook, FSH 2609.24.)
 2. *Other Stream Class II:* Where economically feasible, maintain or improve the opportunities for natural migration for resident fish. Consult the Aquatic Habitat Management Handbook, FSH 2609.24. Consult with the Alaska Department of Fish and Game whenever fish passage may be restricted.
 3. *Stream Class III:* No fish habitat is found in this stream class.

Improvement

- A. Emphasize improvement of fish resources in the Stream and Lake Protection land use designation.

FOREST PESTS

Forest Pest Management: PEST1

- A. Apply forest pest management principles to maintain or improve forest health and the condition of aquatic and riparian ecosystems.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only those activities which are dependent upon riparian resources and do not significantly reduce the capability of the area to: 1)

maintain or improve associated fish or wildlife habitat, or 2) protect water quality for beneficial uses.

1. Analyze new proposals on a case-by-case basis, using an interdisciplinary process, to determine probable effects.
 2. Apply Transportation Standards and Guidelines, when granting new rights-of-way.
- B. This land use designation represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this land use designation area only after a search for TUS "windows" has been exhausted.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Preparation: MG&C11

- A. Emphasize watershed and fisheries coordination in project analysis, development of environmental documents, and design for minerals activities.

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Forest lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads.
- C. Design mineral exploration and development activities to be compatible with the emphasis of this land use designation. Apply the following management practices to reduce resource impacts.
 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Sec.505 (a).)
 2. Apply timing restrictions to instream construction, as needed, to protect fisheries habitat and mitigate adverse sedimentation.
 3. Minimize the effects of mineral development and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
 4. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 5. Take advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 6. Revegetate disturbed areas in accordance with project plans.
 7. Design reclamation plans so minerals activities leave a natural-appearing condition.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. Provide for inventoried ROS opportunities and activities throughout this land use designation, unless a local portion of the land use designation is specifically closed to public use. Where the ROS setting is changed by project implementation, manage the recreation resource in accordance with the created ROS conditions.
 - 1. Locate, design, and operate only those recreation projects which are necessary to accommodate public use of the water and shoreline areas (i.e., boat or floatplane docks, launching ramps and associated access roads and trails). Where practical, locate parking, sanitation and other recreation facilities outside the land use designation. Design all facilities within the land use designation to avoid adverse effects on water quality and riparian shorelines.
 - 2. For existing facilities; consider relocating the facility outside of the stream and lake protection land use designation. Consideration should be based on current and anticipated effects on riparian values, public issues, application of Best Management Practices to minimize the effects of recreation facilities on the beneficial uses of water, and costs of relocating the facility.

SOIL AND WATER

Soil Inventory: S&W1111

- A. Verify and define riparian areas on the ground during project level planning.

Watershed Resource Planning: S&W112

- A. Manage activities to minimize adverse effects on the beneficial uses of water and to protect the aquatic and terrestrial riparian habitats, channel and streambanks, and provide for floodplain stability.
 - 1. Identify soil and water quality requirements during the environmental analysis for project-level activities.
 - 2. Apply Best Management Practices to minimize the effects of land disturbing activities on the beneficial uses of water.
 - 3. Determine floodplain values and plan to avoid, where possible, the long and short-term adverse impacts to soil and water resources associated with the occupancy and modification of floodplains.

TIMBER

Timber Resource Planning: TIM112

- A. Timber land is classified as unsuitable within 100 feet slope distance in width on each side of Class I streams and within 100 feet slope distance on those Class II streams which flow directly into Class I streams. Best Management Practices, as defined in the Region 10 Soil and Water Conservation Handbook (FSH 2509.22), shall be used on all other streams to assure the protection of riparian habitat.
 - 1. Apply Best Management Practices to minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water.
- B. Personal use woodcutting is compatible with this land use designation provided that management objectives are met. Cutting within 100 feet

of Class I and Class II streams which flow directly into Class I streams is discouraged.

Timber Resource Coordination: TIM113

- A. Emphasize riparian-associated resource objectives in analysis, development of environmental documents, and project design for timber activities.
- B. The Sale Area Improvement Plan will prioritize K-V funds. Reforestation will have highest priority for funds; other land use designation objectives will have lower priorities.

Timber Sale Preparation: TIM114

- A. Location and design of timber harvest activities require special consideration and mitigation to ensure that riparian area characteristics for fish and wildlife habitat, water quality, and other riparian-associated resources are maintained. This may be accomplished with both even-aged and uneven-aged silvicultural systems.
- B. Provide protection to fish and wildlife during critical periods of their life cycles by applying seasonal restrictions on timber harvest activities, as needed.
- C. When stream crossings are required to harvest timber, perform site-specific investigations to determine the environmental impacts associated with constructing road crossings versus allowing yarding corridors on the riparian area. Tailholds may be allowed on a case-by-case basis if land use designation objectives are met. During design and implementation of any activities within 100 feet in width on each side of Class I streams, and on those Class II streams which flow directly into Class I streams, do not cause significant adverse impact to the riparian habitat.
- D. Plan timber harvest settings that cross or include streamcourses or include V-notches to avoid significant adverse impacts to the riparian habitat or the soil and water resources. Unless stated otherwise in the Process Group direction, the following apply:
 1. Trees or products yarded across or along streamcourses shall be fully suspended when crossing the streamcourse or yarding the full length of the stream or drainage, unless alternatives are developed in the operating plan or timber sale contract which meet the objectives of this land use designation.
 2. Unless agreed otherwise in the operating plan or timber sale contract, and consistent with safe practices, trees identified for harvest should be felled so that they do not fall within a "no commercial timber harvest" area in the Stream and Lake Protection land use designation or into a streamcourse. Trees may be wedged, jacked, lined, or otherwise pulled when necessary. Trees accidentally felled or windfallen trees in streamcourses shall be removed only following approval of the Sale Officer, and only in a manner consistent with the protection of the streamcourse and riparian area.
 3. At the time agreed in the operating plan or timber sale contract, all trees, except those within guyline circles, which cannot be felled to avoid falling in streamcourses, shall be left standing until yarding is in progress on the landing to which the trees will be

yarded. Trees within the guylines circle will be felled as agreed in the operating plan or timber sale contract.

4. Split yard away from streams whenever possible.
 5. Interdisciplinary review of sale unit layout during planning should evaluate potential consequences of alternatives for cutting or leaving trees in V-notches. Among factors which should be considered are soil, watershed, and other resource information, blow-down potential, and yarding capability.
 6. Allow salvage of material if objectives of this land use designation can be met. Although salvage is allowed in all process groups and stream classes, normally there will be no salvage within 100 feet in width on each side of Class I streams or on those Class II streams which flow directly into Class I streams. Salvage in the 100 feet on each side of Class I and II streams should only be considered in order to maintain or protect resources within the stream and lake protection area. This salvage does not contribute to the Allowable Sale Quantity.
- E. The following tables provide the standards and guidelines for timber harvest activities. Distances are in slope distance measured from the ordinary high water mark (see glossary). Distances shown are for windfirm leave strips; greater distance may be required to achieve reasonable assurance that windthrow as the result of adjacent harvest activity will not occur within the windfirm distance. To design windfirm leave strips, consider conditions such as soils, local wind patterns, tree height and size, and other site-specific factors. Forest-wide and land use designation-wide standards and guidelines apply for each channel process group.
1. See the following charts -
(Special definitions for the charts: Where the standards state "no commercial timber harvest," this means that commercial timber harvest shall be prohibited (Tongass Timber Reform Act of 1990)). Where the standards state "no programmed commercial timber harvest," this means that no timber harvest will be scheduled, but that unprogrammed commercial timber harvest could be allowed. Among other reasons, unprogrammed commercial timber harvest may include timber sold as part of a salvage sale, for insect and disease abatement purposes, and for specialty wood products.)

(continued on page 202)

Stream and Lake Protection
Low Gradient Floodplain Process Group
(Channel types B1, B8, C1, C3, C4, C6, D4, D5, D8)

Stream Class

	I
Objectives	<ul style="list-style-type: none"> - Maintain or Improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species - Maintain long-term supplies of large woody debris sources within the process group - Allow no activities which may cause floodplain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet in width on each side of all channel types - Allow single tree selection harvest within 100 to 200 feet in width on each side of B1 or B8 channel types not associated with other channel types - Allow no programmed commercial timber harvest within 100 to 200 feet in width on each side for remainder of channel types - Consider all harvest methods, on a case-by-case basis, in the riparian area beyond 200 feet if the riparian area is greater than 200 feet
Harvest Rate	<ul style="list-style-type: none"> - Beyond 100 feet from the stream, strive to maintain 90% of the normal basal area with trees 16"+ dbh within areas with no programmed commercial timber harvest.
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest" areas unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Locate roads in this process group only when other reasonably feasible routes do not exist.

- NOTES:**
- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed, but will be limited to uneven-aged silvicultural systems.
 - Commercial timber harvest guidelines beyond 100 feet may vary, based on site-specific analysis, in order to meet process group objectives.
 - Beyond 100 feet of the stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g., for bridge stringers, totem poles, etc.).
 - Stream Classes II and III do not normally occur in this process group. If they should occur, harvest control must meet management objectives for Class II and III of the Alluvial Fan Process Group.

**Stream and Lake Protection
Alluvial Fan Process Group**
(Channel types A3, B5, D1, D6)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Allow no activities which may cause floodplain destabilization - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization 	<ul style="list-style-type: none"> - Allow no activities which may cause floodplain destabilization - Assure the protection of riparian habitat - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within active portion of fan or 100 feet of channel, whichever is greater - All harvest methods are available on remaining inactive portion of fan while meeting objectives 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within active portion of fan or 100 feet of channel, if the stream flows directly into a Class I stream (25 feet if not tributary to a Class I stream). - Allow single tree selection harvest within 25 to 60 feet from streambank if not within active portion of fan and not flowing directly into a Class I stream. - All harvest methods are available on remaining inactive portion of fan while meeting objectives 	<ul style="list-style-type: none"> - Allow no programmed commercial timber harvest within active portion of fan or 25 feet of streambank, whichever is greater - All harvest methods are available on remaining inactive portion of fan while meeting objectives
Harvest Rate	<ul style="list-style-type: none"> - Beyond 100 feet of the stream, strive to maintain 90% of the normal basal area with trees 16" + dbh within areas with "no programmed commercial timber harvest" (see note below) 	<ul style="list-style-type: none"> - Harvest should not exceed 50% of the forest land of individual fan. Remaining forested land is not to be harvested until created openings contain 50 foot tall conifer trees (approximately 30 yrs.) 	

Stream Class

	I	II	III
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the no commercial timber harvest area unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 		<ul style="list-style-type: none"> - Allow salvage in all areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Anticipate stream meandering in determining the feasibility and/or most practical road locations, stream crossings, and design. 		

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

Stream and Lake Protection
Mixed Control Moderate Gradient Process Group
 (Channel types B2, B3, D3)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Allow no activities which may cause floodplain destabilization - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization 	<ul style="list-style-type: none"> - Allow no activities which may cause floodplain destabilization - Assure the protection of riparian habitat - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of channels. - Allow single tree selection on remainder of the area. 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams. For other streams, allow single tree selection harvest within 25 feet of B2 channels and 60 feet of B3 and D3 channels. - All harvest methods are available on remaining area; where timber harvest is allowed within 100 feet of the stream, final harvest should incorporate undulating unit boundaries to limit the amount of continuous disturbance parallel to the streambank 	<ul style="list-style-type: none"> - Allow single tree selection within 25 feet of B2 channels - All harvest methods are available on remaining area while meeting objectives
Harvest Rate	<ul style="list-style-type: none"> - Forest-wide Standards and Guidelines for timber apply 		

Stream Class

	I	II	III
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest areas" unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 		<ul style="list-style-type: none"> - Allow salvage in all areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Special road construction techniques may be required to ensure fish passage 		

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

Stream and Lake Protection
Large Low Gradient Contained Process Group
 (Channel types C2, C5)

Stream Class

	I	II
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause flood plain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - All harvest methods are available on remaining area while meeting objectives - Full suspension yarding is required to cross stream channel 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams - Allow no programmed commercial timber harvest within 25 feet of other streams - All silvicultural systems are available on remaining area while meeting objectives - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding is required to cross stream channel
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest" areas unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 	
Roading	<ul style="list-style-type: none"> - Road construction is generally not appropriate in this process group; where road crossings are required, minimize erosion and sedimentation associated with road crossing approaches within inner gorge 	

NOTES:

- A primary consideration for timber harvest within the Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).
- Stream Class III does not normally occur in this process group. If it should occur, Harvest Control must meet Management Objectives for Class III of the Moderate Gradient Contained Process Group.

Stream and Lake Protection
Moderate Gradient Contained Process Group
 (Channel types B4, B6, B7)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Maintain or Improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Allow no activities which may cause floodplain destabilization - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization 	<ul style="list-style-type: none"> - Allow no activities which may cause floodplain destabilization - Assure the protection of riparian habitat - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams 	<ul style="list-style-type: none"> - All harvest methods are available while meeting objectives
	<ul style="list-style-type: none"> - Beyond 100 feet, selectively leave trees with crowns that do not extend above the slope break - Minimize soil disturbance associated with yarding within the inner gorge - Full suspension yarding required to cross stream channel - Maintain near-natural snag component of stand 	<ul style="list-style-type: none"> - Selectively leave trees with crowns that do not extend above the slope break along streams which do not flow directly into Class I streams and beyond 100 feet for other streams - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding required to cross stream channel 	

Stream Class

	I	II	III
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the 'no commercial timber harvest areas' unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 		
Roading	<ul style="list-style-type: none"> - Road construction is generally not appropriate in this process group; where road crossings are required, minimize erosion and sedimentation associated with road crossing approaches within the inner gorge 		

NOTES:

- A primary consideration for timber harvest within this land use designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

Stream and Lake Protection
High Gradient Contained Process Group
 (Channel types A1, A2, A4, A5, A6, A7, D2, D7)

Stream Class

	III
Objectives	<ul style="list-style-type: none"> - Assure the protection of riparian habitat - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices. - Allow no activities which may cause floodplain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow harvest to streambank while meeting objectives - Full suspension required to cross stream channel
Harvest Rate	<ul style="list-style-type: none"> - Harvest rate not to exceed 25% of the acres every 20 years of a 3rd order or larger watershed (note: this guideline applies only to those acres associated with this land use designation)
Salvage	<ul style="list-style-type: none"> - Allow salvage while meeting objectives

- NOTES:**
- Commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
 - Stream Classes I and II do not normally occur in this process group. If they should occur, Harvest Control must meet Management Objectives for Class I and II of the Moderate Gradient Contained Process Group.

**Stream and Lake Protection
Placid or Glide Streams Process Group
(Channel types L1, L2)**

Stream Class

	I	II
Objectives	<ul style="list-style-type: none"> - Maintain or Improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause flood plain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Allow no programmed commercial timber harvest beyond 100 feet 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams - Allow no programmed commercial timber harvest along other streams and, for all streams, beyond 100 feet
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest areas" unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas using non-ground disturbing methods, while meeting objectives e.g. helicopter) 	
Roading	<ul style="list-style-type: none"> - Roding is generally not appropriate in this process group 	

NOTES:

- A primary consideration for timber harvest within this land use designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).
- Stream Class III does not normally occur in this process group. If it should occur, Harvest Control must meet Management Objectives for Class III of the Moderate Gradient Contained Process Group.

**Stream and Lake Protection
Lakes and Ponds Process Group
(Channel types L, L3, L4, L5)**

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Maintain or Improve aquatic biological productivity - Assure the protection of riparian habitat - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Allow no measurable reduction in smolt habitat capability except when change is a result of natural change - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat 	<ul style="list-style-type: none"> - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices. - Assure the protection of riparian habitat
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Allow uneven-aged management 100 to 500 feet of lake, pond or L channel, or the extent of this land use designation, whichever is less - Any silvicultural system applies for remainder of area while meeting objectives. 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet in width of lakes and ponds which: 1) flow directly into a Class I stream, or 2) flow into a Class II stream which flows directly into a Class I stream - For lakes and ponds not flowing directly into a Class I stream, allow uneven-aged management within 100 feet of lakes and ponds less 50 acres or L channels - Allow uneven-aged management 100 to 500 feet, or extent of land use designation whichever is less, of lakes greater than 50 acres - Any silvicultural systems apply for the remainder of the area while meeting objectives - Treat as the adjacent land use designation if lake or pond is less than 5 acres 	<ul style="list-style-type: none"> - Maintain a minimum of 50% of natural shading vegetation for temperature sensitive lakes or channels - All silvicultural systems available while meeting objectives - Treat as the adjacent land use designation if lake or pond is less than 5 acres

Stream Class

	I	II	III
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the 'no commercial timber harvest areas' unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 		<ul style="list-style-type: none"> - Allow salvage in all areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Roads may be allowed if other practical alternatives are not available or if needed to access the water body for recreation or other needs 		

NOTE:

- A primary consideration for timber harvest within this land use designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, in order to meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

**Stream and Lake Protection
Estuarine Process Group
(Channel types E1, E2, E3, E4, E5)**

Stream Class

	I
Objectives	<ul style="list-style-type: none"> - Maintain or Improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Allow no programmed commercial timber harvest within 100 to 500 feet of E1 and E5 estuarine channels, or the extent of this land use designation, whichever is less - Allow no programmed commercial timber harvest within 100 to 200 feet of E2 and E3 estuarine channels, or the extent of this land use designation, whichever is less - Allow uneven-aged silvicultural system for remainder of area
Harvest Rate	<ul style="list-style-type: none"> - Beyond 100' from the stream, strive to maintain 90% of the normal basal area with trees 16" + dbh within areas with no programmed commercial timber harvest (see note below)
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the 'no commercial timber harvest areas' unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Juvenile fish passage may require special attention - Generally, no roading should occur in estuarine wetland areas

- NOTES:**
- A primary consideration for timber harvest within this land use designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
 - Commercial timber harvest guidelines beyond 100 feet may vary, based on site-specific analysis, in order to meet process group objectives.
 - Beyond 100 feet of the stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g., for bridge stringers, totem poles, etc.).
 - Stream Classes II and III do not normally occur in this process group. If they should occur, Harvest Control must meet Management Objectives for Class II and III of the Lakes and Ponds Process Group.

TRANSPORTATION Transportation Operations: TRAN1

- A. Locate, design, and construct roads in a manner which will minimize effects on wildlife and fish habitats and populations. Conduct development activities on wetlands and floodplains in compliance with Executive Orders 11988 and 11990 (Floodplain Management and Protection of Wetlands). (Consult the Forest Service Road Preconstruction and Drainage Structures Handbooks and the Region 10 BMP Handbook for detailed location and design guidance.)
1. Develop and incorporate an erosion control and stabilization plan for stabilizing all human-caused soil disturbances in project plans.
 2. Locate stream crossings only in stable reaches, unless appropriate mitigation measures are taken. Design crossings of V-notched drainages to prevent debris jamming. Culverts will be designed and installed to prevent downstream erosion and sedimentation. When embankment material is used for decking on native log bridges, install side logs, wood chinking, and a woven or polypropylene fabric blanket prior to embankment placement to contain surfacing materials and prevent entry of sediment into the stream.
 3. Permit location of roads parallel to fish-bearing streams and crossing fish streams only where other locations are not feasible and the management direction for fish habitat can be met. Where roads are located near fish streams, minimize the introduction of sediment during clearing, construction and operation activities. Sidecasting and waste materials must not encroach upon the streamcourse and as much undisturbed groundcover as possible shall be left between the road and the stream. Require complete endhaul of waste material where roads are located near fish streams when there is the probability of downhill movement of the material into the stream. Place fill into fish streams only when considered through the IDT process to be the best alternative.
 4. Meet fish passage management direction at all locations where roads cross fish streams. (Consult Forest-wide Standards & Guidelines for Fish Habitat Planning, FISH112.) Contracts will specify permissible uses of heavy machinery and the timing of road construction activities based on consultation with the Alaska Department of Fish and Game and as determined by interdisciplinary analysis and appropriate line officer approval.
 5. Slope drainage ditches along the roadbed with reasonable consistency to the nearest relief culvert and avoid leading directly into stream channels.
 6. Design bridge abutments to minimize disturbances to streambanks.
 7. Avoid location of roads parallel to riparian areas or within riparian areas with known concentrations of wildlife such as brown bear or high use waterfowl areas.
 8. Consult with the Alaska Department of Fish and Game on: a) timing instream activities that affect anadromous fish; b) location

of stream crossings that affect anadromous fish; and c) activities that will result in barriers to fish movement.

- B. If the need to restrict access is identified during project interdisciplinary team review, roads may be closed, either seasonally or yearlong, to minimize adverse effects on fish and wildlife. To the extent practicable, manage road use in cooperation with appropriate State and other Federal agencies to meet fish and wildlife population management objectives.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. A variety of visual conditions may exist within this land use designation.
 - 1. Adopt the Visual Quality Objective of the adjacent land use designation.
 - 2. Visual Quality Objectives may range from Retention to Maximum Modification.

WILDLIFE

Wildlife Habitat Planning: WILD112

- A. Utilize existing inventories and evaluate the need for further project-specific inventories of wildlife habitat conditions in riparian areas during project analysis.
 - 1. Select Management Indicator Species (MIS) appropriate to the project area for project analysis. (See also Wildlife Forest-wide Standards & Guidelines).
- B. Coordinate all activities with consideration for the needs of wildlife, within the overall objectives of this land use designation.
 - 1. Use the habitat needs of MIS to evaluate opportunities for, and consequences on, wildlife.
 - 2. In project planning, consider opportunities to allow for the elevational migration of wildlife.
 - 3. Consider silvicultural techniques which establish and prolong understory forb and shrub production in critical habitat areas. Such techniques can include prescribed burning, precommercial thinning, canopy gaps, and uneven-aged management.
 - 4. Provide habitat for cavity-nesting wildlife species.
 - * Retain soft and hard snags where possible, while meeting management objectives, considering safety needs for people and equipment.
 - * Where possible, save both hard and soft snags in areas protected from wind.
 - * Snags do not need to be evenly distributed; clumped distributions are preferred.
 - * Favor saving snags away from roads to reduce loss from firewood gathering.
 - * After harvest, designate snags as wildlife trees and mark them illegal for cutting, except where snags are a threat to human safety.
 - * Consider retaining live trees for snag recruitment.
 - 5. In areas associated with streams and lakes which are designated for no timber harvest or uneven-aged management (single tree or group selection), manage for old-growth characteristics.

6. Maintain or improve wetland habitats which receive high use by waterfowl species such as ducks, geese and shorebirds. (Refer to Forest-wide Standards & Guidelines for Wildlife - Waterfowl.)
- C. Coordinate road management to emphasize the needs of wildlife.
1. Locate and design roads in riparian areas to minimize human disturbance to wildlife, with particular emphasis being given to brown bear riparian habitat.
 2. Use road management, including yearlong or seasonal closures, where necessary, to reduce human disturbance of wildlife. Particular emphasis should be given to road management in important brown bear riparian habitats.

BEACH FRINGE AND ESTUARY

Land Use Designation BF

The emphasis of this land use designation is to manage natural beach fringe and estuary habitats to favor wildlife, fish, recreation, visual and other resources associated with beach fringe and estuary areas. The beach fringe is defined as 500 feet slope distance inland from mean high tide, and estuary is defined as 1000 feet slope distance inland from mean high tide around all identified estuary areas. Habitats for shorebirds, waterfowl, bald eagles, and other marine-associated species are emphasized. Old-growth conifer stands, grasslands, wetlands, and other natural habitats associated with the beach fringe and estuary areas above the mean high tide line are managed in near-natural, undisturbed habitat conditions. Areas previously harvested in this zone are allowed to become future old-growth habitat.

The Beach Fringe and Estuary land use designation is applied where more development-oriented management would otherwise normally occur.

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources. Interpretation may be provided when it is compatible with the management objectives for this land use designation.
Facilities	Developments requiring water access (for example, docks, floats, boat ramps) may be present.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage. The use of prescribed natural fire, to maintain or improve natural habitats, is not presently used, but may be considered in the future.
Fish	Aquatic biological habitat productivity is maintained or improved. Fisheries enhancement projects may occur.
Forest Pests	Pest prevention and suppression practices are implemented to protect these and adjacent resources.
Lands	Special use activities which are compatible with beach fringe and estuary resource management objectives may be present.
Minerals	Lands are open to mineral entry. Mineral management activities should be compatible with the objectives of the beach fringe and estuary land use designation to the maximum extent feasible.
Recreation	Recreation uses associated with a marine environment are managed consistent with the inventoried ROS Class and are compatible with maintaining habitat conditions and wildlife populations. Opportunities exist for providing recreation users with solitude and a high chance of observing wildlife.

Soil and Water	Soil and water resources evolve in near-natural beach fringe and estuary environments.
Subsistence	Subsistence use is allowed in accordance with applicable Federal and State regulations. Opportunities for harvesting beach fringe and estuary-related resources is maintained or improved. Timber may be used for subsistence uses.
Timber	Forested lands are classified as unsuitable. Personal use wood from beach log salvage is fully compatible with this land use designation. Cutting on the upland is discouraged, but if allowed, is limited to designated areas.
Transportation	Log transfer facilities may be present. Roads, not associated with LTF's or some types of recreation, are located outside of the beach fringe and estuary land use designation to the extent practicable.
Visual Resource	Generally, activities in the foreground as viewed from the water are not evident to the casual observer, except for occasional areas where the activities are subordinate to the characteristic landscape.
Wildlife	Wildlife habitats evolve in near-natural beach fringe and estuary habitat conditions. Habitat projects may be identified and implemented to improve beach fringe and estuary habitat conditions for wildlife.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11, CAVE MG&C12	All II-VII	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111, 111-1 TIM114	All VI, VII(B-D); VIII; IX	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS1, VIS12 VIS11	All I(B, C, G)	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, interpretation, and allocation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Allow permanent developments requiring water access (for example, docks, floats, boat ramps).
 - 1. Site proposed facilities sufficiently distant from the mouths of intertidal channels of known anadromous fish streams to avoid significant interference.
 - 2. Site proposed facilities sufficiently distant from tidal flats or subtidal beds of aquatic vegetation to avoid significant impairment.
 - 3. Restrict filling of intertidal and subtidal areas to those sites having the least value as habitat for marine organisms and vegetation, unless interdisciplinary analysis determines that for other reasons (for example, recreation or visual concerns) filling the more productive site is desirable.
 - 4. Avoid areas with established uses such as commercial and sport fishing, hunting, and anchorages for commercial and recreational vessels unless the project interdisciplinary process determines that location of sites is compatible with such uses.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics will emphasize the least possible disturbance or evidence of human presence.
 - 1. Use of mechanized equipment requires Regional Forester approval.
 - 2. Suppression tactics will avoid human/bear conflicts and existing policy will be emphasized to leave no trash or any other kinds of bear attractants in the area.

3. Rehabilitation of all campsites, suppression lines, and other evidence of human presence will occur as soon as it is safe, but within one year after the fire occurs.

Fuel Improvements: FIRE2

Prescribed fire

- A. As a general management practice, management-ignited prescribed fire will not be used in this land use designation. Should it become necessary to consider the use of management-ignited prescribed fire, FSM 2324 provides direction.
- B. Use natural ignitions to perpetuate the natural ecological process. As a general management practice, natural ignitions will not be used in this land use designation. Should it become necessary to consider the use of prescribed natural fire, the Forest Plan must be amended to analyze, justify, and approve prescribed natural fire programs. FSM 5142 provides direction.

FISH

Fish Habitat Planning: FISH112

- A. Emphasize the protection and improvement of aquatic habitat for marine, brackish, and freshwater plant and animal species.

FOREST PESTS

Forest Pest Management: PEST1

- A. Pest prevention and suppression practices are implemented to protect these and adjacent resources.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

- A. Permit only activities compatible with Beach Fringe and Estuary land use designation objectives.
 1. Coordinate all activities which directly affect the Coastal Zone, with the Alaska Office of Management and Budget, Division of Governmental Coordination, to ensure consistency, to the maximum extent practicable, with the Alaska Coastal Management Plan.
 2. This land use designation represents a Transportation and Utility System (TUS) "Avoidance" area. Transportation and utility sites or corridors may be located within this land use designation only after a search for TUS "Windows" has been exhausted.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Administration: MG&C12

Forest Lands Open to Mineral Entry

- A. Lands within this land use designation are open to mineral entry.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and National Forest Service Mining Regulations 36 CFR 228.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Use state-of-the-art techniques for developing minerals to reduce impacts to the extent reasonable.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
- C. Design mineral exploration and development activities to be compatible with the Beach Fringe and Estuary land use designation. Apply the following management practices to reduce resource impacts.
 - 1. Design mineral management activities to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. (Consult ANILCA, Sec. 505 (a).)
 - 2. Take maximum advantage of topographic and vegetative screening when locating drill rigs and pumps, roads, rock quarries, structures, and marine transfer facilities.
 - 3. Reduce the height of or design quarry walls to have an irregular back line, when seen from sensitive travel routes.
 - 4. Locate material sites and marine transfer facilities outside this land use designation if reasonable alternatives exist.
 - 5. When vegetation is removed in a project area located adjacent to sensitive travel routes, haul away, bury, or burn and scatter such vegetation.
 - 6. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive viewpoints.
 - 7. Use colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
 - 8. Revegetate disturbed areas in accordance with project plans.
 - 9. Apply timing restrictions to minerals activities as needed during critical wildlife mating, calving, and migrating periods.
 - 10. Shape landform modifications to simulate naturally-occurring forms.
 - 11. Design reclamation plans so minerals activities leave a natural-appearing condition.

RECREATION

Recreation Use Administration: REC122

Recreation Management and Operations

- A. Recreation management emphasizes the maintenance of generally natural condition settings.
- B. Regulate recreation use based on studies reflecting the effect of recreation activities on wildlife and fish resources and habitat.
 - 1. Regulate use to eliminate the adverse effects of humans or reduce it to acceptable levels, when monitoring indicates that human use adversely affects habitats and populations of wildlife and fish.
 - 2. Design and locate recreation-related structures to be compatible with habitat needs. Regulate user-created structures to avoid degradation of habitat.
 - 3. Regulate off-highway vehicle use to prevent degradation of habitat or adverse disturbance of wildlife and fish populations.
- C. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the existing capabilities of the Beach Fringe and Estuary Land Use Designation.

1. Where possible, schedule activities to avoid change to the existing ROS class in marine recreation settings. Manage recreation use in a manner that is compatible with the objectives of this Land Use Designation.
2. In locations where scheduled activities change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines with emphasis on marine-related recreation activities.

SUBSISTENCE

Subsistence: SUB

- A. Allow subsistence use of timber. Subsistence users will follow regulations to protect bald eagle nest sites and other beach fringe resources.

TIMBER

Timber Resource Planning: TIM112

- A. Forested lands are classified as unsuitable.
- B. Personal use wood from beach log salvage is fully compatible with this land use designation. Cutting on the upland is discouraged, but if allowed, is limited to designated areas.

Timber Resource Coordination: TIM113

- A. Timber activities will be limited to uneven-aged silvicultural systems in second-growth stands to encourage early development of old-growth habitat characteristics, or salvage of catastrophic events (primarily windthrow). Emphasize wildlife objectives in the analysis, the development of the environmental documents, and the design and implementation of silvicultural activities.

Timber Sale Preparation: TIM114

- A. Salvage, although the exception, will be limited to dead and down materials resulting from catastrophic events (such as windthrow). Environmental analysis will determine if salvage sales are compatible with this land use designation.
- B. Uneven-aged management will be limited to single tree or group selection (normally not to exceed 2 acres) in natural young-growth stands or second-growth stands resulting from earlier harvest. Stands may be thinned to develop stand characteristics for future old-growth.

TRANSPORTATION

Transportation Operations: TRAN1

- A. Designate road corridors where necessary to allow access for management activities in this or other land use designations.
 1. Perform integrated logging system and transportation analysis to determine, if practical upland routes exist avoiding this land use designation. Consider impacts to fish and wildlife and road closure enforcement costs in this analysis.
 2. Determine road locations and road management objectives through the interdisciplinary team process. Give special attention to wildlife and fish needs and the anticipated effects of human use on the habitat and populations using the habitat during the development of road management objectives.

- * If the need to restrict access is identified during project interdisciplinary review, roads will be closed, either seasonally or year-long, to minimize adverse effects on wildlife and fish.
- * Provide recreational access where appropriate.
- 3. To meet the Visual Quality Objective of Partial Retention, special consideration must be given to minimizing apparent landform modification (as seen from sensitive travel routes) during road location, design, and construction.
- B. Log transfer facilities may be constructed.
 1. If this is the best location for a log transfer facility, locate, design, construct, and manage facilities in a manner which will minimize adverse effects on fish and wildlife. If roads and log transfer facilities are placed in this land use designation, keep clearing widths to a minimum.
 2. To meet the Visual Quality Objective of Partial Retention, give special consideration to minimizing the visual impact of landform modification (as seen from sensitive travel routes) during log transfer facility location, design, and construction.

VISUALS

Visual Resource Operations: VIS1

- A. Design proposed activities to be subordinate to the characteristic landscape utilizing existing form, line, color and texture found in the landscape.
 1. Apply Forest-wide Standards and Guidelines for the Partial Retention Visual Quality Objective. This objective defines the maximum limit of allowable change to the visual character of the area; less visible evidence of activities, particularly in the visual foreground as seen from saltwater is desirable.

WILDLIFE

Wildlife Enhancement: WILD22

- A. Timber stands may be managed as a function of wildlife habitat development rather than for a silvicultural objective. Wildlife habitat activities may include thinning of young stands, release and weeding, pruning, and fertilization.
 1. Encourage understory shrubs and forbs through early thinnings. Use 16-18 foot leave tree spacing as a guideline.
 2. Consider creating small canopy gaps generally less than 2 acres and well-distributed along the beach fringe (not to exceed 10 to 15 percent of the beach fringe).

Wildlife Habitat Inventory: WILD111

- A. Inventory the beach fringe and estuary habitat to establish some baseline conditions for determining long-term natural, ecological, and human-induced changes.
 1. Coordinate with, utilize and incorporate existing and/or on-going inventory work and techniques such as plant association inventories, soil inventories, timber stand exams, USFWS inventories, and ADF&G inventories.
 2. Develop and implement a prioritized inventory schedule for all beach fringe habitat areas.

Wildlife Habitat Planning: WILD112

- A. Allow previously harvested areas which have been included within the beach fringe to evolve naturally into old-growth habitats, or provide second-growth management to accelerate attainment of old-growth characteristics.
- B. Maintain or improve wetland habitats which receive high use by waterfowl species such as ducks, geese, shorebirds and seabirds. (See Forest-wide Standards and Guidelines for Wildlife - Waterfowl.)

TRANSPORTATION AND UTILITY SYSTEMS

Land Use Designation TUS

The emphasis of this land use designation is to provide for existing and potential major public transportation and utility systems. Facilities located within this land use designation include State and Federal Highways, railroads, powerlines 66 KV and above, and pipelines 10 inches or greater in diameter, and their associated facilities, such as marine terminals, dams, reservoirs, and generators.

Prior to construction of any new transportation and utility system, lands within this land use designation will be managed in accordance with the initial land use designation (color on the map) specified in the Forest Plan.

Note: Transportation and utility systems may be allowed in other areas not allocated to this land use designation. (Consult ANILCA Title XI.)

At-a-Glance . . .

Cultural Resources	Locate, evaluate and protect significant cultural resources.
Facilities	Improvements which are compatible with transportation and utility uses are allowed.
Fire	All fires are suppressed using a suppression action that minimizes fire suppression costs and resource damage.
Fish	Management activities are designed to maintain the present and continued fish productivity of anadromous fish and other foodfish habitat to the maximum extent feasible. Fisheries enhancement structures or activities are allowed.
Forest Pests	Pest prevention and suppression are encouraged to maintain or improve forest health in this and adjacent land use designations.
Lands	Special use authorizations not related to transportation or utilities may be issued, if compatible with present or future transportation and utility uses.
Minerals	Sites and corridors may or may not be open to mineral entry, depending on the underlying land use designation.
Recreation	Recreation facilities may be constructed in conjunction with the development of state and federal highways and reservoirs. Recreation use may be encouraged or discouraged on a case-by-case basis.
Soil and Water	Mitigation may be required to maintain high water quality. Soil cover is maintained and slope failure associated with management activities is minimized.

Subsistence	Subsistence use is allowed in accordance with applicable Federal and State regulations.
Timber	Prior to construction, timber suitability is based on the existing land use designation. Following construction, if lands are permanently cleared, the right-of-way is considered unsuitable. Personal use woodcutting activities are compatible with this land use designation provided that management activities are met.
Transportation	Corridors for future utilities follow existing and planned land transportation routes to the extent practicable.
Visual Resource	The characteristic landscape may be dominated by activities associated with transportation and utility systems. Although TUS developments may dominate the seen area, they are designed with consideration for existing form, line, and texture found in the natural landscape.
Wildlife	To the maximum extent feasible, management activities are designed to minimize effects on wildlife habitats.

Apply the following Forest-wide Standards & Guidelines located in Chapter 4:

RESOURCE	SECTION	SUB-SECTIONS	PAGE #
AIR	AIR	All	4-2
BIODIVERSITY	BIO	All	4-3
CULTURAL	CULT	All	4-8
FACILITIES	FAC	All	4-18
FIRE	FIRE	All	4-19
FISH	FISH	All	4-20
FOREST PESTS	PEST	All	4-25
LANDS	LAND	All	4-26
LAW ENFORCEMENT	LAW	All	4-38
MINERALS, GEOLOGY, AND CAVES	MG&C11,CAVES	All	4-39
OLD-GROWTH FOREST	OLD	All	4-44
RECREATION	REC	All	4-45
RIPARIAN	RIP	All	4-60
RURAL DEVELOPMENT	RUR	All	4-61
SOIL AND WATER	S&W	All	4-62
SPECIAL INTEREST AREAS	SIA	All	4-65
SUBSISTENCE	SUB	All	4-66
THREATENED, ENDANGERED, SENSITIVE	TE&S	All	4-68
TIMBER	TIM111-1	All	4-72
TRAILS	TRAI	All	4-81
TRANSPORTATION	TRAN	All	4-84
VISUAL RESOURCE	VIS	All	4-92
WETLANDS	WET	All	4-97
WILDLIFE	WILD	All	4-98

Apply the following Land Use Designation Standards & Guidelines:

CULTURAL

Cultural Resource Activities: CULT

Inventory/Evaluation

- A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and interpretation within this land use designation.
 - 1. Identify, classify, and evaluate known cultural resources.
 - 2. Identify cultural properties to be nominated to the National Register of Historic Places.
 - 3. Identify cultural properties that require stabilization or other protective measures.
 - 4. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

FACILITIES

Facilities Improvements: FAC2

- A. Allow administrative facilities which are compatible with present and/or future site uses.

FIRE

Fire Suppression: FIRE12

Suppression Action

- A. All wildfires will be suppressed using the suppression option identified in the Southeast Alaska/Prince William Sound Fire Management Plan. An escaped fire situation analysis (EFSA) of expected fire behavior, time of year, and locations with respect to private land and adjacent land use areas, may lead to a lower strategy. If an EFSA discloses no adverse effects and it is more cost-efficient, the lower strategy will be used.
- B. Suppression tactics are limited only by the standards and guidelines for this land use designation, such as soil, water quality, and visual quality.

Fuel Improvements: FIRE2

Prescribed fire

- A. Management ignitions may be used as an acceptable means of fuels management as long as its use is compatible with the standards and guidelines for this land use designation.
- B. Natural ignitions will not be used in this land use designation.

FISH

Fish Habitat Planning: FISH112

Planning/mitigation

- A. Design transportation and utility system activities to maintain the present and continued productivity of anadromous fish and other food-fish habitat to the maximum extent feasible.
- B. Stress protection of fish habitat to prevent the need for mitigation. Mitigation, rehabilitation and monitoring of impacts to fish habitat or populations shall be identified in environmental documents.

Enhancement

- A. Allow fish enhancement activities.

FOREST PESTS

Forest Pest Management: PEST1

- A. Encourage pest suppression and prevention to maintain or improve forest health in this and adjacent land use designations.
- B. Permit timber sanitation and salvage.
- C. All right-of-way plans will be reviewed by an entomologist prior to any construction.

Forest Pest Survey and Inventory: PEST2

- A. Survey and inventory visible outbreaks annually.

LANDS

Special Use Administration (Non-Recreation): LAND122

Transportation and Utility Systems

- A. Manage special use authorizations related to transportation and utility systems according to the following standards and guidelines.
 - 1. Coordinate special use proposals with State and Federal Agencies, such as the Federal Energy Regulatory Commission (FERC), the Federal Highway Administration, or Alaska Department of Transportation. Analyze new proposals on a case-by-case basis, using an interdisciplinary process. Obtain input from local communities and other affected publics.
 - 2. Use designated corridors for multiple compatible transportation and utility systems to the extent practicable.
 - 3. Require proponents of hydroelectric power projects to obtain a license or exemption from the FERC as a condition of project approval by the Forest Service.
 - 4. Leave transportation and utility corridors open to public use unless special considerations, such as public safety or resource damage, warrant closures or restrictions.
 - 5. Bury powerlines or submerge them where practicable and feasible.

Other Special Use Authorizations

- A. Allow special uses not related to utilities, if compatible with present or future utility uses.
 - 1. Determine through an interdisciplinary process on a case-by-case basis, if non-related uses are compatible.
 - 2. Consult with current authorization holders to consider compatibility of new uses.

**MINERALS
GEOLOGY
CAVES**

Minerals and Geology Resource Preparation: MG&C11

- A. Coordinate with claimant to ensure the location of roads, transmission lines, and pipelines across mining claims do not interfere with mining activities, markers, or improvements.

Minerals and Geology Administration: MG&C12

Mineral Entry

- A. Depending on the underlying land use designation, sites and corridors may or may not be open to mineral entry. Apply Forest-wide Minerals and Geology Standards and Guidelines appropriate to either open or closed mineral entry.
- B. Permit reasonable access to mining claims with valid existing rights in accordance with the provisions of an approved plan of operations.

Plan of Operations

- A. Where minerals resources are developed, use state-of-the-art techniques for developing them, to reduce, impacts to the extent reasonable based on the objectives of the initial land use designation. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
- B. Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads.

RECREATION

Recreation Use Administration: REC122

Recreation Settings

- A. Provide for inventoried recreation settings and opportunities until the development of transportation and utility systems change the ROS setting(s).
- B. When transportation and utility systems are developed, consider construction of recreation facilities in conjunction with the planning of state and federal highways and reservoirs.
 1. Manage the changed recreation setting with appropriate ROS guidelines.
 2. If necessary, discourage or restrict recreation use to prevent damage to facilities or to provide for public safety.
 3. Manage recreation use in a manner compatible with adjacent land use designations.

TIMBER

Timber Resource Planning: TIM112

- A. Prior to the construction of transportation or utility corridors, base timber suitability on the underlying (initial) land use designation. Following construction, if the rights-of-way are permanently cleared, lands in the right-of-way are considered unsuitable.
- B. For areas where initial land use designation authorizes timber harvest, suitable forested land is available for harvest and is included in the allowable sale quantity calculation.
- C. For initial land use designations which do not allow timber harvest, forested land is classified as unsuitable and withdrawn from the timber base. Any timber harvest associated with facility development is non-chargeable to the allowable sale quantity.
- D. Following the construction of a transportation and utility system in an area with interim direction authorizing timber harvest, the right-of-way is considered unsuitable unless the utility is buried or is suspended above the maximum height of the trees.
- E. Personal use woodcutting activities are compatible with this land use designation provided that management objectives are met.

TRANSPORTATION Transportation Operations: TRAN1

- A. Follow existing and planned future land transportation routes with corridors for future utilities to the extent practicable.
 - 1. Consider potential conflicts and opportunities with future roads, timber harvest, and other management activities.
 - 2. Consider the following during the design phase of all Sensitivity Level 1 and most Sensitivity Level 2 roads:
 - * Vegetation of slopes seen from the road.
 - * Providing "planting pockets" or terraces or slopes, where needed.
 - * Minimizing landform modifications through road location and design.
 - * Consider treating vegetation on clearing edges by feathering or free-flowing, undulating edges to break up the straight line effect of road.
 - * Requiring roadside clean-up on all roads receiving general public use or expected to have such future use.

VISUAL RESOURCE Visual Resource Operations: VIS1

- A. The characteristic landscape may be dominated by activities associated with transportation and utility systems. Although TUS developments may dominate the seen area, they are designed with consideration for existing form, line, and texture found in the natural landscape.

WILDLIFE

Wildlife Habitat Inventory: WILD111

- A. Establish a baseline inventory, or use an existing inventory of wildlife habitat conditions, preceding or coinciding with transportation and utility systems development.

Wildlife Habitat Planning: WILD12

- A. Minimize and/or mitigate adverse impacts to wildlife habitat and populations to the maximum extent feasible.
 - 1. Use the habitat needs of MIS to evaluate opportunities for wildlife.
 - 2. Consider the following measures in design of projects: measures which reduce or eliminate electrocution of animals on powerlines, fencing along rights-of-way to prevent road kills and to provide for public safety, corridors for passage across roads, signing, reduced speed limits, road alignments to reduce site distance which affect road hunting mortalities; etc.

Chapter 4

Forest-wide Standards and Guidelines

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CHAPTER 4 - FOREST-WIDE STANDARDS AND GUIDELINES

INTRODUCTION

Chapters 2, 3 and 4 of the Forest Plan present the direction for managing the Tongass National Forest. The components of this direction are explained in the introduction to Chapter 2. This chapter (Chapter 4) includes the Forest-wide standards and guidelines. These standards and guidelines for the protection or management of the different forest resources apply to all or most areas of the Forest, and are used in conjunction with additional standards and guidelines included within each management prescription. Each management prescription (Chapter 3) includes a table indicating which of the Forest-wide standards and guidelines apply to the area (land use designation) covered by that prescription. The Forest-wide standards and guidelines are organized by resource, as shown in the table of contents.

AIR

Forest-wide Standards & Guidelines

Air Resource Inventory: AIR111-2

I. *Baseline Quality and Values*

- A. During project planning, assess air quality conditions on National Forest lands by following direction in FSM 2580 and the Air Resource Management Handbook, 1987 Interim Directive No. 1., and subsequent updates.

Air Resource Planning: AIR112

I. *Objective*

- A. The objective for the air resource, which is to be managed as a part of the forest ecosystem, is to maintain or improve National Forest air quality by preventing significant deterioration from Forest activities or other sources.
 1. Consider the objectives for the air resource when planning, designing, and implementing projects, which may affect the air resource, consistent with other multiple use goals and objectives.

II. *Planning for the Maintenance of Air Quality*

- A. Plan to maintain current air quality, Forestwide, as directed in the State Implementation Plan.
 1. Manage Forest resource activities to control and minimize air pollution impacts and to ensure that predicted emissions from all pollution sources, including fugitive dust, do not exceed ambient air quality standards as specified under the Alaska Administrative Code, Title 18, Chapter 50.
 - * Obtain burning permits from the Alaska Department of Environmental Conservation for all prescribed fire projects.
 2. Require permittees, contractors, and mine operators to apply for applicable State permits and meet State Air Quality Standards when conducting work on the Forest.
 3. Ensure external air pollution sources do not significantly affect National Forest ecosystems or ambient air quality.

Air Coordination: AIR113

I. *Coordination with the State of Alaska*

- A. Cooperate with the Alaska Department of Environmental Conservation to protect the air resource on the National Forest. Join in the assessment of air quality monitoring needs and in the development or revisions of air quality standards and regulations, as needed.
- B. Review and comment on both proposed and existing sources of off-Forest pollution that may significantly affect ambient air quality on National Forest System lands.
- C. Review the requirements for proposed new emission sources under the Prevention of Significant Deterioration (PSD) Permitting Process.

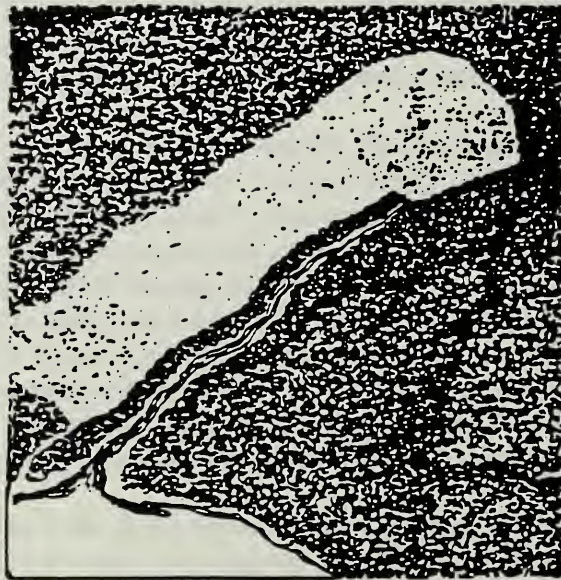
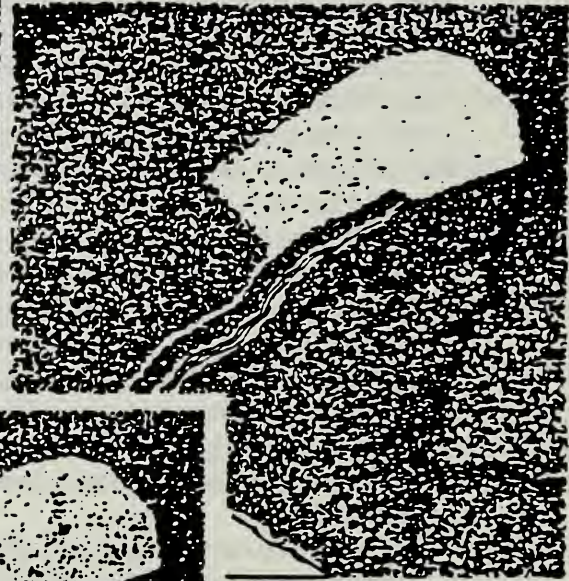
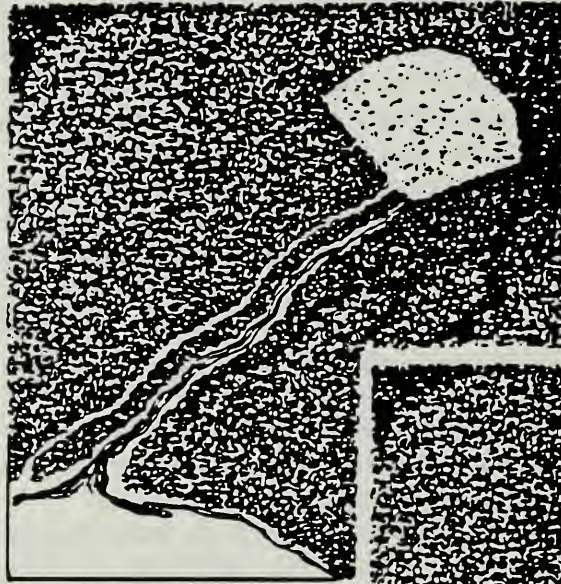
BIODIVERSITY

Forest-wide Standards & Guidelines

Biodiversity: BIO

I. *Planning and Managing Biodiversity*

- A. Plan and manage for biodiversity (biological diversity) by maintaining, in a healthy state, species of animals and plants historically native to Southeast Alaska.
1. Maintain or improve habitats for the recovery and conservation of federally-listed threatened or endangered species. (Refer to Forest-wide Standards and Guidelines for Threatened, Endangered and Sensitive Species.)
 2. Provide for the conservation of sensitive species by avoiding or minimizing adverse impacts to species whose viability has been identified as a concern. (Refer to Forest-wide Standards and Guidelines for Threatened, Endangered, and Sensitive Species.)
 3. Manage habitats to provide for the maintenance of viable populations of existing native and desired non-native wildlife, fish, and plant species well-distributed throughout their historic geographic range within the Tongass National Forest.
 4. Complete establishment reports for recommended Research Natural Areas.
 5. Complete definitions and an inventory process for old-growth forests. (Refer to Forest-wide Standards and Guidelines for Old-Growth Forests.) Provide for representation of all forested plant associations in old-growth conditions.
 6. For old-growth habitats, in allocations allowing timber harvest, maintain large old-growth blocks and corridors between old-growth blocks, where compatible with other resource objectives.
 - * Concentrate timber harvesting activities to provide for unroaded and unlogged old-growth forests in areas adjacent to the timber harvesting. Three techniques are suggested:
 - * Harvest timber in vertical, wide continuous strips. Harvest areas should be considered from riparian areas to tree line, with adjacent old-growth forests also extending from riparian areas to tree line. The size of area to be harvested should be large enough to provide logical future timber harvest units. (Refer to Figure 1 as an example.)
 - * To retain important lowland old-growth habitats during most of the first timber rotation, strive to harvest upper portions of a watershed first. This approach will maximize the availability of the remaining lowland old-growth forest at any point in time. Harvest timber on northerly aspects prior to timber on southerly aspects. Where possible, southerly aspects should be maintained as contiguous units of old-growth habitat types. (Refer to Figure 2 as an example.)
 - * Use large and continuous harvest areas, where harvest of old-growth proceeds from the periphery inward. This is called the "locust method" which leaves at any point in time the largest contiguous block of old-growth within any given area. This also minimizes the amount of edge habitat vulnerable to windthrow. (Refer to Figure 3 as example.)
 - * Facilitate dispersal of wildlife species between old-growth forest blocks. Use unharvested forested beach and estuary fringes and riparian areas, and, if necessary, designate additional biological corridors to facilitate dispersal of wildlife species.



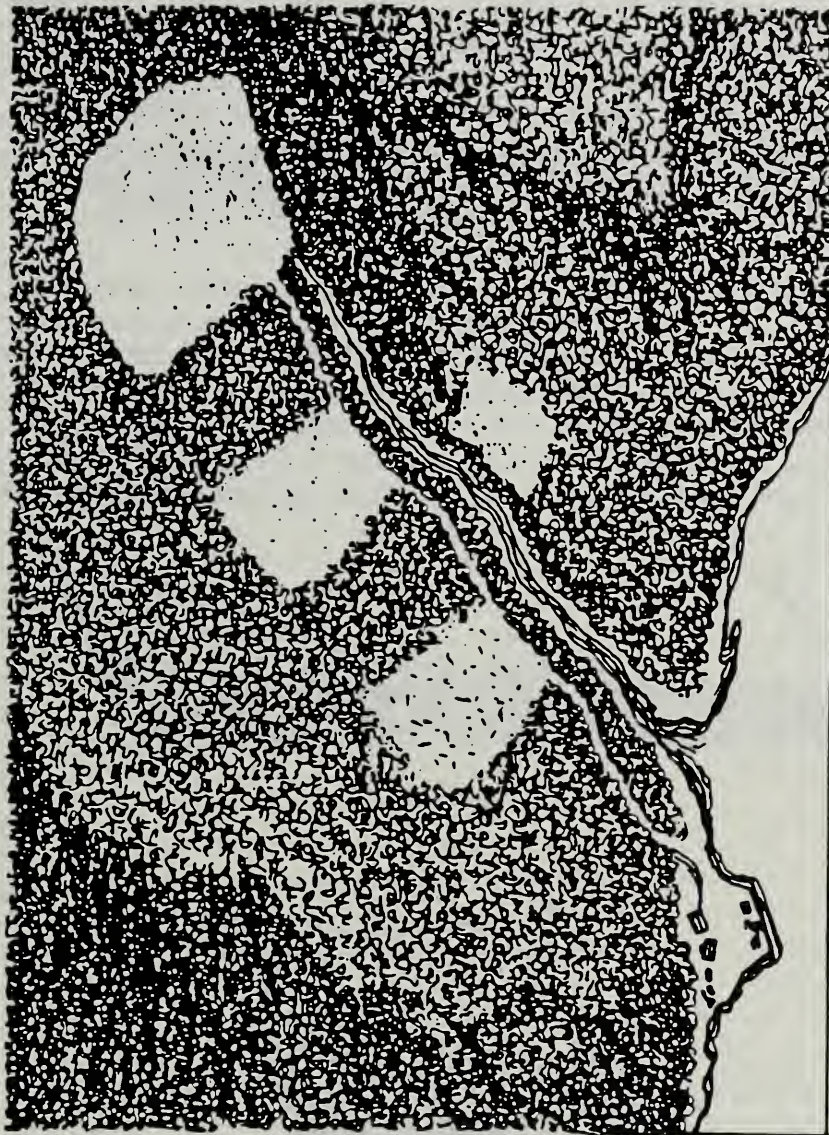


Figure 2. Recommended pattern of harvest to emphasize timber production. Harvest begins in the upper portion of the watershed on north-facing slopes and proceeds toward the lower portion of the watershed.

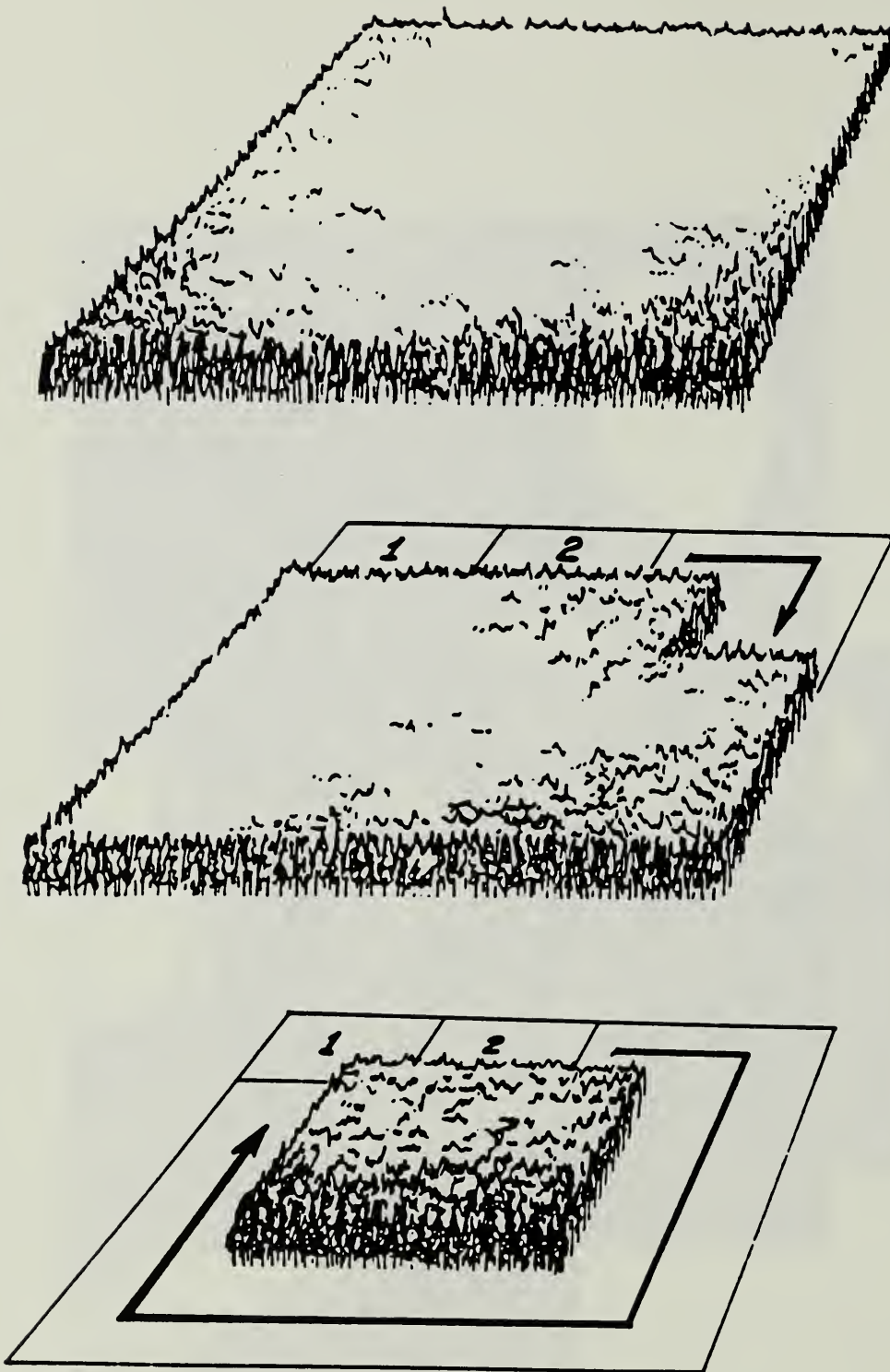


Figure 3. A forest stand illustrating the "locust" method of timber harvest. The locust method retains the most old growth at any point in time and reduces edge vulnerable to windthrow.

7. Use silvicultural techniques, where compatible with other resource objectives, which establish and prolong understory forb and shrub production in second-growth timber stands. (Refer to Forest-wide Standards and Guidelines for Wildlife.)
8. In timber harvest areas, emphasize habitat heterogeneity.
 - * Harvest areas should include small patches of green trees, brushy openings, and snags consistent with safe working practices. Leaving green trees will, through time, provide needed snag habitat within often monotypic second-growth stands. Likewise, brushy openings provide forage for species. The purpose is to increase, through time, the diversity of habitats available to wildlife in managed forests.
 - * Edges of harvest units should be feathered rather than sharp, to reduce vulnerability of forest stands to windthrow.
9. Use road management regulations and techniques to regulate human access, when necessary, to protect fish, wildlife and plant habitats and/or populations. (Refer to Forest-wide Standards and Guidelines for Wildlife and Transportation, and specific direction in each management prescription.)
10. Protect fish habitat. Assure that there are no serious and adverse effects and that riparian areas are protected. (Refer to riparian land use prescriptions.)
11. Implement a Forest-wide program, with necessary regulations, and projects which prevent habituation of bears to human foods/garbage and reduce chances of human/bear incidents. (Refer to Forest-wide Standards and Guidelines for Wildlife.)

CULTURAL RESOURCES

Forest-wide Standards & Guidelines

Cultural Resource Activities: CULT

I. Management

- A. Maintain a cultural resource management program to identify, evaluate, preserve and protect cultural resources on a Forest-wide and project specific-level in compliance with the National Historic Preservation Act, as amended, the National Environmental Policy Act, the American Indian Religious Freedom Act, and their implementing regulations. Consult 36 CFR 800 and FSM 2300.
- B. Coordinate management of cultural resources with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP). Consult 36 CFR 800 and FSM 2300.
- C. Identify and develop appropriate interpretive messages for cultural resource sites and activities that relate the historical value and contributions of natural and cultural resource management to the Tongass National Forest. Work closely with all interpretive services programs to assure accurate and effective interpretation of cultural resources.
- D. Coordinate the management, access, and use of forest products to perpetuate Native American cultural art forms.

II. Overview

- A. Update the Tongass Cultural Resource Overview concurrently with the next Forest Plan Revision to address the management situation and planning needs of the Forest. Information from the Overview and from other sources, is used to develop a framework for the identification, classification and evaluation of known and predicted properties on the Forest.

III. Planning

- A. Develop a cultural resource management assessment that provides a framework for the Overview update. Its objectives are to schedule management activities, to implement or refine management activities, to summarize current status, and to identify priorities for future cultural resources inventory, evaluation and protection.
 1. Update the cultural resource assessment annually, for budget implementation.
 2. The assessment shall include:
 - * An overview of new data.
 - * Identification of areas requiring intensive site inventory, including non-project areas of the Forest.
 - * Identification, classification and evaluation of known cultural resources.
 - * A reevaluation and update of the cultural resource sensitivity zone system based on new data and/or understandings of the Area's cultural resources and their locations.
 - * An identification of measures and priorities for the protection of cultural resources from vandalism, theft, and natural deterioration.
 - * An identification of prioritized needs for the stabilization, restoration and repair of damaged sites.
 - * An identification of the need for maintenance of sites on or eligible for inclusion in the National Register of Historic Places.

- * An identification of opportunities for interpretation of cultural resources for public education and enjoyment.
- * An identification of the interaction of cultural resources and other multiple uses, including consideration of management activities, and impacts on cultural resource management.
- * An identification of the coordination efforts with appropriate State cultural resource plans and planning activities of the State Historic Preservation Officer, State Archaeologist and other State and Federal agencies.

IV. *Project Clearance/Inventory*

- A. *Project Clearance*: Any project, activity, or program that can result in changes in the character or use of historic properties and is under the direct or indirect jurisdiction of the Forest, licensed or assisted by the Forest, including new or continuing projects, activities, or programs and any of their elements not previously considered under Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended, shall be considered an undertaking and will require evaluation through inventory and survey. The following procedures shall be taken when implementing an undertaking to ensure close cultural resources coordination and site inspection throughout the compliance process.
1. No undertaking shall proceed until consultation requirements have been completed and cultural resources clearance has been approved by the Forest Supervisor.
 2. Any undertaking that is not in compliance with 36 CFR 800 shall be suspended by the Forest Supervisor until it is brought into compliance.
 3. Cultural resource sites shall be marked for protection prior to project implementation.
 4. If a previously undiscovered site is found during the course of a project, the project administrator shall halt any work that might potentially damage the site and the State Historic Preservation Officer (SHPO) shall be consulted by the Forest Supervisor. Work may not resume until consultation has been completed and the Forest Supervisor authorizes resumption.
 5. Include a copy of the Inventory Standards and Accounting form in the project folder for all undertakings. Reports and maps containing site information should be included by reference only, to protect confidentiality of site locations.
 6. Include in each contract, permit or lease, a statement of the operating conditions required to protect cultural resources in or adjacent to the project area, and a clause addressing responsibility to protect sites and liability for damage.
 7. Protect all cultural properties until a Determination of Eligibility for the National Register of Historic Places has been completed in consultation with the State Historic Preservation Officer.
- B. Intensive survey is required for compliance ("project clearance"). Intensive survey means systematic pedestrian examination of the surface, and subsurface examination where necessary to ensure that the goal of the survey ("project clearance") is accomplished. Systematic means consistent use of processes or methods of inspection that yield demonstrably reliable results (for example, transects and subsurface testing). When transects are used, transect intervals normally do not exceed 25 meters. Precise survey intensity level for accomplishing surveys must be determined on a case-by-case basis, taking into account the environmental characteristics of the area, conditions, type of impacting activity, and the kinds of resources that might be encountered.
1. All surveys should be guided by an explicit research design. If a research design is not used, the reason(s) should be documented in the survey report.
 2. The purpose and location of a survey determines the intensity of the survey.
 3. Project clearance surveys are designed and accomplished to provide reasonable assurance that all cultural resources that might qualify for the National Register and which are located in the area of potential effect of an undertaking are discovered.

4. All discovered sites shall be documented and maintained in an up-to-date, automated data base in conjunction with the Alaska Heritage Resource Survey (AHRS).
 5. Cultural resource surveys shall be designed, supervised, and evaluated by a professional cultural resource specialist.
- C. Document cultural resource surveys in a report that contains the following information. Sensitive data concerning the nature and location of cultural resources should be located solely in a removable appendix, which is not provided to the general public.
1. Introductory statement detailing why the survey was performed when, where, and by whom.
 2. General location, vicinity, and project maps.
 3. Summaries of the past and present physical and cultural environment.
 4. The research design under which the work was conducted.
 5. Results of the survey.
 6. Project recommendations.
 7. Literature cited or consulted.
 8. Appendixes (site maps, test pit profiles, photographs, etc.) as needed.
 9. Removable section detailing sensitive information.
- D. Minimum recommended survey limits are as follows:
1. Survey the direct impact area plus an area of indirect impact determined by professional judgment from the nature of the planned use (type of use, size of impacted area, anticipated impacts from people, etc.).
- E. Reconnaissance surveys may provide a general impression of an area's cultural resources. These surveys are designed to accomplish limited goals and may not be sufficient to meet minimum legal requirements for project clearance.
- F. Projects that do not have the potential to affect cultural resources, or are not under the direct or indirect jurisdiction of the Forest Service are not considered undertakings. The State Historic Preservation Officer is consulted in questionable cases. The following activities are normally considered to have no potential to affect cultural resources, unless known sites are involved:
1. Emergency actions taken to protect life or property are not considered undertakings subject to immediate consultation. Consult 36 CFR 78.
 2. Activities that involve less than one square meter (11 square feet) of cumulative ground disturbance.
 3. Tenant-type maintenance of administrative sites, work centers, field camps, recreational sites and their facilities, and ranger boats.
 4. Activities taking place on glacial ice and permanent snowfields.
 5. Routine trail maintenance in areas which have received archeological clearance or which do not involve disturbance of new ground.
 6. Routine road maintenance in previously surveyed areas, or where work is within previously disturbed surfaces, ditches, and cut-and-fill slopes. When road projects are determined to be undertakings and cleared, the initial clearance recommendation to the State Historic Preservation Officer should cover current and subsequent routine maintenance as described above.
 7. Non-discretionary, congressionally-mandated land exchanges.
 8. Conveyances executed under the authority of the Alaska Native Claims Settlement Act of 1971 (P.L. 92-203) and the Alaska Statehood Act of 1958 (P.L. 85-508)
 9. Activities where previous natural or human disturbance has modified the landscape so extensively that the likelihood of finding cultural resources is negligible (for example, vertical expansion of existing pits).
 10. Maintenance, reconstruction, or replacement of existing facilities in areas which have already received archaeological clearance or which does not entail additional ground disturbance (for example, fish ladders, bridges, culverts, fences, cabins, or features of developed recreation sites).

11. Resource maintenance activities involving no surface disturbance sufficient to expose mineral soil (for example, TSI by hand or precommercial thinning by hand; associated campsites are excluded).
- G. *Inventory*. Develop a comprehensive compilation of known cultural resources information in overview form which describes the location, description, status, and other management data for all project clearance and non-project surveys.
1. Include a compilation of areas that have been surveyed.
 2. Include a discussion and map of areas assigned to the cultural resource sensitivity zones.
 3. Include a discussion of the area's environmental and cultural histories.
 4. Identify gaps in existing data and provide recommendations for future research.
 5. Develop management direction.
 6. Include a comprehensive bibliography.
 7. Complete inventory of project-specific areas during the planning process to ensure compliance with existing regulation.
 8. Inventory standards are determined from direction contained within the FSM 2300, and formalized in a research design in consultation with the State Historic Preservation Officer.
 9. Inventory the area of an undertaking's potential effect for cultural resources and of Native American religious use and traditional cultural significance.
10. In consultation with the SHPO, identify cultural property types that may require special management. These properties may include culturally modified trees, religious, or areas with intangible qualities having traditional significance. Develop with the SHPO draft management plans for these identified cultural properties and consult with Native Americans to identify traditional use areas within the Forest.
- H. Three cultural resource sensitivity zones are recognized. These zones are subject to revision based upon new data from annual inventory activities. The elevation and slope angle used to delimit the sensitivity zones are general guidelines. Cultural and geographic factors require flexibility in applying the sensitivity zone concept. Revision data for sensitivity zones shall be documented in the annual assessment, the Overview update and formalized in a Plan Amendment. These Sensitivity Zones are:
1. *High*: All areas between sea level and 100 feet in elevation.
 2. *Medium*: All areas between 100 and 1000 feet in elevation and with slope angles of 30 percent or less.
 3. *Low*: All areas between 100 and 1000 feet in elevation and with slope angles greater than 30 percent; all areas above 1000 feet in elevation, regardless of slope angle; muskeg areas.

The following table illustrates the relationship between Inventory/Survey and sensitivity zones:

Inventory Type	Sensitivity Zone - High	Sensitivity Zone - Medium	Sensitivity Zone - Low
Existing Data Search	XXX	XXX	XXX
Survey	XXX	XXX*	**

XXX Existing Data Search or Survey is required.

* Normally, areas of medium probability will require survey, but it may be possible to recommend clearance on the basis of the results of the Existing Data Search. Consultation with the State Historical Preservation Officer (SHPO) is required.

** Normally, areas of low probability may be cleared on the basis of an Existing Data Search alone. If the Existing Data Search suggests that the area may have cultural sensitivity, a survey must be performed. Consultation with the SHPO is required.

V. Project Implementation

- A. Inventory and evaluation may be accomplished at the operator's discretion and cost provided that the inventory and evaluation is accomplished under the supervision of a qualified Cultural Resource Specialist authorized by a special use authorization.
- B. Include as part of the Clearance Report specific protective and/or mitigative measures to be taken by the operator who is responsible for the cost of any such protective or mitigative measures.
- C. Mark cultural resource sites within or adjacent to the project area prior to project implementation.
- d. Include in each contract, permit, or lease a statement of the operating conditions required to protect cultural resources in the project area. Also include the pertinent clause notifying the operator of his or her responsibility to protect marked sites when working in the project area and the operators liability for damage.
- E. Provide training in the recognition, site inspection, and protection of cultural resources for all persons responsible for on-the-ground administration of contracts, permits or leases.
- F. Suspension of any work in the vicinity of a previously undiscovered cultural resource site shall be implemented by the project administrator to avoid potential site damage. The Forest Supervisor shall notify the State Historic Preservation Office (SHPO) and authorize resumption of work only after the consultation process has been completed. The project administrator shall keep the contractor, permittee, or lessee informed of anticipated delays in work resumption.

VI. Evaluation - Determination of Eligibility for Inclusion in the National Register of Historic Places

- A. Cultural resource properties located during inventory shall be evaluated by a professional Cultural Resource Specialist to determine the properties' eligibility for the National Register of Historic Places and the effect of proposed activities on the cultural resource following established procedures and regulations in 36 CFR 63 and 36 CFR 800. Certain information is required for evaluation and assessment including the nature, time period represented, and the extent and depth of cultural deposits. When this information is not provided through survey procedures, additional investigations including archival research, architectural study, or archaeological test excavation may be necessary.

- B. Cultural resource sites which are classified as Special Interest Areas under 36 CFR 294 shall be evaluated for the National Register of Historic Places and as possible National Historic Landmarks as established in 36 CFR 63. Consult the Forest Service Manual 2300.
 - 1. Designate and classify Special Interest Areas through interdisciplinary review using public comment, established procedures and regulation, individualized study and planning for each area to determine further standards and guidelines consistent with the objective of the area.
 - * Review proposed Special Interest Areas during Forest Plan Revision.
 - 2. Establish the exterior boundary of the Special Interest Area so it can be easily recognized, readily enforced, and inclusive of all values to be protected.
 - 3. Protect the area from degradation from effects of management activities occurring within adjacent land use designations.
- C. Evaluate all cultural resource properties on National Forest lands. The following is the recommended order of priority:
 - 1. Properties that may be adversely affected by proposed land management activities.
 - 2. Properties undergoing deterioration due to vandalism, public use, erosion, or other forces.
 - 3. Properties of known significance that have been identified, but not previously evaluated.
 - 4. Other cultural resource properties.

VII. Nominations

- A. The Forest shall nominate cultural resource sites to the National Register of Historic Places following procedures found in 36 CFR 60. Nominations may include individual sites, thematic groups, or historic districts.
 - 1. Maintain an annually updated priority listing of cultural resources to be nominated.

VIII. Mitigation

- A. In cases where in place preservation of cultural values is the objective, the Forest Supervisor shall consider management options such as project design, location, or cancellations in meeting the objective. Consult 36 CFR 800 for procedures to be followed in reaching a management decision.
- B. The preferred management of sites listed in, nominated to, or eligible for the National Register of Historic Places is avoidance and protection.
 - 1. Sites listed in, nominated to, or eligible for the National Register of Historic Places shall be managed to achieve a "No Adverse Effect" finding, in consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. Consult 36 CFR 800.
 - 2. The recovery (collection) of cultural resources can occur during the inventory, evaluation, or mitigation (data recovery) phases. Standard requirements include documentation of the resource, labeling of the artifacts, and curation of the recovered materials and resultant records.
 - 3. Collection of artifacts, except under emergency circumstances, must be accomplished or directly supervised by a professional Cultural Resource Specialist. With the approval of the Forest Supervisor, employees meeting the qualifications of a professional Cultural Resource Specialist, may recover artifacts for purposes of evaluation.
 - 4. Requirements for cultural resource collection are:
 - * *Emergency collection:* Artifacts collected in emergency situations shall be turned over to the Area Cultural Resource Specialist for appropriate curation.
 - * Special Agents and other law enforcement officers conducting criminal investigations may collect artifacts as evidence. Any material collected must be cataloged and stored in a secure area.

- * Artifact samples may be collected from cultural resource sites, when they can be systematically recovered and properly recorded for further evaluation (caution must be exercised to assure that the collection of artifact samples is adequate for the purpose intended without causing unacceptable impacts to the resource).
 - * Data recovery (including collection of artifacts and photographic/archival recordation) must be conducted in accord with a Forest Service/State Historic Preservation Office approved Data Recovery Plan, which shall conform to the published guidelines in the Advisory Council on Historic Preservation, *Handbook for the Treatment of Archaeological Properties*.
5. Disinterment of human remains and associated grave goods should occur only when authorized projects cannot be modified or when the remains and associated grave goods are in danger of destruction due to land disturbance, inundation, erosion, vandalism, or similar events.
 - * The Forest Supervisor should provide a reasonable opportunity for consultation with groups or individuals interested in the treatment of human remains and grave goods before any disinterment, analysis, reinterment or other disposition takes place.
 - * Consultation should include genetic or cultural descendants of the deceased, and the State Historic Preservation Officer.
 6. When a project results in the disinterment of human remains and associated grave goods, the proponent of the project shall bear all expenses associated with the disinterment, analysis, and reinterment or other disposition of those remains.
 7. Analysis of human remains will be accomplished according to a research design ensuring recovery of important data through non-destructive techniques within a reasonable time from the date of discovery and documented in an analysis report.
 8. Stored human remains will be afforded consideration for reburial along with associated grave goods when analysis is completed. The human remains shall not be exhibited or displayed.
 9. Reinterment of human remains and associated grave goods will be as consistent as possible with the likely wishes of the deceased or in consultation with genetic or cultural descendants, if known.
 10. Human remains disinterred from Forest land shall be reburied in the same general location or in a cemetery. Reburial does not create a cemetery. Each reburial location will be recorded as a cultural resource site and its location will be kept confidential.

IX. Enhancement

- A. The Forest shall identify opportunities and priorities for interpretation of cultural resources for public education and recreation.
 1. Manage significant and suitable cultural resource sites to realize their recreational and educational values to the public. Enhancement programs should include in-service funding as well as opportunity for establishing partnerships with the private sector. The measure of suitability should be based upon accessibility, feasibility for protection, condition of the property, compatibility with other management activities, and value to the public.
 2. Enhance suitable cultural values through interpretation, restoration, and the publication of reports, brochures or films, videos, and slide programs. Interpretive services and facilities should be compatible with the nature, quality, and integrity of the resource selected for enhancement.
 3. Cooperate with museums, universities, and other recognized institutions, agencies, and knowledgeable persons in planning and constructing cultural resource exhibits and providing opportunities for scholarly/scientific use.

4. Manage cultural resources to ensure that properties and their records are protected to prevent degradation or unauthorized use under authority of the Archaeological Resources Protection Act of 1979 and the regulations in 36 CFR 296.

X. Site Inspection

- A. Assess condition, and document restoration or stabilization needs of cultural sites. Use this information for reporting the success of mitigation measures and other actions taken to ensure site preservation.
 1. Frequency of inspection should include a minimum of one documented visit per selected site per year.
 - * If site damage is observed, additional inspections may become necessary. If an area is damaged through suspected human disturbance, other sites in that vicinity should also be inspected. (Consult the Area Cultural Resource Specialist and/or Special Agent.)
 2. Coordinate the assessments with District Rangers, the Area Cultural Resource Specialist and the Special Agent.
- B. Assessment procedures should include observations documenting the current site condition. Document assessments through a signed, written report that verifies which site was inspected and the observed condition.
 1. The report shall be filed by the Area Cultural Resource Specialist as part of the official site record and copies shall be sent to the District Office, the Regional Office, and the State Historic Preservation Officer.
 2. Recommended observations for the initial inspection by the Area Cultural Resource Specialist should include but are not limited to:
 - * An informal determination of eligibility, if not previously determined;
 - * Observed site condition;
 - * When damage is observed: assess the extent and recentness of damage;
 - * Initial assessment of the scientific and interpretive values;
 - * Make suggestion for protection and stabilization;
 - * Draw an accurate sketch map illustrating the site, the area of damage, and include measurements.
 3. Selected District Personnel should record the following observations:
 - * Observed site condition;
 - * When damage is observed assess the extent and recentness of damage. Draw an accurate sketch map illustrating the site, the area of damage, and include measurements;
 - * Complete report and notify the District Ranger and Area Cultural Resource Specialist;
- C. *Damage Assessment Report.* If site damage is observed and it has not been previously recorded, a site damage assessment report will be prepared by the Area Cultural Resource Specialist. The purpose of the damage assessment report is: to identify the damage, to make recommendations to stabilize the site from further deterioration, and to evaluate the actions needed to prevent further damage.
 1. A professional Cultural Resource Specialist should inspect any reported site damage to determine the specifics of damage and the requirements of a damage assessment.
 - * Previously unassessed cultural resource damage should be photographed with identifying information for each photograph recorded in writing.
 - * A map should be prepared showing the location of the damaged area in relation to the site as a whole. Each damaged area should be identified to indicate damage type (vandalism, erosion, project damage, undetermined causes, etc.).
 - * Resource damage should be quantifiable in terms of area or volume. Measurements of damaged areas should be recorded as precisely as possible. Areas that

- have been excavated should be measured for length, width, and depth in order to calculate total volume of the area.
- D. Remain alert to cultural damage potentially attributable to criminal acts and safeguard investigation by avoiding further disturbance of the area.
1. Beyond the initial discovery of damage attributed to human disturbance, management activities should occur only under the direction or supervision of the Special Agent to ensure proper identification of the damage potentially attributable to the criminal acts under investigation and that such damage is distinguished from any other site damage present. The Special Agent may provide instructions to conduct various procedures including recordation through photography, measurement, videotape, mapping, collection of evidence, etc.
 2. Unless instructed by the Special Agent, do not collect archaeological evidence of damage attributable to criminal acts.
 - * All employees should receive awareness training that includes the laws and regulations pertaining to the protection or disturbance of cultural resources. All legal methods will be used to prosecute individuals who violate those laws and regulations.
- E. Prioritize cultural sites to be assessed on a yearly basis as coordinated by the District Ranger, Area Cultural Resource Specialist and Special Agent utilizing the following criteria:
1. Cultural sites that may be adversely affected by proposed management activities.
 2. Cultural sites undergoing deterioration due to vandalism, public use, erosion, or other forces.
 3. Cultural sites of known significance that have been identified but never monitored.
 4. Other cultural properties that are identified as potentially significant but have not been documented or evaluated.
- F. Measures for the protection of cultural resources from vandalism, natural destruction, or project activity once compliance procedures have been accomplished shall include resource inspection. Resources that have sustained damage from natural forces shall require planning for measures, such as stabilization or data recovery. Vandalism, collecting, illicit excavation, or project damage shall require planning for protective measures, such as signing, administrative closure, remote sensing, increased inspection, investigation, stabilization, data recovery or other measures under the authority of the American Antiquities Act of 1906, the Archaeological Resources Protection Act of 1979 and regulations in 36 CFR 261, 36 CFR 296, and 36 CFR 800.
1. Inspect each resource listed in the National Register of Historic Places on a scheduled basis as established in the annual cultural resources assessment.
 2. Inspect on an opportunity basis other eligible cultural resource sites. Those sites determined to be ineligible for the National Register of Historic Places will not be inspected.
 3. Provide periodic training in the protection and assessment of cultural resources for all persons responsible for the on-the-ground administration of in-service projects, contracts, permits, or leases that may have the potential to affect cultural resources through procedures established in the Forest Service Manual 2300.
 4. A professional Cultural Resource Specialist shall inspect damaged sites, notify the State Historic Preservation Officer, and prepare a site damage assessment within 90 days, weather permitting.
- G. Establish the cost of restoration and repair of archaeological resources damaged as a result of a violation as established in 36 CFR 296 by including the sum of costs already incurred for emergency restoration and repair work, plus those costs projected to be necessary to complete restoration, and repair, which may include, but need not be limited to, the costs of the following:

1. Reconstruction of the archaeological resource.
2. Stabilization of the archaeological resource.
3. Ground contour reconstruction and surface stabilization.
4. Research necessary to carry out reconstruction or stabilization.
5. Physical barriers or other protective devices, necessitated by disturbance of the resource, and to protect it from further disturbance.
6. Examination and analysis of the resource including recording of remaining information, if required by damage, in order to salvage remaining values which cannot be otherwise protected.
7. Reinterment of human remains in accordance with religious custom and State, local, or tribal law, where appropriate, as determined by the Federal land manager.
8. Preparation of reports relating to any of the above activities.

FACILITIES

Forest-wide Standards & Guidelines

The recreation, permitted, and administrative facilities needed to support the management, protection, and utilization of the National Forests include buildings, utility systems, dams, and other constructed features.

Facilities Operations: FAC1

I. Administration and Maintenance

- A. Assess and document the ability of Forest Service facilities to support planned activities.
- B. Assess the historic and cultural values of these facilities.
- C. Provide maintenance and safety inspections on major structures on the Forest in compliance with FSM requirements.
- D. Maintain current operation and maintenance plans for FS-owned recreation facilities (FSM 2330).

Facilities Improvement Preparation: FAC21

I. Plan Development

- A. Complete site development plans for all facility needs identified in the Forest Plan implementation schedule or the Forest Facility Master Plan (FSM 7311).
- B. Maintain in the Forest Facility Master Plan a description of the desired future condition for facilities which reflects needs, future development opportunities, and long term management.

Document the extent and management of these facilities including:

1. Number of buildings by type and age.
2. Number of dams by classification.
3. Developed recreation sites, such as FS campgrounds, picnic areas, and trailheads with recreation facilities.
4. Number and types of permitted facilities, including dams, ski areas, fences, buildings, etc.
5. Number (and/or miles) of systems including sewerage, water, electrical, and communication networks needed within recreation, permitted, and administrative sites.

Facility Construction: FAC22

I. Construction Requirements

- A. In all remodeling, new construction, or building leasing, construct in accordance with an approved site development plan in order to provide safe, functional, aesthetically pleasing, energy efficient, and cost-effective facilities.
 1. Ensure consistency with land use designation direction.
- B. Consider a full range of accessibility challenge levels for non-remote locations. Use higher challenge levels at remote locations as practicable.

Facility Maintenance: FAC23

I. Maintenance

- A. Maintain facilities to meet codes applicable at the time of construction, unless otherwise required by law.
- B. Remove accessibility barriers to physically challenged users, as practicable, while maintaining planned accessibility challenge levels.

FIRE

Forest-wide Standards & Guidelines

Fire Suppression: FIRE12

I. Objectives

- A. The fire suppression program will seek to respond to all wildfires in a cost-effective manner and to minimize the number of acres lost to wildfire. Specifically, the program's intent is to minimize fire suppression cost and net land value change while providing for the safety of the public and of the personnel engaged in fire suppression activities.

II. Suppression options

- A. Plan, implement, and maintain a fire management program using the National Fire Management Analysis System (NFMAS).
- B. Base the selection of wildfire suppression action on land use designation objectives.
- C. Consider the land use designation objectives in the selection of a suppression strategy for an escaped fire.

Fuels Improvements: FIRE2

I. Objectives

- A. The intent of the fuels management program is to treat both activity fuels and natural vegetation to the degree needed to facilitate implementation of the fire protection program. Development of fuels prescriptions will be consistent with the specific land use designation.
- B. Use prescribed fire to accomplish resource management objectives.

FISH

Forest-wide Standards & Guidelines

Fish Habitat Inventory: FISH111

I. Inventory

- A. Maintain the channel type and stream class (see Glossary) based inventory of all Forest streams.
 - 1. Maintain and update the stream inventory during site-specific project planning and analysis. Consult publication R10-MB-6, the "Channel Types Field Guide" (as revised), for descriptions of the channel types.
- B. Maintain the inventory of Forest streams for fish enhancement opportunities. As part of this inventory, document barriers to fish migration, including their attributes. Record location of barriers in the Forest-wide GIS data base.

Fish Habitat Planning: FISH112

I. Channel classification and process groups

- A. Use channel type inventories to categorize stream reaches into channel process groups. Use channel types and process groups to plan management activities affecting fish and fish habitat along all lakes and streams. (Consult the Alaska Region's "Aquatic Habitat Management Handbook.") Process groups to be used are:

Process Groups

Low gradient floodplains
Alluvial fans
Large low gradient contained
Moderate gradient contained
Mixed control moderate gradient
High gradient contained
Placid or glide streams
Lakes, ponds and floodplains
Estuarine

Channel Types

B1,B8,C1,C3,C4,C6,D4,D5,D8
A3,B5,D1,D6
C2,C5
B4,B6,B7
B2,B3,D3
A1,A2,A4,A5,A6,A7,D2,D7
L1,L2
L,L3,L4,L5
E1,E2,E3,E4,E5

These groups may be redefined as more information about channel types becomes available.

- 1. Map and field-verify streams, lakes and estuaries by channel type and class as needed for project planning and implementation.
- 2. During project planning, refine direction given in the Forest Plan for process groups to meet site-specific objectives of individual stream sections for fish habitat.
- B. Further develop the habitat capability models for understanding the relationship between fish and fish habitat. The primary purpose is to improve the understanding of Forest Plan Management Indicator Species' habitats and population relationships.

II. Objectives for management affecting fish habitat

- A. Maintain or improve fish habitat capability in channel process groups.
 - 1. *Stream Class I:* Maintain or improve aquatic biological productivity within each individual Class I stream system.
 - 2. *Stream Class II:* Maintain habitat capability for resident fish populations, and for downstream Class I stream systems, to the extent practicable.

3. *Stream Class III*: Maintain water quality for downstream Class I and II stream systems.
- B. Maintain natural stream bank and stream channel processes.
 1. *Stream Class I and Class II streams that flow directly into Class I streams*. Maintain or improve anadromous, adfluvial, and high value resident sport fish habitat capability by providing natural or improved cover/pool ratio, pool-riffle sequences, and habitat features, such as stable large woody debris. Design management activities to maintain stream bank, channel and floodplain integrity.
 2. *Other Stream Class II*: Maintain habitat capability for resident fish populations, to the extent practicable, by providing natural or improved cover/pool ratio, pool-riffle sequences, and habitat features, such as stable large woody debris. Design management activities to maintain stream bank, channel and floodplain integrity. Avoid impacts to downstream Class I streams.
 3. *Stream Class III*: Design management activities to maintain stream bank, channel and floodplain integrity. Avoid impacts to downstream Class I and Class II streams.
- C. Maintain natural and beneficial quantities of large woody debris (LWD) over the short and long-term.
 1. *Stream Class I and Class II streams that flow directly into Class I streams*. Maintain anadromous, adfluvial, and high value resident sport fish habitat capability by providing for natural and beneficial volumes of LWD for rearing and spawning, stream energy dissipation, and sources of organic matter to the stream ecosystem. Use biological and physical characteristics of the stream to determine size classes and distribution.
 2. *Other Stream Class II*: Maintain habitat capability for resident fish populations, to the extent practicable, by providing LWD, and by designing for future sources at volumes determined by channel type biological and physical characteristics.
 3. *Stream Class III*: Maintain LWD in channels and banks to prevent changes in natural stream bank and stream channel processes.
- D. Maintain water quality to provide for fish production.
 1. *Stream Classes I, II, and III*: Prevent adverse effects to rearing and spawning habitat. Maintain anadromous, adfluvial, and high value sport fish habitat capability, as well as capability for other resident fish populations, to the extent practicable. Assure no chronic sediment input following soil-disturbing activities. Prevent adverse impacts to fish habitat downstream by minimizing siltation.
 2. Implement applicable Best Management Practices. (See Appendix C).
- E. Maintain or improve water temperature at a level to optimize salmonid populations.
 1. *Stream Class I and Class II streams that flow directly into Class I streams*. Maintain optimum salmonid summer stream temperatures at between 50 and 68°F or at natural levels. Manage watersheds and riparian streambanks to attain optimum stream temperature regimes.
 2. *Other Stream Class II*: Maintain water temperatures below 68°F, or at natural levels, to maintain habitat capability for resident fish populations, to the extent practicable. Manage watersheds and riparian streambanks to maintain water temperature standards and guidelines for downstream Class I streams.
 3. *Stream Class III*: Manage watersheds and riparian streambanks to maintain water temperature standards and guidelines for downstream Class I and II streams.
- F. Maintain or improve primary or secondary stream biological production in second-growth forests.
 1. *Stream Class I and Class II streams that flow directly into Class I streams*. Maintain natural or improved primary and secondary biological production in streams to provide for full biological potential of anadromous and adfluvial fish habitat and high quality resident sport fisheries.
 2. *Other Stream Class II*: Manage vegetation and biological productivity to maintain habitat capability for resident fish populations to the extent practicable, and to maintain nutrient sources for downstream waters.

3. *Stream Class III*: Manage vegetation to provide maintenance of nutrient sources to downstream waters.
- G. Maintain fish passage through stream crossing structures.
1. *Stream Class I and Class II streams that flow directly into Class I streams*. Maintain or improve the opportunities for adult and juvenile anadromous and adfluvial sport fish migration. (Consult the Aquatic Habitat Management Handbook, FSH 2609.24.)
 2. *Other Stream Class II*: Where economically feasible, maintain or improve the opportunities for natural migration for resident fish. Consult the Aquatic Habitat Management Handbook, FSH 2609.24. Consult with the Alaska Department of Fish and Game whenever fish passage may be restricted.
 3. *Stream Class III*: No fish habitat is found in this stream class.

III. Management Indicator Species

- A. Use Management Indicator Species (MIS) to evaluate management activities' effects on fish.
1. When planning projects, use the following guidelines for the selection of MIS:
 - * First priority shall be for the MIS selected for the Forest Plan and federally listed threatened and endangered species
 - * Second priority shall be for MIS recommended for the Region. (Consult the USDA Forest Service publication *Wildlife and Fisheries Habitat Management Notes – Management Indicator Species for the National Forest Lands in Alaska*, publication R10-TP-2.)
 - * Third priority will be to use the following guidelines for the selection of MIS when the first and second priority do not meet the needs for a particular project area:
 - a) State listed threatened or endangered.
 - b) Species which have the potential to be seriously and adversely affected by the proposed project and are not adequately represented by the above MIS.
 - c) Species for which the Forest comprises a majority total statewide, Regional or National habitat and which are not adequately represented by the above MIS.
 - d) Species which represent or reflect environmental suitability for other species and are not adequately represented by the above MIS.
 - e) Species having significant economic value. Normally these species are those commonly fished for sport, subsistence, or commercial use.

IV. Management Activities

- A. Maintain a fish program schedule which includes anticipated inventory needs, monitoring requirements and proposed habitat improvement and maintenance projects.
- B. During the design and implementation of management activities which are likely to affect fish habitat, favor the improvement or maintenance of natural fish habitat over mitigation or rehabilitation.

V. Coordination

- A. Coordinate activities that affect fish resources with other Forest disciplines through the IDT process, and with State, other Federal, and local agencies and groups.
1. Maintain Memoranda of Understanding with appropriate State, Federal and local agencies and aquaculture associations.
 2. Establish timing periods for instream and estuarine work with Alaska Department of Fish and Game.
 3. Require that each Administrative Area meet at least annually with appropriate agencies (such as the Alaska Department of Fish and Game, National Marine Fisheries Service and the U.S. Fish and Wildlife Service) to review resource activities, and schedule work needing coordination.

4. Coordinate with the Alaska Working Group on Cooperative Forestry/Fisheries Research, state and federal agencies, and the Forestry Science Laboratory, in maintaining a continuous program for research, monitoring, and assessment of impacts of land-use activities on fish habitat.
- B. Avoid attracting use to locations with limited distribution or numbers of individual species.
- C. Consider effects of off-highway vehicle (OHV) travel and road closures on fish.
- D. Use the Sikes Act authorities for cooperative work with the State.

VI. Projects

- A. Use the following priority for fish habitat project work: mitigation for unplanned impacts, rehabilitation, enhancement. For both mitigation and rehabilitation, consider alternatives for cost efficiency of performing off-site enhancement (enhancement of a different area than where the impact actually occurs).
 1. Location of off-site enhancement shall be governed by the following priorities:
 - * First priority: same stream reach (same species)
 - * Second priority: same stream (same species)
 - * Third priority: same watershed (same species)
 - * Fourth priority: same anadromous fish harvest area (same species)
 - * Fifth priority: differing species, using above priority order
- B. Enhance fish habitat to meet the objectives identified in this Plan. Opportunities may include, but are not limited to: instream enhancement, lake fertilization, cooperative bio-enhancement (e.g. stocking), incubation boxes, and fishway construction.
 1. Use the Cooperative Fisheries Planning process (see ANILCA Section 507) and/or other cooperative agreements for developing priorities for the enhancement of fish resources.
 2. Determine habitat capability on streams and lakes identified for enhancement in the Cooperative Fisheries Planning process prior to construction of fish projects.
 3. As projects are constructed or eliminated from consideration, schedule enhancement opportunity investigations on a yearly basis to provide for ongoing listing of additional projects.
- C. Recognize bio-enhancement (e.g. stocking of juveniles, use of egg incubation boxes, transferring of adult fish to seed stream systems) as part of the fish improvement project costs when appropriate. Cooperate/coordinate with fish agencies and aquaculture associations to facilitate bio-enhancement.
 1. Establish the appropriateness of bio-enhancement by the need to meet fish production goals of the project identified in project planning.

Fish Habitat Improvement: FISH22

I. Planning

- A. Improve fish habitat to achieve the habitat and population objectives of the Forest Plan.
- B. Construct projects using the most cost-efficient methods, while achieving desired results consistent with the land use designation.
- C. During project planning consider the need to monitor the accomplishment of project objectives. Need shall be governed by the type of project, with high interest, high investment projects monitored more intensively.
 1. Where needed, develop cooperative agreements with fish/aquaculture agencies and other groups to assess the effectiveness of Forest Service habitat improvement.

II. Construction Coordination

- A. Coordinate fish habitat improvement construction using an interdisciplinary process.
- B. Coordinate habitat improvement projects with the Alaska Department of Fish and Game and other appropriate agencies and groups.

Fish Habitat Maintenance: FISH23

I. Maintenance

- A. Provide for the maintenance of fish habitat enhancements.**
 - 1. Fund maintenance of existing projects prior to the construction of new ones.**
 - 2. Include funding for maintenance in the planning and budgeting for all projects.**
 - 3. Maintain improvements to assure that project objectives are met.**
 - 4. If maintenance and operation of an improvement are evaluated, and the improvement becomes inefficient to maintain; redesign or stop maintenance of that improvement.**
 - 5. If an improvement becomes inoperable, consider its removal or reconstruction.**
- B. Develop a written maintenance responsibilities agreement with project cooperators prior to project construction.**

FOREST PESTS

Forest-wide Standards & Guidelines

Forest Pest Management: PEST1

I. Forest Pest Management

- A. Maintain or improve forest health by applying forest pest management principles. (Consult the Forest Pest Management group, State and Private Forestry for principles) during project design and implementation.
 - 1. Create ecological conditions which improve the health of vegetation by incorporating forest pest management principles into forest planning, decision-making, and implementation of project activities. The Forest Pest Management Group will be responsible for providing the data necessary for project planning to maintain or improve forest health.
 - 2. Consider Forest Pest Management Group recommendations in minimizing the impacts of pests. These recommendations will include analysis of a variety of pest control alternatives, including no action, chemical, cultural, mechanical, and biological methods.
- B. Evaluate pest damage to resources. The Forest Pest Management Group will:
 - 1. Evaluate pest conditions through ground surveys to determine pest damage levels and effects.
 - 2. Use data from these evaluations to develop District project prescriptions.
- C. The Forest Pest Management Group will provide training, technology transfer, and technical assistance to Area and District personnel to assist management of forest pests.

Forest Pest Survey & Inventory: PEST2

I. Forest and District Cooperation

- A. The Forest Pest Management Group will conduct an annual pest survey in cooperation with the Areas and Districts.
 - 1. Resource managers will notify the Forest Pest Management Group of any pest problems noted during field activities on the Forest.
 - 2. Prior to the survey, resource managers will set survey priorities and will notify the Forest Pest Management Group of their needs.
 - 3. The Forest Pest Management Group will conduct surveys of a variety of forest cover types and land use designations. Surveys will concentrate in those areas identified as having highest management priority by the Areas and Districts.

LANDS

Forest-wide Standards & Guidelines

Lands Preparation: LAND11

I. Land Status

- A. Perform a land ownership review during early project planning stages, prior to management activities, to ensure protection of State, private, and other Federal Agency rights and interests.
 - 1. Consult sources, such as BLM Master Title Plats (MTP's), in addition to the land status atlas, to identify land encumbrances which do not appear in the land status atlas.

II. Coordinating with Others

- A. Coordinate activities, including environmental analysis on National Forest System land, with adjacent State and private landowners. Solicit and consider their input when analyzing proposals which might affect them.
- B. Coordinate, in accordance with the MOU, all projects which have a direct effect on the coastal zone, with Alaska Office of Management and Budget, Division of Governmental Coordination, to ensure activities are consistent, to the maximum extent practicable, with the Alaska Coastal Zone Management Program. The Coastal Zone excludes all Federal lands.
- C. Cooperate with the State of Alaska and local communities to help develop coastal zone area plans compatible with Forest Service upland management objectives.
- D. Coordinate activities on encumbered lands with interest holders, as appropriate.

Special Use Administration (non-Recreation): LAND122

I. Special Use Authorization

- A. Manage special use authorizations to best serve the public interest, in accordance with the following standards and guidelines. (Consult 36 CFR 251.)
 - 1. Do not authorize private uses of National Forest System lands when such uses can be reasonably accommodated on other lands. (Consult FSM 2700.)
 - 2. Review new special use requests for their compatibility with land use designations, based on a consideration of environmental values, economic feasibility, and a determination of social and economic benefits. Do not approve permits solely for the purpose of creating business opportunities or to reduce cost for the applicant. (Consult FSM 2700 and the Alaska Regional Guide.)
 - 3. In addition to the above criteria, special use applications may be denied if the authorizing officer determines that: 1) the proposed use would not be in the public interest; 2) the applicant is not qualified; 3) the proposed use would otherwise be inconsistent with applicable Federal or State law; or 4) the applicant does not or cannot demonstrate technical or financial capability. (Consult 36 CFR 251.54.)
 - 4. Review and adjust special use fees on a planned basis to comply with the Federal Land Policy and Management Act and Forest Service policy. (Consult the Alaska Regional Guide and FSM 2700.)
 - 5. Upon renewal or transfer of a permit, terminate or bring into conformance existing uses which are not compatible with the Forest Plan.
 - 6. On lands encumbered by State selections, obtain concurrence from the Alaska Department of Natural Resources prior to granting a Special Use Authorization, in ac-

- cordance with the Alaska National Interest Lands Conservation Act, Section 906 (k) and Forest Service Manual policy. (Consult FSM 5450.)
7. Do not issue Special Use Authorizations on lands selected, or withdrawn for selection by a Native corporation without the consent of that Native corporation, unless waived by the Regional Forester. (Consult FSM 5450.)
 8. Do not issue Special Use Authorizations on lands for which there is a Native Allotment application without consent from the applicant and the Bureau of Indian Affairs (as appropriate), unless the application has been adjudicated by BLM as being invalid and the case has been closed. Contact the Regional Forester prior to granting a Special Use Authorization within an active claim area, as Regional Forester authorization may also be required. (Consult FSM 5450.)
 9. Coordinate all Special Use Authorization proposals which have a direct effect on the coastal zone, with Alaska Office of Management and Budget, Division of Governmental Coordination, to ensure these activities are consistent, to the maximum extent practicable, with the Alaska Coastal Zone Management Plan. The Coastal Zone excludes all Federal lands.
 10. Require that structures be constructed and maintained in a manner to blend with the surrounding environment, and be consistent with management objectives and other allowed activities. To the extent practical, locate new structures hidden from areas of concentrated visitor use, such as rivers, roads, trails, and public recreation cabins.
 11. Manage authorized uses to maintain a neat and sanitary condition of the permit area. The preferred method of litter disposal is to remove all litter from National Forest System lands and dispose of it at appropriate sanitary facilities. If this is not practical, require the permit holder to burn all burnables on site, at a location designated by the responsible Forest Officer, and remove all materials which cannot be burned for disposal at an approved disposal site.
 12. Locate outdoor toilets away from lakes, rivers, and streams. Follow guidelines in the State Wastewater Disposal Regulations. Outdoor toilet locations will be approved by the Forest Service prior to construction. (Consult 18 AAC 72.)
 13. To the extent allowed by law, regulation, and policy, require permit applicants to conduct environmental analyses and supporting activities (such as cultural resource surveys) and submit them to the responsible official for consideration in Forest Service decisions.

II. Cabins and Related Structures

- A. Manage cabins and related structures which were existing but unauthorized prior to ANILCA (December 2, 1980), in accordance with the following standards and guidelines. (In Wilderness, consult FSM 2320 and the Wilderness Management Prescriptions).
 1. Allow the continuation of customary and traditional uses of cabins and related structures which were existing but unauthorized on December 2, 1980 in accordance with a nontransferable, renewable, five-year Special Use Permit until the death of the last immediate family member of the original permittee, when such uses are compatible with land use designation direction, and are otherwise in compliance with the Alaska National Interest Lands Conservation Act (ANILCA), Section 1303(b).
 2. Prior to issuing a permit, in accordance with ANILCA, Section 1303(b)(3), require the permit applicant to: 1) reasonably demonstrate by affidavit, bill of sale or other documentation, proof of possessory interest or right of occupancy; 2) submit a sketch or photograph of the cabin and a map showing its location; 3) agree to vacate the cabin and remove all personal property from it within a reasonable time period following nonrenewal or revocation of the permit; and 4) acknowledge in the permit application that the applicant has no interest in the real property on which the cabin is located.

3. When issuing these permits, list all qualifying immediate family members along with the original claimant and require that one person be designated to represent all permit holders. The original claimant is the resident of record, as of December 2, 1980.
 4. An immediate family member consists of spouse, children, and parents. It does not include brothers, sisters, grandchildren, grandparents, or other relatives.
- B. Manage cabins and related structures which were authorized on December 2, 1980, in accordance with the following standards and guidelines. (For Wilderness cabins and related structures, consult FSM 2320 and the Wilderness Management Prescriptions).
1. Allow the continued use of cabins, homesites, and similar structures which were authorized on December 2, 1980, in accordance with the terms of the original permit. Generally renew these permits (if the terms of the permit in effect on December 2, 1980 allow for renewal), subject to reasonable regulations and provisions of the Alaska National Interest Lands Conservation Act, Section 1303(d), unless continuation of the use would constitute a direct threat or significant impairment to the purposes for which the National Forest or conservation system unit was established. A reasonable fee may be imposed on cabins previously under free use or existing fees may be increased by a reasonable amount, to keep pace with inflation, or for other justifiable purposes.
 2. These permits may be transferred to one other person at the election or death of the permittee of record on December 2, 1980, if the conditions of the original permit allow for such transfer.
- C. Manage new cabins and related structures, in accordance with the following standards and guidelines. (For Wilderness, consult FSM 2320.)
1. The construction of new cabins is prohibited with the following limited exceptions. A nontransferable, five-year special use permit may be issued in some circumstances, following a determination that: 1) the proposed use, construction, and maintenance of the cabin are compatible with land use designation objectives; 2) use of the cabin is directly related to administration of the area or is necessary for continuation of an ongoing activity, allowed within the area; and 3) the permit applicant has no reasonable alternative.
 2. Do not permit construction of new cabins for private recreational or residential uses. Consider permitting new cabins for some commercial uses, when a cabin is necessary to provide a needed public service (generally, public need is identified in a prospectus) or within areas where such commercial use of cabins was an established customary and traditional use prior to December 2, 1980. Consider permitting new cabins for administrative use by other Agencies, such as Alaska Department of Fish and Game, when no practical alternatives exist.
 3. All new cabins will be deeded over to, and become the property of, the United States Government, as provided in the Alaska National Interest Lands Conservation Act, Section 1303(b)(4).
 4. Prior to issuing a permit, in accordance with ANILCA, Section 1303(b)(3), require the permit applicant to: 1) submit a sketch or photograph of the proposed cabin and a map showing its location; 2) agree to vacate the cabin and remove all personal property from it, within a reasonable time period following nonrenewal or revocation of the permit; 3) acknowledge in the permit application that the applicant has no interest in the real property on which the cabin will be constructed; and 4) quit claim deed the cabin, to the United States Government.
- D. Provide for subsistence uses by authorizing temporary facilities, such as tent platforms, rather than new cabins. Follow procedures and design standards for temporary facilities, found in Section 1316 of the Alaska National Interest Lands Conservation Act, the following section on temporary facilities, and the Forest Service Manual. (Consult FSM 2720.)

III. Temporary Facilities

- A. A temporary facility is defined as: "Any structure or other man-made improvement which can be readily and completely dismantled and removed from the site when the authorized use terminates." (Consult FSM 2720.)
- B. Permit temporary campsites, tent platforms, shelters, and other temporary equipment, directly and necessarily related to the taking of fish and wildlife, subject to: 1) reasonable regulation to ensure compatibility; 2) conditions of the Alaska National Interest Lands Conservation Act, Section 1316; 3) Forest Service Manual direction, and 4) consistency with management prescriptions direction. (Consult FSM 2720. In Wilderness, consult FSM 2320.)
 - 1. When issuing new permits for subsistence-related facilities, authorize tent platforms and associated temporary facilities only.
 - 2. To the extent practical, locate subsistence camps out of sight of high use areas such as rivers, roads, trails, public recreation cabins, and other user facilities.

IV. Aquatic Farming Permits

- A. "Aquatic farming" should not be confused with "aquaculture". Consult the glossary for a definition of these and related terms. "Aquatic farming" is provided for in Alaska State Law (AS 16.40.100 - 16.40.199, June 9, 1988). It involves growing aquatic plants or shellfish for sale, either in captivity or under positive control. Typically shellfish are pen-reared. Finfish are generally not included and release of the organism does not result in a product becoming available as a common property resource. "Aquaculture" is provided for in ANILCA, Section 1315(b). It involves the maintenance or improvement of fish stocks. It includes facilities such as fish hatcheries and projects such as fish stocking or lake fertilization. It includes finfish and release results in a product becoming available as a common property resource.
- B. Cooperate with State and other Federal Agencies to meet industry and public needs for aquatic farming programs and ensure compatibility with other resources and activities.
 - 1. During evaluation of requests for Forest Service permits, carefully analyze the effects of aquatic farming activities on other resources and other activities, such as recreational uses and access to adjacent uplands. Oppose aquatic farm development in or adjacent to National Forest System Wilderness.
 - 2. Coordinate responses to aquatic farming proposals with the Alaska Department of Natural Resources and Alaska Office of Management and Budget, Division of Governmental Coordination.
 - 3. Initially, issue permits only for low investment, minimum development, temporary support facilities (not to include cabins) which can be readily removed from the site if the project ceases to be viable for the operator. Consider permitting additional support facilities on National Forest System lands, only after a viable business is established and need for the facilities can be demonstrated.

V. Floathouses

- A. Manage residential floathouses in accordance with the following standards and guidelines.
 - 1. Issue Special Use Authorizations for floathouse shoreties only at locations where the activity is specifically provided for in the Alaska Coastal Zone Management Plan or approved coastal zone area plans.
 - 2. Cooperate with the State of Alaska and local communities to help develop criteria which address floathouse placement. In developing new State or city plans, encourage locating floathouses near communities or adjacent to private uplands. Avoid locating them: 1) adjacent to designated Wilderness or other areas where they would be incompatible with upland management objectives; 2) where they may adversely affect forest resources; or 3) where they may conflict with higher priority public uses.

3. As a condition of the Forest Service Special Use Authorization, require applicants to obtain all necessary authorizations from other appropriate Agencies, such as Alaska Department of Natural Resources and the U.S. Army Corps of Engineers.

VI. Fish Camps

- A. Apply the following standards and guidelines to permits for commercial set net fish camps.
 1. Where the use of commercial fish camps, including primitive cabins, is a customary and traditional use, allow this use to continue within traditional locations, at approximately traditional densities, as established prior to ANILCA (December 2, 1980), if compatible with land use designations objectives.
 2. New facilities will usually be tent platforms and associated temporary facilities unless a need can be demonstrated for a cabin.
 3. New cabins, if authorized, will not exceed 500 square feet in size. Limit new cabin authorizations to one cabin per set net permit. If needed, authorize additional sites for use with a tent platform.
 4. Assign a permit tenure of five years for cabins and one to five years for tent platforms with the provision that, unless revoked for violation of permit conditions, these permits may be renewed upon expiration.
 5. Assign new fish camp permit holders areas up to 1/4 acre in size, based on need.
 6. Within areas traditionally used for fish camps, do not authorize new non-related special uses, other than uses associated with subsistence. Allow existing privileges currently under permit, to continue. Do not allow fish camp permit holders to engage in other commercial activities from their fish camps, such as outfitter/guide or lodge/resort activities, unless already authorized by permit.
 7. Consider authorizing requests for subsistence uses from fish camps; however, any authorization for subsistence uses from fish camps will be documented in writing to the permit holder, along with conditions, if any, which may be necessary to protect resources and the rights of other users. Do not permit residential uses of fish camps.
 8. To obtain a fish camp permit, require applicants to hold a commercial set net permit from the Alaska Department of Fish and Game, valid for the area in which the proposed facility is to be located. Camp occupancy will generally correspond to the dates of the open set net season, with exceptions allowed for camp set up and take down (if necessary) and for subsistence uses, if authorized.
 9. Some fish camp permits have traditionally been issued free of charge. In compliance with the Federal Land Policy and Management Act, and Federal Regulations (36 CFR 251 .57), assess appropriate fees in conjunction with all commercial fish camp uses.
 10. Natural hydrologic changes may lead to use areas being relocated. This need is recognized and new use areas may be authorized, if necessary, following separate environmental analysis, as rivers change their course or other changes lead to shifts in the location of fish runs. Issue permits for tent platforms in new locations where cabin use is not already established.

VII. Right-of-Way Grants

- A. Grant reasonable access across National Forest System land to allow inholders and other landowners use of their land without unnecessarily reducing Forest Service management options or damaging National Forest lands or resources. (Consult FSM 2730.)
 1. Ensure that all roads constructed through permits or leases are designed according to standards appropriate to the planned uses, considering safety, cost of transportation, and effects upon lands and resources. Ensure these roads are planned and designed to re-establish vegetative cover on the disturbed area within a reasonable period of time (not to exceed 10 years) after the termination of the permit or lease,

unless the road is determined as a permanent addition to the National Forest transportation system. (Consult 36 CFR 219.)

- B. Apply the following approval authorities, as applicable, when processing right-of-way grant requests.
1. Continue to use existing authorities such as the Federal Land Policy and Management Act (FLPMA), the Forest Road and Trail Act (FRTA), and the Highway Act of 1958, except when prohibited by other applicable law.
 2. When proposed rights-of-way cross, or enter upon, a Conservation System Unit (as defined in ANILCA, Section 102(4)), follow procedural requirements found in ANILCA, Section 1104.
 3. When proposed rights-of-way will provide access to State or private inholdings or valid occupancies (such as a mining claim or Special Use Authorization) surrounded by, within, or effectively surrounded by, a Conservation System Unit, use authorities found in ANILCA, Section 1110(b).
 4. When proposed rights-of-way will provide temporary access to non-Federal lands, to or across a Conservation System Unit, for purposes of survey, geophysical, exploratory, or other temporary uses which will not result in permanent resource damage, use authorities found in ANILCA, Section 1111.
 5. When proposed rights-of-way will provide access to other non-Federal inholdings, either within or outside of a Conservation System Unit, use authorities found in ANILCA, Section 1323(a).
- C. Allow the following activities to occur without requiring a Special Use Authorization. (Consult ANILCA, Section 1110(a).)
1. Allow the use of snowmachines, motorboats, fixed-wing airplanes, and nonmotorized surface transportation methods for traditional activities which are permitted by law and for travel to and from villages and homesites, subject to reasonable regulations to protect resource values. These uses do not require a permit and may be prohibited only following a notice and hearing in the vicinity of the affected area, and a determination that such uses would be detrimental to resource values.
 3. This direction does not authorize the construction or maintenance of improvements or facilities on National Forest System lands, nor does it authorize use of off-highway vehicles, other than snowmachines.
- D. Apply the following standards and guidelines to Transportation and Utility Systems. The primary purpose of these systems is to accommodate public transportation and energy transmission. These Transportation and Utility Systems include significant existing and proposed transportation and utility sites and corridors, and other rights-of-way necessary to accommodate use from a facility or other compatible right-of-way, when such rights-of-way cross National Forest System lands.

Examples of facilities located within these corridors include, but are not limited to, State and Federal Highways, railroads, powerlines 66kV and above, and pipelines 10 inches or greater in diameter, constructed by holders of a special use authorization. Water pipelines greater than 10 inches are included only if they are a public utility (i.e., if they service a community water supply).

These systems will generally include sites where associated facilities, such as dams, reservoirs, or generators, are located. Sites and corridors include the land directly under, and immediately adjacent to the facilities. Sites have significant improvements located within a generally compact area, while corridors are linear in nature. Sites and corridors will generally be void of large vegetation, but may contain low-lying ground vegetation.

1. A Transportation and Utility System (TUS) "window" is an area potentially available for the location of transportation or utility corridors and sites. Windows represent areas of future opportunity where the applied management direction will not conflict with

future designation of a TUS. A site-specific analysis is still required during project level planning, to identify resource protection needs within these areas. Windows are designated through the allocation of lands to TUS windows in their standards and guidelines.

2. A TUS "avoidance area" is an area where the establishment and use of transportation or utility corridors and sites is not desirable given the land use designation emphasis. A search for "windows" should be exhausted before TUS facilities are considered in avoidance areas. When practical, these areas should be avoided through site-specific analysis during project level planning. Avoidance areas often include Congressionally and administratively designated areas. Although special environmental or procedural considerations may be required for these areas, these special designations do not preclude consideration and use as a TUS. Avoidance areas are designated through the allocation of lands to land use designations specifically identified as TUS avoidance areas in their standards and guidelines.
3. A TUS "exclusion area" is a large area (large enough to cause significant barriers) which legislatively precludes transportation and utility systems. There will be no exclusion areas on the Tongass National Forest due to special authorities provided in ANILCA, Title XI.
4. Try to accommodate new transportation and utility proposals within existing corridors, to the maximum extent feasible. (Consult 36 CFR 219.)
5. Site-specific locations and mitigation measures for unconstructed TUS's will be determined by project level planning which will analyze environment considerations, such as visual resources, wildlife habitat, and soil conditions.

VIII. Military Training Activities

- A. Authorize military training activities on National Forest System lands in accordance with the Master Agreement between the Department of Defense and the Department of Agriculture which governs the use of National Forest System Lands for these purposes. (Consult FSM 1530.)
 1. Authorize military training activities on National Forest System lands when these activities: 1) will be compatible with other uses; 2) conform to land use designation direction; and 3) after the Department of Defense has determined and substantiated that lands under its administration are either unsuitable or unavailable.
 2. Determine probable effects of proposed activities, necessary mitigation measures, and effective monitoring techniques, on a case-by-case basis, with a site-specific environmental analysis, conducted in accordance with the Master Agreement.
 3. When local supplemental agreements with Military Agencies exist, consult such agreements for additional direction.

IX. Sanitary Landfills

- A. Manage landfills in accordance with the following National policy but subject to approved special provisions for Alaska.
 1. Require strict compliance with applicable Environmental Protection Agency guidelines.
 2. Avoid authorizing new solid waste disposal sites and the expansion of existing sites on National Forest System lands, subject to exceptions approved for the Alaska Region.
 3. Provide for solid waste disposal sites through exchange, sale under the Townsite Act (7 U.S.C. 1012a; 16 U.S.C. 478a), or selection by the State of Alaska of National Forest System lands when there is no viable alternative on non-Federal land and where there will be no adverse impacts to other National Forest resources or land. Encourage the State of Alaska to select those areas suitable and needed for solid waste disposal near existing and proposed communities to eliminate the need to use National Forest

- System lands. Provide conditions for the conveyance document to assure the land will be controlled by a government entity and activities which interfere with the management and protection of adjacent National Forest System lands will not occur.
4. Subject to exceptions approved for the Alaska Region, phase out existing Special Use Authorizations for solid waste disposal sites by December 31, 1999. Terminate authorizations as opportunities become available, based on factors such as useful life of the site, opportunity for land exchange, impacts to other Forest resources, and compliance with the terms and conditions of the Authorization. Require all solid waste disposal sites to comply with appropriate criteria and guidelines in 40 CFR 241, 40 CFR 257, and FSM 7460.
 5. Special situations in Alaska may require the continued use of National Forest System lands for some non-community domestic waste disposal in remote locations. Remote locations are island and mainland locations, accessible only by aircraft or boat, with no private land available for solid waste disposal. Examples of typical situations include: 1) remote lodges under special use authorization; 2) mining activities in remote Forest locations; 3) remote Forest Service administrative sites; 4) Forest Service contractors working in remote locations; 5) aquaculture sites in remote locations; and 6) the needs of the state and other Federal Agencies located in remote National Forest locations. Even in these special situations, encourage Forest users to pack-out waste materials and remove them from National Forest System lands, to the extent practical.

Land Ownership Administration: LAND123

I. Land Selections

- A. When making land management decisions, appropriately consider valid State selections (pursuant to the Alaska Statehood Act), Native selections (pursuant to the Alaska Native Claims Settlement Act, as amended, or the Haida Land Exchange Act of 1986), and Native Allotment claims (pursuant to the Alaska Native Allotment Act of 1906). Protect legal rights of the State of Alaska and Native Corporations when managing selected or withdrawn lands. Apply the following standards and guidelines to Land Use Designations encumbered by State selections, Native selections or withdrawals, and Native Allotment applications, until these lands are either conveyed into State or private ownership, or they revert back to unencumbered National Forest System land.
 1. Cooperate with the State of Alaska, Native Corporations, Native Allotment applicants, the Bureau of Land Management, the Bureau of Indian Affairs, and other Federal Agencies, to assist in processing legitimate claims or applications. Encourage other parties involved to assist in finalizing conveyance of full legal entitlement in a timely manner.
 2. Avoid Forest Service investment on lands encumbered by State selections, Native withdrawals or selections, or Native Allotment applications.
 3. Carefully review each selection, prior to conveyance, to identify third party interests and needed right-of-way reservations which are allowed under applicable legislation.
- B. Manage State selections, entered under authority of the Alaska Statehood Act, according to the following standards and guidelines. (Consult 43 CFR 2627.)
 1. Encourage State selections adjacent to existing communities. Work with State agencies and local communities to substantially eliminate Forest ownership in and adjacent to communities where State, borough, or community governmental improvements and jurisdiction should logically reside.
 2. Obtain concurrence from the Alaska Department of Natural Resources prior to any surface-disturbing activity or granting any occupancy permit, contract, easement, or other similar use authorization on State selected lands, in accordance with the Alaska

- National Interest Lands Conservation Act, Section 906(k) and Forest Service Manual policy. (Consult FSM 5450.)
- C. Apply the following standards and guidelines to Land Use Designations encumbered by Native selections or withdrawals, made under authority of the Alaska Native Claims Settlement Act (ANCSA), as amended, until these lands are either conveyed into private ownership, or they revert back to unencumbered National Forest System land. (Consult 43 CFR 2650.)
 - 1. Do not issue occupancy permits, contracts, easements, or similar authorizations on lands selected, or withdrawn for selection, by a Native Corporation under authority of ANCSA, without coordination and consent from that Native Corporation, unless permission is first obtained from the Regional Forester. (Consult FSM 5450.)
 - 2. Do not allow timber harvest on lands selected by a Native Corporation under authority of ANCSA, which fall within a timber sale contract contingency area, except by agreement with that Native Corporation. (Consult ANCSA, as amended by Section 908 of the Alaska National Interest Lands Conservation Act. "Contingency Area" is defined in this section of ANILCA.)
 - D. Apply the following standards and guidelines to land use designations encumbered by Native land withdrawals, made under authority of the Haida Land Exchange Act of 1986, until these lands are either conveyed into private ownership, or they revert back to unencumbered National Forest System land.
 - 1. During acceptance periods provided in the Haida Land Exchange Act of 1986, manage lands available for conveyance under Section 4 of that Act, to maintain their existing character and resources, subject to active existing rights. (Consult Section 8, Haida Land Exchange Act of 1986.)
 - E. Apply the following standards and guidelines to land use designations encumbered by Native Allotment applications, submitted under authority of the Alaska Native Allotment Act of 1906, until these lands are either conveyed into private ownership, or they revert back to unencumbered National Forest System land. (Consult 43 CFR 2561.)
 - 1. Do not issue use authorizations, such as permits, contracts, or easements, on lands for which there is a Native Allotment application, without consent from the applicant and the Bureau of Indian Affairs (as appropriate), unless the application has been adjudicated by BLM as being invalid and the case has been closed. Contact the Regional Forester prior to granting use authorizations within a valid claim area, as authorization from the Regional Forester may be required. Do not authorize construction of new roads on a valid claim area unless a Deed of Further Assurance has been obtained and recorded, or clearance has been received from the Regional Forester. (Consult FSM 5450.)

Landline Location and Maintenance: LAND23, LAND24

I. Establishing Boundaries

- A. Apply the following standards and guidelines when maintaining established National Forest property boundary lines and corners, or when locating, surveying, and posting new National Forest property boundaries and corners.
 - 1. Coordinate with the Bureau of Land Management (BLM) for original boundary line survey. Encourage cooperative work with the BLM to mark and post original National Forest/State and National Forest/Native boundaries to Forest Service standards. The Forest Service will maintain these boundary lines and corners after the original survey. These boundaries should not be surveyed, marked or posted, until after conveyance of the land.
 - 2. Maintain the existing inventory of surveyed and unsurveyed boundary lines to establish survey priorities. Establish program priorities to coincide with Forest Service manual direction. (Consult FSM 7150.)

II. *International Boundaries*

- A. Apply the following standards and guidelines when locating or maintaining International boundary lines and corners.
 - 1. Ensure compliance with the United States/Canada Treaty of 24 February 1925. Coordinate the location, survey, posting, marking, and maintenance of the International Boundary with the U.S./Canada International Boundary Commission, U.S. Department of State.
 - 2. Ensure compliance with Presidential Proclamations of June 15, 1908 and May 3, 1912. Do not permit any occupancies or management activities, within 60 feet of the United States side of the United States/Canada International Boundary, without prior approval from the International Boundary Commission.

Rights-of-Way: LAND25

I. *Rights-of-Way Acquired*

- A. Acquire, across non-National Forest System land, road and trail rights-of-way which are adequate for the protection, administration, and utilization of the Tongass National Forest. (Consult FSM 5460.)
 - 1. Generally, acquire rights-of-way identified in project plans at least one year prior to scheduled activity.
 - 2. Generally, acquire unlimited easements, granted in perpetuity. Limited easements (e.g., those authorizing administrative use, but not public use) may be acquired when public use is not desirable, as determined through the implementation planning process.
 - 3. Encourage the use of cost-share agreements, when practicable, to avoid economic and resource impacts associated with duplicate road systems and log transfer facilities.
 - 4. Monitor compliance with stipulations of existing rights-of-way to ensure long-term retention of needed rights-of-way. Dispose of rights-of-way which are no longer needed. Review easements acquired under Section 17(b) of the Alaska Native Claims Settlement Act, and take appropriate steps toward construction of transportation facilities prior to easement expiration dates.
 - 5. Identify and request all needed rights-of-way across lands selected by the State or Native organizations, as provided by Federal law. Carefully review selections prior to conveyance.
 - 6. Secure adequate rights-of-way before issuing contracts or constructing facilities in intermingled landownerships. (Consult FSM 5400.)
 - 7. Follow the Bureau of Land Management/Forest Service Memorandum of Understanding 17(b) on easement administration.
- B. Acquire log transfer facility (LTF) authorizations on tidelands in accordance with the following standards and guidelines.
 - 1. Coordinate LTF activities (location, construction, operation, etc.) with the U.S. Army Corps Engineers, U.S. Environmental Protection Agency, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Alaska Department of Natural Resources, Alaska Office of Management and Budget (Division of Governmental Coordination), Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, local communities, and adjacent landowners, as appropriate.
 - 2. Ensure LTF activities are consistent, to the maximum extent practicable, with the Alaska Coastal Zone Management Program.
 - 3. Acquire long-term easements and leases (preferably at least 25 years) for permanent LTF sites.

Land Ownership Adjustments: LAND26

I. Priorities

- A. Land acquisition priorities have been described and summarized in the document, *"Alaska Submerged Lands Act Report, Analysis of Inholdings, Acquisition Priorities and Recommendations to Reduce Impacts on Conservation System Units in Alaska,"* dated August 1990, by U.S. Fish and Wildlife Service, Bureau of Land Management, National Park Service, and USDA Forest Service. Base acquisition decisions on this analysis and report, as updated by future revisions. Maps identifying the location of parcels are available from USDA Forest Service, Alaska Regional Office lands personnel.

Lands available for disposal are those lands approved by the Regional Forester for selection by the State of Alaska, those lands selected by Native Corporations under ANCSA, and those Native allotment claims adjudicated valid by the BLM. These lands are available only to the respective applicants described above, as provided by Federal law. If applications or claims are relinquished or declared invalid, the affected lands are no longer available for disposal.

Consider proposals for other lands not described above, on a case-by-case basis, using the following criteria. (Consult FSM 5400.)

1. Work cooperatively with the State of Alaska and Native Corporations to improve land ownership patterns and management opportunities resulting from State and Native land conveyances.
2. Retain National Forest System lands which best serve the public interest in Federal ownership.
3. Consolidate National Forest System lands, when practicable. Attempt to reduce miles of property boundary lines and number of corners, to locate and maintain.
4. Generally, acquire and dispose of land with as few reservations and outstanding rights as possible. (Consult FSM 5420, 5430, and 5470.)
5. Avoid separating the surface and subsurface estate, unless it is clearly in the public interest. (Consult FSM 5430.)
6. Pursue land adjustments that reduce administrative costs or increase the output of goods and services. Avoid land adjustments that do not enhance Forest Service programs. (Consult FSM 5430.)
7. Generally, pursue land exchanges on an equal value basis. Exchanges may be made for other than equal value if the parties agree and the exchange is determined to be in the public interest, as provided in Section 1302(h) of the Alaska National Interest Lands Conservation Act and Section 22(f) of the Alaska Native Claims Settlement Act, as amended by Section 17 of Public Law 94-204. (Consult FSM 5430.)

II. Acquisition

- A. Apply the following standards and guidelines for land acquisition activities.
1. Acquire isolated inholdings at critical locations if public benefits will occur.
 2. Within Congressionally designated areas, such as Wilderness, acquire private inholdings as opportunities permit. Wilderness inholdings are priority acquisitions until after the State and Native selection process is completed.
 3. Within administratively designated areas, such as a Special Interest Area, generally acquire private inholdings, as opportunities arise.
 4. Acquire private lands necessary for efficient management of the Forest.
 5. Generally, acquire lands by exchange or donation. Purchase lands on a willing seller/willing buyer basis when exchange or donation are not practicable.
 6. In any land adjustment proposal, consider performing a watershed and other resource condition assessment to determine resource restoration needs. Where rehabilitation

is needed to comply with Federal Law such as the Clean Water Act, prepare a cost estimate for rehabilitation prior to the land acquisition.

7. Evaluate parcels proposed for acquisition for the presence of hazardous substances, and document the findings, in conformance with established higher level guidelines for conducting these evaluations.

III. Disposal

- A. Apply the following standards and guidelines for land disposal activities.
 1. Do not exchange National Forest System lands selected by the State of Alaska, or a Native Corporation, or lands under Native allotment application, which have not yet been conveyed, unless specifically provided for in legislation. If the party holding the encumbrance desires ownership adjustments, they may relinquish their selection. The Forest Service may then pursue land ownership adjustment, if otherwise appropriate.
 2. Dispose of National Forest System lands which would best serve the public interest in private ownership, provided the action will not decrease ability to meet National Forest System management objectives. Examples may include: 1) isolated small parcels which are impractical to manage; 2) parcels where a greater general public value can be derived in private ownership; and 3) areas necessary for community expansion. (Consult 36 CFR 254.)
 3. Avoid exchanging National Forest System lands occupied under permits or easements unless the non-Federal owner and the permittee reach agreement on the disposition of existing uses. (Consult FSM 5430.)
 4. Within Congressionally designated areas, such as Wilderness, retain existing National Forest System lands. Within administratively designated areas, such as a Special Interest Area, generally retain National Forest System land, unless there are compelling reasons for disposal.

LAW ENFORCEMENT

Forest-wide Standards & Guidelines

Law Enforcement Activities: LAW

I. *Prevention and Protection*

- A.** Emphasize the prevention of illegal actions (including trespass), and the protection of National Forest users, their property, Forest Service employees, Government property, and Forest resources. Develop and maintain a strong prevention program, using information and education, a training program for all Law Enforcement Officers, and cooperative law enforcement agreements with State and local agencies. When prevention is not successful, proceed to detection, investigation, reporting of violations, prosecution, and publicizing penalties received. Promote a Law Enforcement Program that is fair, firm, effective, and promotes a better understanding of the laws and regulations and the need for compliance with them. (Consult FSM 5300.)
1. Enforce Federal laws pertaining to the National Forest System and Secretary of Agriculture Regulations under 36 CFR 261. Take aggressive action to discover and investigate violations of applicable laws and regulations, but use discretion, when legally permissible, in deciding appropriate action to take when handling minor petty offenses which do not constitute a threat to public or employee safety, and do not result in resource or property damage of more than \$100.
 2. Identify sites, areas, and situations which have high risk to visitors or their property. Minimize these risks using methods such as information and education, design of facilities, providing notice prior to change in management, official presence, and cooperative agreements with State and local police departments. If prevention attempts fail, proceed to detection, investigation, and prosecution of criminals. Cite law violators, when appropriate, and publicize penalties given.
 3. Identify sites and situations which constitute a high risk provide information and training for affected employees. Provide full-range Law Enforcement Officers to assist employees in situations which may become violent. Cite law violators when appropriate and publicize penalties received.
 4. Identify areas and situations most susceptible to loss or damage of Government property or Forest resources. Minimize the opportunity for loss or damage, using methods such as official presence, information and education, citizen involvement, signing, cooperative agreements, and property control records. When prevention methods fail, investigate and prosecute law violators and publicize penalties received.
 5. Identify employees most likely to observe illegal activities on National Forest System lands. Train and inform these employees in realizing their responsibilities, obligations, and procedures available to handle these situations.
 6. Make all law enforcement contacts in a professional manner promoting a better understanding by everyone of the laws and regulations, and of the need for compliance.
 7. Only Special Agents or other properly trained and equipped personnel will normally make arrests. However, any Forest Officer should take immediate action when necessary to protect life or prevent serious damage or destruction of property, prevent escape of a suspect, or a loss of material evidence, when such action can be taken with reasonable safety.
 8. Only Forest Service employees specifically authorized to do so, may carry firearms for law enforcement purposes.
 9. Refer to the Regional Law Enforcement Plan for Regionwide direction on such things as staffing, training, and equipment requirements. Refer to Ranger District Law Enforcement Plans for more site-specific direction.

MINERALS, GEOLOGY, AND CAVES

Forest-wide Standards & Guidelines

Minerals and Geology Resource Preparation: MG&C11

I. Resource Inventory

- A. Maintain the Mineral Resource Inventory. Include historic and current mining activity, regional and local geology, access routes, and geologic and mineral terranes. Provide a mineral survey, assessment, appraisal, and activity forecast of the mineral resource per FSM 2800 direction.)
 - 1. Develop inventory to meet or exceed Order 4 standards (1:250,000 map scale). Apply Order 3 inventory standards (1:63,300) as required to adequately represent data. (Consult FSM 2880.)

II. Resource Planning

- A. Assemble and provide Minerals and Geology information as needed for project planning. Such information will normally include a minerals and geology inventory and analysis, forecasts for minerals exploration and development activities, and geologic resource interpretations.

III. Resource Preparation

- A. Conduct compliance checks, validity and patent exams, and review operating plans, lease proposals, and applications. Provide expert testimony or opinions for contests, hearings, or appeals. Conduct geotechnical engineering and interpretive geology investigations as required.

IV. Resource Coordination

- A. Coordinate Minerals and Geology inventories and minerals administration with State, and other Federal Agencies including the United States Department of Interior: Bureau of Land Management, Bureau of Mines, and the Geologic Survey.
 - 1. Maintain Memoranda of Understanding and/or agreements with appropriate Federal, State, and local agencies and groups.

Minerals and Geology Administration: MG&C12

I. Forest Lands Withdrawn From Mineral Entry.

- A. Claimants with claims located in areas withdrawn from mineral entry retain valid existing rights if such rights are established prior to the withdrawal date.
- B. Conduct on the ground validity examinations by a qualified minerals examiner to establish or reject valid existing rights on active mining claims within wilderness areas.
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

II. Forest Lands Open To Mineral Entry.

- A. Encourage the exploration, development, and extraction of locatable and leasable minerals and energy resources.
- B. Assure prospectors and claimants their right of ingress and egress granted under the General Mining Law of 1872, ANILCA, and the National Forest Mining Regulations (36 CFR 228).
- C. Permit reasonable access to mining claims in accordance with the provisions of an approved plan of operations.

III. *Plan of Operations*

- A.** A Notice of Intent and/or a plan of operations is required for locatable, leasable, and salable minerals. (Consult FSM 2810, 2820, 2850, and 36 CFR 228.)
 - 1.** A plan of operations will receive prompt evaluation and action within the time frames established in 36 CFR 228.
 - 2.** Conduct an environmental analysis with appropriate documentation for all operating plans.
- B.** Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to land use designation objectives. Include mitigation measures for locatable and saleable minerals and standard and special stipulations in leasing actions that are compatible with the scale of proposed development and commensurate with potential resource impacts.
 - 1.** Maintain the habitats, to the maximum extent feasible, of anadromous fish and other foodfish, and maintain the present and continued productivity of such habitat when such habitats are affected by mining activities. Assess the effects on populations of such fish in consultation with appropriate State agencies. (Consult ANILCA, Section 505(a).)
 - 2.** Apply appropriate Transportation Forest-wide Standards and Guidelines to the location and construction of mining roads and facilities.
 - 3.** Reclaim disturbed areas in accordance with an approved plan of operations.
 - 4.** Apply Best Management Practices to promote the beneficial uses of water. (Consult Appendix C of this document and FSH 2509.22.)

IV. *Bonds*

- A.** A bond may be required for locatable, leasable, and salable mineral operations to ensure operator performance and site reclamation are completed. (Consult 36 CFR 228.)

V. *Mineral Materials*

- A.** Permit mineral material sites only after an environmental analysis assures other resources are adequately protected, the site location and operating plan are consistent with the land use designation emphasis, and such resources are not reasonably available on private land. Require bonds and reclamation as appropriate. (Consult FSM 2850 and 36 CFR 228.)
- B.** Where the opportunity exists, design, excavate, and reclaim material sites to facilitate their use for dispersed recreation or other desirable uses such as conversion to salmonid rearing ponds and spawning channels.

VI. *Split Estates*

- A.** Avoid separating the surface and subsurface estates. Coordinate with BLM, State, Native Corporations, and private landowners to manage split estates in accordance with individual patents or deeds.

Cave Management

"Cave" is legally defined under federal law as: "...any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the surface" (Federal Cave Resource Protection Act, 1988). Speleologists use "cave" to refer to all parts, regardless of size, of an underground system that links openings and chambers and that may connect the system to the surface. The most common type of cave is formed in limestone by dissolution. Included in the term caves are tree molds and lava tubes associated with lava flows, erosional caves, as well as those formed by dissolution of bedrock. The majority of caves on the Tongass were formed as the result of dissolution. The Blue River Lava Flow on the upper end of the Unuk River may very well have extensive lava tube systems. This area is virtually unexplored.

Cave Management Program: CAVE

I. Management

- A. The Forest shall maintain a cave resource management program to identify, evaluate, preserve and protect caves and their environments which have unique biological, hydrological, geological, mineralogical, paleontological, cultural, educational, recreational, and/or other scientific values.
- B. Seek cooperation with interested publics, including caving organizations, scientists, and recreationists in managing cave resources. Promote public education programs to insure an increased understanding of the value of these irreplaceable resources and the need to preserve these unique ecosystems.
- C. Coordinate cave management with the management of other surface resources.

II. Planning

- A. Develop and maintain a cave resource inventory, identifying both existing and potential cave locations and major karst features. Karst is defined as a type of topography that develops in areas underlain by soluble rocks, primarily limestones. Dissolution of the subsurface strata results in areas of well-developed subsurface drainage characterized by sinkholes, collapsed channels, and caves. This inventory will provide resource managers with knowledge of areas where caves and related unique geologic features are likely to exist. Areas where karst topography is known to exist and potential karst areas will be identified. This will allow land managers to better schedule activities, knowing that a cave resource assessment of the planned activity is needed if the planned activity falls within an area where caves can and/or do exist.
- B. Manage cave resources using an interdisciplinary approach. Significant caves, as well as those pending evaluation, will be considered in all land use planning decisions that may affect these sites. Include interested publics and the caving community in the public involvement process.
- C. Update and maintain the cave resource inventory as our understanding of the formation of karst features on the Forest increases and as new areas are identified.

III. Inventory/Project Clearance

- A. *Inventory:* Evaluate caves as required by the Federal Cave Resources Protection Act of 1988. The inventory process should document all unique biological, hydrological, geological, mineralogical, paleontological, educational or scientific, cultural, and/or recreational values. Care should be taken to analyze the surface to subsurface interconnection with the ecosystem. The first purpose of the Act is to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people. Under this Act, consider all caves to be significant until proven otherwise. "Significant" has yet to be defined. Consult the National Speleological Society, local Grottos, and experienced cavers in determining significance. Caves determined to be significant under the Act will

be considered for listing on the National Significant Cave List. Specific locations of Significant Caves are exempt from disclosure to the general public.

- B. Continue to work with the local caving community and other interested publics to locate, map, and describe caves. Biological studies will be conducted to determine the presence of threatened and endangered species and to better define the ecosystems present in the karst features. Forest personnel will be responsible for reporting any karst features found in the field. This includes features such as sinkholes, collapsed channels, caves, resurgence streams, and areas where surface drainage becomes subsurface. To aid Forest personnel in identifying these features on the ground, education programs and an inventory reporting system should be developed .
- C. A Forest-wide, comprehensive cave management analysis should be completed on known cave resources between now and the next Revision of the Forest Plan. Management Plans should be prepared for caves determined to be significant and for others where hazardous conditions exist. Management plans will include an inventory and mapping of cave resources, research and monitoring programs, and when necessary, a cleanup or restoration program. Management prescriptions will be developed on a cave-by-cave basis. If the analysis determines that cave management or protection is required, the cave should be placed in one of the following classes:

Class 1: Sensitive Caves

These caves considered unsuitable for exploration by the general public either because of their pristine condition, unique resources, or extreme safety hazards. They may contain resources that would be affected by low level visitation. These caves are not shown on maps or discussed in publications intended for general public use such as guides, brochures, and magazines. Scientific studies within these caves will be encouraged.

Class 2: Undeveloped Caves

These caves are undeveloped or contain minimal developments that are suited for persons who are properly prepared. Some of these caves will require technical skills beyond that of the average Forest visitor and could present substantial hazards to the user. In general, these caves are those where it has been determined that recreational use will not substantially degrade the cave's resources or special values. Location of these caves will be available to the public upon request, however, public use will not be directed toward them.

Class 3: Directed Access Caves

These caves are those with directed public access and are developed for public use and enjoyment. These caves are shown on maps or have signs directing visitor access. Regardless of the level of development, public visitation is encouraged. These caves could have improved access, developed trails, artificial lighting, and guided tours. Interpretive materials about these caves may be available. The caves may have sensitive resources that need to be protected. Access may be through a reservation system.

- D. All newly discovered caves will be temporarily managed as Class 1 until an analysis of resource values is completed. Following analysis, each cave will be designated either Class 1, 2, or 3, as appropriate.
- E. Caves determined through analysis to have no significant values, and documented as such, will no longer be managed as a cave resource.
- F. *Project Clearance.* The Federal Cave Resources Protection Act of 1988 requires that surface management activities assure that caves under consideration for the National Significant Caves List are protected during the period of consideration. Any management activity that can directly or indirectly affect the ecosystem of the cave resource shall not

the project administrator shall halt any work that might potentially damage the cave resource. Work may resume after consultation with the Forest cave management specialist and appropriate mitigation measures, if needed, are applied.

IV. Standards & Guidelines

- A. Prior to determination of significance under the 1988 Cave Act, or Forest-wide comprehensive cave management analysis, the following direction is applicable:
1. During the cave inventory process, map the subsurface extent and position of the caves. Care shall be taken to note subsurface drainage patterns, resurgence areas, surface drainage, and drainage basin characteristics. This information is necessary to determine the cave's ecological relation to the surface.
 2. Design timber harvest, road construction, and other related management activities above or in the vicinity of a cave, or the course of such a cave, in a way to insure protection of the cave resources.
 3. Require retention of vegetation in the vicinity of a cave or cave course to protect the cave's microenvironment. The extent and limits of no harvest buffer surrounding major karst features shall be determined on a case-by-case basis. Topographic breaks and vegetation patterns should be utilized during buffer design and layout. The intent of vegetation retention is to insure the stability of the cave ecosystem, the integrity of the slopes surrounding the cave, and adequate sediment filtration between management activities and cave resources. There will be no ground-disturbing activities on slopes steeper than 30 degrees adjacent to cave entrances. An example of this would be protection of a steep-sided, closed basin in which surface drainage flows into a cave system or on steep slopes immediately adjacent and uphill of a cave opening.
 4. Maintain vegetation around all direct drainages into caves. This includes sinkholes, cave collapse areas known to open into a cave's drainage system, and perennial, intermittent, or ephemeral streams flowing into caves. Protect the immediate area surrounding resurgence springs to insure stability of the cave system's ecosystem. The intent of this direction is to insure that additional sediment is not introduced into the cave system, surface flows are not interrupted, and logging slash and debris is not transported into the cave system nor plugs the cave entrance.
 5. Avoid alteration of cave entrances, or their use as disposal sites for slash, spoils, or other refuse.
 6. Avoid diversion of surface drainage into caves.
 7. Design roads and related construction to avoid altering surface drainage into karst features or focusing sediment from road surface and/or drainage into karst features.
 8. Design quarry and material sources to insure that location and excavation in no way threaten cave resources.
 9. Where timber harvest is occurring in the vicinity of a cave, fall trees directionally away from the cave and its course. Yarding should in no way drag timber across and/or through karst features. Full suspension yarding or other mitigation measures, which will insure the stability of karst slopes, is required in these areas.
 10. Limit public access, if required, to prevent damage to the cave resources or if there are safety hazards.
 11. Information concerning the specific location of any significant cave may not be made available to the public unless disclosure of such information would further the purposes of the Act and would not create a risk of harm, theft, or destruction of the cave.
 12. Scientific or educational use of caves may be authorized by the Forest Supervisor.
 13. Foster communication and cooperation between the Forest Service, caving organizations, and recreationists. Exchanged information will not be made public if it could lead to degradation of sensitive caves.
 14. Enforce laws protecting caves from illegal relic collectors and vandalism.

OLD-GROWTH FOREST

Forest-wide Standards & Guidelines

Old-Growth Forest: OLD

I. Objectives

- A. Old-growth forests provide many significant values associated with biological diversity, wildlife and fisheries habitat, recreation, aesthetics, soil productivity, water quality, and timber. Consider old-growth forest values in designing the dispersion of old growth which may range from a network of old-growth forest stands for wildlife habitat to old-growth areas for public recreation. (Note: Standards & guidelines for the allocation and management of old-growth forests and habitats are included in: 1) this section; 2) the Old-Growth Habitat Land Use Designation Management Prescription (OG); and 3) in the Forest-wide Standards & Guidelines sections on for Biodiversity and Wildlife.)

II. Definitions and Inventory

- A. Old-growth forests are ecosystems distinguished by old trees and related structural attributes. Old-growth forests encompass the latter stages of stand development. They typically differ from earlier stages of stand development in a variety of characteristics which may include tree size, accumulation of large dead woody material, number of canopy layers and tree species composition, and ecosystem function.
- B. Participate with the Region and other agencies, organizations and individuals in the continuing development of old-growth forest definitions applicable to the Tongass National Forest, in accordance with National direction.

III. Management

- A. Manage old-growth forests to meet management goals and objectives of the Forest Plan. For old growth, these goals and objectives include:
 - * Recovery of threatened and endangered species and to provide habitat for sensitive species.
 - * Maintenance of habitat for viable populations of native plants and animals species, including desirable introduced species.
 - * Maintenance of biological diversity.
 - * Subsistence objectives.
 - * Wildlife population objectives.
 - * Fish habitat and water quality objectives.
 - * Recreation and visual landscape objectives.
 - * Timber management objectives.

RECREATION

Forest-wide Standards & Guidelines

Recreation Resource Inventory: REC111

I. Recreation Resource Opportunities

- A. Maintain the inventory of recreation resource opportunities throughout the Forest.
 - 1. Use the Recreation Opportunity Spectrum (ROS) system and Tongass National Forest Recreation Places Inventory. (Consult FSM 2310; and National/Regional ROS Handbooks.)
 - 2. Update existing ROS inventories as a part of specific project planning and implementation, and whenever project activities cause a change in recreation setting conditions significant enough to reclassify the affected area.
 - 3. Maintain the necessary data to determine the individual and/or cumulative changes in ROS class distribution throughout the Forest.

Recreation Resource Planning: REC112

I. Interagency Planning

- A. The principal feature that sets National Forest lands apart from most other suppliers of outdoor recreation is the ability to provide opportunities for generally unconfined outdoor recreation, free of urban influences. National policy directs that these special opportunities be maintained for current and future generations; and that National Forest recreation focus primarily on activities which require a large land base and provide a contrast to urbanization. As a part of the National Forest role of helping meet national and regional social needs, recreation management will endeavor to encourage traditional American values such as a conservation ethic, appreciation of nature, national and community pride, and national and community well-being including the stability of lifestyle and character. This will be accomplished through providing opportunities and programs which are appropriate to the forest environment, dependent upon natural settings, and which help participants experience and understand nature.
 - 1. Determine the appropriate role of the National Forest lands in providing natural resource-based recreation opportunities, sites, facilities and experiences. Within the context of National policy, cooperate and coordinate with National, State, and local agencies in providing a balance of outdoor recreation opportunities throughout Southeast Alaska.
 - 2. Use the ROS framework of settings and experience opportunities to define the capabilities of National Forest lands to meet identified recreation needs and services. (Consult ROS Handbooks and Forest ROS maps.)
- B. Recreation opportunities provided on National Forest lands should be in concert with, and supplemental to, those opportunities which are located on lands of other ownership or jurisdiction. Generally, recreation areas, sites and facilities located on National Forest lands should:
 - 1. Complement commercial public services (i.e., resorts, marinas, stores, service stations) within communities or on private or other public land.
 - 2. Support a system of anchorages suitable for recreation boats along small boat waterways which connect communities or provide access to popular recreation attractions.
 - 3. Provide other appropriate facilities to meet specific identified recreation needs on a case-by-case basis.

- C. Cooperatively participate with local communities and user groups when implementing recreation development projects. Implementation should:
 1. Involve the public and affected communities, landowners and other affected interest groups in the project planning process.
 2. Recognize that recreation use by residents and tourists radiate from communities and service centers to utilize lands and facilities under a variety of ownerships and jurisdictions.
 3. Verify the local role of the Forest Service in providing the recreation opportunities, services and facilities.
 4. Verify the basis for developing Forest Service recreation-related projects.
 5. Identify sites and activities where joint or cooperative development or management is desirable. Include opportunities for such things as: on-site interpretation of natural and cultural resources, particularly on lands of mixed ownership; providing public information through joint publications; joint cabin reservation systems; or construction, operation and maintenance agreements.
 6. Consult FSM 2300 and Internal Service-wide Handbooks.

II. *Integrated Resource Planning*

- A. During non-recreation project planning, assess the effects of these projects on the diversity and quality of recreation settings and activity opportunities within, and adjacent to, the project area.
 1. Where recreation resources may be affected, seek to mitigate setting and activity opportunities foregone due to resource management actions. Project planning and design should consider valid substitutes for recreation settings and activity opportunities. Substitute recreation opportunities should:
 - * Serve the same community or service area as the displaced opportunity.
 - * Provide essentially the same choice of activities, settings and resource attributes.
 - * Provide essentially the same capacity for use.
 - * Be acceptable to the affected segments of the public.
- B. Identify opportunities to enhance existing, and provide additional, recreation activities, opportunities and services where desirable to meet local or Forest-wide recreation demands. Particular attention should be given to: those opportunities which are in relatively short supply within the day-use travel distance of communities; those which are important to tourism and commercial service providers; those opportunities to provide a base for visitor use of semi-primitive and primitive areas; those which compliment recreation programs of communities, the State, and private landowners; and those related to the unique combination of marine, wildlife and fish resources characteristic of Southeast Alaska. Examples include:
 - * Freshwater fishing and access.
 - * Ice fishing.
 - * Fuelwood gathering.
 - * Wildlife viewing.
 - * Interpretation of natural or cultural resources.
 - * Interpretation of management activities.
 - * Snowmobile and/or cross-country skiing and access.
 - * Access to beaches and other attraction features.
 - * Loop travel routes (roads, trails, and water routes).
 - * Scenic marine and road travel corridors.
 - * Parking/camping places for recreation vehicles, bicyclists, and boaters.
 - * Resort and lodge opportunities to serve as visitor bases.
- C. Coordinate, to the extent practicable, recreation project development with fish and wildlife habitat improvement, and road projects.

Recreation Use Administration: REC122

I. Coordination with wilderness management

- A. Evaluate the effects of location, design, and operation of developed sites and roads adjacent to Wilderness. Projects should be developed and operated in a manner which complements wilderness management objectives and avoids degradation of wilderness values.
- B. Special use activities and facilities located adjacent to Wilderness should be located, designed, and operated in a manner that avoids degradation of wilderness values.

II. Cabins and related structures

- A. Manage cabins and related structures which were existing, but unauthorized, prior to ANILCA (December 2, 1980), in accordance with the direction in LAND122-Cabins.
- B. Allow new recreation-related cabins only after determining that their location and use is compatible with the objectives of the Land Use Designation in which it would be located.
- C. Issue no permits authorizing the construction of private recreation cabins.

III. Public Outfitter/Guide services

- A. Authorize the services of qualified outfitters and guides to the public where the need for the service has been identified and is compatible with the objectives and management direction of affected land use designations. The services of outfitter and guides should facilitate the use, enjoyment, understanding, and appreciation of National Forest recreation settings.
- B. Manage Outfitter and Guide services: as partnerships with the Forest Service; as a way to nurture and encourage assistance and support for attaining the objectives of the land use designation; and to assist the Forest Service in the development of increased public understanding and appreciation of the Forest Service mission and goals.
- C. Encourage skilled and experienced individuals, organizations, and companies to conduct outfitting and guiding activities in a manner that assures National Forest visitors receive quality services.
- D. Administer Outfitter/Guide special use permits in accordance with the direction in FSM 2720.
 1. Outfitting and guiding operations should not require permanent improvements occupying National Forest lands. Encourage operations which require only temporary facilities, easily removed at the end of the use season.
 2. Authorize outfitter/guide operations on the basis of the following criteria:
 - * The affected ecosystem(s) have the capability to accommodate the expected kinds of activities and amounts of use without degradation of ecosystem composition and structure.
 - * Existing or proposed operations and activities are appropriate for the specific ROS settings within the land use designation.
 - * Avoid adversely impacting popular or highly-valued local areas with outfitter/guide operations.
 - * There is a demonstrated public need for the services to be offered and/or the services will enhance the objectives of the land use designation.
 - * The operations can be carried out in a manner that is compatible with existing or expected use by the general public and will not constitute de facto exclusive use areas.
 3. Permit outfitter/guide operations through the issuance of priority use permits whenever possible, supplemented with temporary permits. Assign priority use and temporary use permits within a land use designation based on the following:
 - * Allocate no more than one-half the appropriate capacity of the land use designation to outfitter/guide operations. (Refer to the desired future condition for the land use

designation in terms of the desired ROS setting, associated encounters with other parties, and evidence of human activities.)

- * Avoid adversely impacting popular or highly-valued local areas with outfitter/guide operations.
 - * Appropriate party size and distribution of groups. Generally consider a party size of no more than 12 persons for any one site or activity group. Consideration for higher group size may be authorized where it is desirable to have a higher guide/client ratio for safety purposes, youth groups or other special circumstances.
4. Where there is surplus capacity not being utilized by the general public, temporary use for specific periods of time (not to exceed one year) may be authorized. Such temporary use does not qualify for credit toward priority use by a permittee.
- E. Cooperate with State and local authorities and user organizations to resolve situations where illegal outfitters are known to be operating. (Refer FSM 5300 and Forest-wide Law Enforcement section.)

IV. Recreation Settings

- A. Provide a broad spectrum of outdoor recreation opportunities in accordance with the existing capabilities of the National Forest as indicated by the ROS inventory.

In land use designations where nonrecreation resource management activities are emphasized, manage to continue providing the inherent recreation settings and opportunities until scheduled activities and practices cause a change in the ROS setting. Manage recreation use in a manner that is compatible with the long-term objectives of the underlying land use designation.

In locations where scheduled activities change the recreation setting, manage the new setting in accordance with the appropriate ROS guidelines. Maintain the capability of all land use designations to provide appropriate quality recreation opportunities on a sustained basis.

1. Provide *Rural* recreation opportunities within 1/2 mile of heavily traveled roads and state highways or areas that receive heavy aircraft travel. Provide access to recreation activity opportunities and facilities within the area. Adopted Visual Quality Objectives (VQO's) do not exceed maximum modification, and are primarily Partial Retention or Modification in the foreground viewed from sites and travel routes. Some facilities, such as visitor centers may be elaborate and designed for large groups of people.
2. Provide *Roaded Natural* recreation opportunities within 1/2 mile of moderate to heavily traveled waterways and/or roads which are maintained to Levels 3 and 4 and open for use by the public or those areas that receive heavy small aircraft travel. Provide access to recreation activity opportunities and facilities within the area. Adopted Visual Quality Objectives do not exceed Modification, and are primarily Retention, and Partial Retention in the foreground as viewed from sites and travel routes.
3. Provide *Roaded Modified* recreation opportunities and appropriate facilities within timber harvest areas with a VQO of Maximum Modification. These areas are accessed by Forest roads which are maintained to Levels 2, 3, and 4, and are open for use by the public. Provide parking and camping facilities to enhance the use of recreation vehicles, angler parking, trailheads, and ATV use of nearby local roads.
4. Provide *Semi-primitive Motorized* recreation opportunities within 1/2 mile of infrequently traveled waterways or small aircraft access points, and/or roads which are open and maintained for passage by high clearance and four-wheeled drive vehicles (Maintenance Level 2) and provide access to recreation opportunities and facilities. Manage such areas to provide for low to moderate numbers of encounters with other parties and appropriate solitude at campsites.

5. Provide *Semi-primitive Non-motorized* recreation opportunities in all areas more than 1/2 mile away from: 1) infrequently traveled waterways; 2) roads and trails open to motorized recreation use, and 3) clearcut harvest areas. Aircraft access is only occasional.
 6. Provide *Primitive* recreation opportunities in all areas that meet the remoteness criteria for the Primitive ROS setting.
 7. Manage recreation use and activities to meet the appropriate levels of social encounters, on-site development, and visitor impacts indicated for the associated ROS settings.
- B. Manage recreation resource activities and facilities in accordance with the established Regional guidelines. All recreation planning and management activities will address the following critical elements of the recreation setting:
1. *Visual Characteristics* - The Visual Quality Objective (VQO) describes varying degrees of allowable alteration of the characteristic landscape in each ROS setting. The key to managing landscape character in each ROS setting is to adopt the compatible Visual Quality Objective and its corresponding guidelines. (Consult FSH 2309.22.)
 2. *Access* - Includes the mode of transport used within the area and service levels of roads.
 3. *Remoteness* - Remoteness concerns the extent to which individuals perceive themselves removed from the sights and sounds of human activity.
 4. *Visitor management* - Visitor management includes both regulation and control of visitor activities as well as providing information and services to aid their enjoyment and use an area. A major reason underlying participation in outdoor recreation is to get away from the controls and constraints of the everyday world. There is a need for care and sensitivity in how visitor management is implemented. Resolving behavioral problems should be given a high priority in managing recreation places. The presence of controls and the way in which they are implemented is as much a part of the recreation setting as the physical environment.

The type, level, and location of information provided to users can enhance or detract from the desired experience. Generally, on-site information is appropriate in the more developed ROS settings, while off-site sources are better accepted in the more primitive ROS settings.

5. *On-Site Development* - On-site development refers to the scale and appropriateness of site modification and facilities. Design and location of site development activities should consider the following criteria:
 - * Extent of site development. Is it limited to a few isolated locations or distributed throughout the area?
 - * Evidence of the activity. Are proposed materials compatible with those found in the characteristic landscape? Will the activity meet the adopted Visual Quality Objective(s) of the land use designation?
 - * Complexity and scale of the activity. The scale and complexity should be appropriate for the intended use and compatible with other structures and attributes of a site.
 - * Purpose. Facilities can be for convenience and comfort, or safety and resource protection; and should be compatible with the overall objectives of the land use designation.
6. *Social Encounters* - Social encounters refers to the number and type of other people met in the area, along travelways, or camped within sight or sound.
7. *Visitor Impacts* - Visitor impacts refer to the affect of recreation use on other resources such as soil, vegetation, water, air and wildlife. The management intent is not necessarily how to prevent human-induced change, but one of deciding how much change is acceptable, and the actions needed for control. In general, user expectations are

for minimum signs of human-caused alterations at the primitive end of the ROS and more acceptance of alterations near the developed end.

8. Use the following ROS charts in project planning and analysis as guidelines to establish appropriate levels of use, scale and kinds of facilities, visual quality objectives, types of access, and services to meet local and Regional needs and desired recreation setting conditions.

(Narrative continued on page 4-58)

Legend for the following charts

ROS SETTING INDICATORS

DEVELOPMENT SCALE (for recreation facilities)

- I. *Minimum site modification.* Rustic/rudimentary improvements for site protection only.
- II. *Little site modification.* Rustic/rudimentary improvements for site protection and some comfort for user. On-land motorized access with some traffic controls.
- III. *Moderate site modification.* Facilities equally designed for resource protection and user comfort. Contemporary/rustic design of facilities. Interpretive services often informal, but on-site.
- IV. *Site heavily modified.* Some facilities strictly for user comfort and convenience of user. Roads hard surfaced with obvious traffic controls. High density units/acre.
- V. *High degree of site modification.* Facilities mostly designed for comfort and convenience of user. Flush toilets and electrical hook-ups common. Synthetic materials often used. Formal, sophisticated interpretive facilities available. Site often landscaped with exotic materials.

PARTY SIZE

Typical independent party consists of 3-4 people traveling as a social group. Guided or organization groups are typically larger.

SITE HARDENING

Site hardening (such as paving, barriers, campsites, etc.) is done to reduce visitor impacts.

**ROS Class
Rural**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed Modification in the foreground and Maximum Modification in middle ground.
Access	All forms of access and travel modes may occur, although access to and through the area is primarily by passenger vehicle. Road and trail surfaces are often hardened.
Remoteness	Remoteness is of little importance, and moderate to high concentrations of people and sights and sounds of human activity are acceptable when not continuous.
Visitor Management	On-site regimentation and controls are obvious. Control facilities such as parking areas, medians, and barriers harmonize with natural/exotic landscaping. Information and interpretive facilities may be complex and dominant on developed sites.
On-site Recreation Development	All Development Scales (I-V) are appropriate and maintained at intended standards necessary to accommodate the types and levels of use anticipated for the site and area. Facilities typically include visitor centers, major campgrounds and other facilities for concentrated use.
Social Encounters	User may meet more than 20 other parties per day on trails and in dispersed areas; no standard for encounters on roads and developed facilities. Developed sites often are at full capacity, but do not exceed 80% of the design capacity over the operating season.
Visitor Impacts	Visitor-caused impacts are noticeable, but not degrading to basic resource elements or exceed established visual quality objectives. Site hardening may be dominate, but is in harmony with natural/exotic landscape and appropriate for the site and setting.

**ROS Class
Roaded Natural**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed the Partial Retention Visual Quality Objective. Existing visual conditions ranging from Preservation through Retention are fully compatible and encouraged.
Access	All forms of access and travel modes may occur. Access to and through the area is typically by passenger vehicle, although motorized use may be restricted to provide for resource protection, user safety, or to provide a diversity of recreation opportunity.
Remoteness	Remoteness is of little importance, but low to moderate concentrations of human sights and sounds are preferred.
Visitor Management	On-site regimentation and controls are obvious. Control facilities such as parking areas, barriers and signs harmonize with the natural environment. Visitor information facilities are not elaborate or complex.
On-site Recreation Development	Facilities and structures generally do not exceed Development Scale III and are maintained to accommodate the types and levels of use anticipated for the site and area. Typical facilities include outdoor interpretive displays and rustic campgrounds and picnic areas.
Social Encounters	User meets less than 20 other parties per day on trails and dispersed areas, during at least 80% of the primary use season. Developed sites often are at full capacity but do not exceed 80% of the design capacity over the season of operation.
Visitor Impacts	Visitor-caused impacts are noticeable, but not degrading to basic resource elements or exceed established visual quality objectives. Site hardening may be dominant, but is in harmony with natural-appearing landscape and appropriate for the site and setting.

**ROS Class
Roaded Modified**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed the Maximum Modification Visual Quality Objective. Apply visual management techniques to soften effects of maximum modification conditions in the foreground of sensitive travel routes and recreation sites.
Access	All forms of access and travel modes may occur, although roads are generally not well suited to highway-type vehicles. OHV use on designated routes or areas is encouraged. Use by high clearance vehicles is common.
Remoteness	Remoteness from urban conditions and high concentrations of people is important. Low concentrations of human sights and sounds in a back-country roaded setting are preferred.
Visitor Management	On-site regimentation and controls are few. Control facilities are appropriate for the predominating back-country roaded setting. Visitor information facilities may be used to interpret management activities, but are not elaborate and are appropriate for the setting.
On-site Recreation Development	Facilities and structures generally do not exceed Development Scale II and are maintained to accommodate the types and levels of use anticipated for the site and area.
Social Encounters	User meets less than 10 other parties per day on trails and dispersed roaded areas during at least 80% of the primary use season. Few, if any, other parties are visible at dispersed campsites.
Visitor Impacts	Visitor-caused impacts are noticeable, but not degrading to basic resource elements. Site hardening may dominate at campsites and parking areas, but is in harmony with, and appropriate for, back-country roaded setting.

**ROS Class
Semi-Primitive Motorized**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed the Partial Retention Visual Quality Objective. Existing visual conditions ranging from Preservation through Retention are fully compatible and encouraged.
Access	Travel on motorized and non-motorized trails and Traffic Service Level 4 roads, although some Traffic Service Level 3 roads provide access to and through the area. Use by high clearance vehicles and motorized water travel is common. Road density is less than one mile per square mile. Off-road snowmachine travel on snow may occur.
Remoteness	Nearby sights or sound of human activity are rare, but distant sights or sounds may occur. Setting is located more than 1/2 hour walk or paddle from Traffic Service Level 3 or other high use travel routes, not including marine travelways. Perception of remoteness is moderate.
Visitor Management	On-site regimentation and controls are few. Control facilities consist primarily of informational signs and site-specific road closures. Visitor information facilities may be used to interpret cultural and natural resource features, but are not elaborate and harmonize with the setting.
On-site Recreation Development	Facilities and structures generally do not exceed Development Scale II and are maintained to accommodate the types and levels of use anticipated for the site and area.
Social Encounters	User meets less than 10 parties per day on trails, roads, and shorelines during 80% of the primary use season. During 80% of the primary use season no other parties are visible from campsites.
Visitor Impacts	Visitor-caused impacts may be noticeable, but not degrading to basic resource elements. Site hardening is very infrequent, but, when it occurs, is in harmony with, and appropriate for, the natural-appearing back-country setting.

**ROS Class
Semi-Primitive Non-Motorized**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed the Retention Visual Quality Objective. An existing visual condition of Preservation is fully compatible and encouraged.
Access	Cross-country travel and travel on non-motorized trails is typical. Use of airplanes, helicopters, motorboats and snowmachines for traditional activities, subsistence, emergency search and rescue, and other authorized resource management activities may occur unless specifically restricted for safety and/or resource protection purposes.
Remoteness	Nearby sights or sound of human activity are rare, but distant sights or sounds may occur. Setting is located more than 1/2 hour walk or paddle from any road open to public travel, not including marine travelways.
Visitor Management	On-site regimentation and controls are rare. Visitor information facilities may be used to interpret cultural and natural resource features, but are not elaborate and harmonize with the setting.
On-site Recreation Development	Facilities and structures generally do not exceed Development Scale II and are maintained to accommodate the types and levels of use anticipated for the site. Forest Service Recreation cabins are fully compatible.
Social Encounters	User meets less than 10 parties per day on trails and waterways during 80% of the primary use season. No other parties are within sight or sound of dispersed campsites during 80% of the primary use season.
Visitor Impacts	Visitor-caused impacts to resources are rare and usually not long-lasting. Site hardening is limited to boardwalk trails, boat tramways, moorings and docks, bearproof food cache facilities and rustic public recreation cabins.

**ROS Class
Primitive**

Setting Indicators	Standards and Guidelines
Visual Quality	Not to exceed the Retention Visual Quality Objective. An existing visual condition of Preservation is fully compatible and encouraged.
Access	Cross-country travel and travel on non-motorized trails and on waterways is typical. Use of airplanes, helicopters, motorboats and snowmachines for traditional activities, subsistence, emergency search and rescue, and other authorized resource management activities may occur unless specifically restricted for safety and/or resource protection purposes.
Remoteness	No or infrequent sights and sounds of human activity are present. Setting is located more than 1.5 hours walking or paddling distance from any human developments other than marine travelways.
Visitor Management	On-site regimentation and controls are very rare. Signing is limited to directional information and safety needs. No on-site interpretive facilities are used and there is great opportunity for discovery on the part of the user.
On-site Recreation Development	Structures do not exceed Development Scale I except for public recreation cabins, and are maintained for appropriate levels of use.
Social Encounters	User meets less than 3 parties per day during trip. No other parties are within sight or sound of dispersed campsites or cabins.
Visitor Impacts	Visitor-caused impacts to resources are slight and usually not noticeable the following year. Site hardening is limited to boardwalk trails and necessary boat moorings or bearproof food caches and public recreation cabins.

V. *Developed Site Management*

- A. Manage development scale 3, 4, and 5 sites (see glossary) for full service when at least one of the following are met:
 - 1. A campground is designated as a fee site.
 - 2. More than 20 percent of the designed capacity is being utilized.
 - 3. When the site is designated for group use and is under a reservation system and/or established user fee.
 - 4. The site is a boating site with constructed ramp.
 - 5. The site is a staffed visitor information center.

VI. *Recreation Construction and Rehabilitation*

- A. Provide appropriate development facilities where the private sector is not able or willing to meet the demand.
- B. Maintain cost-effective developed recreation facilities which complement non-Forest Service developments in the same community home range or service center area.
- C. Provide appropriate handicapped accessible facilities in proportion to the demand by user populations using sites and areas.
- D. Evaluate the location and need for recreation facilities which lie within identified 100-year floodplains as to the specific hazards and values involved with the site and its use. Viable alternatives will be thoroughly explored. (Consult FSM 2527.)
- E. Post adequate warning signs in floodplains which are frequented by users as a result of site or access development.

VII. *Interpretive Services*

- A. Provide a continuous Interpretive Services Program that is designed to accurately and adequately develop an interest and understanding of the natural environment of the Forest and Southeast Alaska, and the mission of the Forest Service in managing the National Forest.
- B. Assist visitors and users to understand the role of natural and cultural resources in the development of industry, heritage and culture in Southeast Alaska. Relate these roles to the rest of the State, Canada and the Nation.
- C. Promote visitor understanding of the National Forest System, Forest Research, and State and Private Forestry programs.
 - 1. Emphasize understanding of stewardship of public lands and their productivity through professional forest management with balanced use of natural resources.
 - 2. Develop Interpretive Services programs for all principal resource management programs. Information should emphasize the integration of management activities designed to achieve the goals and objectives developed for specific areas.
 - 3. Emphasize appropriate regulations and visitor behavior in respect to the protection of marine mammals in interpretive programs in accordance with the Marine Mammals Protection Act.
- D. Inform visitors of the distribution, differences, and roles of the Federal, State and private lands found in Southeast Alaska and the range of recreation and cultural interest opportunities and facilities available.
 - 1. Continue to pursue and implement cooperative interpretive partnerships with other Federal and State land management agencies consistent with the principal travel routes and activity centers used by forest visitors.
 - 2. Provide an array of imaginative and dynamic media by which interpretive messages are made available to the visitor. Use a spectrum of media and presentation designs that are appealing, appropriate for the setting, easily understood by the intended audience, and reflect the Forest Service as a professional and caring land management agency.

3. Continue to provide the necessary support to the Alaska Public Lands Information Centers in the rest of the State (Fairbanks, Anchorage and Tok) so that they are able to include accurate and timely information about Southeast Alaska and the Tongass National Forest. Implement and continue the Forest Service's leadership role for the Southeast Alaska Visitor Center in Ketchikan.
 4. Continue to improve existing interpretive services programs and facilities such as those at Mendenhall Glacier, Centennial Hall and aboard the Alaska Marine Highway ferries. Support shall include identification of current issues and events of interest to forest visitors; adequate staffing to meet program objectives; assistance in training the seasonal and volunteer staff; and objective evaluation of programs to assure accurate and positive coverage of the natural and cultural resources on the Tongass National Forest and their management.
 5. Expand the use the Alaska Natural History Association (ANHA) as an interpretive partner to provide forest visitors with a broad range of interpretive media. These may include, but are not limited to, publications, video and audio tapes, and other media that feature the natural and cultural resources of the National Forest and the heritage of Southeast Alaska. Encourage all types of support and donations to ANHA which can be used to develop additional materials and programs.
 6. In partnership with communities, organizations and individuals develop additional ANHA outlets at locations that will best serve Forest customers.
 7. Continue to support the Elderhostel Education Program in local communities and aboard the Alaska Marine Highway.
- E. Provide a coordinated program of awareness and training for all employees, and partners (including outfitter and guides and other public service permittees) to ensure a consistent program of public service.
1. Encourage other agency participation in Forest Interpretive Services training programs.
 2. The Forest Service mission and image shall remain predominately visible at all Forest Service facilities through the use of uniformed Forest Service personnel, the Forest Service shield, and other media.
 3. To the extent practicable, provide training about National Forest resources, points of interest and management to all interested outfitter and guides, industry representatives and other partners.

RIPARIAN

Forest-wide Standards & Guidelines

Riparian Area: RIP

I. Objectives

- A. Provide healthy riparian areas for fish, other aquatic life, old-growth and riparian-associated wildlife species, and water-related recreation. For further direction, refer to the Forest-wide fish, old-growth, biodiversity, wildlife and recreation Standards and Guidelines and the Stream and Lake Protection management prescription. The following includes a partial listing of direction pertaining to riparian areas. (Also consult FSM 2526.)
1. Assure the protection of riparian habitat. (Consult Tongass Timber Reform Act, Section 103 (a); and ANILCA, section 705 (e).)
 2. Manage for short and long-term productivity of riparian areas.
 3. Maintain natural streambank and stream channel processes.
 4. Maintain natural and beneficial quantities of large woody debris over the short and long term.
 5. Maintain water quality to provide for the beneficial uses of riparian areas. (Consult Best Management Practices Chapter 10 of the Soil & Water Conservation Handbook, FSH 2509.22 and Appendix C of this document.)
 6. Coordinate management activities between resources directly affecting the riparian area with other resources.
 7. Coordinate road management activities to emphasize the needs of wildlife and the upstream passage of fish at road crossings. (Consult the Aquatic Habitat Management Handbook, FSH 2609.24.)
 8. In watersheds with intermingled land ownership, cooperate with the other land owners in striving for healthy riparian areas.

II. Inventory

- A. Riparian areas encompass the aquatic and riparian ecosystems, including riparian streambanks, lakes and floodplains, with distinctive resource values and characteristics. Included in the riparian area is the transition zone between the aquatic and upland terrestrial ecosystems. Riparian areas are identified during Forest and project planning through computer based inventory data which includes stream channel types, plant associations, landforms and soil types. At the project implementation stage, more detailed inventory, is required where riparian resources may be affected.
1. Consult the Forest-wide Fish Standards and Guidelines for direction on maintenance of the channel type and stream class inventories. Consult the Forest-wide Soil and Water guidelines for direction on maintenance of the soils, landforms and plant association inventory (SRI inventory).
 2. Refine riparian definitions and delineation methods as necessary. Consult with appropriate Federal and State agencies and other groups and agencies.

III. Project Planning

- A. On those projects and activities that are in, or influence, riparian areas, assure interdisciplinary involvement and consideration of riparian resources in project planning and in the environmental analysis process.
- B. Assure that project plans are properly communicated to permittees, contractors, and purchasers and that they understand riparian objectives.

RURAL DEVELOPMENT

Forest-wide Standards & Guidelines

Rural Development Activities: RD

I. Consider Rural Development in Resource Management Decisions.

- A. Forest programs and budgets should consider where resources could be redirected to respond to local needs and opportunities for rural development.
 - 1. Consider rural interests including state, Native Corporations, and others, in resource decisions by jointly identifying and developing natural resource opportunities including those on private land.
- B. Consider social, cultural, and economic issues in resource management decisions by:
 - 1. Considering local communities' needs in project plans.
 - 2. Evaluating community-based sources of goods and services needed to plan, design and implement Forest projects.
 - 3. Forming networks of partners in communication and cooperation to further provide for Rural Development in Alaska.
 - 4. Considering community organization and protocol in resource planning and decision processes.
 - 5. Provide information and share decisions pertaining to resource management and development on National Forests with communities. Provide opportunities for Forest Service employees to participate in local rural development planning.

II. Community-based Rural Development Plans incorporate Forest Service Resource Activities.

- A. Provide information about Forest management and Rural Development opportunities during community planning activities.
 - 1. Provide local planners with national and local updates on Rural Development programs and opportunities.
 - 2. Provide training opportunities to local resource planners and managers as well as Forest Service employees to develop a common understanding of the role of Forest resources in rural development.
 - 3. Develop and provide timely research information, technology, and project coordination to enhance rural economic development.

SOIL AND WATER

Forest-wide Standards & Guidelines

Soil Inventory: S&W1111

I. Inventory

- A. Maintain the Soil Resource Inventory (SRI) or Integrated Resource Inventory (IRI). (Consult FSM 2550, Soil Management Handbook, Land Systems Handbook (6/82 R10 Amend. 1), National Soil Handbook-430-VI, Soil Survey Manual-430-V.)
 - 1. Determine and implement the level of Soil Resource Inventory (SRI) or Integrated Resource Inventory (IRI) necessary to meet planning and implementation needs for proposed management projects.

Water Inventory: S&W1112

I. Inventory and Evaluation

- A. In conducting water investigations, evaluate the following elements of Water Resource Inventories (WRI).
 - * Climate
 - * Water Quality
 - * Water Quantity
 - * Channel Types
 - * Water Uses and Developments
 - * Watershed Condition

Consult FSM 2530, Water Resource Inventory Handbook (5/83 R-10 Supp 1) and Water Information Management System Handbook (FSH 2509.17).

- 1. Determine the level of Water Resource Inventory (WRI) to meet project planning and implementation needs.

Watershed Resource Planning: S&W112

I. Land use Activities

- A. Plan and conduct land use activities to avoid irreversible or serious and adverse effects on soil and water resources.
 - 1. Make soil and water resource data and interpretations required for land and related resource management available for project analysis. Consult FSM 2530 and 2550.
 - 2. Maintain water quality and quantity to protect the State-designated beneficial uses. Consult the Alaska Nonpoint Source Pollution Control Strategy, Chapter 10 of the Soil and Water Conservation Handbook (Best Management Practices - FSH 2509.22), the Soil Management Handbook (FSH 2509.18).
 - 3. Apply Best Management Practices (BMP's) to all land-disturbing activities as a process to protect the beneficial uses of water from nonpoint sources of pollution. (Note: Appendix C of the Plan includes a summary of the Best Management Practices which are found in Chapter 10 of the Soil and Water Conservation Handbook, FSH 2509.22.) Also consult FSM 2530, Forest-wide Standards and Guidelines for Facilities, Transportation, and Fish, U.S. Army Corps of Engineer Regulations (33 CFR 323.4), and the Clean Water Act.
 - 4. Apply soil conservation practices to meet Regional Soil Quality Standards (SQS) on all land-disturbing activities as a process to prevent detrimental soil disturbance. Detrimental soil disturbance is defined as significant changes or impairment in soil properties that are expected to result in reduced short or long-term productivity of the

land over the planning horizon. Consult FSM 2520 and 2550, FSH 2509.18 and R10 Supplement 2509.18-91-?? (Regional SQS, in preparation). Best Management Practices also include some soil conservation practices (FSH 2509.22, Soil and Water Conservation Handbook, Chapter 10); develop other specific soil conservation practices during project planning, as needed.

- B. Apply multiple-use management to non-designated domestic use watersheds, while providing water suitable for human consumption within State Water Quality Standards and water supply regulations. Consult State Water Quality Standards (18 AAC 70.020).
- C. Avoid adverse impacts to soil and water resources when conducting land use activities on wetland, floodplains, and riparian areas. Consult Executive Orders 11988, 11990, and 11514; FSM 2510 and 2520; U.S. Army Corps of Engineers regulations (33 CFR 323); NFMA Planning Regulations (36 CFR 219.27); appropriate Best Management Practices (Chapter 10 of the Soil and Water Conservation Handbook, FSH 2509.22) for wetlands, floodplains and riparian areas; and, Forest-wide Standards and Guidelines for wetlands and riparian areas:
 - 1. Design land disturbing activities to minimize degradation to the significant functions and values of wetlands.
 - 2. Cooperate with State and Federal agencies having overlapping resource management responsibilities for these land classifications, including the Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, U.S. Army Corps of Engineers, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service. Execute plans and decisions in a manner consistent with the statutory responsibilities of these agencies.
- D. Under applicable State and Federal Law reserve both ground and surface water rights to manage National Forest System lands. Consult FSM 2540.
 - 1. Review projects and reserve water rights or notify state of water uses for reservation management purposes, when it is determined such uses are necessary for carrying out the purposes of the project. Be sure review of uses and needs includes at least the following items:
 - * In-stream flow needs.
 - * Adequate flow for fish passes and habitat
 - * Forest Service administrative and domestic use.
 - * Developed special uses and recreation sites.
- E. Consult with other forest resource groups, State, Federal and local government agencies and Native American communities for the protection, mitigation, and/or improvement of the water and soil resources.
- F. Participate actively in planning by other Federal, State and local agencies where these plans could affect the beneficial uses of water on National Forest System lands.

II. *Dispersion to Minimize Cumulative Watershed Effects*

- A. Minimize Cumulative Watershed Effects (CWE) which could adversely affect soil and water resources and result in changes in stream channel equilibrium, such as: 1) changes in sediment transport leading to stream aggradation, degradation and/or streambank erosion; 2) silting in of pools; and, 3) reduction in aquatic habitat capability.
 - 1. Limit large scale ground-disturbing activities and associated roading to no more than 35 percent of the acres of 3rd order or larger watershed in less than a 15-year period unless a CWE analysis during project planning indicates otherwise.

Watershed Resource Improvement: S&W2

I. *Water quality protection and improvement*

- A. Protect or improve water quality and/or quantity (for example, stream bank stabilization, stream channel realignment) and stabilize soil erosion sites and improve, when prudent, soil productivity (for example, soil stabilization).**
 - 1. Conduct Watershed Condition Surveys (WCS) to determine improvement needs as part of the development of watershed improvement plans. Consult FSM 2510 and 2520.**
 - 2. Complete watershed improvement plans for all watershed projects prior to watershed project implementation. Consult FSM 2520.**
 - 3. Use the Forest Watershed Improvement Needs Inventory (WINI) for identification and prioritization of treatment to soils, stream banks and channels. Consult FSM 2510.**
 - 4. Maintain WINI reports to provide information for current year budgets, out-year budgets (next two years) and RPA.**
 - 5. Give priority to treatment of soil sites, stream banks and channels with the highest erodible conditions directly affecting the beneficial uses of water.**
 - 6. Whenever possible, use indigenous plants and materials.**
 - 7. Use plants, where possible, which improve wildlife habitat.**
 - 8. Inspect all watershed improvement projects annually until the final evaluation indicates that maintenance is no longer needed.**
 - 9. Use Sale Area Improvement Plans and K-V funds as appropriate.**

SPECIAL INTEREST AREAS

Forest-wide Standards & Guidelines

Management Activities: SIA

I. *Special Interest Area Identification*

A. Identify potential Special Interest Areas during project planning.

1. Consider areas with unique values and evaluate as potential Special Interest Areas during project-level environmental analysis. Criteria for identifying and evaluating Special Interest Areas include:
 - * Has unique archeological, historical, scenic, recreational, geological, botanical, zoological or paleontological values or features.
 - * Possesses local, regional, or national significance.
 - * Is an outstanding or rare example of resource represented.
 - * Contains a large number of high-quality examples of different natural resources.
 - * Offers unusual opportunities for public interpretation of natural history, or for scientific research.
2. Compile a list of potential Special Interest Areas to be considered during the next Forest Plan Revision. Include a description, map and discussion of special features for each potential area.

II. *Special Interest Area Analysis*

A. Recommendations for designation of Special Interest Areas shall be based on the following priorities:

1. Areas that may be adversely affected by proposed land management activities.
2. Areas undergoing deterioration due to vandalism, public use, erosion, or other forces.
3. Areas of known significance that have been identified, but not previously evaluated.
4. Other areas.

III. *Protection*

A. Manage potential Special Interest Areas to ensure that their unique qualities are not degraded by other resource activities or unauthorized uses.

1. Establish a boundary around each identified area which includes its unique or special features, and excludes detrimental management activities until a determination of future status and management has been made.
2. Inspect potential Special Interest Areas on a regular basis to prevent vandalism, natural destruction, or project activities with potentially adverse effects.

SUBSISTENCE

Forest-wide Standards & Guidelines

Subsistence: SUB

I. Subsistence

- A. It is the policy of the Forest Service that:
1. The continuation of the opportunity for subsistence uses by rural Alaskan residents, including both Natives and non-Natives, will be provided on National Forest System lands.
 2. Consistent with the purposes for which National Forest System lands in Alaska were established, sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the National Forest System lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence.
 3. Non-wasteful subsistence uses of fish and wildlife and other renewable resources shall be the priority consumptive uses of all such resources on National Forest System lands in Alaska when it is necessary to restrict the taking of such resources.
 4. The Forest Service will cooperate with adjacent landowners and land managers in managing subsistence activities and in protecting the continued viability of all wild renewable resources on National Forest System lands.
 5. Designated subsistence advisory committees and councils shall be consulted for their opinions and recommendations on current and proposed management actions, pursuant to ANILCA, Title VIII, Section 805.
- B. All Forest management activities shall be located and managed considering impacts upon rural residents who depend upon subsistence uses of the resources of National Forest lands, in compliance with ANILCA, Title VIII, Section 810(a).
1. Conduct an evaluation of proposed management activities according to Section 810 of ANILCA. In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of National Forest lands, evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of National Forest lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit or other use, occupancy or disposition of such lands which may significantly restrict subsistence uses shall be effected until the following actions are accomplished:
 - * Notice is given to the appropriate State agency and the appropriate local committees and regional councils established pursuant to Section 805 of ANILCA;
 - * Notice of a hearing is given and a hearing is held in the vicinity of the area involved;
 - * A determination is made that 1) such a significant possibility of a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands; 2) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and 3) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.
 2. If required to prepare an environmental impact statement pursuant to the National Environmental Policy Act, the notice and hearing and findings required in 1 above shall be a part of such environmental impact statement.
 3. Nothing in 1 above shall be construed to prohibit or impair the ability of the State or any Native Corporation to make land selections and receive land conveyances pursuant to the Alaska Statehood Act or the Alaska Native Claims Settlement Act.

4. After compliance with the procedural requirements of Section 810 of ANILCA and other applicable law, the responsible Forest Service official may manage or dispose of public lands under their primary jurisdiction for any of those uses or purposes authorized by ANILCA or other law. Management to accommodate identified subsistence uses could include:
 - a. Cancel all or part of the planned project.
 - b. Substitute another site for the project and prepare another environmental analysis if the change is significant.
 - c. Implement mitigation measures, such as:
 - 1) Access management during hunting and fishing seasons
 - 2) Special silvicultural prescriptions
 - 3) Implement subsistence priority in game and fish harvest regulations
 - 4) Conduct wildlife or fish habitat improvement projects that benefit subsistence species in the project area
5. Consult Section 810 of ANILCA and the Forest Service Subsistence Management and Use Handbook.
- C. Habitat of subsistence species shall be managed in a manner which minimizes the likelihood of irreversible or long-term adverse effects upon such populations and species.
- D. Evaluate changes in subsistence use patterns and activities in cooperation with appropriate State and Federal agencies by conducting annual surveys of wildlife populations and subsistence harvest.
- E. Provide the Federal Subsistence Board annually with subsistence hunting and fishing regulations and make recommendations for emergency regulations as needed for maintaining "healthy populations." Provide maps depicting current subsistence use and areas affected by proposed regulations.
- F. Provide for enforcement of subsistence use regulations.
- G. Maintain a Public Information Program concerning subsistence management on National Forest System lands.
- H. In cooperation with appropriate State and Federal agencies, maintain a subsistence research program and data base.
- I. Maintain reasonable access to subsistence resources.
 1. Permit appropriate use for subsistence purposes of snowmachines, motorboats, and other means of surface transportation traditionally employed for such purposes by rural Southeast Alaska residents, subject to reasonable regulations.
 2. Where necessary to maintain "healthy" populations or achieve a subsistence priority over other uses, restrict the location, timing, and means of access.
 3. Management of off-highway vehicle (OHV) use associated with access created by Forest Management activities will be addressed in OHV management plans.
- J. Allow for subsistence use of wood and other customary and traditional subsistence resources used in traditional use areas, subject to land use prescription objectives.
- K. Consider subsistence users needs in the scheduling, location and design of fish and wildlife habitat improvement projects.
- L. In the development of access and facilities, seek opportunities to provide for subsistence users (for example, anchorages and shelters). Such access and facility opportunities should be identified and planned with local subsistence users.

THREATENED, ENDANGERED AND SENSITIVE SPECIES

Forest-wide Standards & Guidelines

Threatened, Endangered and Sensitive Species: TE&S

I. *Threatened and Endangered Species*

- A. Meet the requirements of the Endangered Species Act, as amended.
1. Utilize informal and formal consultation procedures, and conference procedures (whichever is appropriate) with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service for all major construction activities and other forest management activities which may have an effect on federally-listed threatened, endangered, or proposed species population, or critical habitat.
 2. Maintain and/or improve habitats for the recovery and conservation of federally-listed threatened, endangered and proposed species. Implement National and Regional Forest Service policy and direction for management of threatened, endangered, and proposed species. (Consult FSM 2670.)
 3. Support monitoring, research, and inventory work for threatened, endangered, proposed and candidate species. Coordinate with appropriate Federal and State agencies. Use "challenge cost share," and Sikes Act agreements, "Section 6 Grants" (under authority of the Endangered Species Act), and other partnerships.

II. *Sensitive Species*

- A. Implement national and regional Forest Service policy and direction for the identification and management of sensitive species. (Consult FSM 2670.)
1. When population or habitat declines for a plant or animal species become a Forest Service concern, evaluate the particular species for approval/placement on the Regional Sensitive Species List by the Regional Forester.
 2. Provide for viable populations of sensitive species by avoiding or minimizing impacts to species whose viability has been identified as a concern. Where desirable, implement habitat enhancement projects to increase habitat capabilities and expand species distributions.
 3. The status of sensitive species shall be reviewed at least every 5 years. Such status reviews shall recommend whether or not a species should continue to be listed as a sensitive species.
 4. Identify research needs for sensitive plants and animals on the Forest.

III. *Steller Sea Lion Habitats*

- A. Provide for the protection and maintenance of Steller sea lion habitats.
1. Ensure that Forest Service permitted or approved activities are conducted in a manner consistent with the *Marine Mammal Protection Act* and the *Endangered Species Act*. "Taking" of sea lions is prohibited; "taking" includes harassing or pursuing or attempting any such activity.
 2. Locate facilities and concentrated human activities requiring Forest Service approval as far from known sea lion haul outs, rookeries and known concentration areas as practicable. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance:
 - * Facilities, camps, LTF's, campgrounds and other developments should be located 1 mile from known haul outs, and farther if the development is large.

- * Avoid direct aircraft flights over haul outs on Forest Service permitted or approved activities. Within .5 miles (800 meters) of haul outs, maintain a constant flight direction and airspeed and a minimum above-ground-level of 1000 feet (305 meters), when weather ceilings permit.
 - * Minimize disturbance effects of boat traffic: Remain at least .5 miles (800 meters) away from haul outs and rookeries, where safe passage exists.
 - * Individuals associated with Forest Service permitted or approved activities will not intentionally approach within 100 yards, or otherwise intentionally disturb or displace any hauled-out sea lion.
3. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of sea lions by the public. Maintain a public education program explaining Forest management activities related to sea lions in cooperation with State and other Federal agencies.

IV. *Whale Habitats*

- A. Provide for the protection and maintenance of whale habitats.
 1. Avoid intentional aircraft flights below 500 feet above-ground-level in the known vicinity of whales on Forest Service permitted or approved activities, when weather ceilings permit.
 2. Avoid intentional approach in a vessel of 100 feet or more in length to within 1/4 mile of whales on Forest Service permitted or approved activities, when safe passage exists.
 3. Avoid intentional approach in a vessel of less than 100 feet in length to within 100 yards of whales on Forest Service permitted or approved activities, when safe passage exists.

V. *American and Arctic Peregrine Falcon Habitats*

- A. Provide for the protection and maintenance of habitats for migrating American and arctic peregrine falcon.
 1. Obtain increased understanding and knowledge about the migration of American and arctic peregrine falcons through Southeast Alaska (for example the timing of migrations, the length of stay in Southeast Alaska, important foraging areas, important prey items, etc.).
 2. Protect seabird rookeries and waterfowl concentration areas (see Forest-wide Wildlife Standards and Guidelines).

VI. *Peale's Peregrine Falcon Habitats*

- A. Provide for the protection and maintenance of peregrine falcon habitat.
 1. Maintain nest site location data in cooperation with the U.S. Fish and Wildlife Service.
 2. Exchange records with appropriate State and Federal agencies annually on the status of populations and habitat.
 3. Plan project activities to avoid adverse impacts to the falcons and their habitats. Evaluate proposed projects within two miles of known falcon nests, for their effects considering such items as: 1) human activities (aircraft, ground and water transportation, high noise levels, and permanent facilities) which could cause disturbance to nesting pairs and young during the nesting period April 15 - August 31; 2) activities or habitat alterations which could adversely affect prey availability. Coordinate all project activities with the U.S. Fish and Wildlife Service.
 4. Within 15 miles (24 km) of all known nest sites, prohibit all use of herbicides and pesticides which cause egg shell thinning or other problems in birds of prey.

VII. Trumpeter Swan Habitats

- A. Provide for the protection and maintenance of Trumpeter Swan habitats.**
 - 1. Avoid disturbance of trumpeter swans, particularly during nesting, brood-rearing and wintering periods, to prevent abandonment of nests, brood-rearing areas, and winter habitats. As a general guideline, minimize disturbance by providing a minimum separation of .5 miles (800 meters) between waterbodies used by nesting, brood-rearing and wintering trumpeter swans and human activities or developments. The District Ranger will, after consultation with appropriate resource specialists, take all practicable measures to minimize disturbance.
 - 2. Avoid placement of overhead wires, fences, or other structures which could interfere with the flight paths of swans and cause injury or mortality.
 - 3. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of this species by the public. Maintain a public education program explaining Forest management activities related to this species in cooperation with State and other Federal agencies.
 - 4. In cooperation with State and Federal agencies, evaluate levels of lead in habitat areas, and evaluate effects on trumpeter swan populations.

VIII. Osprey Habitats

- A. Maintain and enhance osprey populations and habitat.**
 - 1. Establish and maintain a minimum 330-foot (100-meter) radius (horizontal distance) habitat management zone around each existing osprey nest tree. Determine the exact boundary based on local topography, timber type, windfirmness, and other factors.
 - 2. Within the osprey nest zones, prohibit all land use activity which would likely disturb the osprey. Infringement may be acceptable depending on the nature of the project and timing of the activity.
 - 3. Maintain the osprey nest zone even though the nest or nest tree becomes inactive.
 - 4. Provide trees suitable for use by osprey for nesting, feeding and perching. Consider the following:
 - * Snags and live trees that dominate or co-dominate a shoreline.
 - * Snags with broken tops and live trees with large enough branches to support birds.
 - 5. Regulate Forest Service sponsored activities within .5 miles (800 meters) of osprey nests to prevent disturbance during the nesting season (April 15 - September 1).
 - 6. New nests will receive the same level of management protection as existing nests, however, osprey which select new nests in close proximity to existing human activities will not require those activities to be terminated.
 - 7. Annually exchange records with appropriate State and Federal agencies on the status of populations and habitat. Ideally, population and nest surveys (checks on known nests) should be done annually; however, surveys will be done at least once every 5 years.

IX. Island King Salmon Habitats

- A. Provide for the protection and maintenance of runs of king salmon that naturally occur on islands. The runs in King Salmon and Wheeler Creeks on Admiralty Island are the only known naturally-occurring island king salmon populations. Both streams are located within Admiralty National Monument Wilderness.**
 - 1. Coordinate with the Alaska Department of Fish and Game and National Marine Fisheries Service on commercial, sport and subsistence fish use, hatchery egg take programs, and other activities affecting the viability of king salmon runs in order to preserve these unique populations.
 - 2. Avoid the placement of facilities (Forest Service and non-Forest Service) in the vicinity of these streams which would increase harvest pressure on these king salmon runs.

3. Coordinate with other groups or Federal and State agencies to develop and fund a program of study to understand the life history and genetic characteristics of these unique runs of king salmon.

X. Northern Pike Habitat

- A. Provide for the protection and maintenance of northern pike found in the Pike Lakes on the Yakutat Forelands. This population of northern pike is unique to Southeast Alaska.
 1. Avoid the placement of facilities (Forest Service and non-Forest Service) in the vicinity of the Pike Lakes which would increase harvest pressure to the point where the viability of these species is affected.
 2. Coordinate with the Alaska Department of Fish and Game on any activities which would affect the viability of the northern pike.
 3. Coordinate with other groups or Federal and State agencies to develop and fund a program of study to understand the life history and genetic characteristics of this unique population of northern pike.

XI. Chum Salmon in Fish Creek

- A. Provide for the protection and maintenance of chum salmon in Fish Creek near Hyder. This population of chum salmon is characterized by their extraordinary large size.
 1. Coordinate with the Alaska Department of Fish and Game and the National Marine Fisheries Service on commercial, sport and subsistence fish use, hatchery egg take programs, and other activities affecting the viability of the chum salmon runs in Fish Creek in order to preserve these populations.
 2. Coordinate with the Alaska Department of Fish and Game and the National Marine Fisheries Service on any activities which would affect the viability of the chum salmon.
 3. Coordinate with other groups or Federal and State agencies to develop and fund a program of study to understand the life history and genetic characteristics of this run of chum salmon.
 4. Provide for habitat improvement and maintenance to maintain the viability of this run of salmon, as necessary.

TIMBER

Forest-wide Standards & Guidelines

Timber Resource Inventory: TIM111

I. Inventory

- A. Provide efficient, compatible, and statistically valid data describing the timber resource, its condition, and trends. Timber inventories primarily collect data describing the tree component of the vegetation on forested lands.
 - 1. Timber inventories shall be coordinated with other data collection efforts to minimize duplication and to maximize the use of the resulting information. Emphasize multiple-resource or integrated individual-resource inventories.

Extensive Timber inventory: TIM111-1

I. Stage I Extensive Inventory

- A. An extensive timber re-inventory covering the entire Tongass National Forest will be conducted every 10 to 15 years to reflect the timber condition at the time of each Forest Plan Revision. (Consult the National Forest Inventory Handbook.)
 - 1. The approximate schedule for the next Forest inventory is:
 - * Chatham Area - 1993
 - * Stikine Area - 1995
 - * Ketchikan Area - 1997
- B. The inventory will be designed to insure National Forest Service standards are achieved. Consult the National Forest Inventory Handbook.

Silvicultural Examination and Prescription: TIM111-2

I. Stage II Intensive Inventory

- A. Silvicultural examinations and silvicultural prescriptions are required for proposed resource management activities where vegetative manipulation of the forest is involved. (Consult Region 10 Silvicultural Examination and Prescription Handbook.)
- B. Stand examinations will be conducted as part of timber sale analysis. Stand examination is the process of gathering vegetative data to provide a basis for silvicultural and other management decisions.
- C. Silvicultural prescriptions will be written as part of project planning. Silvicultural prescriptions are based on stand examinations and include a written description of the current stand condition and the anticipated future condition based on management activities. The prescription also includes silvicultural practices, cutting methods, or other management actions which will be sequentially applied to achieve the desired stand condition. The prescriptions will be approved by a certified silviculturist.

Timber Resource Planning: TIM112

I. Information Gathering and Maintenance

- A. Provide timber resource information necessary to prepare timber harvest projects. This includes maintenance of inventories, analysis of data, and input for interdisciplinary environmental analysis.

II. *Pacific Yew*

- A. Consider protecting known Pacific yew plants from commercial timber harvest activities and maintain their regeneration capabilities.
 - 1. Locate existing plants during regular Forest Service project activities. Implement site-specific silvicultural prescriptions to protect the known plants and maintain their regeneration capabilities.

Timber Resource 10 Year Sale Schedule: TIM112-3

I. *10-Year Timber Sale Schedule*

- A. Maintain and update the timber sale schedule. The scheduled timber sales for the first 10 years of the plan are included in the Ten-Year Timber Sale Schedule. This schedule projects the location, volume, harvest system, and miles of road required to achieve the planned timber output on an annual basis.
 - 1. The timber sale schedule will be updated or adjusted annually to reflect actual demand, specific project viability, budgetary actions, availability of personnel, and other operational constraints.

Timber Resource Coordination: TIM113

I. *Timber Program*

- A. Technical support from other resources is required to insure that the timber program identified in the Forest Plan is implemented.
 - 1. The annual timber program will include necessary support from other resources to provide input for proposed activities and to monitor the effects of completed activities.
- B. Project design, and environmental analysis for timber activities will consider the management emphasis of the project area.
- C. The project NEPA process, which forms the basis for the Sale Area Improvement/Knutson-Vandenburg (K-V) Plan, identifies all resource improvement opportunities within the sale area. These will be scheduled based on priority of needs and availability of funds.
- D. The following chart will be used as a guide for coordinating the visual quality objectives and visual absorption capability setting with timber harvest activities.

**Guidelines for Timber Harvest Activities
Specific to
Visual Quality Objectives and Visual Absorption Capability Settings**

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance*	Height to Adjacent Mature Stand	Logging Slash**
Retention - Low VAC	single tree or group selection (less than 2 acres)	8%	50%	Would not be evident 2 years after project completion.
Retention - Intermediate VAC	single tree or small clearcut (appx. 5 - 15 acres)	10%	50%	no limit
Retention - High VAC	small clearcut (appx. 15 - 30 acres)	10%	30%	no limit
Partial Retention - Low VAC	group selection or small clearcut (appx. 5-10 acres)	8%	35%	Would not be evident 5 years after project completion.
Partial Retention - Intermediate VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Partial Retention - High VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - Low VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Modification - Intermediate VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - High VAC	clearcut (appx. 80 - 100 acres)	25%	5 feet	no limit
Maximum Modification - Low VAC	clearcut (appx. 50 - 75 acres)	50%	5 feet	no limit
Maximum Modification - Intermediate & High VAC settings	clearcut (appx. 80 - 100 acres)	50%	5 feet	no limit

- * Cumulative visual disturbance reflects the maximum allowable percent of a visual viewshed to be in a disturbed condition at any one point in time. These estimates are appropriate for planning purposes. During project analysis, these percentages should be referred to as a guideline. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.
- ** Tree limbs, root wads, and excessively high tree stumps are considered logging slash. To meet Retention and Partial Retention VQO's adjacent to road corridors, it may be necessary to do additional clean-up following an active timber sale. KV funds may be appropriate to use in these settings.

Timber Sale Preparation: TIM114

I. Timber Sale Preparation

- A. The timber sale preparation process is an intensive interdisciplinary field investigation of the area within and adjacent to the proposed project area. Information obtained by staff specialists will be used for environmental analysis.

II. Regeneration Harvest Systems

- A. Regeneration systems are subdivided into even-aged silvicultural systems and uneven-aged silvicultural systems. Even-aged systems include clearcutting, shelterwood, and seed-tree harvest systems. Uneven-aged systems include single-tree selection and group selection harvest systems.

III. Even-aged Systems

- A. Land use designation prescriptions provide direction for applicability of even-aged harvest systems.
 - 1. Even-aged timber harvesting will only be applied where it will not create isolated timber stands that cannot be economically harvested in the future. Cutting units should not be located where future logging will destroy regeneration established following an earlier regeneration cutting.
- B. Clearcutting is an even-aged harvest system applicable for all forest types in Southeast Alaska. It is the most common harvest system used on the Tongass National Forest.
 - 1. Clearcutting will be used only where such a practice is determined to be the best system to meet the objectives and requirements of the land use designation.
 - 2. Clearcutting is most generally applied where trees are cut to achieve timber production objectives, where there is risk of dwarf-mistletoe infection, or where there is a high risk of windthrow.
 - 3. Clearcutting may be applied where longer rotations (greater than culmination of mean annual increment - CMAI) are established to meet other resource objectives, on unsuitable forest land to meet management objectives, or for cutting noncommercial forest products. Final harvest will be equal to or greater than 95 percent culmination of mean annual increment (the age at which the volume increment for a stand of trees has achieved its highest mean volume).
- C. Shelterwood is an even-aged harvest system. The shelterwood harvest system can be applied to all timber types on the Tongass.
 - 1. Shelterwood harvest system may be used to meet the land use designation objectives. Objectives often include the protection of visual resources, wildlife and fish, and the harvesting of specialty products.
 - 2. If applied for harvesting noncommercial forest products (fuelwood), shelterwood must be applied only where recurring salvage operations can be conducted.
 - 3. The shelterwood silvicultural system is generally limited to tractor or aerial harvest systems.
- D. Seed tree is an even-aged silvicultural system. It may be used where natural regeneration is desired and there is not an adequate seed source in surrounding stands.

IV. Size of Clearcuts

- A. NFMA regulations provide that 100 acres is the maximum size of created openings allowed for the hemlock-Sitka spruce forest type of coastal Alaska, unless excepted under specific conditions. Cedar and hardwoods are usually considered to be a component of the hemlock-Sitka spruce ecotype in Southeast Alaska and therefore the 100-acre limit will also apply.
- B. Recognizing that harvest units must be designed to accomplish management goals, created openings may be larger where larger units will produce a more desirable contribution of benefits.
 1. Factors which allow the maximum size of created openings to be enlarged are:
 - * Natural and biological hazards to the survival of residual trees and surrounding stands
 - * Topography
 - * Relationship of units to other natural or artificial openings and proximity of units
 - * Coordination and consistency with adjacent land use designations
 - * Effect on water quality and quantity
 - * Visual Absorption Capability (VAC)
 - * Effect on wildlife and fish habitat, based on the most recent research.
 - * Regeneration requirements for desirable tree species
 - * Transportation and harvest system requirements
 - * Relative total costs of preparation, logging, and administration of harvest
- C. Where it is determined by an interdisciplinary analysis that exceptions to the size limit are warranted, the actual size limitation of openings may be up to 100 percent greater (200 acres) if required due to natural biological hazards to the survival of residual trees and surrounding stands, and 50 percent greater (150 acres) for the remaining factors. The appropriate Forest Supervisor will identify the particular conditions under which the larger size is warranted considering the benefits to be gained. Larger sizes are permitted on an individual timber sale basis after 60 days public notice, and review and approval by the Regional Forester.
- D. The established limits and exceptions do not apply to the size of areas harvested as a result of natural catastrophic conditions, such as insect and disease infestation, or windthrow.
- E. Created openings will be adequately stocked with desirable tree species, which are approximately 5 feet in height, before the area will no longer be considered an opening for the purposes of determining limitations on the scheduling, locating, and calculating the size of additional created openings.
- F. Maintain a buffer zone of no less than one hundred feet in width on each side of all Class I streams, and on those Class II streams which flow directly into a Class I stream, within which commercial timber harvesting shall be prohibited. Use Best Management Practices, as defined in the Region 10 Soil and Water Conservation Handbook (FSH 2509.22) to assure the protection of riparian habitat on streams or portions of streams not protected by buffer zones.
- G. Special consideration will be required in the design of harvest units adjacent to land use designations which limit or prohibit timber activities. Where the chance of windthrow in adjacent stands is increased by timber harvest, measures will be taken to contain the windthrow within the land use designation where timber is harvested.

V. Uneven-aged Systems

- A. Prescriptions for each land use designation provide direction for applicability of uneven-aged silvicultural systems. All timber types on the Tongass National Forest may be harvested using uneven-aged silvicultural methods.

1. Uneven-aged management is applied where the interdisciplinary process determines the system is appropriate to meet the objectives and requirements of the land use designation including the protection of excessively steep or unstable soils, visual resources, wildlife and fish, recreation, and for use of noncommercial wood products (fuelwood).
 2. Uneven-aged management systems are limited to areas where yarding equipment suited to partial cuts can be used.
- B. Single-tree selection is an uneven-aged silvicultural system. The single-tree selection method evaluates each tree for its contribution to the desired characteristics of the uneven-aged stand. Regeneration and intermediate cuttings are usually done in one operation. Desired regeneration grows in the spaces created by the harvested trees.
1. Single-tree selection is used to meet land use designation objectives including the protection of excessively steep or unstable soils, visual resources, wildlife and fish, recreation, and for utilization of noncommercial wood products (fuelwood).
 2. Single-tree selection timber harvest methods are generally limited to tractor or aerial systems suited to this type of partial cut.
- C. Group selection is an uneven-aged harvest system. The group selection method prescribes the removal of small groups of trees (usually 2 acres or less) to create openings in the stand. The uneven-aged stand created is actually a mosaic of small even-aged groups. The desired regeneration grows in the spaces created by the groups of trees harvested.
1. Group selection is used to meet land use designation objectives including the protection of excessively steep or unstable soils, visual resources, wildlife and fish, recreation, and for utilization of noncommercial wood products (fuelwood).
 2. Group selection harvest methods are limited to areas that can employ yarding equipment suited to this type of partial cut.

VI. *Intermediate Harvest Systems*

- A. Prescriptions for each land use designation provide direction for applicability of intermediate harvest practices.
- B. Commercial thinning is an intermediate harvest system. Commercial thinning is a removal of some trees from an immature stand, primarily to accelerate the growth of the remaining trees, but also, by suitable selection, as a means of improving final species composition, size class distribution, and to capture volume that would be otherwise lost to mortality. Intermediate harvest is being evaluated to assess the benefits for some species of wildlife.
 1. Continue development and application of the Alaska Region Second-Growth Forest Management Program.

VII. *Salvage Harvest*

- A. Salvage cutting is the harvesting of individual dead or dying trees (trees not expected to live 20 years), wherever they may occur, provided there is no land use prescription limitation. Salvage may include trees damaged by road construction.
- B. Trees salvaged in a land use designation excluded from scheduled timber harvest (unsuitable forest land) will not be included as chargeable volume to the allowable sale quantity. These lands will not be substituted for suitable forest land.
- C. Beach log salvage often involves both State and National Forest System lands. A Memorandum of Understanding between the State of Alaska and the Forest Service on coordination of beach log salvage dated April 23, 1980 provides direction.
 1. The State and Forest Service will make combined beach log salvage sales. The party with the largest share of material will sell and administer the sale.
 2. Beach logs may be exported.
 3. Beach logs that are not merchantable will be designated for personal use whenever possible.

- D. Beach log salvage material is not chargeable to the annual allowable sale quantity.

VIII. Utilization Standards

- A. Industrial wood products on the Tongass National Forest will be managed for quality sawtimber material.
 - 1. Require utilization and optimum practical use of wood material. Promote the use of wood for its highest value product commensurate with present and anticipated supply and demand.
 - 2. Improvements in utilization will be made through sale preparation, appraisals, contract administration, and dissemination of research information.
 - 3. Consult current Regional direction for precise standards.

IX. Requirement for Proportionality (Consult Tongass Timber Reform Act, Section 301.)

- A. Eliminate the practice of harvesting a disproportionate amount of old-growth timber by limiting the volume harvested over the rotation in volume classes 6 and 7, as defined in TLMP and supporting documents, so that the proportion of volume harvested in these classes within a contiguous management area does not exceed the proportion of volume currently represented by these classes within the management area. This applies to the APC and KPC long-term contracts only.

X. Competitive Bidding and Small Business

- A. Private enterprise shall be encouraged to use National Forest timber resources.
 - 1. The Forest Service will plan sale offerings to encourage competitive bidding in a range of total sale volume and species that provides opportunities for purchasers.
 - 2. A fair share of timber will be set aside for preferential bidding by small business operators. The Forest Service and the Small Business Administration will consult annually on the amount of volume to be offered.

Reforestation Certification: TIM121-1

I. Certification

- A. Assess reforestation of units receiving final harvest.
 - 1. Certify that every unit which receives a final harvest meets or surpasses the stocking guidelines and certification standards (consult FSH 2409.17) within the 5-year regeneration period established by law. A unit may be certified as adequately stocked at any time during this 5-year period. (See also the Monitoring Plan)

II. Planted or Seeded Areas

- A. Assess areas that have been planted or seeded to determine whether management objectives have been met.
 - 1. Certify that a planted or seeded area has attained a stocking level above a defined minimum in terms of number and distribution of acceptable species, whether planted, seeded, or natural.

Timber Stand Improvement Certification: TIM121-2

I. Treated Areas

- A. Assess areas that have received precommercial thinning or release and weeding treatments to insure management objectives have been met.
 - 1. Certify that the treatment met the prescription objectives. In the case of thinning, it normally means certifying that the stocking of desired residual trees meets prescribed standards.

Commercial Sale Administration: TIM122

I. Contract Administration

- A. Administer timber sale contract provisions, post-sale measurement, and financial oversight of all sales.
 - 1. Frequency of timber sale inspection will be determined by the complexity of the timber sale and operator performance, with the objective being to ensure full contract compliance.
 - 2. Sale administrators in non-timber emphasis land use designations will work with the other specialist(s) to ensure that the project goals are obtained.

Timber Resource Improvement Preparation: TIM214

I. Forest Pest Management

- A. Pesticide use is not prescribed in the Forest Plan, but may be considered on a case-by-case basis. Biological, environmental, and economic costs and benefits of pesticide use are to be identified and weighed prior to Forest Service use of pesticides on the Forest.
- B. Pesticides will be employed only after such use has been evaluated in an environmental analysis, recommended for approval by the Integrated Pest Management Working Group, and approved by the Regional Forester.
- C. When pesticide use is judged necessary, selection and application will be based on the following guidelines:
 - 1. Those application methods and formulations will be used that are most effective in suppressing the pest, most specific to the target organisms, and least harmful to nontarget components of the environment.
 - 2. In operational pest management programs, only those pesticides will be used that are registered in accordance with the Federal Insecticide, Fungicide and Rodenticide Act, as amended, except as otherwise provided in regulations issued by the Environmental Protection Agency or the Department of Agriculture.
 - 3. Application will be restricted to the minimal effective dosage that, when precisely applied to the target area at optimum times, will accomplish the resource management objectives.

Reforestation: TIM24

I. Site Preparation, Planning, Stocking

- A. This activity comprises all treatments and activities aiding the reestablishment of desirable tree cover following timber harvest.
 - 1. Examine all forest lands treated after the first and third growing seasons.
 - * Examine artificial seeding or planting treatments 1 and 3 years after treatment.
 - * No first year surveys are required if the silvicultural prescription anticipates natural regeneration.
 - * Stands will be certified as stocked if the third year survey indicates that the area meets stocking standards.
 - * Schedule another survey no later than seven growing seasons after harvest if the third year survey indicates the area is very likely to be stocked, but more time is required to make this determination.
 - * Prescribe artificial regeneration if the third year survey indicates that natural regeneration is highly unlikely.
 - 2. Prescribed burning can be used for preparing sites for planting, seeding, and for other resource needs. It may also be used for fuel management, when the wood residue cannot be used for other purposes.

Timber Stand Improvement: TIM25

I. *Intermediate Cutting*

- A.** This activity includes timber stand improvement comprising all noncommercial intermediate cuttings and other treatments to improve the composition, health, and growth of a timber stand.
 - 1.** Precommercial thinning favors the dominant or selected species that are more or less evenly distributed over the stand by removing a varying proportion of the other species. Spacing will be determined by land use designation objectives.
 - 2.** Release and weeding is used to free trees or groups of trees from more immediate competition by cutting or otherwise eliminating growth that is overtopping or closely surrounding it.

TRAILS

Forest-wide Standards & Guidelines

Trail Activities: TRAI1

I. Opportunities

- A. Provide for a diversity of outdoor recreation trail and waterway opportunities, which are appropriate for the ROS class and land use designation. Include such activities as hiking, mountaineering, spelunking, cross-country skiing, snowmobiling, ATV use, motorized trailbike riding, mountain bike riding, motorboating, canoeing and kayaking.
- B. Emphasize opportunities in all ROS classes, as applicable, for activities which are in harmony with the natural environment and consistent with the recreation role of the National Forest lands in a given area.
- C. Locate, design and operate trails to make the best use of available recreation opportunities. Establish trail objectives and associated management actions by examination of the interaction of all resource activities, opportunities inherently present, and the objectives of the land use designation.
- D. Coordinate trail planning, location, design and operation with the recreation management goals and objectives of other National, State, local agencies, and private operations. Make an effort to provide loop trail opportunities through the integration of systems regardless of jurisdiction.
- E. Provide access to high quality recreation places with trail systems that will enhance the total experience of the user.
- F. Emphasize trail systems that offer the following opportunities as may be appropriate and feasible in a given area:
 1. Connected, multi-day trip opportunities for both land trails and water trails.
 2. Link trails with existing (or emerging) road systems.
 3. Alpine trail systems with quick access from saltwater anchorages, cabins, local communities, and resorts.
 4. ATV trail systems utilizing connections with existing road systems to form loop trips and access to recreation attractions.
 5. Loop trail systems in connection with recreation cabins.
 6. Access from local communities to snowline where snow trails are feasible to develop.
 7. Heli-hiking trails within a reasonable distance (based on cost) from local communities and service centers.

Trail Administration: TRAI2

I. Inventory and Maintenance

- A. Maintain an inventory of existing trail systems which will assist in determining the desirability of retaining trails in their current locations, their contribution in meeting overall recreation objectives, and actions needed to bring the system up to desired standards, and to maintain those standards. (Consult FS Trails Management Handbook and FS RIM Handbook - RIM Trails.)
- B. Construct, reconstruct and maintain trails and waterway facilities as part of the Forest transportation system.
 1. Prioritize and schedule trail construction and maintenance to meet public needs as follows:

- * Existing trails which are causing resource damage or to protect investments.
 - * Existing trails and waterways serving local community needs and tourist centers.
 - * Existing trails and waterways providing access to recreation cabins.
 - * Existing trails and waterways in Wildernesses.
 - * New trails and waterways which will serve local communities, tourist centers and resorts.
 - * New trails in Wilderness which will disperse use and are needed to help protect wilderness resources from degradation.
2. Provide trailheads in locations to allow access to the greatest number and types of trails practicable within an area. Consider use for both snow and snow-free trail access (during different seasons) from the same trailhead when possible. Match the capacity of the trailhead with the desired capacity of the area being served.
 3. Construct and maintain trails to the standard appropriate for the type and amount of use desired in a given area. If the trail is to be used by multiple types of users, design and construct it to adequately and safely accommodate the most demanding or impacting type of use. (Consult FSH 2309.18.)
 4. Design and construct bridges to support the maximum expected snow and ice load, construction or maintenance equipment, and anticipated user equipment. Bridges must be appropriate for the prescribed ROS class and meet the adopted Visual Quality Objective for the area.
 5. Use volunteer, human resource, and cooperative programs to augment trail construction and maintenance budgets and to provide land use education opportunities for the public. Integrate these resources into the total trail management system. Encourage local organizations to "adopt a trail" to provide needed maintenance on a continuing basis. Crews must be under the supervision of a qualified trail supervisor. Help develop qualified supervisors in volunteer organizations and other cooperative programs. (Consult FS Trails Management Handbook.)
- C. Trails and associated waterways within land use designations and recreation places often become the principal tools for achieving management objectives. Construct and maintain trails and related facilities so that they contribute to desired conditions and appear to be an appropriate part of the forest setting and not an intrusion upon it. (Consult FS Trails Management Handbook.) Use Best Management Practices (Chapter 10 of the Soil and Water Management Handbook, FSH 2509.22 and Appendix C of this Plan) to reduce the effects of trail activities on the beneficial uses of water.
1. Develop and incorporate in project plans an erosion control and stabilization plan for stabilizing all human-caused soil disturbances.
 2. Locate trail crossings at right angles to streams and at suitable bridge locations. Design and maintain trail treads to protect riparian values and minimize soil erosion.
 3. Locate stream crossings only in stable reaches. Design crossings of V-notched drainages to prevent debris jamming. Drainage structure gradients should follow natural gradient for non-fish streams where needed to prevent downstream erosion. Require brow logs for dirt and rock surfaced log stringer bridges and turnpike sections to contain materials and prevent entry of sediment into the stream. For further location and design guidance consult the Trails Handbook and Drainage Structures Handbook.
 4. Permit construction of trails parallel to, and crossing, fish streams only where objectives for the management of fish habitat can be met. Where trails are located near fish streams, minimize the introduction of sediment during clearing, construction and operation activities. Sidecasting and waste materials must not encroach upon the stream course and as much undisturbed groundcover as possible shall be left between the trail and the stream. Complete endhaul of waste material will be required where trails are located near fish streams when there is the probability of downhill

movement of the material into the stream. Fill will be allowed in fish streams only when considered through the IDT process to be the best alternative.

5. Meet fish passage direction at all locations where trails cross fish streams. Contracts will specify permissible uses of motorized equipment and the timing of trail construction activities based on agreement with the Alaska Department of Fish and Game and as determined by interdisciplinary analysis and appropriate line officer approval.

TRANSPORTATION

Forest-wide Standards & Guidelines

Transportation System Inventory: TRAN111

I. Inventory Updating and Maintenance

- A. Maintain an inventory of all forest development transportation facilities, including roads, bridges and major culverts, log transfer facilities, and airfields. (Consult FSM 7710.)
 - 1. Use the Transportation Inventory System (TIS), or subsequently developed and approved system, as the data management system for the forest road, bridge, and major culvert inventory.
 - 2. Update transportation maps annually for changes.

Road and Bridge Administration: TRAN122

I. Road Management

- A. Manage Forest Development Roads based on Road Management Objectives using the criteria listed below:
 - 1. Keep Forest Development Roads open to public motorized use unless:
 - * Use conflicts with land use designation objectives, such as the need to protect critical habitat or to retain a non-motorized recreation experience.
 - * Financing is not available to maintain the road or manage the associated use of adjacent lands.
 - * Use causes unacceptable damage to roadway or adjacent soil and water resources.
 - * Use results in unsafe conditions.
 - * There is little or no public need.
 - 2. Manage road use by seasonal closure if any of the following conditions are anticipated:
 - * Seasonal conflicts with land use designation objectives, such as the need to provide security for wildlife during critical times of the year.
 - * Traffic hazards or unacceptable damage to roadway or adjacent soil and water resources due to weather or seasonal conditions.
 - 3. Restrict public use by temporary closure if:
 - * concurrent use between commercial and other traffic is unsafe.
 - * the potential for damage to equipment from vandalism is high.
 - * needed for seasonal protection of a specific resource, such as wildlife.
 - 4. Allow administrative use of closed or restricted roads when needed for emergency use or otherwise deemed appropriate by the Forest Supervisor.
- B. Consider the opportunities to manage road use in cooperatively with applicable State and other Federal agencies to meet fish and wildlife management objectives.
- C. Communicate road closures to the public in a positive manner, stressing the reason for closure rather than denial of access.

II. Permitting

- A. Authorize, by issuing a road use permit, appropriate commercial use of Forest Development Roads not otherwise authorized by a Forest Service contract, easement, special use authorization, operating plan, or other similar agreement. Include investment sharing and maintenance requirements and rules of use as terms of the permit. (Consult FSM 7730 R-10 supplement).

III. Cost Share Management

- A. Administer cost-shared roads in accordance with the terms of the agreement between the Forest Service and the cooperators.**
 - 1. Collect data about traffic volume and types of users on Forest Development Roads as needed to determine investment sharing and commensurate maintenance responsibilities.**

Transportation Improvement Planning: TRAN212

I. Planning

- A. Plan transportation facilities that will efficiently integrate and achieve Forest Plan direction, including consideration of landscape scale ecological objectives. Take advantage of resource opportunities recognized during project scoping, such as providing access to a recreation attractor or mineral deposit.**
- B. Direct the orderly development and management of the transportation system and ensure the documentation of decisions affecting the system.**
- C. Coordinate transportation corridor development with the applicable Canadian, Federal, State, and local government agencies and private landowners. The Forest Service will not make road connections between communities or emerging communities without the participation and collaboration of State and local governments, communities, and affected individuals.**

II. Road Management Objectives

- A. Based on Forest Plan direction and project interdisciplinary analysis, develop road management objectives for all Forest Development Roads to direct future activities. (Consult FSM 7710.)**
 - 1. Document the intended purpose of the road in the road management objectives, and have the objectives signed by a line officer.**
 - 2. Include in road management objectives, where available, any ecological objectives which road construction, operation, or maintenance can help to achieve (New Perspectives Principles).**
 - 3. Include in road management objectives the criteria for design (Road Preconstruction Handbook), operation and maintenance (FSM 7730).**

Preconstruction Engineering: TRAN214

I. Road Standards

- A. Perform route or site selection, location, geotechnical investigations, survey, and design to a technical level sufficient to meet the intended and commensurate with both ecological objectives and the investment to be incurred. Ensure consistency with Forest-wide standards and guidelines and Best Management Practices. (Consult FSH 2509.22.)**
 - 1. Consider each of the following factors when determining standards for the intended uses:**
 - * cost of transportation (including operation and maintenance)**
 - * safety**
 - * intended purpose and ecological objectives**
 - * impacts on land and resources on both local and landscape points of view.**
- B. Construct roads in the most cost-effective manner consistent with forest plan designations, ecological objectives, and intended purposes. Use the Forest Highway Program (consult FSM 7740) and joint financing with other State and Federal agencies to construct roads to a higher standard, when determined appropriate to meet road management objectives.**
- C. Evaluate each proposed timber sale road construction or reconstruction project to determine the least cost road (considering cost of construction, maintenance and hauling)**

which meets the intended purpose. Compare the road construction standard required for the immediate harvest and removal of timber with that needed to meet long-term road management objectives and ecological objectives. When a higher standard facility is required to meet multiple-use objectives or for future management, include supplemental funding (Forest Service funds) to construct the higher standard. The purchaser of National Forest timber shall not bear that part of the cost necessary to meet the higher standard (consult FSM 2430).

- D. Cooperate with the Alaska Department of Transportation and Public Facilities and the Federal Highway Administration in the administration of the Forest Highway Program. Provide nominations of routes to be upgraded and encourage their transfer to state jurisdiction, in order to provide safe facilities and adequate maintenance between communities linked by the Forest Development Transportation System. (Consult FSM 7700.)
- E. Build and manage roads primarily to meet public needs. Include considerations for a full range of access forms such as cars, trucks, bicycles, off highway vehicles, and foot travel. Where roads will provide potential access to private or State of Alaska lands, recognition of the route as a potential State route should influence location and alignment standards to avoid future duplication of construction. Such consideration must not, however, be considered justification for a higher cost road than is necessary for Forest Service resource management.
- F. Consider conservation of petroleum energy supplies in the location, design, and operation of the transportation system.

II. Location and Design

- A. Locate and design Forest Development Roads in a manner which will utilize both local and landscape scale ecological objectives, as well as Best Management Practices. Utilize current scientific literature to best achieve protection of basic resources. Seek to minimize effects on wildlife and fish habitat, riparian habitat, and wetlands. Avoid displacement of wildlife and fish populations. Consult the Forest Service Road Preconstruction and Drainage Structures Handbooks, and the Region 10 Soil and Water Conservation Handbook for detailed location and design guidance.
 - 1. Incorporate erosion control and stabilization measures in project plans for stabilizing all human-caused soil disturbances. Assure Best Management Practices can be implemented in construction, operation and maintenance of the road.
 - 2. Avoid construction on highly unstable uplifted marine sediment as identified in the soil resource inventory (SRI) or use geotechnical engineering designs to maintain stability. Obtain line officer approval after on-site consideration and stability analysis.
 - 3. Roading on slopes in excess of the soil's internal angle of friction, as identified in SRI's, requires geotechnical investigation and appropriate designs. Obtain line officer approval after site-specific investigation has been conducted to determine degree of risk and the potential effects from mass wasting. Conduct stability analysis to determine the most effective and lowest cost method of reducing the risk of roadway failure. Consider constructing full bench roads and end-hauling excavated waste materials. End-hauled waste materials shall be deposited at safe locations that prevent the waste material from entering streams. Stabilize and revegetate end hauled materials in accordance with prescribed erosion control measures specified in the project plan.
 - 4. Locate stream crossings in stable reaches, unless mitigation measures are taken. Design crossings of V-notched drainages to prevent debris jamming. Design and install culverts to prevent downstream erosion. When embankment material is used for decking on native log bridges, install side logs, wood chinking, and a geotextile fabric blanket prior to embankment placement to contain surfacing materials and prevent entry of sediment into the stream.
 - 5. Avoid locations of roads which parallel near fish bearing streams. Seek locations which avoid fish streams, crossing only when other locations are not feasible and the management direction for fish habitat can be met. Where roads are located near fish

streams, avoid the introduction of sediment during clearing, construction and operation activities. Sidecasting and waste materials must not encroach upon the stream course. Leave as much undisturbed ground cover between the road and the stream as practicable. Require complete endhaul of waste material where there is the probability of downhill movement of that material into the stream. Place fill into fish streams only when considered through the interdisciplinary team process to be the best alternative.

6. Meet fish passage direction at all locations where roads cross fish streams. (Consult Forest-wide Standards and Guidelines for Fish Habitat Planning, FISH112.) Specify permissible uses of heavy machinery and the timing of road construction activities in contracts based on consultation with the Alaska Department of Fish and Game and as determined by interdisciplinary analysis and appropriate line officer approval.
 7. In areas where erosion due to heavy rains on disturbed soil is a resource protection concern, provide Special Project Specifications that prescribe the maximum distance beyond the end of embankment placement that pioneering operations (preliminary clearing of the road right-of-way) may occur.
 8. Slope drainage ditches along the roadbed to the nearest relief culvert and avoid leading directly into stream channels.
 9. Design bridge abutments to minimize disturbances to streambanks.
 10. Promptly rehabilitate temporary roads in accordance with erosion control and stabilization measures prescribed in the project plan. Establish vegetation on roadbeds of temporary roads within 10 years following termination of use.
- B. Design and construct roads to conform to the Adopted Visual Quality Objectives.
1. For guidance, consult National Forest Landscape Management Handbook, Volume 2, Chapter 4: Roads.
 2. All Sensitivity Level 1 and most Sensitivity Level 2 roads shall consider the following in the design phase:
 - * Vegetating slopes seen from the road
 - * Providing "planting pockets" or terraces on slopes, where needed
 - * Minimizing landform modifications through road location and design
 - * Consider vegetative treatment of clearing edges such as feathering or free-flowing, undulating edge to break up the straight line.
 - * Clean-up roadsides after construction on all roads receiving general public use or expected to have such use.
- C. Plan, design and construct roads to minimize conflicts or mitigate conflicts with existing facilities such as trails, pipelines, utilities, cabins, etc.

III. *Wetlands, Floodplains, Estuaries, Tidal Meadows*

- A. Locate and design Forest Development Roads to minimize impact to soils, water and associated resources in accordance with Executive Orders 11988 and 11990 (Floodplain Management and Protection of Wetlands). Avoid development activities to the extent practicable in areas of important wetland value identified during project interdisciplinary team analysis.
1. Do not construct roads across alluvial floodplains, mass wastage areas, or braided stream bottomlands unless an interdisciplinary team investigation indicates that individual site-specific mitigation can be applied to assure protection for the soils, water and associated resources.
 2. For roads or other facilities approved for location near estuaries, fills, sidecasting and waste materials must not encroach upon such areas unless recommended after project interdisciplinary team analysis.
 3. Use the following criteria for siting water-dependent transportation facilities, other than log transfer facilities, such as docks, landings, floats, and boat ramps:
 - * Locate far enough from known anadromous fish streams to avoid significant interference.

- * Locate far enough from tideflats or subtidal beds of aquatic vegetation to avoid significant impairment.
- * Restrict the filling of intertidal and subtidal areas to those sites having the least value as habitat for marine organisms and vegetation, unless interdisciplinary team analysis determines that for other resource reasons it is desirable to fill the more productive site.
- * Avoid areas with established uses, such as commercial and sport fishing, hunting and anchorages for commercial and recreational vessels, unless interdisciplinary review determines that location of sites may be accomplished in a manner that is compatible with such uses.

IV. Quarry and Borrow Sites

- A. Locate and design quarry (shot rock pit) and borrow (gravel pit) sites and time their use to minimize the impacts upon other resource values, existing facilities, and to meet land use designation objectives. During the design phase, consider the potential for use of the pit to improve fish habitat and dispersed recreation opportunities.
 1. Plan rock quarries and borrow pits through the interdisciplinary team process. On potentially landslide-prone areas, blasting will be avoided during or within 72 hours following a 2-year 24 hour storm (total amount of expected rainfall from a storm event that would statistically occur once every two years, in Alaska, this would probably equate to about 4 inches of rain in one day), or until determined that the soil groundwater level does not constitute a high-risk situation. Where other sources are available, do not locate borrow pits on landslide-prone areas. Where no other practicable alternative exists, strip quarries of their overburden and haul excavated material to a stable location. Stabilization of the overburden material will conform to the erosion control and stabilization measures developed during the planning of the quarry or borrow pit.
 2. Design quarry and borrow pits to minimize the possibility of sediment being carried into watercourses by runoff. Borrow pits will be located away from watercourses, unless project interdisciplinary team analysis determines that site-specific mitigation measures can be applied to assure protection of the soils, water and associated resources. Whenever locations near streamcourses or other water bodies are recommended, erosion control measures must provide for drainage from materials sites to run off through a vegetative screen or sediment basin prior to entering a water body, unless the quarry or borrow pit is to be used for fish habitat management.
 3. Limit blasting that adversely affects fish spawning beds to times when eggs and alevins are not vulnerable. Safe times and distances will be determined on a site-by-site basis after consultation with agencies such as:
 - * Alaska Department of Fish and Game
 - * National Marine Fisheries Service
 - * U.S. Fish and Wildlife Service
 4. Do not allow the use of intertidal gravel as a source of borrow in fish spawning areas. Such borrow will be limited to those areas and methods stipulated in the project plan as being compatible with the character of the area and where the borrow source can be returned to a natural appearance subsequent to use.
 5. Drain borrow pits and quarries no longer needed, unless developed for fish or waterfowl habitat, and revegetate mineral soil.
 6. Consider screening borrow pits, quarries and access roads along sensitive travel routes.

V. Log Transfer Facilities Siting

- A. Site log transfer facilities in locations which will best avoid or minimize potential impacts on water quality, aquatic habitat and other resources. During site analysis, cooperate with State and Federal agencies per stipulations in Memoranda of Understanding or coopera-

tive agreements to assemble required data and evaluate alternatives. The Alaska Timber Task Force Siting Guidelines are reproduced below (items 1 through 10), followed by additional site selection criteria to be considered in that evaluation. Consideration should be given to all of these guidelines when proposing new facility sites.

1. *Proximity to Rearing and Spawning Areas:* Normally prohibit the siting of log transfer and log raft storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing.
2. *Protected Locations:* Site log transfer and log raft storage facilities in weather protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.
3. *Upland Facility Requirements:* Site log transfer facilities in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of a 60 lineal foot facility face.
4. *Safe Access to a Facility from the Uplands:* To provide safe access to the log transfer facility and adjoining log sort yard, site the facility where access roads to the facility can maintain a grade of 10 percent or less for trucks and 4 percent or less for specialized equipment.
5. *Bark Dispersal:* Site log transfer facilities along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.
6. *Site Productivity:* Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.
7. *Sensitive Habitats:* Do not site log transfer facilities and log raft storage areas on or adjacent to extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas.
8. *Safe Marine Access to Facilities:* Log rafting and storage facilities should be safely accessible to tugboats with log rafts at most tides and on most winter days.
9. *Storage and Rafting:* Store logs, log bundles or log rafts in areas where they will not ground at low tide. A minimum depth of 40 feet or deeper measured at mean lower low water (MLLW) for log raft storage is preferred.
10. *Bald Eagle Nest Trees:* Site log transfer facilities to avoid bald eagle nests. No project construction or operation should be closer than 330 feet to any bald eagle nest tree unless permitted by U.S. Fish and Wildlife Service.
11. Minimize the number of log transfer facilities and storage areas by selecting locations that will accommodate future logging without requiring additional transfer or storage sites.
12. Give preference to locating log transfer facilities along straits or channels when feasible. When located in bays, large bays are preferred to small bays, deep bays preferred to shallow bays. Sites near the mouth of bays are preferred to sites near the head of bays. Give preference to sites where marine vegetation is sparse or absent over sites with vegetation.
13. Avoid siting log transfer, rafting, and storage facilities in areas with established commercial, subsistence, and sport fishing activity, high levels of recreation use, areas of high scenic quality, or documented concentrations of species commonly pursued by commercial, subsistence, and sport fishers.
14. When an existing log transfer facility in a less than optimal location is considered for reconstruction, perform an interdisciplinary analysis to determine whether adverse impacts of relocating the facility exceed those resulting from continued use at the existing site.
15. Site in locations that have foundation materials, determined by appropriate subsurface investigation, that can economically and effectively support the structure through the duration of its design life.

VI. LTF Design and Construction

- A. Plan and construct log transfer facilities in accordance with land use designation objectives and the Alaska Timber Task Force Construction Guidelines listed below, in order to achieve effective and environmentally sound designs.
 1. *Log Transfer Facility Design*: Log transfer facility design should be the least environmentally damaging, practicable alternative. Factors to be considered in selection of design alternatives include:
 - * Economic practicality
 - * Facility requirements
 - * Physical site constraints
 - * Timber volumes to be transferred (site usage and duration)
 - * Total potential effects on biota and water quality (including biological productivity and sensitivity).
 - * Other potential uses of the site and facility.
 2. *Fill Structures*: Design and construct fill structures to prevent erosion, pollution and structural displacement.
 3. *Timing of Inwater Construction*: Time inwater construction, blasting and/or filling associated with LTF sites to limit adverse impacts to marine and estuarine fishery resources and to avoid conflicts with other user groups.
 4. *Bark Accumulation Management*: Use best practicable procedures and methodologies to control intertidal and submarine accumulations of bark during the siting, design and operation of the LTF and contiguous collateral upland facilities.
 5. *Bundle Speed*: The speed of log bundles entering receiving waters should be nonviolent and the slowest practicable speed achievable. Decisions on the allowable transfer system that can be used will occur on a site-specific basis during the permitting process.
 6. *Surface Drainage Management*: Use practicable procedures for control of surface water runoff from facilities in the design, construction and operation of LTF's contiguous sort yards and/or log storage yards.
- B. Consider the visual impact of a proposed structure in the selection of alternative designs. In areas of high visual sensitivity emphasize designs which would be less likely to dominate the landscape (such as a low-angled slide rather than a bulkhead design).

Road and Bridge Construction/Reconstruction: TRAN22

I. Construction

- A. Construct Forest Development Roads that provide the stability and durability appropriate for their intended use as documented in the road management objectives, and which are necessary for completion of the management activities identified in the Forest Plan implementation schedule.

II. Reconstruction

- A. Reconstruct roads in accordance with the following limitations.
 1. Limit reconstruction activities to:
 - * Correction of unsafe conditions that cannot be corrected by traffic restriction.
 - * Repair of situations where use will cause environmental impacts inconsistent with Forest Plan direction.
 - * Upgrading of a facility that was not originally constructed to accommodate current or anticipated use.
 - * Repair of surfacing, bridges, and LTF's, where analysis clearly shows an economic advantage to protect the investment.

Road Maintenance: TRAN23

I. Maintenance levels, conditions, and inspections

- A. Operate and maintain Forest Development Roads in a manner which meets the road management objectives and ecological objectives for the landscape where the road is located. Maintain roads to meet Best Management Practices regardless of the methods used to obtain the maintenance work. Manage roads to provide cost effective support to land use designation objectives and safe travel to users of the system, while protecting the environment, adjacent resources, and the public investment. (Consult the Transportation System Maintenance Handbook.)
1. Consider protection needs of adjacent resources when planning and conducting road maintenance activities.
 - * Maintain road running surfaces and bridge decks to minimize the amount of road surface sediment entering adjacent streams and lakes.
 - * Maintain ditches and culverts to keep water effectively flowing, and minimize sediment entering streamcourses.
 - * Provide for the disposal of waste materials collected during road maintenance (soil, rock and debris) in a manner that minimizes sediment entering streams and lakes and meets land use designation objectives (particularly those regarding visual quality).
 - * During snow plowing operations, do not use bodies of fresh water as disposal sites for snow (and accompanying road surface sediments).
 2. Perform Condition Surveys annually. The intensity of survey will be commensurate with the risk of structure failure. Itemize deficiencies needing correction and present recommendations for corrective action.
 3. Inspect bridges at frequency and standards specified in FSM 7730.
 4. Implement requirements of the Forest Service Highway Safety Program (consult FSM 7730), which include recording the location of all known accidents and identifying locations, design, and operating features that are potential high hazards. Prioritize hazards for correction based on traffic volume, traffic mix, and degree of hazard. Program the elimination of identified hazards on a systematic basis, and as funding permits.
 5. Use of traffic control devices will be in accordance with the guidelines contained in the Manual on Uniform Traffic Control Devices.

VISUAL RESOURCE

Forest-wide Standards & Guidelines

Visual Resource Operations: VIS1

I. Visual Resource Management

- A. Visual Quality Objectives (VQO's) adopted in this Plan reflect the direction and objectives of each land use designation and provide guidance in managing forest lands. Adopted Visual Quality Objectives will be met to the greatest extent practicable.
- B. Landscape analysis is recommended for all development activities and is required for all activities within viewsheds seen from Sensitivity Level 1 and 2 travel routes and areas.
- C. Complete viewshed analyses in conjunction with project level planning. Priority for viewshed analysis is as follows: 1) Scenic Viewshed and Modified Landscape land use designations; 2) Sensitivity Level 1 areas or portions thereof, not contained in 1); 3) other visually sensitive viewsheds identified during project planning. The viewshed analysis will provide site-specific project guidance to achieve the desired long-term visual condition.
- D. Consult the National Forest Landscape Management Handbooks and R10 Forest Service Handbook 2309 for visual management guidance.

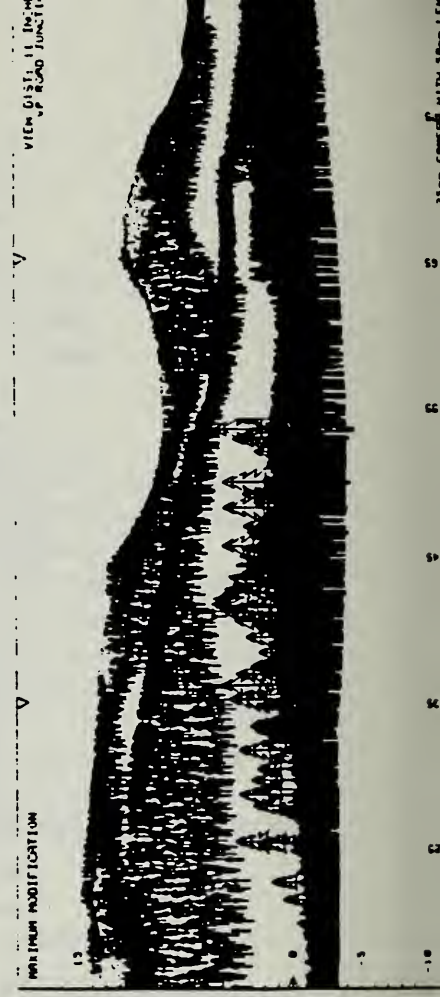
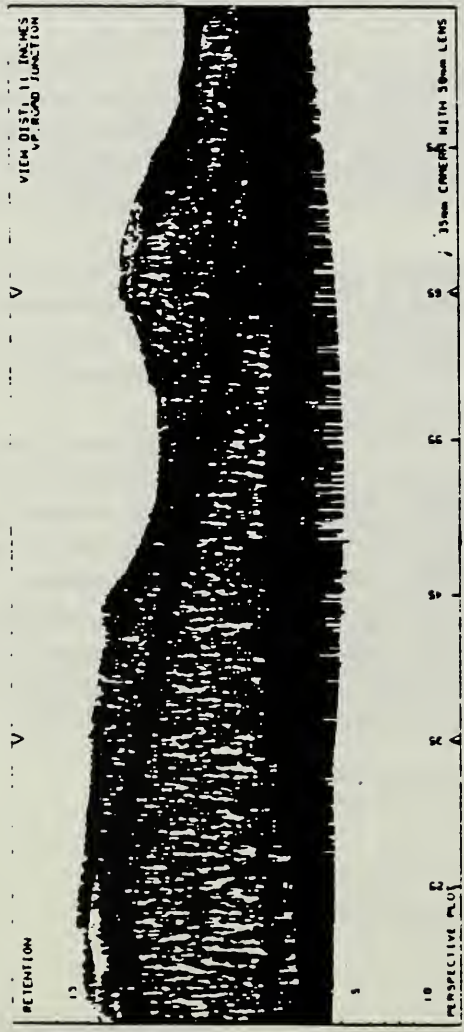
Visual Resource Preparation: VIS11

I. Visual Quality Objectives (VQO's).

- A. *VQO Preservation*: Allows for ecological changes only, with the objective to achieve or maintain a pristine environment.
 - 1. *Facilities*.
 - * Very low impact recreation facilities are allowed (includes trails and small, minor signs). Fish improvements may be allowed.
- B. *VQO Retention*: Design activities to not be visually evident to the casual observer. This objective should be accomplished within six months following the completion of management activities.
 - 1. *Facilities*.
 - * Correlate coloring of structures to match natural conditions.
 - * Keep vegetation clearing adjacent to the site.
 - * Select materials that blend with the natural surroundings.
 - 2. *Transportation*.
 - * Rock Sources. Locate off mainline road systems by providing spur road access to the rock source.
 - * Corridor Treatment. Provide for roadside cleanup of ground-disturbing activities. Depending on site conditions, cut stumps as low as possible, angled away from the viewer to limit their visibility as seen in the foreground. Incorporate this treatment in the timber sale contract.
 - * Log Transfer Facilities (LTF's). Generally are not appropriate in this VQO setting.
- C. *VQO Partial Retention*: Design activities to be subordinate to the landscape character of the area. This VQO should be accomplished within one year of project completion.
 - 1. *Facilities*.
 - * Emphasize enhancement of views both to and from the facility.
 - * Use colors found in the natural environment while considering seasonal variations.
 - 2. *Transportation*.
 - * Design rock sources to not be seen from sensitive travel routes. Rehabilitation will be necessary following closure of rock source developments.

- * Temporary LTF. Develop rehabilitation plan at the close of contract or LTF's life.
 - * Permanent LTF. Involve landscape architect in all stages of LTF planning and design. Consider low profile designs to minimize visibility from adjacent travel routes.
- D. *VQO Modification*: Activities may visually dominate the original characteristic landscape. This VQO should be met within one year in the foreground distance zone and within five years in the middle and background distance zones.
1. Use naturally established form, line, color and texture found in the landscape when planning activities.
 2. Facilities. Siting and design should borrow from naturally occurring patterns in the landscape, and should not visually dominate when viewed in the background distance zone.
 3. Transportation.
 - * Rock source operations and resulting landform modifications may be evident to the casual observer as seen from sensitive travel routes. However, the quarry location and design should mitigate, to the extent practicable, the apparent visual size and dominance of the activity (for example, shaping of backwalls, roadside screening and general orientation of the opening).
 - * LTFs (temporary or permanent): Landscape architect should be involved in the planning and design of LTF.
- E. *VQO Maximum Modification*: Area may be dominated by management activities.
1. Design activities to resemble natural occurrences as viewed in the background distance zone.
- F. Update visual resource inventories as project implementation changes sensitivity levels (i.e. new roads) and use patterns change.
- G. The following table provides specific mitigation measures appropriate to timber management.
1. The ability to attain the adopted Visual Quality Objective is dependent on many variables. Visual Absorption Capacity (VAC) is an estimate of the relative ability of a landscape to absorb management activities. High, Intermediate and Low VAC ratings are used. A Low VAC setting generally has steep slopes, with little landscape variety, while a High VAC setting is relatively flat and/or has a high degree of variety in the landscape.
 2. The unit sizes in the following table provide guidance to the project IDT. Each landscape setting is different, and should be evaluated on a case-by-case basis. There may be instances where the visual objective can be attained while the unit size is greater than the guideline, and there also may be instances where the unit size must be smaller to meet the intent of the Visual Quality Objective.
 3. Cumulative visual disturbance reflects the maximum allowable percent of a viewshed to be in a disturbed condition at any one point in time. These estimates are appropriate for planning purposes. During project analysis, these percents should be referred to as a guideline. Ground conditions may indicate a need to be more or less restrictive in scheduling harvest to meet the intent of the Visual Quality Objective.
 4. Tree limbs, root wads, and tree stumps may require additional treatment after the timber sale to meet the Retention and Partial Retention VQO. For timber sales and road construction contracts, use appropriate clauses which would address these concerns. Brush disposal (BD) funds may be appropriate to use in these settings.

LANDSCAPES AS MANAGED UNDER FOUR VISUAL QUALITY OBJECTIVES



**Guidelines for Timber Harvest Activities
Specific to
Visual Quality Objectives and Visual Absorption Capability Settings**

VQO/VAC Setting	Typical Silviculture Method and Unit Size	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash
Retention - Low VAC	single tree or group selection (less than 2 acres)	8%	50%	Would not be evident 2 years after project completion.
Retention - Intermediate VAC	single tree or small clearcut (appx. 5 - 15 acres)	10%	50%	no limit
Retention - High VAC	small clearcut (appx. 15 - 30 acres)	10%	30%	no limit
Partial Retention - Low VAC	group selection or small clearcut (appx. 5-10 acres)	8%	35%	Would not be evident 5 years after project completion.
Partial Retention - Intermediate VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Partial Retention - High VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - Low VAC	clearcut (appx. 15 - 40 acres)	15%	25%	no limit
Modification - Intermediate VAC	clearcut (appx. 40 - 60 acres)	20%	20%	no limit
Modification - High VAC	clearcut (appx. 80 - 100 acres)	25%	5 feet	no limit
Maximum Modification - Low VAC	clearcut (appx. 50 - 75 acres)	50%	5 feet	no limit
Maximum Modification - Intermediate & High VAC settings	clearcut (appx. 80 - 100 acres)	50%	5 feet	no limit

Visual Resource Administration: VIS12

I. *Mitigation, Enhancement and Monitoring.*

- A. Minimize potential visual impacts through scheduling or timing management activities so that they are dispersed and not concentrated.
- B. Rehabilitate, where practicable, existing projects and areas which do not meet the Adopted Visual Quality Objectives. Consider the following in setting priorities:
 - 1. Relative importance of the area (public sensitivity).
 - 2. Projected length of time to naturally attain the Adopted VQO in comparison to the use of rehabilitation techniques. Examples of rehabilitation include: seeding road cuts, removing roadside slash and debris, re-shaping harvest unit boundaries, cutting roadside stumps as low as possible, shaping or spreading excess overburden, etc.
 - 3. Benefits to other resources by accomplishing rehabilitation.
 - 4. If project monitoring indicates a need for visual rehabilitation measures, a rehabilitation plan should be developed in an interdisciplinary setting.
- C. Use enhancement measures, where practicable, to create variety where little variety now exists through addition, subtraction, or alteration of vegetation, earthforms, waterforms, etc. Examples include: opening up vistas or screening out undesirable views and planting of species to give unique form, color or texture to an area.
- D. Consult the Landscape Management Handbook, Region 10, to determine project level monitoring.
 - 1. Identify and document specific areas to be monitored.

II. *National Forest Scenic Byways*

- A. Manage Scenic Byways in keeping with nationally-established goals (consult USFS Chief's letter of August 29, 1988: 2370 Scenic Byways):
 - 1. Showcase outstanding National Forest scenery.
 - 2. Increase the public's understanding of the National Forests as the major provider of outdoor recreation.
 - 3. Acknowledge and emphasize the role of marine recreation and transportation networks in Southeast Alaska.
 - 4. Increase public awareness and understanding of all National Forest activities.
 - 5. Meet the growing demand of driving for pleasure as a significant recreation use.
 - 6. Increase the use of National Forests by non-traditional users including urban minorities, the disadvantaged and the elderly.
 - 7. Contribute to the Nation's overall Scenic Byways effort.
- B. The Scenic Byway will focus attention on a significant travel route. Manage Scenic Byways consistent with the emphasis of the designated land use designation. A Scenic Byway may be comprised of land use designations of differing emphasis.
 - 1. Show the forest user the concept of a "working forest" with a variety of visual conditions consistent with the designated land use designations.
 - 2. Utilize computer graphic capabilities to design land management activities to facilitate meeting the visual objectives of the land use designation as seen from the Scenic Byway.

WETLANDS

Forest-wide Standards & Guidelines

Wetlands: WET

I. Objectives

- A. Minimize the loss of wetland acreage, and the adverse impacts of land management activities on wetlands, especially the least available and most biologically productive wetlands.
- B. Maintain or improve the natural and beneficial values and functions of wetlands.
- C. Avoid alteration or new construction on wetlands, wherever there is a practicable alternative. [Practicable means available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes. 40 CFR 230.3(q)].

II. Evaluation

- A. Use the most current technical criteria for wetland identification. Consult *1991 Interagency Federal Manual for Identifying and Delineating Wetlands* and/or the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands, 1989*, as appropriate.
- B. Refine or develop wetlands data and maps including wetlands values and functions as needed for project planning.

III. Land Use Activities

- A. As required by law, assure a General or Standard Permit is obtained from the Corps of Engineers (COE) for discharge of dredged or fill material on all wetland types for any activity not exempted.
- B. Consistent with Best Management Practices (BMP's), allow the construction and maintenance of forest roads and temporary roads for moving mining equipment. Such activity is exempted from permitting requirements under the Clean Water Act, Section 404.
- C. Consistent with the Clean Water Act, as amended, use BMP's in all management activities which could affect water quality of wetlands. BMP's are intended to assure that flow and circulation patterns, and chemical and biological characteristics of water are not impaired. (Consult Appendix C.)
- D. Before issuing permits, leases, easements, rights-of-way or exchanging out of wetlands, identify uses that are restricted under identified Federal, State or local wetlands regulations. Incorporate appropriate restrictions, where necessary, to protect or minimize wetland impacts, or withhold such properties from exchange.
- E. Seek cooperation in management from State and Federal agencies having overlapping resource management responsibilities for these land, including the Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, U.S. Army Corps of Engineers, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service.

WILDLIFE

Forest-wide Standards & Guidelines

Wildlife Habitat Planning: WILD112

I. *Coordination/cooperation with Other Agencies, Institutions and Parties*

- A. Coordinate with the Alaska Department of Fish and Game, other State agencies, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and other cooperators and partnerships during the planning of activities that affect wildlife.
 - 1. Each Administrative Area shall meet at least annually with State and Federal wildlife agencies to review resource activities, and schedule work needing coordination.
 - 2. Maintain memoranda of understanding with appropriate State, Federal and local agencies and associations.
- B. Emphasize management for indigenous wildlife species and natural habitat over other wildlife management approaches except in cases where the Forest Service, in cooperation with the Alaska Department of Fish and Game, find desirable alternatives. Special consideration will be given to the habitat of sensitive, threatened, and endangered species of plants, wildlife and fish.
- C. Coordinate wildlife habitat surveys, studies, plans and improvement projects with the Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, and other appropriate state, federal, local and private agencies. Use the Sikes Act authorities for cooperative work with the State. Use "challenge cost share" agreements and other partnerships.
- D. Provide habitat information to the Alaska Department of Fish and Game to assist in correlating hunting seasons, permits, and bag limits to on-the-ground habitat conditions in order that population and habitat objectives can be achieved.
- E. Coordinate with the Alaska Department of Fish and Game in development of state strategic plans and population goals and objectives for wildlife species.

II. *General Habitat Planning/Coordination*

- A. Recognize as wildlife habitat, areas of land and water which can contribute to achieving wildlife objectives for consumptive and non-consumptive uses.
- B. Provide the habitat necessary to ensure that viable population levels of all existing native, and desirable introduced, vertebrate species are well distributed and maintained over time.
- C. Cooperate with the State in regulating vehicle, boat, and other human use as necessary to achieve wildlife objectives, recognizing the access provisions of ANILCA. Emphasize reduction of human disturbance to high value habitat areas and during critical periods of wildlife use.
- D. Maintain a wildlife program schedule which includes anticipated inventory needs, monitoring requirements and proposed habitat improvement and maintenance projects.
- E. Use the Forest Plan Management Indicator Species (MIS) to evaluate effects of management activities on wildlife.
 - 1. When planning projects, use the following guidelines for the selection of MIS:
 - (a) First priority shall be to use the Forest Plan Management Indicator Species where applicable.
 - (b) Second priority shall be for MIS recommended for the Region. (Consult the USDA Forest Service publication *Wildlife and Fisheries Habitat Management Notes* --

Management Indicator Species for the National Forest Lands in Alaska, publication R10-TP-2.)

- (c) Third priority will be to use the following guidelines for the selection of MIS when the first and second priority MIS do not meet the needs for a particular project area:
- 1) State-listed threatened or endangered species.
 - 2) Species which have the potential to be seriously and adversely affected by the proposed project and are not adequately represented by the above MIS.
 - 3) Species for which the Forest comprises a majority of the total statewide, Regional or National habitat and which are not adequately represented by the above MIS.
 - 4) Species which represent or reflect environmental suitability for other species and are not adequately represented by the above MIS.
 - 5) Species having significant economic value. Normally these species are those commonly hunted or trapped, or which have a high non-consumptive value (species sought after for viewing).

III. Habitat Improvement Planning

- A. Identify habitat improvement projects to meet wildlife habitat and population objectives.
1. Give highest priority for wildlife habitat improvement to areas exhibiting the following conditions:
 - * Existing habitat in poor condition compared to its potential.
 - * Habitat with a history of receiving high levels of use.
 - * Present population levels of wildlife lower than desired.
 - * Desired response of the vegetation to treatment expected.
 - * Treatments with a favorable benefit/cost ratio.
 - * Having the lowest potential negative impacts on other resources for wildlife benefit to be gained.
 - * Habitats which have been lost or have experienced severe declines.
 2. Use silvicultural practices, where applicable, to accomplish wildlife habitat objectives.

IV. Sitka Black-tailed Deer Habitat

- A. Provide the best possible habitat (vegetative) condition for Sitka black-tailed deer compatible with the management objectives of each land use designation. (Winter range is generally recognized as the limiting habitat component for deer populations.)
1. When planning projects, evaluate alternatives which would maintain large blocks of old-growth winter range habitat. The following chart will be used as a guide for evaluating the effects of block size.

Sizes of old-growth habitat blocks needed to support various percentages of maximum deer populations in Southeast Alaska

Percent of Maximum Populations

	100%	92%	85%	78%	72%	64%	58%	51%	43%	37%	30%
Acres:	1000	900	800	700	600	500	400	300	200	100	<100

Source: Appendix B - Habitat Capability Model

2. Use the deer winter habitat capability model to evaluate project alternatives.
3. Implement second-growth management practices in important wintering areas. (See Forest-wide Direction for Wildlife Habitat Improvement: WILD22).

V. Bald Eagle Habitat

A. The Bald Eagle Protection Act dictates that Bald Eagle habitat will be given special protection. The 1990 Interagency Agreement established with the U.S. Fish and Wildlife Service provides the following management standards and guidelines.

1. Establish and maintain a minimum five chain (330 foot) radius habitat management zone around each bald eagle nest tree and restrict, where necessary, activities inconsistent with current bald eagle use within this zone. Restrictions will be documented in the project activity environmental assessment (EA) or environmental impact statement (EIS). A bald eagle nest tree is a tree of any species that contains a structure built by eagles for the purpose of nesting. All nest trees will be considered active from March 1 to May 31. From June 1 to August 31, trees with nests containing eggs of young as indicated by observations of eggs, young eagles, or by the presence of adult eagles engaged in nesting activities will be considered active.
2. For management purposes, the five chain management zone will be maintained even though the nest becomes inactive or is lost for any reason.
3. Contact the Fish and Wildlife Service if an encroachment upon the five chain tree management zone by a planned land use activity appears unavoidable. In each case the Forest Service will request, in writing, a variance to the terms of the Interagency Agreement. Requests for variances will be supported by aerial photos, large scale maps indicating the nest location, description of the nest location including distances from notable geographic reference points, presentation of the alternatives considered, an assessment of the potential impacts associated with each alternative, and a statement of the preferred course of action. If the Forest Service and Fish and Wildlife Service deem it necessary, a joint analysis of the situation, including assessment of alternatives will be conducted at the site. Any habitat management recommendations developed and agreed to during the onsite analysis will be included as part of a variance to the terms of the Interagency Agreement.
4. Maintain habitats for perching and winter roosting.
 - * *Perching Habitat*: Suitable perching trees are trees which are normally dominant or co-dominant and have large branches to support birds, open crowns for easy access and exit, and good visibility. Spike-top trees or snags or other non-merchantable trees are also suitable for perch trees.
Preferred perching habitat includes:
 - Along the coast - an unharvested strip of timber approximately 1/8 mile in width adjacent to the coastline.
 - Along riparian areas - windfirm trees along each stream or river identified as important for bald eagle management.
 - Along lakes - groups of 13-15 windfirm trees spaced at least every 150 feet of shoreline on lakes of 50 acres or greater in size.
 - * *Winter Roosting Habitat*: Suitable winter roosting habitat is windfirm stands of dominant or co-dominant trees 20 acres or more in size, in areas of high eagle use. The locations may include prominent points, small inlets, tidal channels or stands near spawning streams. Sheltered south-facing slopes or forest stands protected from winds may be important winter roost sites. Site-specific investigations will be necessary to identify important habitat areas and verify winter habitat requirements are satisfied.
5. Recognize that blasting within one-half mile of eagles or active nests can result in significant disturbance. The following guidelines are recommended to avoid disturbance and help prevent need for variances:
 - a) September 1 to February 28 (nonbreeding season): Normal blasting procedures are permitted if there is no direct danger to eagles, nests, eagle nest trees, or other eagle habitat elements.

- b) March 1 to May 31 (nest site selection): Controlled blasting is allowed within one-half mile of an active bald eagle nest provided that 1) the blasting can be accomplished in accordance with the requirements of the Bald Eagle Protection Act; 2) written coordination with the Fish and Wildlife Service has occurred; 3) the results of the interagency coordination are documented.
 - c) June 1 to August 31 (nesting period): If the nest is unoccupied, guidelines under (a) apply. If the nest is occupied, guidelines under (b) apply.
 - d) Topographical features and/or special blasting procedures will be considered to allow blasting within the one-half mile zone.
6. Avoid repeated helicopter flights within 1/4 mile of active bald eagle nests, particularly with large helicopters used for yarding timber. Heliports and helicopter logging flight corridors will maintain at least a 1/4 mile distance from active nests.
 7. Mark (tag) all new or unmarked nest trees that are located during wildlife surveys or other forest work with a nest tree sign. A nest tree survey card will be completed and the site identified on a suitable U.S. Geological Survey map. Copies of this information will be sent to the U.S. Fish and Wildlife Service in Juneau.
 8. Develop by March 1, annual statements of eagle-related work to be performed by the U.S. Fish and Wildlife Service for each Administrative Area.
 9. Maintain the interagency agreement for bald eagle management and the Seymour Bald Eagle Management Area.

VI. Bear Habitat Management

- A. Implement a Forest-wide program (in cooperation with the Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, Cities and Boroughs) with necessary regulations and projects which prevent habituation of bears to human foods/garbage and reduce chances of human/bear incidents.
 1. Phase out and rehabilitate all existing open garbage sites on National Forest land. Establish timetables for phase out and rehabilitation in cooperation with appropriate State agencies.
 2. Require incinerators and/or other bearproof garbage facilities at all camps, recreation sites, and special use authorizations in bear habitats.
 3. Locate seasonal and permanent camps, recreation facilities, mineral exploration and operational facilities, log dumps and transfer facilities more than 1 mile from sites of seasonal brown bear concentrations to reduce chances of bear-human confrontations, where practicable.
 4. Forest Service approved projects and special use authorizations in brown bear habitat will include specific plans for minimizing adverse impacts to the habitat and for reducing bear-human conflicts. Specific plans could include seasonal restrictions on activities and other measures determined on a case-by-case basis.
 5. Maintain an aggressive public education program on bear behavior to reduce the number of human/bear incidents.
 6. When necessary to reduce habituation of bears or to reduce human/bear incidents, implement special regulations requiring storage of human food in ways to make it unavailable to bears.
 7. Manage roads where concentrations of brown bear occur to minimize human/bear interactions and to ensure the long-term productivity of brown bears. Where practicable, roads should not be built within 300 feet of important salmon-bear streams, except as necessary to cross the stream at a nearly perpendicular angle to the stream. Where roads are joined to communities (ferry and road access to greater than 1000 people), open road density should not exceed 1.0 mile of Forest development roads per square mile of roaded area within a Wildlife Analysis Area (1990 ADF&G Wildlife Analysis Area Map) that supports a bear population. Roads which are closed and made unusable for motorized traffic by administrative closure and gating, ditching, and barricading

after management activities are not included in calculating open road density. In areas where the coastline provides access to bears comparable to road access, the length of coastline should be considered in road management plans.

8. Address the effects of off-highway vehicle (OHV) disturbance on brown bear habitats and populations in OHV management plans and project plans.

VII. *Marine Mammal Habitats*

- A. Provide for the protection and maintenance of harbor seal, Steller sea lion and sea otter habitats.

1. Ensure that Forest Service permitted or approved activities are conducted in a manner consistent with the Marine Mammal Protection Act and the Endangered Species Act. "Taking" of marine mammals is prohibited; "taking" includes harassment, pursuit, or attempting any such activity.
2. Locate facilities and concentrated human activities requiring Forest Service approval as far from known marine mammal haul outs, rookeries and known concentration areas as practicable. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance:
 - * Locate camps, log transfer facilities, campgrounds and other developments 1 mile from known haul outs, and farther if the development is large.
 - * On Forest Service permitted and approved activities, direct aircraft flights over haul outs are prohibited. Within .5 miles of haul outs, maintain a constant flight direction and airspeed and a minimum flight elevation of 1000 feet, when weather ceilings permit.
 - * For boat traffic on Forest Service permitted or approved activities, remain at least .5 miles away from hauled-out harbor seals during the pupping and rearing season (May 15 - July 1), when safe boat passage exists. Minimize disturbance of seals with pups in the water by remaining at least 330 feet away from parturient seals, when safe boat passage exists. (Note: These distances are derived from a study in a park where hunting is prohibited and access is restricted and where viewing seals is encouraged. Assess effects of these guidelines, if necessary, and amend the guidelines based upon the assessment.)
 - * Minimize disturbance effects of boat traffic: For molting harbor seals, remain .5 miles away from haul outs where seals are molting; For Stellar sea lions, remain at least .5 miles away from haul outs and rookeries; For sea otters, avoid known feeding and resting concentration areas, especially following prolonged stormy periods when sea otters have been unable to feed.
 - * Individuals associated with Forest Service permitted or approved activities will not intentionally approach within 100 yards, or otherwise intentionally disturb or displace any hauled-out marine mammal.
3. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of marine mammals by the public. Maintain a public education program explaining Forest management activities related to marine mammals in cooperation with State and other Federal agencies.

VIII. *Seabird Rookeries*

- A. Provide for the protection and maintenance of seabird (marine bird) rookeries.
 1. Locate facilities and concentrated human activities requiring Forest Service approval as far from known seabird colonies as practicable. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance:
 - * For aircraft flights on Forest Service permitted or approved activities, when weather ceilings permit, maintain a constant flight direction and airspeed and a minimum flight elevation of 1,500 feet (458 meters) for helicopters and 500 feet (153 meters) for fixed-winged aircraft. If at all possible, avoid flying over seabird colonies.

2. Minimize the availability of garbage to gulls by requiring special use permittees to collect and dispose of garbage their Special Use Authorizations.
3. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of these species by the public. Maintain a public education program explaining Forest management activities related to these species in cooperation with State and other Federal agencies.

IX. Waterfowl Habitats

- A. Maintain or enhance wetland habitats which receive high use by waterfowl species such as ducks, geese and shorebirds.
 1. Identify during project environmental analysis in cooperation with the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service any wetlands which receive high use by waterfowl.
 2. Locate facilities and concentrated human activities requiring Forest Service approval as far from known waterfowl concentration areas as practicable. Minimize disturbance of geese and waterfowl by restricting, when practical, development activities to periods when geese and waterfowl are absent from the area.
 3. Maintain habitat capability in coastal wetlands and intertidal areas that are important migratory staging areas and fall/winter/spring concentration areas, and wetlands that are important nesting and brood-rearing habitats, by avoiding where practical, all development activities which could fill wetlands, drain wetlands, or alter water levels resulting in loss of desirable vegetation, or direct loss of habitat.
 4. Avoid, where possible, management activities within 410 feet (125 meters) of goose habitat when geese are present during nesting, brood rearing, molting and wintering periods, if geese are present.
 5. Minimize human disturbance of habitats and protect wetland vegetation during critical periods of the year (nesting and brood-rearing, molting, and winter) by regulating human use (such as aircraft, hiking, boating, off-highway vehicle use) in important wetland areas. The following distances are provided as general guidelines for reducing human disturbance:
 - * For aircraft flights on Forest Service approved projects, when weather ceilings permit: 1,500 feet (458 meters) above ground level for helicopters; 500 feet (153 meters) above ground level for fixed-wing aircraft; 1 mile (1.6 km) horizontal distance and 1,000 feet (305 meters) above ground level for helicopters from molting sea ducks; 1,000 feet (305 meters) above ground level for fixed-wing aircraft over habitat used by molting geese.
 - * Provide a minimum distance of 410 feet (125 meters) between human activities on the ground and areas being used by geese and other waterfowl.
 6. When human use results in significant adverse effects on waterfowl habitat, regulate such use to eliminate or reduce the adverse effects.
 7. Regulate off-highway vehicle use to prevent degradation of habitat or adverse disturbance of populations.
 8. Develop waterfowl habitat improvement projects in cooperation with appropriate State and Federal agencies.
 9. Protect and maintain the soil and water quality and quantity from disturbances of waste discharge and fill material and other soil disturbances that lead to concentrations of surface water and soil erosion, which may lead to rill or gully erosion and subsequent water quality degradation.
 10. For Special Use Administration (nonrecreational), issue only authorizations which meet the objectives of Executive Order 11990 (Protection of Wetlands). Issue permits which serve to preserve, enhance, or aid in the management of the natural and beneficial values of wetlands.

11. Perform integrated logging system and transportation analysis to determine if other practical routes avoiding high use waterfowl areas exist.
12. If the need to restrict road access is identified during project interdisciplinary review, roads will be closed either seasonally or yearlong to minimize adverse effects on waterfowl.
13. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of these species by the public. Maintain a public education program explaining Forest management activities related to these species in cooperation with State and other Federal agencies.

X. *Great Blue Heron Rookeries*

- A. Provide for the protection of existing great blue heron rookeries.
 1. Protect active heron rookeries by maintaining the integrity of the rookery site, and regulating human use in the vicinity of the rookery. Prevent disturbance during the active nesting season (generally March 1 to July 31). Avoid direct aircraft flights on Forest Service permitted or approved activities. Within .25 miles (400 meters) of rookeries, maintain a minimum flight elevation of 660 feet, when weather ceilings permit.

XI. *Alexander Archipelago Wolf*

- A. Implement a Forest-wide program (in cooperation with the Alaska Department of Fish and Game) to reduce human-caused mortality of wolves.
 1. In ADF&G Wildlife Analysis Areas (WAA's) where wolf shooting and trapping success is very high in relation to expected total populations, as a mitigation measure, consider a one mile per square mile open road density in combination with cooperation of ADF&G to regulate trapping and shooting.
 2. In WAA's that adjoin Wilderness or roadless areas of greater than 247,000 acres, open road densities of up to 1.2 miles of Forest development roads per square mile of roaded area may be allowed.
 3. In areas where the coastline provides access to wolves comparable to road access, the length of coastline should be considered in road management plans.

XII. *Mountain Goat*

- A. Provide for the long-term productivity of mountain goat habitat.
 1. Locate facilities and concentrated human activities as far from important wintering and kidding habitat as practicable.
 - * Locate facilities, camps, LTF's, campgrounds and other developments 1 mile or more from important wintering and kidding habitat.
 - * If the 1 mile or more distance cannot be achieved, mitigate possible adverse impacts by seasonally restricting or regulating human use, and other-site specific mitigation measures.
 2. Manage roads and trails to minimize human disturbance in important habitat areas.

XIII. *Snag/Cavity-Nesting Habitat*

- A. Provide habitat for cavity-nesting wildlife species. Use the following chart as a guide for evaluating the relationship between the number of snags present in an area and the percent of maximum woodpecker populations which can be supported:

Numbers of snags* required per 100 forested acres to support various percentages of maximum woodpecker populations in Southeastern Alaska**

Percent of Maximum Populations

<i>Species</i>	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Red-breasted sapsucker	160	144	128	112	96	80	64	48	32	16
Hairy woodpecker	672	605	538	470	403	336	269	202	134	67

Source: Habitat Capability Models - Appendix B

* Soft and hard snags which are ≥ 15 inches dbh and ≥ 10 feet in height

** Forested acres refers to all lands capable of supporting 10% tree cover

1. During project planning, evaluate snag/cavity habitat on an entire 4th order watershed basis. Averaged on a fourth order watershed basis, a minimum of 275 snags per 100 forested acres will be maintained. Analyze red-breasted sapsucker and hairy woodpecker habitat capability using habitat capability models.
2. Retain snags within all land use designations allowing timber harvest. Consider the following:
 - * Retain soft and hard snags where possible, while meeting management objectives, considering safety needs for people and equipment.
 - * Where possible, save both hard and soft snags in areas protected from wind.
 - * Snags do not need to be evenly distributed; clumped distributions are preferred.
 - * Favor saving snags away from roads to reduce loss from firewood gathering activity.
 - * After timber harvest in an area, remaining snags may be designated as wildlife trees and marked to make them illegal for cutting.
 - * Consider retaining live trees for future snag recruitment.

XIV. Moose Habitat

- A. Develop habitat management direction for moose habitats.
 1. During project planning, inventory vegetative conditions in moose habitat areas to help identify short and long-term changes in habitat conditions, and to assess the effects of various management activities.
 2. Plan habitat improvement projects utilizing a variety of techniques such as silvicultural treatments, second-growth management activities, prescribed burning, planting and other vegetative manipulation techniques as appropriate.
 3. Coordinate other resource management activities to maintain or improve habitat conditions for moose. Manage roads to minimize adverse effects of human access on moose populations. Open road densities shall not exceed 1 mile per square mile, calculated on a fourth order watershed basis. These open road densities apply to Maintenance Level 2, 3, 4, and 5 roads.
 4. Coordinate planning with other appropriate agencies.

Wildlife Habitat Improvement: WILD22

I. Improvement Projects

- A. Continue a second-growth management program to maintain, prolong, and/or improve understory forage production and increase future structural diversity in second-growth timber stands for wildlife (deer, moose, black bear, and other species).

1. Give priority consideration for second-growth management to the following areas and conditions:
 - * Historical deer winter range with high deer use.
 - * Historical or potential moose winter range.
 - * Areas with high black bear populations.
 - * Areas with important and accessible consumptive and non-consumptive human uses of wildlife benefited by second-growth management.
 - * Second-growth timber stands which have a relatively high tree stocking density which would result in early loss of understory forage. The following plant association groupings can help identify second-growth stands with higher priorities for second-growth management:

<i>Plant Association Group</i>	<i>Priority</i>
High Volume Hemlock Group (well-drained slopes) Plant Associations in this group Hemlock/blueberry Hemlock/blueberry/shieldfern Hemlock-Redcedar/blueberry (well drained) Spruce/blueberry	High
Skunk Cabbage Group Plant Associations included in this group. Hemlock/blueberry/skunk cabbage Hemlock-Redcedar/blueberry/skunk cabbage	High
Devils Club Group Plant Associations included in this group Hemlock/devil's club plus allother spruce associations (except spruce/reedgrass) Most areas at Yakutat	Low
Cedar Group Plant Associations included in this group All other hemlock/redcedar associations All hemlock/yellow cedar associations	Low
Mixed Conifer Group	Low
Mountain Hemlock Group	Low

2. Use the following general guidelines for precommercial thinning:
 - * *Timing:* Time precommercial thinning before desirable forage species are shaded out by trees, although trees should fully occupy the site. The smaller trees in the stand should be at least one foot high so they can be seen and thinned or removed. Generally, highly productive sites will need to be thinned at a younger age (10-15 years) than moderate or low productive sites (15-25 years). Use site-specific conditions to determine the timing of precommercial thinning.
 - * *Spacing:* Positive results have been documented for tree spacings ranging from 12 feet by 12 feet to 20 feet by 20 feet. Site-specific objectives and analysis should identify spacings to be used. Consider variable spacings and leaving some unthinned thickets to create future structural diversity.
 - * *Slash Disposal:* Generally, slash disposal treatments will not be necessary. In some site-specific areas, slash treatments may be needed to facilitate animal movements

or increase forage production and availability. A general guideline for when to consider slash treatments is when slash depths exceed 1.6 ft. (50 cm.). Slash treatments may include girdling trees, falling trees away from high forage areas, piling trees, or lopping and scattering of slash.

3. Use the following general guidelines for canopy gaps:
 - * *Timing*: Same as precommercial thinning. It is generally recommended that canopy gaps be created at the same time as precommercial thinning activity.
 - * *Slash Disposal*: Same as precommercial thinning.
 - * *Sizes*: Size recommendations for canopy gaps range from 0.1 acres to 2.0 acres. Site-specific objectives and analysis should identify the gap sizes.
 - * *Amount of Area*: Depending upon site-specific objectives, recommendations for the amount of area to be managed for canopy gaps range from 5 to 50 percent of the harvest unit.
 - * *Maintenance*: Where possible, maintain canopy gaps to prevent loss of understory forage whenever possible from tree canopy closure or tree regeneration. Generally, 10 to 25 year intervals will occur between treatments.
4. Use the following general guidelines for commercial thinning:
 - * *Spacing*: Do not use fixed spaced thinnings. Vary tree spacing and maintain canopy gaps and openings to allow for some "side lighting" to occur.
 - * *Timing*: Commercial thinning should occur prior to loss of understory forage. Timing will vary depending on site-specific conditions.
 - * *Method*: Use a "free thinning method" to encourage vertical diversity and windfirmness. Do not remove more than 25 to 30 percent of the stand basal area (rule of thumb to prevent blowdown).
 - * *Snow Interception*: Leave 10 to 20 of the largest trees on each acre for snow interception.
- B. Coordinate habitat improvement projects with the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service and other appropriate agencies.

Wildlife Habitat Maintenance: WILD23

I. Maintenance

- A. Provide for the maintenance of wildlife habitat improvements.
 1. Fund maintenance of existing structures prior to the construction of new structures.
 2. Funding for maintenance shall be included in the planning and budgeting for all structures.
 3. Maintain structures to assure objectives of the original project are met.
 4. If the improvement becomes inefficient to operate or maintain, redesign or stop maintenance of that improvement.
 5. If a structure becomes inoperable, consider removal or reconstruction, as appropriate.
- B. Develop a written agreement with project cooperators on maintenance responsibilities prior to project construction.

Chapter 5
Implementation

CHAPTER 5 - IMPLEMENTATION

INTRODUCTION

Implementation of the Forest Plan involves the scheduling and execution of specific projects and activities to carry out or meet the goals and objectives of the Plan. Schedules of projects for several resources were given as part of the objectives in Chapter 2. Implementation includes the planning and analysis required to select specific resource management practices for each project that will achieve the objectives and comply with all applicable standards and guidelines. Specific projects may include harvesting (through a sale) a certain amount of timber, constructing a campground, or building a fish ladder. Proposals by others (such as to construct a communications facility) are evaluated using the same standards and guidelines, and must comply with all applicable direction in the Forest Plan.

Each year, upon approval of a final budget, the Forest makes final and implements an annual program of work. Future budget requests will be based on the resource schedules and goals and objectives of the revised Forest Plan. The accomplishment of the annual program of work results in the step-by-step implementation of Forest Plan management direction.

TTRA REQUIREMENTS

The Tongass Timber Reform Act (TTRA) included several requirements for management of the Tongass which have been incorporated into the revised Forest Plan. The application of stream buffers, the creation of new Wilderness areas, and the creation of permanent Land Use Designation II areas were included in the February 1991 Amendment to the Tongass Forest Plan, and these have been incorporated into the Revised Plan. The requirement for "proportional" timber harvest of high-volume old growth has also been incorporated into the Revision. These four provisions of TTRA are explained briefly here. Further information is contained in the relevant sections of the DEIS Supplement.

1. TTRA mandates a no-harvest zone, or buffer, of at least 100 feet on either side of all Class I streams, and of all Class II streams which flow directly into Class I streams. The Stream and Lake Protection Land Use Designation includes this requirement as part of its management prescription.
2. Five new Wildernesses were created, and a sixth expanded, for a total of 299,696 acres. These areas have all been assigned the Wilderness Land Use Designation. The areas are: Chuck River, Karta River, Kuiu, Pleasant-Lemesurier-Inian Islands, South Etolin Island, and the Young Lake Addition to Kootznoowoo Wilderness.

3. Twelve other areas, totaling 727,765 acres, were given a permanent "Land Use Designation II" status, to be managed in an essentially roadless condition with no commercial timber harvest allowed. A new land use designation, called Land Use Designation II, was developed and assigned to these areas. The areas are: Yakutat, Berners Bay, Anan, Kadashan, Lisianski/Upper Hoonah, Mt. Calder/Holbrook, Nutkwa, Outside Islands, Trap Bay, Point Adolphus/Mud Bay, Naha and Salmon Bay.
4. TTRA requires that the harvest of high volume old-growth (volume classes 6 and 7) will not be at an accelerated rate. The act requires that the proportion of harvest in volume classes 6 and 7 will not exceed the proportion of volume of these classes currently represented in a contiguous management area. ("Management area" refers to the 141 management areas used in the 1979 Tongass Forest Plan, as amended.)

The long-term contracts have been amended to assure proportional harvest over the remainder of each long-term contract term, in the management areas in which long-term contract harvest occurs. During the remainder of the long-term contracts, the acres specified for harvest in volume classes 6 and 7 (combined) will be limited to no more than the ratio of these volume classes to all volume classes currently in the timber base (as of enactment of the Tongass Timber Reform Act, November 28, 1990). The objective is, that at the expiration of the long-term contracts, there will be the same proportion of volume classes 6 and 7 remaining in each management area as currently exists within the timber base of that management area.

The timber base of a management area includes all old-growth timber (volume classes 4 through 7), except the acreage within the minimum 100-foot stream buffers (as discussed above) and Wilderness and Land Use Designation II areas. To insure that the most recent inventory information is used, the actual volume class(es) of each harvest unit in the Offering Area will be based on in-place data collected for and used in the environmental analysis. The TLMP Revision Geographic Information System (GIS) is used as the source for calculating the current proportionality of volume classes 6 and 7. Of the data bases available, TIMTYPE was selected because it meets the Tongass Timber Reform Act criteria that volume classes be defined the same as those in the Current Plan. Specific details regarding the implementation and assessment of proportionality are documented in the R-10 Timber Sale Preparation Handbook.

THE TWO-STEP PLANNING PROCESS

The Forest Plan provides the broad, programmatic direction necessary to manage the resources and uses of the National Forest in a coordinated and integrated manner. This direction includes the multiple-use goals and objectives, management prescriptions, and standards and guidelines. The standards and guidelines are then applied to individual projects to assure that the goals and objectives, and the intent of the prescriptions, is carried out. Forest plans normally do not make site-specific decisions; that is the role of project-level environmental analysis.

The **first step** in the land management planning process is the Forest Plan, which determines land allocations, and provides requirements for site-specific decisions. The **second step** is the analysis of individual projects, which includes applying the standards and guidelines from the Forest Plan to site-specific activities.

Project-level decisions require site-specific environmental analysis. Common project-level decisions include whether or not, and if so, in what way, timber will be harvested in a given area, a campground will be constructed, or a fisheries structure will be installed. An environmental analysis document, such as an environmental impact statement or environmental assessment, precedes these decisions unless they are categorically excluded from documentation. Project-level planning provides an additional opportunity (beyond development of the Forest Plan) for public participation.

AMENDMENTS

When a change to the Forest Plan is needed, the Forest Supervisors will prepare an amendment and conduct an environmental analysis. Non-significant (minor) amendments may be approved by the Forest Supervisors. Significant (major) amendments must be approved by the Regional Forester. The development and approval of a significant amendment must follow the same procedures as were required for developing and approving the Forest Plan (or its revision). ("Significance" here is as defined by the National Forest Management Act regulations, and is different than significance as used under the National Environmental Policy Act.)

The Forest Supervisors (the Tongass National Forest is divided into three Administrative Areas, each with a separate Forest Supervisor) may amend, or recommend to amend, the Forest Plan at any time. An amendment may result from:

1. Recommendations of an interdisciplinary team, based on results of monitoring and evaluation.
2. Decisions by the Forest Supervisors that existing or proposed permits, contracts, cooperative agreements, or other instruments authorizing occupancy and use are appropriate, but are not consistent with the Forest Plan.

3. Changes in proposed implementation schedules, resulting from differences between Forest Plan projected funding levels, and funds actually appropriated.
4. Administrative appeal decisions.
5. Planning errors found during Forest Plan implementation.
6. Changes in physical, biological, social or economic conditions.

The Forest Supervisors will determine whether proposed changes in the Forest Plan are significant or non-significant. If determined to be non-significant, the Forest Supervisors will document that determination in a decision document, and provide appropriate public notification prior to implementing the changes. If the change is determined to be significant, the decision about the change then rests with the Regional Forester, who will also prepare a decision document after environmental analysis.

Non-significant amendments to the Forest Plan can result from:

1. Actions that do not substantially alter the multiple-use goals and objectives for long-term land and resource management.
2. Minor adjustments to land use designation boundaries, management prescriptions, or Forest-wide standards and guidelines resulting from further site-specific analysis.
3. Short-term fluctuations in an implementation schedule or in planned annual outputs.

Significant amendments to the Forest Plan can result from:

1. Changes that have an effect on the entire Forest Plan, or that affect land and resources throughout a large portion of the planning area (for example, area-wide increases or decreases in resource demands).
2. Changes that would significantly alter the long-term relationship between the amounts of resource uses and Forest products originally projected (such as changes in implementation schedules resulting from sustained differences between proposed and actual budgets).
3. Major changes in management prescriptions or land use designation allocations, or in Forest-wide standards and guidelines.

REVISIONS

The Forest Plan will ordinarily be revised on a 10-year cycle, or at least every 15 years. It also may be revised whenever the Forest Supervisors determine that conditions in the area covered by the Forest Plan have changed significantly, or when changes in national policies, goals, or objectives would have a significant effect on Forest-level programs. In the monitoring and evaluation process, an interdisciplinary team may recommend a revision (or an amendment) of the Forest Plan at any time.

Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of the Forest Plan. The Forest Supervisors will review conditions in the area covered by the Forest Plan at least every five years to determine whether significant changes have occurred. Revisions must be approved by the Regional Forester.

Chapter 6

Monitoring and Evaluation

CHAPTER 6 - MONITORING AND EVALUATION

INTRODUCTION

Monitoring and evaluation provide the public, the Regional Forester, and Forest officials with information on the progress and results of implementing the Forest Plan. As such, monitoring and evaluation comprise an essential feedback mechanism to help keep the Plan dynamic and responsive to changing conditions.

Monitoring consists of measuring—on a sample basis—actual activities and their effects. Evaluation compares these results with projections contained in the Forest Plan, and with public concerns. Where activities and effects are consistent with expectations and respond to public concerns, these results will be documented and implementation of the Plan will continue. Where activities and effects are not consistent with expectations, further analysis will be done to identify what corrective action needs to be taken to keep the Plan current.

OBJECTIVES

The Forest Plan monitoring and evaluation program is designed to determine the degree to which:

- Planned outputs, goals, and objectives are being met.
- Public concerns are being addressed.
- Standards and guidelines are being followed.
- Standards and guidelines achieve the expected results.
- Implementation of the Plan affects the land, resources, and communities adjacent to or near the Forest, as projected.
- Activities on nearby lands managed by other Federal, State, or local governmental agencies affect management of the Forest, as anticipated.
- Additional research is needed to support the management of the Forest.
- The Forest Plan needs to be amended or revised.

RELATIONSHIP TO OTHER MONITORING ACTIVITIES

This monitoring plan is not intended to depict all monitoring activities undertaken on the Forest. Many such activities are conducted under direction contained in site-specific project plans developed under the programmatic guidance of the Forest Plan. Other routine monitoring activities include the use of "unit cards" for timber harvest and road construction projects. Among other purposes, these cards document the implementation of mitigation measures designed to prevent potential adverse effects from such projects. Finally, management of the Forest, including implementation of project plans and the Forest Plan, is reviewed and documented periodically by various Forest Service officials during what are known as "Management Reviews," "Activity and Program Reviews," and "General Management Reviews," depending on the geographic and/or programmatic scope of the review.

The requirements of this monitoring plan are not intended to replace monitoring requirements developed in the project planning process, or other ongoing monitoring activities such as the use of unit cards or management reviews. Specific project monitoring requirements will continue to be determined in the NEPA/project planning process. Although there will be overlap between monitoring requirements of project plans and the Forest Plan, no single project monitoring plan is expected to address all of the questions listed in this monitoring plan. On the other hand, some project plans may impose monitoring requirements not included in this monitoring plan, in response to site-specific concerns. Taken as a whole, however, each Area's project monitoring plans should be designed to answer the questions posed in this monitoring plan, so that wherever possible, the Forest Plan's monitoring requirements can be met by compiling the results of project monitoring.

Finally, other data-gathering activities are listed in Appendix B as "information needs." These are inventory or research items that would be useful to complete, and could be thought of as "monitoring" in a broad use of the term. Because these items are not essential to determining the effects of Plan implementation, however, these items are not included in the monitoring plan as required tasks.

ANNUAL MONITORING PROGRAMS

Each Administrative Area will prepare an annual monitoring program as part of the Area's annual work program. This program should display how the Area will meet all its monitoring requirements, including how the different monitoring tasks (e.g. project and Forest Plan, as well as different resource areas) will be coordinated to avoid duplication and reduce costs. The costs of project monitoring should be included as a required cost of the project. To the extent that project monitoring generates information needed to satisfy the Forest Plan monitoring requirements, most of the Forest Plan monitoring costs will also be assigned to the relevant projects. Remaining Forest Plan monitoring costs must be obtained from program funds.

FUNDING

Although actual annual funding may not correspond to the level projected in the Forest Plan, each Area will ensure that monitoring is funded at a level commensurate with the level of funding provided for program implementation. For example, if the wildlife program is funded at the 90% level for a given year, then the Forest Plan monitoring program for wildlife that is not covered by project funds should also be funded at about the 90% level. In some cases, such as long-term water quality monitoring, it may be necessary to maintain monitoring at the 100% level to ensure that one-year funding reductions do not impair the ability of long-term monitoring studies to produce valid results.

The estimated annual costs for each monitoring item assume adequate funding to fully implement the Forest Plan. Except where specifically noted otherwise, the estimates also reflect the total cost of answering the relevant monitoring question, without charging any such costs to projects as discussed above.

ANNUAL MONITORING REPORTS

The Forest Supervisors are responsible for coordinating the preparation of an annual monitoring and evaluation report. Such reports will summarize the monitoring activities conducted during the year covered and the results obtained; address each of the monitoring questions listed in this monitoring plan; and evaluate the implementation of the Plan in terms of each of the objectives listed at the beginning of this chapter. Finally, the annual monitoring and evaluation report should include recommendations for remedial action, if necessary, to make management activities and their effects consistent with the Plan.

Specific recommendations for corrective action will depend on the risk to the resource and the type of disparity discovered. The types of action that could be recommended include:

- No action, if monitoring and evaluation indicate that the standards and guidelines are being followed and the results are meeting Forest Plan objectives.
- Additional monitoring, if initial results are inconclusive or indicate a pattern of minor discrepancies between the standards and guidelines and their implementation, or between expected and actual results.
- Referral to the appropriate line officer for action to ensure proper application of the standards and guidelines, if compliance is inconsistent.
- Changing the projected output schedule, if it turns out to be unrealistic.

- Revising the budget, if the anticipated costs of implementation of the Plan turn out to be incorrect.
- Amending the Plan to change, for example, the allocation of particular areas from one Land Use Designation to another, or changing one or more of the standards and guidelines.
- Revising the Plan if major changes are warranted.

TYPES OF MONITORING

There are three distinct types of monitoring: implementation, effectiveness, and validation. Implementation monitoring determines if projects and activities comply with Forest Plan standards and guidelines. Effectiveness monitoring determines whether the standard and guidelines achieve the desired results. Validation monitoring determines whether the assumptions in the Forest Plan regarding the relationship between management actions and their effects are correct, or if there is a better way to depict these relationships.

Implementation monitoring

Implementation monitoring is the most basic type of monitoring, in that the question it seeks to answer is "Are projects and activities being implemented in compliance with the standards and guidelines? Do they meet the objectives of the Plan?" This is often phrased simply as "Did we do what we said we would do?"

Implementation monitoring is usually conducted on a qualitative rather than quantitative basis. Therefore, it is the easiest and least expensive type of monitoring, yet it forms the basis for conducting the other types. Therefore, implementation monitoring may be the most important of the three, and needs to be conducted most often.

Effectiveness monitoring

Effectiveness monitoring can normally be conducted only after implementation monitoring has determined that projects and activities comply with the Forest Plan's standards and guidelines. It poses the question "To what extent does adherence to the standards and guidelines achieve the results expected?" In some cases, it may be possible to conduct implementation and effectiveness monitoring simultaneously, determining the extent to which standards and guidelines (1) were followed; and (2) worked as anticipated.

Like implementation monitoring, effectiveness monitoring can also be conducted—in some cases—on a qualitative basis. More often, however, effectiveness monitoring involves a quantitative examination of the effects of management activities. Because this type of monitoring may require a considerable amount of data, it is generally conducted on a limited basis dealing with sensitive areas and activities that pose moderate or high risk of adverse effects on Forest resources, or in response to public concerns. In some cases, effectiveness monitoring may require studies lasting more than one year.

Effectiveness monitoring differs from implementation monitoring in that, once the question "do the standards and guidelines work as expected" is answered for a particular standard and guideline in representative settings, it does not need to be sampled repeatedly every year. In other words, once the standards and guidelines have been proven to achieve the desired results when properly implemented, then monitoring their implementation is sufficient. Accordingly, the suggested sampling methods for effectiveness monitoring in the monitoring item descriptions assume that different standards and guidelines will be assessed annually, or in different settings, throughout the planning period. Such direction is not intended to require duplication of valid monitoring results.

Validation monitoring Validation monitoring is conducted to determine whether the initial data, assumptions, relationships, and models used in revising the Plan are correct, or if there is a better way to meet Forest Plan objectives.

The questions posed by validation monitoring are: Are assumptions and resource relationships used in the Forest Plan correct? Is there a better way to meet Forest Plan goals and objectives? It is usually conducted when effectiveness monitoring results indicate basic assumptions or coefficients are questionable or where coefficients and standards are not reasonably substantiated by existing research. Items monitored are those with strong public interest, Forest Service concern, diversity of opinion, or those that have the potential to be under or overly restrictive. Validation monitoring may be data-intensive and may require long-term investigations. As is the case for effectiveness monitoring, validation monitoring is not expected to be repeated during the planning period once valid results are obtained.

**FIVE-YEAR EVALUA-
TION REPORT**

Because some types of monitoring may not produce valid results in one year, the annual monitoring reports can at most present preliminary results of such studies, and may only summarize their status. Where preliminary results are available, they will be examined to determine if changes are needed in the data collection and storage procedures. Final results of these monitoring activities will be reported in an evaluation report to be prepared after the revised Plan has been in effect for five years. The five-year evaluation report will summarize the findings of all long-term monitoring activities, and include a comprehensive review of implementation of the Plan.

**EXPECTED PRECI-
SION AND RELIABIL-
ITY**

The implementing regulations for the National Forest Management Act require the monitoring plan to include a description of the "expected precision and reliability of the monitoring process" (36 CFR 219.12 (k)(4)). In this context, "precision" is interpreted to be an indication of how accurate the monitoring results are expected to be, and "reliability" is interpreted to be an indication of how reproducible the monitoring results are expected to be.

Both of these factors will vary from one monitoring item to another. Some items are readily quantifiable, such as the number of fish habitat improvement projects completed in a given year. Such items can be monitored with very high precision and reliability. Other items are extremely difficult to quantify, due to inherent measurement difficulties or because the Forest Plan objective is not specifically quantified. An example is whether the wildlife standards and guidelines reduce or eliminate adverse human effects from Forest Service activities on important habitats. In some such cases, it is neither technically nor economically feasible to obtain very precise and reliable monitoring results. On the whole, the monitoring plan is expected to produce results that 1) are as precise and reliable as practicable, given the inherent measurement problems involved, and 2) meet management's need for information with which to determine if changes in the Plan or management activities are necessary. As new monitoring techniques are developed, they will be adopted to improve the precision, reliability, and efficiency of the monitoring and evaluation program.

Monitoring Plan Summary

Resource	Monitoring Question	Variability Indicating Action	Report Period	Annual Cost	Page #
Outputs/costs	Are the estimated outputs projected in the Forest Plan being achieved?	Variance of greater than 25% between projected and actual outputs.	Annual	\$1,000	12
	Are the costs of implementing the Forest Plan consistent with projections?	Variance greater than 20% between the Forest Plan estimates and actual unit costs.	Annual	\$1,000	14
Cultural	Are cultural resources being protected as expected in the Forest Plan?	Evidence of damage to sites.	Annual, with a detailed 5-year report	\$50,000	16
Wilderness	Are standards and guidelines for the management of wilderness being implemented as described in the Forest Plan?	Deviations from the standards and guidelines which threaten the values for which the Wilderness was created.	Annual	\$50,000	18
	Are the Wilderness standards and guidelines effective in preserving the values for which the Wildernesses were created?	Human-caused changes in wilderness resources that approach the LAC standards.	Annual	included above	20
Rivers	Are Wild, Scenic, and Recreation River standards and guidelines being implemented as prescribed in the Forest Plan.	Any failure to implement the standards and guidelines that impairs or threatens to impair the values for which the river was included or proposed for inclusion in the National Wild and Scenic Rivers System.	Annual	\$12,000	22
	Are Wild, Scenic, and Recreation River standards and guides effective in maintaining or enhancing the values for which the river was designated as part of the National Wild and Scenic Rivers System?	Any significant human-caused reduction of river values.	Annual	included above	24
Recreation	Are Recreation Opportunity Spectrum (ROS) settings being maintained as prescribed in the Forest Plan?	Any human-caused changes in ROS settings that were not anticipated in the Forest Plan.	Annual, with a detailed 5-year report	\$10,000	26
Visual resource	Do completed management activities meet the visual quality objectives as adopted in the Forest Plan?	Any human-caused change in visual quality objective that was not anticipated in the Forest Plan.	Annual	\$15,000	28

Monitoring Plan Summary (continued)

Resource	Monitoring Question	Variability indicating Action	Report Period	Annual Cost	Page #
Fish habitat	Are fish & riparian standards and guidelines being implemented as described in the Forest Plan?	Noncompliance with standards and guidelines.	Annual	\$20,000	30
	Are fish & riparian standards and guidelines effective in maintaining or improving fish habitat?	Any significant reduction in habitat capability resulting from management activities.	Annual, with a detailed 5-year report	\$25,000	32
	Are fish enhancement projects producing outputs as anticipated in the Forest Plan?	25% deviation from projected outputs.	Annual, with a detailed 5-year report	\$150,000	34
	Are the fish habitat effects models and assumptions valid in predicting population trends of Management Indicator Species (MIS)?	Trends not in conformance with estimates predicted in the fish MIS models and assumptions.	Annual, with a detailed 5-year report	\$50,000 to \$150,000*	36
Subsistence	Are land management activities (primarily road, timber, and recreation programs) having the expected effects on subsistence resources and opportunities?	Effects on subsistence resources or opportunities inconsistent with the expectations in the Forest Plan.	Annual, with a detailed 5-year report	\$5,000 to \$20,000*	39
T, E, & S	Are threatened, endangered, and sensitive species—and their habitats—being protected?	Any adverse effect on habitat or populations of threatened, endangered, or sensitive species.	Annual	\$13,000	41
Wildlife habitat	Are wildlife habitat standards and guidelines being implemented as described in the Forest Plan?	Noncompliance with standards and guidelines.	Annual	\$12,000	44
	Are the wildlife standards and guidelines reducing or eliminating adverse human effects from Forest Service activities on important habitats, as anticipated?	Evidence that adverse effects from Forest Service activities on habitats is increasing or threatening the long-term conservation of the species.	Annual, with a detailed 5-year report	\$12,000	46
	Are wildlife enhancement projects producing anticipated outputs?	25% deviation from projected outputs, where projections were made.	Annual, with a detailed 5-year report	\$35,000	48
	Are the wildlife habitat capability models valid in predicting Management Indicator Species' (MIS) population trends?	Trends not in conformance with estimates predicted in the wildlife MIS models.	Annual, with a detailed 5-year report	\$150,000 to \$300,000*	50

Monitoring Plan Summary (continued)

Resource	Monitoring Question	Variability Indicating Action	Report Period	Annual Cost	Page #
Timber	Are timber activities adhering to applicable timber management standards and guidelines as prescribed in the Forest Plan?	Noncompliance with standards and guidelines.	Annual	\$13,000	52
	Are the effects of timber management activities on other resources consistent with expectations in the Forest Plan?	Evidence that the standards and guidelines do not result in anticipated results (are either too stringent or not stringent enough).	Annual	\$13,000	54
	Are harvested forest lands restocked within five years following harvest?	Evidence that land is not restocked within 5 years following harvest.	Annual	\$1,500	56
	Is the projected timber harvest quantity based on valid assumptions?	Variation between actual and predicted timber harvest quantity.	Every 5 years	\$5,000	58
	Is the supply of timber offered meeting market demand?	A 20% difference between timber demand and supply.	Annual	\$3,000	60
	Are old-growth forests being maintained in the amount anticipated in the Forest Plan?	Evidence that old-growth acres are not maintained as planned.	Annual, with a detailed 5-year report	\$10,000	62
Watershed	Are Best Management Practices (BMPs) being implemented?	Failure to implement BMPs.	Annual	\$12,000	64
	Are Best Management Practices effective in protecting State-designated beneficial uses of water?	Any significant adverse effects on the beneficial uses of water.	Annual, with a detailed 3-year report	\$40,000	66
	Are the standards and guidelines effective in preventing significant or permanent impairment of soil productivity?	Any significant or permanent impairment of soil productivity.	Annual	\$10,000	68
	Is the constraint for clearcutting and other large-scale ground-disturbing activities on third and fourth order watersheds effective in minimizing cumulative watershed effects?	Evidence that the existing constraint is inadequate to prevent significant changes in stream channel equilibrium or the beneficial uses of water.	Every 5 years	\$250,000	70
Minerals	Are mineral exploration, development, and reclamation activities in compliance with standards and guidelines established in the Forest Plan?	Non-compliance with the standards and guidelines.	Annual	\$6,000	72
	Are the effects of mining activities on surface resources consistent with expectations in the Forest Plan, as embodied in the approved Plans of Operation?	Any significant unanticipated adverse effects on surface resources.	Annual	\$6,000	74
Land ownership	Is the National Forest landbase changing to a degree that requires modification of Forest Plan objectives?	A 10% deviation from anticipated Forest Plan outputs due to changes in landbase.	Every 5 years	\$7,500	76

Monitoring Plan Summary (continued)

Resource	Monitoring Question	Variability Indicating Action	Report Period	Annual Cost	Page #
Transportation	Are forest development roads and Log Transfer Facilities (LTFs) located, constructed, and managed as prescribed in the Forest Plan's standards and guidelines?	Significant variance from the standards and guidelines.	Annual, with a detailed 5-year report	\$5,000	78
	Are the standards and guidelines used for forest development roads and LTFs effective in limiting the environmental effects to anticipated levels?	Any significant unanticipated adverse environmental consequences, or evidence that applicable standards and guides are unnecessarily restrictive.	Annual, with a detailed 5-year report	\$6,000	80
	Is vegetative cover re-established on the disturbed area of all roads within a ten year period after termination of use, unless the road is determined to be necessary as a permanent part of the National Forest Transportation System.	Roads without vegetative cover re-established.	Annual	\$5,000	82
Off Road Vehicle Use (ORV)	Is off road vehicle (ORV) use causing, or will it cause, considerable adverse effects on soil, water, vegetation, fish and wildlife, visitors, or cultural and historic resources of the Forest?	Lack of an off road vehicle plan which considers the effects of ORV use on Forest resources.	Annual	\$500	84
Fire	Does the use of prescribed fire comply with the Forest Plan's requirement for an approved project plan for each use?	Any use of prescribed fire without an approved project plan.	Annual	\$500	86
Insect and disease control	Are destructive insects or disease organisms a threat to desired Forest health?	Evidence that insects or disease are increasing to potentially damaging levels.	Annual	\$100,000	88

* Cost of completing these items depends upon whether data on population trends of relevant species of fish and wildlife are available from the Alaska Department of Fish and Game.

Total estimated cost: \$1,105,000 to \$1,370,000

MONITORING DESCRIPTION HEADINGS

This rest of this chapter consists of descriptions of each monitoring item included in the above table. These explain in detail how each of the monitoring items will be conducted, how often, by whom, and how much each item is expected to cost. Where there are differences between the monitoring plan summary and the descriptions of the monitoring items, the descriptions represent the plan direction. The headings in the descriptions are explained below.

Monitoring Question - Question being asked.

Monitoring Type - Implementation, effectiveness or validation. In some cases there may be overlap between types, or two types may be included in the same question.

Land Use Designation Affected - Displays the areas of the Forest in which the monitoring question will apply.

Action/Effect to be Measured - A statement of what will be examined.

Sampling Methods - The methods for collecting information needed to answer the monitoring question, including the minimum sampling level. Generally, random selection is to be used for choosing which projects or activities to monitor. As new monitoring techniques are developed, these suggested sampling methods may be revised.

Expected Precision and Reliability - An indication of the accuracy of the information collected and how reproducible the results are expected to be. These are qualitative judgements based on an assessment of the types of methods to be used, the effects to be measured, the degree to which Forest Plan objectives are quantifiable, and the level of uncertainty regarding the causal relationships being studied.

Variability Indicating Further Action - The amount of change that can occur before further action is considered. As explained above, further action may range from intensifying the monitoring efforts to revising the Forest Plan.

Risk Assessment - A qualitative assessment of how important each monitoring item is, based on the risk to the underlying resource. There are two components of this assessment: the "cost of error" and the "likelihood of error." For each of these rankings, a value of 1 is low, 2 is medium, and 3 is high. Added together, these scores yield an overall risk assessment of 2 (low); 3 (medium-low); 4 (medium); 5 (medium-high); or, 6 (high).

Reporting Period - The schedule on which the collected data is aggregated, evaluated and reported to determine if further action is necessary. If conditions warrant, reports may be prepared more often than indicated.

Lead Responsibility - Responsibility for conducting and evaluating the monitoring activity.

Estimated Annual Cost - Approximate costs of the monitoring task. These costs may not be expended every year, but are the expected average annual cost over a ten-year period. These estimates do not include "start-up" costs such as purchasing instruments or tools, or the costs of preparing the five-year evaluation report.

References - Statutory or regulatory foundations of the monitoring question, where applicable.

OUTPUTS/COSTS - 1

Monitoring Question:

What level of outputs is being produced on the Forest? How does this compare with Forest Plan projections?

Type: Not applicable.

Land Use Designations Affected:

All

Action or Effect to be Measured:

Recreation Visitor Days (RVDs); Persons-at-one-time (PAOT) capacity (MAR item 26); trail construction and reconstruction (MAR item 21); recreation site and facility construction and reconstruction; fish habitat improvements, in acres and number of structures (MAR items 36.1, 36.2, and 38.2); threatened, endangered, and sensitive species' habitat improvements, in acres and structures (MAR items 39.2 and 39.3); wildlife habitat improvements, in acres and structures (MAR items 37.1 and 37.2); timber offered for sale (MAR item 17); acres reforested (MAR items 19.1 and 19.2); acres of timber stand improvements (MAR items 20.1 and 20.2); acres of watershed improvement projects (MAR item 13); mineral permits (MAR item 14); miles of roads constructed and reconstructed (MAR items 35.1 and 35.3).

Sampling Methods:

Collect and report this information from MAR (Management Attainment Report), RIM (Recreation Information Management System), and other reporting systems. If anticipated outputs are not achieved, determine the cause.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Most of the parameters are relatively easy to measure (such as Payments to State, PAOTs), however some are much more difficult to quantify (such as RVDs).

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Some of these parameters are difficult to measure without interpretation, which may vary from one person to the next.

Variability Indicating Action:

Variance of greater than 25% between projected and actual outputs.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 2 (medium) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 3 (medium-low)

Cost of error: Medium. Failure to attain the desired outputs would not directly affect any resources, however future targets could be changed if they are consistently not met, which may affect the way in which the resources are managed in the future. Economic impacts to the State, affected industries (primarily timber and tourism), and local economies could be effected if the outputs were under or over-achieved.

Likelihood of error: Low. There is a chance that we would not be able to achieve estimated outputs due to political and budgetary constraints, but these effects would probably not be significant.

Reporting Period:

Annual

Lead Responsibility:

Area Administrative and Planning Staff Officers

Estimated Annual Cost of Monitoring:

3 Areas x GS-11 x 2 days

TOTAL ESTIMATE: \$ 1,000

References:

36 CFR 219.12 (k)

OUTPUTS/COSTS - 2

Monitoring Question:

Are the costs of implementing the Forest Plan consistent with projections?

Type: Validation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Comparison of the estimated and actual costs of carrying out the Forest Plan.

Sampling Methods:

Annually compare unit costs from TSPIRS (Timber Sale Program Information Reporting System), ARR (All Resource Reporting) and/or actual monies expended to those projected in the Forest Plan.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. Comparison of projected costs (for those items identified in the Forest Plan and used for FORPLAN modeling purposes) and actual costs (as shown in TSPIRS, ARR, and/or actual monies expended) is relatively easy and straightforward process.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. The results should be readily repeatable.

Variability Indicating Action:

Variance greater than 20 percent between the Forest Plan estimates and actual unit costs.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 1 (low) + LIKELIHOOD OF ERROR 3 (high) = RISK INDEX 4 (medium)

Cost of error:

Low. Errors in the costs of implementing the Forest Plan would not directly affect Forest resources. However, indirect effects could result from using faulty costs in the Forest planning modeling assumptions.

Likelihood of error:

Medium. Implementation costs are very difficult to estimate precisely, and tend to vary by Administrative Area.

Reporting Period:

Annual

Lead Responsibility:

Regional Office Program, Planning & Budget Staff Officer

Estimated Annual Cost of Monitoring:

1P x GS-12 x 4 days

TOTAL ESTIMATE: \$ 1,000

References:

36 CFR 219.12 (d)(3)

CULTURAL

Monitoring Question:

Are cultural resources being protected as expected in the Forest Plan?

Type: Effectiveness.

Land Use Designations Affected:

All

Action or Effect to be Measured:

Cultural resource sites damaged by human activities or natural forces.

Sampling Methods:

Conduct field inspections on selected sites at least once a year, and document the conditions of the site, any changes from the previous inspection and, if possible, the cause of the change. Sites should be selected based on an assessment of several factors, including their resource values and their susceptibility to disturbance from natural forces, vandalism, or management activity.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. It is not possible to protect all cultural sites on a continuous basis, nor detect all sites prior to management activities. However, with trained observers and an annually updated cultural resource assessment, the accuracy of the sampling should be increased.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. The subjectivity of some of the measurements, as well as different skill levels among observers, can lead to variable results. However, measurement by trained archaeologists should help reduce this variability.

Variability Indicating Action:

Evidence of damage to sites.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (*high*) + LIKELIHOOD OF ERROR 2 (*medium*) = RISK INDEX 5 (*medium-high*)

Cost of error: High. Cultural resources are of very high value since they cannot be replaced.

Likelihood of error: Medium. It is not possible to protect all cultural sites from vandalism 24 hours a day. However, it is anticipated that the majority of sites can be detected and protected, as necessary, prior to, or during, planned management activities.

Reporting Period:

Annual assessment of condition of selected sites, with a detailed report on trends in site damage at 5-year intervals. In order for locations of sites to remain undisclosed to protect from vandalism, reporting must not be site-specific.

Lead responsibility:

Area Cultural Resources Management Officers

Estimated Annual Cost of Monitoring:

For field work:

3 Areas X {(1P X GS-11 X 40D) + (1P X GS-7 X 40 D) + \$7,000 miscellaneous and travel costs}

NOTE: The above does not estimate the costs of the damage assessment reports, if necessary, which vary considerably depending on the location of the site, the significance of the site, and the damage done.

For data reporting:

3 Areas X 1P X 5D X GS-11

TOTAL ESTIMATE: \$ 50,000

References:

36 CFR 296

Monitoring Question:

Are standards and guidelines for the management of wilderness being implemented as described in the Forest Plan?

Type: Implementation

Land Use Designations Affected:

Wilderness and Wilderness National Monument

Action or Effect to be Measured:

Activities not in compliance with Wilderness standards and guidelines

Sampling Methods:

Conduct field monitoring of at least 10 percent of Forest Service permitted uses in Wilderness (special use permits and uses authorized by agreements) annually, to document the degree of compliance with applicable standards and guidelines. In addition, perform a field monitoring trip on at least one Wilderness per year in each Administrative Area (Chatham, Stikine, and Ketchikan) to assess compliance with standards and guidelines not related to permits and as an overview of the permit compliance within that individual Wilderness.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Monitoring for permitted activities generally should result in fairly high precision, because the permits are fairly specific about what activities are allowed and when and where they will take place. For other activities, however, monitoring precision will generally be medium because the measurement will inevitably have to generalize compliance with a number of standards and guidelines.

Reliability: (reliability = How reproducible are the monitoring results on repeated measurements?)

Medium. The reasons are similar to those for precision. For permitted activities where managers know when and where specific activities will take place, repeated monitoring should be reliable. However, for general Wilderness, measurements by different observers in different parts of the Wilderness may vary substantially.

Variability Indicating Action:

Deviations from the standards and guidelines which threaten the values for which the Wilderness was created.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. Wilderness is of special concern to the public.

Likelihood of error: Low. Generally, the standards and guidelines are detailed, and written so that consistent interpretations should be made. Moreover, it is extremely unlikely that the standards and guidelines could be sufficiently misinterpreted to allow an activity that would significantly impair wilderness values.

Reporting Period:

Annual

Lead responsibility:

Area Recreation and Lands Staff Officers

Estimated Annual Cost of Monitoring:

Monitoring permittees--19 Wildernesses X {(1P X GS-11 X 2D) + (2P X GS-7 X 4D) + \$1,500 airfare, per diem, etc.}

[Notes: every wilderness should be sampled; on the average 10 percent of permittees should be monitored in each wilderness; this is not intended to be the entire permit monitoring program, only that sufficient to be sure that the standards and guidelines are being implemented on a sample basis]

Monitoring other activities--3 Areas X 1 Review X {(2P X GS-11 X 6D) + (2P X GS-12 X 5D) + (2P X GS-13 X 5D) + \$2,500 airfare, per diem, etc.}

[Notes: 1 review per area per year; these costs also include effectiveness monitoring, as indicated in the next monitoring item; assumes GS-11s will write-up monitoring reports]

TOTAL ESTIMATE: \$ 50,000

References:

36 CFR 219.12 (k)

Monitoring Question:

Are the Wilderness standards and guidelines effective in preserving the values for which the Wildernesses were created?

Type: Effectiveness

Land Use Designations Affected:

Wilderness and Wilderness National Monument

Action or Effect to be Measured:

Effectiveness of standards and guidelines in preserving the values for which the Wildernesses were created, as measured by Limits of Acceptable Change (LAC) condition indicators.

Sampling Methods:

LAC social and resource condition indicators and standards are being established for each Wilderness through the wilderness implementation schedule (WIS) process. They will include indicators of when effects of human activities (including mechanized use) begin to impair the values for which the wildernesses were created. These condition indicators will be used to measure the effectiveness of the applicable standards and guidelines (S&Gs) during the field monitoring of implementation of the S&Gs. Effectiveness monitoring should be displayed in conjunction with Annual Wilderness Reports, as well as in the Forest-wide monitoring reports.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. The monitoring of social and resource indicators are expected to result in a fairly accurate measurement in the condition of the wilderness resources. Overall assessments will be only moderately precise, however, since they will have to generalize the cumulative effectiveness of a number of standards and guidelines.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. The reasons are similar to those for precision. Individual indicators are likely to be interpreted fairly uniformly by different observers. Significant judgement is involved in assessing overall effectiveness of standards and guidelines for a given wilderness, however, so different observers may produce different results.

Variability Indicating Action:

Human-caused changes in wilderness resource indicators that approach the LAC standards.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium high)

Cost of error: High. These areas are of special concern to the public.

Likelihood of error: Medium. Knowledge of the causal relationships between human activities and their effects on wilderness resources is good, but not perfect. Moreover, some wildernesses experience considerable pressure from human activity. Therefore, the likelihood that the standards and guidelines may not totally prevent human-caused impairment of wilderness resources is judged, on balance, to be medium.

Reporting Period:

Annual. Where longer-term studies or measurements are necessary, the status of activities should be included in the annual monitoring report. [Note: Prior to the establishment of an LAC monitoring program, Annual Wilderness Reports will serve as the reporting document.]

Lead Responsibility:

Area and Regional Recreation Staff Officers

Estimated Annual Cost of Monitoring:

Included in implementation monitoring costs for wilderness, under the cost item for "monitoring other activities"

References:

36 CFR 219.12 (k)(2)
ANILCA
The Wilderness Act

Monitoring Question:

Are Wild, Scenic, and Recreation River standards and guidelines being implemented as prescribed in the Forest Plan. (This applies to both the designated components of the National Wild and Scenic River System, and also as interim management direction to those rivers determined to be suitable but not yet designated as part of the System.)

Type: Implementation

Land Use Designations Affected:

Wild River, Scenic River, Recreation River

Action or Effect to be Measured:

Compliance of activities with standards and guidelines.

Sampling Methods:

Annually conduct field inspections of at least 10% of designated or proposed river segments (or at least one per Area) to document the degree of compliance of Forest Service activities and permitted uses (special use permits and uses authorized by agreements) with applicable standards and guidelines. Rivers selected should be those with the highest probability of human-caused impacts.

Expected precision and reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Monitoring for permitted activities generally should result in fairly high precision, because the permits are fairly specific about what activities are allowed and when and where they will take place. For other activities, however, monitoring precision will generally be medium because the measurement will inevitably have to generalize compliance with a number of standards and guidelines.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. The reasons are similar to those for precision. For permitted activities where managers know when and where specific activities will take place, repeated monitoring should be reliable. However, for Rivers in general, measurements by different observers in different parts of the Rivers may vary substantially.

Variability Indicating Action:

Any failure to implement the standards and guidelines that impairs or threatens to impair the values for which the river was included or proposed for inclusion in the National Wild and Scenic Rivers System.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. Rivers in, or suitable for, the National Wild and Scenic River system are of special concern to the public.

Likelihood of error: Low. Generally, the standards and guidelines are detailed, and written so that consistent interpretations should be made. Moreover, it is extremely unlikely that the standards and guidelines could be sufficiently misinterpreted to allow an activity that would significantly impair river values.

Reporting Period:

Annual

Lead Responsibility:

Area Recreation and Lands Staff Officer(s)

Estimated Annual Cost of Monitoring:

For each Area, 2 GS-11s for 3 days, plus \$500 for airfare, etc.

[Notes: Assumes that 1 river segment will be sampled per Area; these costs also include effectiveness monitoring, as indicated in the next monitoring item.]

TOTAL ESTIMATE: \$ 12,000

References:

36 CFR 219.12 (k)

36 CFR 297

1982 Guidelines for Evaluation, Classification & Management of Wild and Scenic Rivers
Wild and Scenic Rivers Act (Public Law 90-542)

Monitoring Question:

Are Wild, Scenic, and Recreation River standards and guides effective in maintaining or enhancing the values for which the river was designated as part of the National Wild and Scenic Rivers System (or found suitable for such designation)?

Type: Effectiveness

Land Use Designations Affected:

Wild River, Scenic River, Recreation River

Action or Effect to be Measured:

The degree to which human activities in or near designated or suitable components of the National Wild and Scenic Rivers System maintain or enhance the resource values of the rivers.

Sampling Methods:

In conjunction with implementation monitoring, annually conduct field inspections of at least 10% of designated or proposed river segments (or at least one at each Area) to determine whether human activities are damaging or threatening to damage the values for which the river was designated or found suitable for such designation.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. The Wild and Scenic River Act is explicit in describing what is allowed and not allowed in River corridors, as well as the objectives for River designation. A field monitoring trip with qualified individuals should be able to fairly precisely assess whether the standards and guidelines are effective in meeting the intent of the Wild and Scenic Rivers Act. Overall assessments will be only moderately precise, however, since they will have to generalize the cumulative effectiveness of a number of standards and guidelines.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. The reasons are similar to those for precision.

Variability Indicating Action:

Any significant human-caused reduction of river values.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. Designated rivers, and those suitable for designation, are of special concern to the public. In addition, if the standards and guidelines fail to maintain river values, there may be a significant effect on the values for which the rivers were designated.

Likelihood of error: Low. The relationship between management activities in or near river corridors and their effects on river values is well understood, and most rivers are not under intense development or use pressures. It is likely that the standards and guidelines have been written to assure the protection of the wild, scenic, or recreation river.

Reporting Period:

Annual, in conjunction with Wild and Scenic River implementation monitoring.

Lead Responsibility:

Area Recreation and Lands Staff Officer(s)

Estimated Annual Cost of Monitoring:

Included in implementation monitoring costs for Rivers, under the cost item for "monitoring other activities"

References:

36 CFR 219.12 (k)

36 CFR 297

1982 Guidelines for Evaluation, Classification & Management of Wild and Scenic Rivers

RECREATION

Monitoring Question:

Are Recreation Opportunity Spectrum (ROS) settings being maintained as prescribed in the Forest Plan? (NOTE: Other recreation-related monitoring occurs in Wilderness, Rivers, Visuals, and other monitoring items.)

Type: Effectiveness

Land Use Designations Affected:

All, especially those with a single ROS objective.

Action or Effect to be Measured:

Acres of land in ROS settings permitted by land allocations.

Sampling Methods:

Annually update the ROS database for areas affected by management activities or visitor use. Compare the results to the most developed ROS category prescribed for the given Land Use Designation.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Human-caused changes in site-specific ROS settings can be measured fairly precisely, but some precision is lost in aggregating these measurements over the entire Forest.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Measuring human-caused changes in ROS settings necessarily involves some judgement, which may be exercised differently by different observers.

Variability Indicating Action:

Any human-caused changes in ROS settings that were not anticipated in the Forest Plan.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (*high*) + LIKELIHOOD OF ERROR 1 (*low*) = RISK INDEX 4 (*medium*)

Cost of error:

High. The public's interest in maintaining the planned ROS settings is expected to be high. Once altered, it may be difficult to return a recreation setting to a less developed state.

Likelihood of error: Low. The relationships between management activities and their effects on ROS settings is fairly well understood.

Reporting Period:

Annual, with a detailed 5-year report which assesses the cumulative changes in ROS.

Lead Responsibility:

Area Recreation Staff Officer

Estimated Annual Cost of Monitoring:

3 Areas x {7D X GS-11}
11 District X {(3D X GS-9) + \$500 misc.}

Recording in GIS Databases:
3 Areas x {(5D X GS-7) + \$500 misc.}

For 5 year review:
{3D X GS-12} (Obtain from GIS)

TOTAL ESTIMATE: \$ 10,000

References:

36 CFR 219.12 (k)(2)

VISUAL RESOURCE

Monitoring Question:

Do completed management activities meet the visual quality objectives as adopted in the Forest Plan?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Change in visual conditions resulting from project implementation.

Sampling Methods:

Annually assess 5% of significant land-altering projects in areas of medium visual sensitivity and on 20% of such projects in areas of high visual sensitivity to determine whether activities have achieved the visual quality objective prescribed in the Forest Plan. For the purposes of this monitoring, the effects of timber management activities should be analyzed on a viewshed basis. Other land-altering activities, such as construction of fish pass structures, recreation facilities, and log transfer facilities should be analyzed on a project basis.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Site-specific measurements of attainment of visual quality objectives can be made accurately, but some precision will be lost during aggregation. (See also the next discussion under reliability.)

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. The purpose of each visual quality objective is fairly clear, however different evaluator's personal subjectivity may often result in a different result. In order to minimize the differences in subjective evaluations by individuals, evaluation is performed by trained landscape architects which should result in medium reliability of results.

Variability Indicating Action:

Any human-caused change in visual quality objective that was not anticipated in the Forest Plan.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. The visual quality of the Forest is a significant concern to the public, especially in sensitive areas. (see evaluations under cost of error in recreation, customer satisfaction)

Likelihood of error: Low. Standards and guides have been developed with a substantial amount of experience with land-altering projects, and widespread failure to attain the visual quality objectives is unlikely. Land managers have been trained to understand the visual quality management system.

Reporting Period:

Annual

Lead Responsibility:

Area Visual Resource Staff Officer

Estimated annual cost of monitoring:

For each Area, 1 GS-11 for 15 days, plus 1 GS-7 for 10 days, plus \$2000 (flight time, miscellaneous), plus 1 GS-12 for 1 day for aggregation

TOTAL ESTIMATE: \$ 15,000

References:

36 CFR 219.12 (k)

FISH HABITAT - 1

Monitoring Question:

Are fish & riparian standards and guidelines being implemented as described in the Forest Plan?

Type: Implementation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Compliance of land disturbing projects with fish & riparian standards and guidelines

Sampling Methods:

Annually conduct field inspections on a sample of at least 20 percent of projects completed within the previous year that involve land disturbance in, or adjacent to, riparian areas, to determine if standards and guidelines have been implemented. Sampling should include projects which represent each of the process groups. Process groups which have the highest habitat capability (such as the low gradient floodplain process group) should have the highest rate of sampling. Each timber harvest unit counts as a separate project. Each separate road crossing of a riparian area also counts as a separate project.

Expected precision and reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Although some of the standards and guidelines are quantitative and easy to measure, others are more qualitative and difficult to quantify.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Measuring adherence to some of the standards and guidelines is somewhat subjective, and may vary from observer to observer.

Variability Indicating Action:

Noncompliance with standards and guidelines.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. Fish are important to the economy of Southeast Alaska, for commercial harvest, for recreation, and for subsistence use. Failure to implement Forest standards and guidelines could reduce fish habitat.

Likelihood of error: Low. The standards and guidelines for activities that could most directly affect fish production in riparian areas are clearly defined. In particular, the TTRA prohibits commercial timber harvest within 100 feet of any "Class I" stream, and within 100 feet of any "Class II" stream that flows directly into a Class I stream.

Reporting Period:

Annual

Lead Responsibility:

Area Fish and Watershed Staff Officers

Estimated Annual Cost of Monitoring:

Field monitoring

For each Area, 2 GS-9s for 15 days, plus 6 hours flight time and \$500 misc.

Aggregation:

For each Area, 1 GS-11 for 2 days.

TOTAL ESTIMATE: \$ 20,000

References:

36 CFR 219.12 (k)

Tongass Timber Reform Act (TTRA), Public Law 101-626

FISH HABITAT - 2

Monitoring Question:

Are fish & riparian standards and guidelines effective in maintaining or improving fish habitat?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Effects of management activities in riparian areas on fish habitat capability.

Sampling Methods:

At a representative sample of the projects where implementation of the standards and guidelines has been confirmed, measure habitat components important for fish, including future sources of large woody debris, passage of fish at road crossings, and sediment sources to streams (see also Watershed, Timber and Transportation monitoring). Evaluate attainment of fish and riparian objectives. Sampling should include projects which represent each of the process groups. Process groups which have the highest habitat capability (such as the low gradient floodplain process group), or the highest risk of standards and guidelines not being effective, should have the highest rate of sampling.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Some of the components of habitat capability are straightforward to measure, while others are difficult to evaluate to close tolerances. For example, the long-term effectiveness of the windfirmness of unharvested acres may be difficult to evaluate.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Since some subjective judgement is necessary, interpretations by specialists may vary.

Variability Indicating Action:

Any significant reduction in habitat capability resulting from management activities.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. Fish are an important resource for subsistence, recreation and commercial use. Failure of standards and guidelines to protect this resource could be costly.

Likelihood of error: Low. The standards and guidelines for protection of riparian areas reflect a good deal of knowledge about the relationship between land-disturbing activities and their potential effects on such areas. The requirements for minimum 100 foot no commercial timber harvest, as mandated by the Tongass Timber Reform Act, should assure that fish habitat capability is maintained or enhanced.

Reporting Period:

Annually, with a detailed 5-year report that presents a discussion of the significance of findings.

Lead Responsibility:

Area Fisheries Staff Officer

Estimated Annual Cost of Monitoring:

For each Area, 1 GS-11, 1 GS-9, and 2 GS-7s for 30 days, plus 20 hours flight time, plus 1 GS-11 5 days for aggregation, plus \$6000 for 1st year start-up costs (instruments and tools, etc.)

TOTAL ESTIMATE: \$ 25,000

References:

36 CFR 219.12 (a)(6)

FISH HABITAT - 3

Monitoring Question:

Are fish enhancement projects producing outputs as anticipated in the Forest Plan?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Changes in habitat capability and numbers of fish resulting from fish enhancement projects.

Sampling Methods:

Annually measure changes in habitat capability and numbers of fish at selected enhancement projects. The intensity of sampling will vary between different types of projects (i.e., small instream structural, structural fish passage, falls modification, spawning channels, rearing ponds/streams, stocking, incubation boxes, lake fertilization, and debris removal), as will the methods. These determinations should be made in the project planning and NEPA process. As a general rule, however, efforts to monitor actual numbers of anadromous fish produced should concentrate on out-migrating fish, since Forest management activities have little influence on ocean survival, the largest single determining factor in numbers of fish returning. This monitoring item may be answered by compiling the results of project monitoring.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Specialists will determine changes in habitat capability, and numbers of fish will be reported. However, depending upon the nature of projects, number of fish resulting from the projects will be an estimate and not completely accurate. The influence of ocean survival on fish produced from most enhancement projects will tend to reduce to the precision of the measurements.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium to High. It is anticipated that the methods would be fairly reliable in predicting changes in habitat capability or numbers of fish. Each observer may estimate effectiveness of enhancement slightly differently.

Variability Indicating Action:

25% deviation from projected outputs.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 2 (medium) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 3 (medium-low)

Cost of error: Medium. The cost to the environment or other resources is low. However, the project costs are often high and that investment could be lost. Further, an error could result in loss of support for the fisheries program by other agencies, groups, and individuals.

Likelihood of error: Low. The productivity of enhancement projects is fairly well understood.

Reporting Period:

Annually on selected project groups with detailed 5-year reports.

Lead responsibility:

Area Fisheries Staff Officer

Estimated Annual Cost of Monitoring:

Note to FS reviewers: It is very difficult to determine what the appropriate sample regimen should be for this item (e.g., what percentage of each type of project should be monitored, and for how long). Therefore, it is very hard to estimate the cost of this item. The estimate below assumes 10 percent of all new projects will be monitored, which amounts to 12 projects over the planning period. Given the risk assessment shown above that this item is of low risk, it is not clear that this item warrants the estimated annual cost of over \$200,000 as shown below. As directed in the S&Gs, however, these costs should be incorporated as part of the associated projects. Those that disagree with the cost estimate or the sampling assumptions are invited to show how they recommend this item be done, and the resultant costs.

Survey/habitat capability evaluation:

3 Areas X 3 persons X 100 days X GS-9 + 10 hrs flight time + \$5000

Aggregation:

3 areas X 1 person X 5 days X GS-9
1 Region X 1 person X 1 day X GS-12
+ \$500 misc.

TOTAL ESTIMATE: \$ 150,000

References:

36 CFR 219.12 (k)(1)

Monitoring Question:

Are the fish habitat effects models and assumptions valid in predicting population trends of Management Indicator Species (MIS)?

Type = Validation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Accuracy in predicting the relationship between anticipated watershed changes and fish habitat capability and population trends.

Sampling Methods:

Obtain data from the Alaska Department of Fish and Game regarding MIS population trends and harvest levels. If data are unavailable, conduct population surveys of the MIS on a sample basis. Determine fish habitat capability and watershed changes in the sample areas. Determine whether a link can be established between watershed changes, fish habitat capability and population trends, and whether the correct assumptions were used during formulation of the Forest Plan.

{Note: Three fish species are used as MIS: Dolly Varden char (which are an indicator of resident fish habitat); coho salmon (which are an indicator of anadromous fish which require at least one year of fresh water rearing); and, pink salmon (which are an indicator of anadromous fish which do not require long-term fresh water rearing, only fresh water for spawning and rearing until emergence from the stream gravels). The models developed for Dolly Varden char and coho salmon include variables that base habitat capability on channel type and activities alongside the stream which affect the quantity of large woody debris available to the stream. Large woody debris is important because it forms pools important for fish that reside for long periods of time in the stream. With passage of the Tongass Timber Reform Act, which prohibits commercial timber harvest within a minimum of 100 feet of all Class I streams, and Class II streams which flow directly into Class I streams, no further effect from timber harvest on the long-term supply of large woody debris is anticipated. The purpose of the no harvest area is to protect fisheries habitat. Therefore, the variables upon which the coho/Dolly Varden models were derived are not anticipated to change, nor can they be tested without manipulation of the timber along the streambanks.

However, it is recognized that for all species of fish, especially the pink salmon MIS, watershed stability is very important. Watersheds that are caused to be more unstable than is natural could result in abnormal changes to stream channels. Changes that would be of concern to fish include reduced bank stability, aggradation or degradation of stream gravels, increased temperatures, changes in chemical parameters of the water, increased amount of fine sediments in gravels, changes in stream flow, changes in aquatic productivity, and changes in microhabitat features of streams (pools, riffles, runs, etc.). The Forest Plan recognizes that these changes may occur, although best management practices are designed to minimize these occurrences, and the Plan predicts no reduction in habitat capability due to effects on the watersheds. Based on one study on Stoney Creek on Prince of Wales Island (Ketchikan Area), the following standard was included in the standards and guidelines: "Limit large scale ground disturbing activities and associated roading to no more than 35 percent of 3rd order or larger watershed acres in less than a 15 year period unless a CWE analysis during project planning indicates otherwise." This guideline is included to minimize the cumulative effects of activities on watershed stability and the beneficial uses of water in the watershed. The monitoring for this guideline is included as Watershed Monitoring Item # 4.}

Expected precision and reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

LOW. Harvest levels and surveys provide estimates of fish population trends, but natural variability in populations cannot be readily accounted for. Current methods cannot provide exact population numbers or distributions.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. While comparison of measured population trends to the MIS model predictions is straightforward, the populations surveyed only provide estimates of actual numbers. In addition, samples taken in watersheds with different bio-physical characteristics could result in different estimates of the effects of management activities.

Variability Indicating Action:

Trends not in conformance with estimates predicted in the fish MIS models and assumptions

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Fish are important to the economy of Southeast Alaska, for commercial harvest, for recreation, and for subsistence use.

Likelihood of error: Medium. As difficult as these relationships are to model, we cannot assume that the models are perfectly accurate. However, buffers along all Class I streams and many Class II streams, as required by the Tongass Timber Reform Act (with considerable input from many biologists), were designed to assure the protection of fisheries on the Tongass National Forest, and therefore the likelihood of an error in estimating effects on fish habitat is somewhat reduced.

Reporting Period:

Annual presentation of estimated fish harvest, with a detailed 5-year report that presents a discussion of the relationship between anticipated watershed changes, fish habitat capability and population trends

Lead Responsibility:

Regional Fish Habitat Relationships Coordinator, Area Fish and Watershed Staff Officers, and Research

Estimated Annual Cost of Monitoring:

This assumes that population trend and harvest data will be available from the Alaska Dept. of Fish and Game. If that proves incorrect, the costs below could rise significantly.

Habitat change inventories:

3 areas x 2 persons x 30 days x GS-9

3 areas x 2 persons x 30 days x GS-5

Compilation of data:

3 areas x 1 person x 10 days x GS-9

1 region x 1 person x 5 days x GS-12

**TOTAL ESTIMATE: \$ 50,000 to \$ 150,000 depending on the
information available from ADF&G**

References:

36 CFR 219.19

SUBSISTENCE

Monitoring Question:

Are land management activities (primarily road, timber, and recreation programs) having the expected effects on subsistence resources and opportunities?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Effects of management activities on subsistence resources and opportunities in wildlife analysis areas (WAAs) in which subsistence use and moderate or intensive development activities occur.

Sampling Methods:

Annually, analyze changes in habitat capability, access and competition on a sample of at least 10 percent of Wildlife Analysis Areas (WAAs) having moderate or intensive development activities to determine if impacts of management activities on subsistence resources are consistent with expectations in the Forest Plan. Every five years, obtain data on subsistence resource use and estimated population trends from the Alaska Department of Fish and Game (ADF&G). If data are not available from the ADF&G, the Forest Service should document changes in estimated population trends and subsistence resource uses. Subsistence resources to be monitored most intensively are deer, brown bear, black bear, moose, marten, mountain goat and river otter. Other subsistence resources are not expected to be affected due to implementation of the Forest Plan, and should not need to be monitored as intensively.

Wildlife habitat capability monitoring is partly duplicated in the wildlife section of this monitoring plan.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

LOW. The impacts of management activities on subsistence resources is expected to be difficult to accurately quantify. The location of subsistence resource use tends to change in location over time. Areas that at one time may not be very important for subsistence purposes may at a later time become very important.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Some measurements are quantitative, others are qualitative. Therefore, for some of the data there may be fairly high variability between observers.

Variability Indicating Action:

Effects on subsistence resources or opportunities inconsistent with the expectations in the Forest Plan

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Subsistence resource users highly value the availability of subsistence resources and opportunities. The importance of subsistence resources and use opportunities is highlighted in ANILCA Title VIII.

Likelihood of error: Medium. The effects of management activities on subsistence are fairly well understood, although often on a qualitative level. Significant pressure will inevitably be placed on some of these resources and opportunities.

Reporting Period:

Report status annually, with detailed 5-year reports

Lead Responsibility:

Area and Regional Subsistence and/or Fish & Wildlife Staff Officers

Estimated Annual Cost of Monitoring:

Cost could range from less than \$5,000 per year to approximately \$20,000 per year, depending on the information that is obtained from the Alaska Department of Fish and Game and the wildlife habitat capability modeling shown elsewhere in this monitoring plan. Without the wildlife habitat modeling shown elsewhere, the total could exceed \$100,000.

References:

ANILCA Title VIII

THREATENED, ENDANGERED AND SENSITIVE SPECIES

Monitoring Question:

Are threatened, endangered, and sensitive species -- and their habitats -- being protected?

Type = Implementation and Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Acres of habitat affected, population trends.

Sampling Methods:

For whales and steller sea lions, annually review the files of all projects that could affect these habitats to ensure that the contracts and/or permits reflect the appropriate activity restrictions contained in the standards and guidelines. Whenever the opportunity arises to make such observations, determine if project activities avoid these marine mammals as required, and report all violations to the appropriate Forest Service line officer for corrective action.

For Trumpeter Swans, inspect all known nest sites at least once per year to determine if the 800-meter "no activity" rule is being followed, and if it is successful in maintaining existing populations.

For Osprey, inspect all known nest sites at least annually to determine if the habitat zone requirements are being met, and if they are successful in maintaining existing populations.

For Peale's Peregrine Falcon, inspect at least 30% of known nest sites at least once each year to determine if the appropriate project activity restrictions are being followed. In cooperation with the U.S. Fish and Wildlife Service, determine if such restrictions are effective in maintaining existing populations.

For Island King Salmon and Northern Pike, obtain data from the Alaska Department of Fish and Game on population trends. Evaluate whether management of the fisheries is maintaining healthy, viable populations.

For Chum Salmon in Fish Creek near Hyder, continue the existing cooperative monitoring program with ADF&G. Evaluate whether management of the fishery is maintaining healthy, viable populations.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Some parameters are readily quantifiable, others are not. In addition, disturbance may only be evaluated once a year, which may not be often enough to detect all human disturbances.

Reliability: (reliability = how reproducibile are the monitoring results on repeated measurements?) **Medium.** In some cases, evaluation of habitat or population variations may be subjective rather than absolute, and values may vary from observer to observer.

Variability Indicating Action:

Any adverse effect on habitat or populations of threatened, endangered, or sensitive species.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Threatened, endangered and sensitive species are very vulnerable, by definition, and are a very high-value resource that are of special concern to the public.

Likelihood of error: Medium. The standards and guidelines are specific on what should be done to prevent adverse effects on threatened, endangered, or sensitive species and their habitats. It is unlikely that the standards and guidelines would not be correctly implemented. However, in some cases, for instance where the commercial fishery is harvesting a species in the ocean, unanticipated overharvest of a sensitive species could occur.

Reporting Period:

Annual

Lead Responsibility:

Area Fish and Wildlife Staff Officers

Estimated Annual Cost of Monitoring:

Marine Mammals--For each Area, 1 GS-9 for 5 days per year (most of the work is done while in the field for other purposes. Special trips to see if project activities are avoiding these animals are not required.)

Swans (roughly 20 nests, all in Yakutat RD)--2 GS-9s for 3 days each year, plus 4 hours flight time.

Osprey (currently 4 nests, all in Stikine Area)--2 GS-9s for 2 days each year, plus 3 hours flight time.

Peale's Peregrine Falcon (32 known nests)--For each Area, 1 GS-9 for 3 days per year plus 10 hrs flight time

Island Kings--1 GS-9 for 2 days per year plus 2 hours flight time

Northern Pike--1 GS-9 for 3 days per year

Hyder Chums--1 GS-9 for 5 days plus 3 hrs flight time

TOTAL ESTIMATE: \$ 13,000

References:

36 CFR 219.12 (k)

WILDLIFE HABITAT - 1

Monitoring Question:

Are wildlife habitat standards and guidelines being implemented as described in the Forest Plan?

Type: Implementation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Compliance of land disturbing projects with wildlife standards and guidelines

Sampling Methods:

Annually conduct field reviews on at least 10% of all VCUs in which timber management, mineral development, or road or recreation facility construction have occurred to measure compliance with standards and guidelines. Issues to be addressed include whether large deer habitat blocks were considered in project planning; 330-foot (100-meter) eagle nest buffers are being maintained; garbage dumps are closed to protect bears; and facilities and activities are located away from marine mammal haulouts, seabird rookeries, and waterfowl habitats.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Adherence to standards and guidelines is difficult to quantify, especially in the aggregate.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium These measurements will have to be somewhat subjective, and may vary from observer to observer.

Variability Indicating Action:

Noncompliance with standards and guidelines.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (*high*) + LIKELIHOOD OF ERROR 1 (*low*) = RISK INDEX 4 (*medium*)

Cost of error: High. Wildlife is a resource enjoyed by many forest visitors for both consumptive and non-consumptive uses. Failure to implement Forest standards and guidelines could result in adverse effects on the wildlife resource.

Likelihood of error: Low. The wildlife standards and guidelines are fairly clear and easy to understand and follow.

Reporting Period:

Annual

Lead Responsibility:

District and Area Wildlife Staff Officers

Estimated Annual Cost of Monitoring:

Assume 20 reviews/year. Each one should take 2 GS-9 people 1 days + 1 hours of flight time.

TOTAL ESTIMATE: \$ 12,000

References:

36 CFR 219.12

WILDLIFE HABITAT - 2

Monitoring Question:

Are the wildlife standards and guidelines reducing or eliminating adverse human effects from Forest Service activities on important habitats, as anticipated?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Effects of human activities on habitats for eagles and bear.

Sampling Methods:

Annually, record occupancy rate of at least 5% of eagle nest sites near ongoing human activities (within approximately 1/4 mile) and compare to occupancy rates in comparable habitats not associated with human activities.

Annually, compile records of bear mortalities not associated with legal hunting seasons to determine whether regulations and project requirements prevent habituation of bears to human foods/garbage and reduce the chances of human-bear incidents.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Identifying the locations and recording the use of eagle nests has been occurring by the US Fish and Wildlife Service and the Forest Service for more than 10 years; the techniques are well established. All bear mortalities must be reported to the AK Department of Fish and Game, by law, and an investigation of the kill is made. The results of the investigation indicate the cause of the kill. However, some kills or poaching may go unreported.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. For the same reasons that the precision is high, the reliability is also high.

Variability Indicating Action:

Evidence that adverse effects from Forest Service activities on habitats is increasing or threatening the long-term conservation of the species.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 2 (medium) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 4 (medium)

Cost of error: Medium. Wildlife is a resource enjoyed by many forest visitors for both consumptive and non-consumptive uses. Both the eagle and the bear are of national significance. However, with the maximum amount of development allowed by the Plan, only a very small percentage of the Forest's habitat for these species would be effected. Therefore, the long-term conservation of these species is unlikely to be an issue (although they could be displaced from localized areas).

Likelihood of error: Low. It is unlikely that the monitoring will be incorrectly monitored. In addition, the standards and guidelines have been developed through an interdisciplinary process, involving the Alaska Department of Fish and Game, the US Fish and Wildlife Service, and the Forest Service, and have therefore been subject to considerable scrutiny in their preparation.

Reporting Period:

Annual, with a detailed 5-year report that presents a discussion of the significance of findings.

Lead Responsibility:

Area Wildlife Staff Officer

Estimated Annual Cost of Monitoring:

Bald eagle monitoring:
3 Areas X 10D X {(GS-7 + GS-9) + \$1,500 flight, boat time + Misc.}
3 Areas X 1D X GS-12

Bear monitoring:
3 Areas X 1D X GS-11

TOTAL ESTIMATE: \$ 12,000

References:

36 CFR 219.12 (k)(2)
MOU with US Fish & Wildlife Service on the Bald Eagle

WILDLIFE HABITAT - 3

Monitoring Question:

Are wildlife enhancement projects producing anticipated outputs?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Changes in the habitat conditions resulting from enhancement projects; changes in habitat capability; and changes in use of the habitat by targeted species.

Sampling Methods:

Each Area should choose one enhancement project on which to study the effects listed above, comparing the results to the estimates in the project's NEPA document, if such estimates are included in the document. At least one study should always be on-going. It is not necessary to start a new monitoring study every year.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Specialists will determine changes in habitat conditions, estimated habitat capability, and trends in wildlife use. Such measurements are extremely difficult to make accurately.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium to High. It is anticipated that the methods would be fairly reliable in predicting changes in habitat conditions. Estimates of changes in habitat capability and trends in wildlife use will more subjective, and less reliable. Each observer may estimate effectiveness of enhancement slightly differently.

Variability Indicating Action:

25% deviation from projected outputs, where projections were made. In other cases, evidence that the project did not produce sufficient benefits to be cost-effective.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 1 (low) + LIKELIHOOD OF ERROR 3 (high) = RISK INDEX 4 (medium)

Cost of error: Low. Failure of enhancement projects to produce anticipated outputs would not have a significant Forest-wide effect on wildlife resources.

Likelihood of error: High. The success of enhancement projects has been questioned by many. A rigorous, reliable method of identifying the outputs has not yet been established despite a lot of effort spent by wildlife biologists.

Reporting Period:

Annual, with a detailed 5-year report

Lead Responsibility:

Area Wildlife Staff Officer

Estimated Annual Cost of Monitoring:

2 GS-9 for 1 month, + 10 hours of flight time, for each Area/year
1 GS-12 for 5 days per Area for aggregation

TOTAL ESTIMATE: \$ 35,000

References:

36 CFR 219.12 (k)(1)

WILDLIFE HABITAT - 4

Monitoring Question:

Are the wildlife habitat capability models valid in predicting Management Indicator Species' (MIS) population trends?

Type: Validation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Accuracy of models in predicting population trends

Sampling Methods:

If possible, obtain data from ADF&G regarding MIS population trends and harvest levels. Otherwise, conduct MIS population surveys on a sample basis. Determine if habitat changes in the sample areas, and estimated changes in habitat capability, correlate to population trends as the models predict. Consider using paired watersheds as one possible research design.

NOTE: Careful analysis will be necessary to determine whether population trends result from habitat capability changes, natural causes, or human takings.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

LOW. Measuring wildlife population trends (for most species) accurately is extremely difficult.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. While comparison of measured population trends to the MIS model predictions is straightforward, the populations surveyed only provide estimates of actual numbers.

Variability Indicating Action:

Trends not in conformance with estimates predicted in the wildlife MIS models.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 3 (high) = RISK INDEX 6 (very high)

Cost of error: High. The wildlife resource is very important to the public. NFMA requires that viable populations of wildlife remain well distributed in the planning area. If models prove invalid, this could have a serious effect on the long term viability of MIS.

Likelihood of error: High. As difficult as these relationships are to model, we cannot assume that the models are perfectly accurate.

Reporting Period:

Annual review with a detailed 5-year report that presents a discussion of the significance of findings.

Lead Responsibility:

Regional Wildlife Habitat Relationships Coordinator, Research, Area Wildlife Staff Officer

Estimated Annual Cost of Monitoring:

This assumes that population trend and harvest data will be available from the Alaska Dept. of Fish and Game. If that proves incorrect, the costs would be approximately double this estimate.

Habitat change inventories:

3 areas x 2 persons x 60 days x GS-9
3 areas x 2 persons x 60 days x GS-7
3 areas x 1 person x 30 days x GS-12
50 hours flight time

Compilation & analysis of data

3 areas x 1 person x 10 days x GS-9
1 region x 1 person x 10 days x GS-12

TOTAL ESTIMATE: \$ 150,000 to \$ 300,000 (see note above)

References:

36 CFR 219.19

Monitoring Question:

Are timber activities adhering to applicable timber management standards and guidelines as prescribed in the Forest Plan?

Type: Implementation

Land Use Designations Affected:

All that allow timber management

Action or Effect to be Measured:

Harvest units in compliance with Forest Plan standards and guidelines

Sampling Methods:

Annually conduct field inspections on a sample of 10 percent of timber harvest units in operation or completed within the previous year to determine if the following sets of standards and guidelines were implemented as prescribed:

- maximum clearcut size limits, including compliance with criteria for exceptions to the 100-acre size limit; and
- timber dispersion, including compliance with (1) the standard and guideline for timber harvest activities specific to visual quality objectives and visual absorption capability settings; (2) guidelines related to Cumulative Watershed Effects; and (3) maximum allowable disturbance for timber harvest.

Compliance with standards and guidelines designed to avoid adverse effects on other resources will be determined by the appropriate resource staff under other specific monitoring tasks listed elsewhere in this monitoring plan, including:

- Maintenance of Recreation Opportunity Spectrum settings (see Recreation monitoring item 1);
- Protection of riparian areas (see Fish Habitat monitoring item 1);
- Use of Best Management Practices to protect water quality (see Watershed monitoring item 1);
- Maintenance of soil productivity (see Watershed monitoring item 3);
- Protection of cultural resources (see Cultural monitoring item 1);and
- Maintenance of subsistence resources and opportunities (see Subsistence monitoring item 1).

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. These standards and guidelines are clear and easily quantifiable.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. These standards and guidelines are clear and easily quantifiable, leaving little room for subjective interpretation, so little variation between observers is expected.

Variability Indicating Action:

Noncompliance with standards and guidelines

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error:

High. Timber management activities have the potential for significant effects on other high-value Forest resources if not properly implemented.

Likelihood of error:

Low. The applicable standards and guidelines are clear and well understood, so few errors are expected.

Reporting Period:

Annual

Lead Responsibility:

Area Timber Staff Officer

Estimated Annual Cost of Monitoring:

Timber S&Gs:

3 Areas X {(2 GS-11 X 10 workdays) + 3 hours flight time} + \$500 misc. This assumes sampling 10 units per Area, with each unit taking 1/2 day in the office, and 1/2 day in the field. (note: costs may be reduced if this item can be performed in conjunction with the Timber-2 item)

(NOTE: monitoring "other resources" will be shown in other worksheets)

TOTAL ESTIMATE: \$ 13,000

References:

36 CFR 219.12 (k)

Monitoring Question:

Are the effects of timber management activities on other resources consistent with expectations in the Forest Plan?

Type = Effectiveness

Land Use Designations Affected:

All that allow timber management

Action or Effect to be Measured:

Comparison of effects of timber projects with effects anticipated in project plans, and aggregation of these comparisons to the Forest Plan level.

Sampling Methods:

Annually conduct field inspections on a sample of at least 10 percent of harvest units in operation or completed within the previous year to determine—at least on a qualitative level—if the effects of the timber management activities on other resources meet Forest Plan objectives.

Whenever such qualitative reviews identify potential adverse effects of timber management activities on other resources that cannot be judged by visual observation, follow-up quantitative effects analysis will be conducted by the appropriate resource staff under other specific monitoring tasks listed elsewhere in this monitoring plan, including:

- Maintenance of Recreation Opportunity Spectrum settings (see Recreation monitoring item 1);
- Achievement of adopted Visual Quality Objectives (see Visual Resource monitoring item 1);
- Protection of riparian areas (see Fish Habitat monitoring item 2);
- Use of Best Management Practices to protect water quality (see Watershed monitoring item 2);
- Maintenance of soil productivity (see Watershed monitoring item 3);
- Protection of cultural resources (see Cultural monitoring item 1); and
- Maintenance of subsistence resources and opportunities (see Subsistence monitoring item 1).

Expected precision and reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Since some of the standards and guidelines do not have easily measurable objectives, measuring the accomplishment of them will require some subjective judgements to be made.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Due to the inherent subjectivity of some of these measurements, some variability between different observers is also inherent.

Variability Indicating Action:

Evidence that the standards and guidelines do not result in anticipated results (are either too stringent or not stringent enough).

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Timber management activities could result in significant adverse environmental effects on a number of other high-value Forest resources if we have underestimated the degree of resource protection required. On the other hand, significant expenditures would be wasted (and/or timber values foregone) if we have overestimated the resource protective measures required.

Likelihood of error: Medium. The level of knowledge concerning the direct and indirect effects of timber management activities is good, but imperfect. Given the number of other resources that the standards and guidelines seek to protect, it is reasonable to assume that some of these standards and guidelines may be either too strict, or not strict enough, to accomplish their intended effects.

Reporting Period:

Annual

Lead responsibility:

Area and District Timber Staff Officers

Estimated Annual Cost of Monitoring:

Assume each Area will inspect about 10 units, and that each one will take 4 GS-11s 1/2 day each. Area totals would be about 20 GS-11 workdays, plus 3 hrs flight time + \$500 misc (note: costs may be reduced if this item can be performed in conjunction with the Timber-1 item)

TOTAL ESTIMATE: \$ 13,000

References:

36 CFR 219.12 (k)(2)

Monitoring Question:

Are harvested forest lands restocked within five years following harvest?

Type: Implementation

Land Use Designations Affected:

All that allow timber harvest

Action or Effect to be Measured:

Restocking of all acres of harvested forest land

Sampling Methods:

Annually conduct an office review of the documentation from field restocking and revegetation surveys on at least 20 percent of timber units needing restocking.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. This measurement is very objective, leaving little opportunity for error.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. As above, the objective nature of the measurement makes for consistent results.

Variability Indicating Action:

Evidence that land is not restocked within 5 years following harvest

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 1 (low) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 2 (low)

Cost of error: Low. Natural restocking of lands within five years in Southeast Alaska is very common. Only very localized areas of the Forest need to be planted or are difficult to regenerate timber. If, for some reason, these areas are not restocked in five years, it is not anticipated that there will be any major change in the long-term yield of timber from the National Forest.

Likelihood of error: Low. Natural restocking of lands within five years in Southeast Alaska is very common.

Reporting Period:

Annual

Lead Responsibility:

District and Area Timber Staff Officers

Estimated Annual Cost of Monitoring:

1 GS-11 for 2 workdays for each Area, plus 1 GS-12 1 day for aggregation

TOTAL ESTIMATE: \$ 1,500

References:

36 CFR 219.12 (k)(5)(i)

Monitoring Question:

Is the projected timber harvest quantity based on valid assumptions?

Type: Validation

Land Use Designations Affected:

All with suitable timber (may be harvested)

Action or Effect to be Measured:

Changes in: (1) productive forest landbase, (2) timber utilization standards, (3) timber inventory results, (4) timber dispersion requirements, (5) tentatively suitable landbase, and/or (6) yield tables.

Sampling Methods:

Review and analyze timber production assumptions in Forest Plan every five years, unless major changes in any of the factors listed above are evident earlier.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. The ability to test the assumptions in FORPLAN and other data that are part of the bases for calculating timber harvest quantity are dependent on the number of variables and data sets involved.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Methods of developing timber harvest quantity have not been extremely reliable and are subject to different interpretation by skilled professionals. (Note: This is one of the reasons that monitoring of this item is important.)

Variability Indicating Action:

Variation between actual and predicted timber harvest quantity.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 2 (medium) + LIKELIHOOD OF ERROR 3 (high) = RISK INDEX 5 (medium-high)

Cost of error:

Medium. Given that the Forest Plan is effective for only 10-15 years, the consequences of predicted timber harvest quantity being somewhat inaccurate are substantial, but not catastrophic.

Likelihood of error:

High. There are numerous variables and assumptions involved in predicting timber harvest quantity. The values for many of these variables is not known with a great deal of certainty.

Reporting Period:

Every 5 years

Lead Responsibility:

Regional Timber and Planning Staff Officers

Estimated Cost of Monitoring:

Every 5 years, 1 GS-12 RO analyst for 3 months & 1 GS-11 GIS Specialist for 3 months

TOTAL ESTIMATE: \$ 5,000

References:

36 CFR 219.27 (b)-(d)

Monitoring Question:

Is the supply of timber offered meeting market demand?

Type: Effectiveness

Land Use Designations Affected:

All that allow timber harvest

Action or Effect to be Measured:

Supply and demand for timber in Southeast Alaska measured in million of board feet.

Sampling Methods:

Compare volume consumed by Southeast Alaska timber industry to volume offered for sale by Forest Service and other suppliers. Identify trends in bid premiums on independent timber sales, and in volume of timber sold but not harvested within three years of sale. Much of this information is already collected for other purposes.

Expected precision and reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

LOW. All of these measurements are indirect indicators of timber demand.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. These indicators are easily quantifiable, so they should produce consistent estimates of supply and demand, even if the estimates of demand are only proxies.

Variability Indicating Action:

A 20 percent difference between timber demand and supply.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error:

High. Timber is highly valued and has a great effect on the Southeast Alaska economy.

Likelihood of error:

Medium. The relationships between supply and demand are difficult to ascertain in the relatively confined markets of Southeast Alaska.

Reporting Period:

Annual

Lead Responsibility:

Regional Timber Staff Officer and Regional Economist

Estimated Annual Cost of Monitoring:

2 GS-13s for 10 workdays

TOTAL ESTIMATE: \$ 3,000

References:

Tongass Timber Reform Act

Monitoring Question:

Are old-growth forests being maintained in the amount anticipated in the Forest Plan?

Type: Implementation

Land Use Designations Affected:

All, with emphasis on those Land Use Designations which allow significant land-disturbing activities

Action or Effect to be Measured:

Changes in the amount (acres) of old-growth forests, including type and distribution.

Sampling Methods:

Annually report number of old-growth acres in each Management Area in which significant land-disturbing activities occur, and compare with acres predicted to remain at the end of the first decade in the Forest Plan. Measure the effects of blowdown on a sample basis.

Once every five years, perform a Forest-wide analysis of old-growth acres to determine whether the type and distribution of old-growth remain as required by the standards and guidelines and the objectives of the Plan.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. Project records will indicate amount of old-growth harvested. This information will be entered into the GIS system, and the amount of old-growth maintained will be compared to anticipated retention.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. It is expected that this item can be accurately tracked in the GIS system.

Variability Indicating Action:

Evidence that old-growth acres are not maintained as planned.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. Old growth provides habitat for diverse plant and animal species. Ensuring old-growth forests provides not only for wildlife, but also for visitor aesthetics and other resources such as recreation, anadromous fish, and subsistence. The public is very concerned about old growth.

Likelihood of error: Low. Old-growth acres are maintained primarily through land allocations. Old-growth acres will be tracked through GIS and other inventory methods. Since acres of old growth are relatively easy to monitor through the GIS, the likelihood of error is low.

Reporting Period:

Annual review with a detailed 5-year report that presents a discussion of the significance of findings. See also "sampling methods."

Lead Responsibility:

Area Timber and Wildlife Staff Officers

Estimated Annual Cost of Monitoring:

Annual monitoring:

Entry into GIS and data compilation:

12 districts X 1 person X 5 days X GS-9 + \$2000 misc.
3 areas X 1 person X 5 days X GS-9 + \$500 misc.

Aggregation:

3 areas X 1 person X 1 day X GS-11
1 Region X 1 person X 1 day X GS-12

Five year monitoring: (divide following cost by 5 to get annual cost)

Analysis:

1 Region X 1 person x 10 days X GS-12 (GIS/Oracle analysis)

TOTAL ESTIMATE: \$ 10,000

WATERSHED - 1

Monitoring Question:

Are Best Management Practices (BMPs) being implemented?

Type: Implementation

Land Use Designations Affected:

All with development

Action or Effect to be Measured:

Determine if Best Management Practices are being properly implemented on projects.

Sampling Methods:

Annually conduct field inspections on at least 20% of all projects that involve a significant land disturbing activity to determine if identified BMPs were adequately implemented. Each timber harvest unit, and the associated road section, counts as a separate project.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. The implementation of BMPs is relatively quantifiable by trained personnel.

Reliability: (reliability = how reproducibile are the monitoring results on repeated measurements?)

Medium. Even with training, measuring the implementation of BMPs will necessitate some subjective judgement that may be exercised differently by different observers.

Variability Indicating Action:

Failure to implement BMPs

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (*high*) + LIKELIHOOD OF ERROR 1 (*low*) = RISK INDEX 4 (*medium*)

Cost of error:

High. Failure to properly implement BMPs could lead to serious adverse environmental consequences.

Likelihood of error:

Low. With training on how to implement BMPs, few errors are expected.

Reporting Period:

Annual

Lead Responsibility:

Area Watershed Staff Officer, with assistance from Engineering and Timber Staff Officers.

Estimated Annual Cost of Monitoring:

In each Area, 2 GS-9s for 10 days + 3 hrs flight time.

Aggregation--1 GS-9 for 5 days.

(This assumes 20 projects, will be sampled at each Area, each one taking 1.5 hours--as estimated by Fryxell, Dudzak, and Kelliher--for both office and field work, involving one Hydrologist and one TSA)

TOTAL ESTIMATE: \$ 12,000

References:

36 CFR 219.12
Clean Water Act

Monitoring Question:

Are Best Management Practices effective in protecting State-designated beneficial uses of water?
(Note: Other monitoring of Best Management Practices are included in the "fish" monitoring and in other watershed monitoring items.)

Type: Effectiveness

Land Use Designations Affected:

All with development

Action or Effect to be Measured:

Water quality effects of Forest management activities.

Sampling Methods:

Study a representative sample of the projects where implementation monitoring has confirmed that BMPs were fully implemented. For these projects, determine if the applicable BMPs were effective in protecting water quality and its designated beneficial uses. Such determinations should initially be made on a qualitative basis to the extent feasible. Where a qualitative review is insufficient to determine the effectiveness of the BMPs, conduct more rigorous quantitative analysis. Such quantitative studies should be initiated on no more than one or two projects per year at each Area, and may take more than one year to complete. Area Watershed Staffs should coordinate these studies over the planning period to (1) ensure analysis of all significant issues; and (2) minimize duplication.

The criteria to be used in making such determinations must be identified on a site-specific basis. Appropriate criteria might include: specific State water quality standards such as stream turbidity, temperature, dissolved oxygen, or sediment; channel equilibrium factors such as pool/riffle ratios, width/depth ratios, or gravel embeddedness; watershed stability factors such as mass wasting frequency and changes in stream flow; or other selected physical, chemical, or biological parameters.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Many of these parameters are relatively quantifiable by trained personnel.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Many of these parameters are relatively quantifiable by trained personnel.

Variability Indicating Action:

Any significant adverse effects on the beneficial uses of water.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error: High. The beneficial uses of water, such as fish habitat, and domestic drinking water supplies, could be affected.

Likelihood of error: Low. The BMPs reflect a high level of understanding about what practices are required to avoid detrimental impacts on the beneficial uses of water.

Reporting Period:

Annual status reports, with comprehensive reports of findings every three years, to correspond with the triannual State water quality standards review.

Lead Responsibility:

Area Watershed and Fisheries Staff Officers.

Estimated Annual Cost of Monitoring:

Qualitative Reviews:

In each Area, 2 GS-9s and 1 GS-7 for 10 workdays + 6 hrs flight time.

(This assumes 10 projects will be sampled at each Area, each one taking 6 hours, plus two hours of air and ground travel time.)

Quantitative Studies:

In each Area, 2 GS-9s for 20 workdays plus 12 hours flight time.

TOTAL ESTIMATE: \$ 40,000

References:

36 CFR 219.12 (k)(2)

Monitoring Question:

Are the standards and guidelines effective in preventing significant or permanent impairment of soil productivity?

Type: Effectiveness

Land Use Designations Affected:

All that allow significant land-disturbing activity:

Action or Effect to be Measured:

Effects of project management activities on soil productivity.

Sampling Methods:

Annually conduct field inspections of at least 10% of projects involving significant land-disturbing activity to determine if soil quality standards were successful in avoiding any significant or permanent impairment of soil productivity.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Some measures of soil productivity are not easily quantifiable, while others are.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. Some subjectivity is required to judge the effectiveness of soil quality standards.

Variability Indicating Action:

Any significant or permanent impairment of soil productivity.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 4 (medium)

Cost of error:

High. Soil productivity is one of the most basic resources of the Forest, and is highly valuable.

Likelihood of error:

Low. The methods of preventing soil erosion are well known, and not difficult to apply.

Reporting Period:

Annual

Lead Responsibility:

Area Watershed Staff Officer

Estimated Annual Cost of Monitoring:

In each Area, 2 GS-9s for 10 days, plus 3 hours flight time.

(This assumes roughly 10 units will be inspected on each unit, and that each inspection takes one day, including office preparation and documentation. It may be possible to do this field work in coordination with the BMP implementation/effectiveness monitoring, which could reduce costs.)

TOTAL ESTIMATE: \$ 10,000

References:

36 CFR 219.12

Monitoring Question:

Is the constraint for clearcutting and other large-scale ground-disturbing activities on third and fourth order watersheds effective in minimizing cumulative watershed effects? This constraint requires that a site-specific cumulative watershed effects analysis be completed prior to harvesting more than 35 percent of a third order or larger watershed in less than a fifteen year period.

Type: Effectiveness and Validation

Land Use Designations Affected:

All with development

Action or Effect to be Measured:

The cumulative effects of multiple management activities on stream channel equilibrium as it relates to downstream fisheries habitat and other beneficial uses of water.

Sampling Methods:

Specific methodology for measuring cumulative watershed effects will be developed. Sampling should focus on: 1) natural watershed sensitivity, 2) watershed disturbance, 3) stream channel condition and equilibrium, and 4) the beneficial uses of water.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

LOW. Methodologies for accurately determining cumulative watershed effects and acceptable levels of disturbance are in the developmental stage.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Unknown. This cannot be determined until the method of determining cumulative watershed effects is developed.

Variability Indicating Action:

Evidence that the existing constraint is inadequate to prevent significant changes in stream channel equilibrium or the beneficial uses of water.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Stream channel equilibrium is very important to fish and other beneficial uses of water.

Likelihood of error: Medium. The current constraint is based on experience in one location on the Tongass. Other research indicates that this constraint may need to vary, depending on geologic conditions of the watershed. The risks of CWE impacts should be reduced, however, by the application of standards and guidelines in many land allocations which limit total land disturbance to far less than the CWE constraint.

Reporting Period:

Every five years

Lead Responsibility:

Regional and Area Watershed and Fisheries Staff Officers

Estimated Annual Cost of Monitoring:

TOTAL ESTIMATE: \$ 250,000

References:

Clean Water Act

MINERALS - 1

Monitoring Question:

Are mineral exploration, development, and reclamation activities in compliance with standards and guidelines established in the Forest Plan?

Type: Implementation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Compliance of activities with Forest Plan standards and guidelines as expressed in Plans of Operation.

Note: Forest Service regulations (36 CFR 228) and manual direction (FSM 2810) require that all mineral exploration and development on National Forest land be covered by an approved plan of operations which adequately describes all surface disturbance.

Sampling Methods:

Area Minerals Officers should conduct onsite inspections at least once each year for each mining operation which requires a Plan of Operations. This inspection should address issues such as whether the environmental analysis conducted for the operation adequately addressed potential effects of the operation; whether the reclamation bond, if required, is adequate to cover reclamation costs; and whether the mineral activities comply with the plan of operations.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?) **Medium.** Some standards and guidelines are difficult to quantify precisely.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?) **Medium.** A degree of subjectivity is involved in assessing application of the Standards and Guidelines.

Variability Indicating Action:

Non-compliance with standards and guidelines.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Mineral operations can have significant effects on site productivity and on off-site water quality.

Likelihood of error: Medium. Large mining projects, which have the greatest risk, are subject to numerous standards and guidelines. Smaller operations, with less risk, are subject to fewer standards, but are visited less often.

Reporting Period:

Annual

Lead Responsibility:

Area Minerals Staff Officer

Estimated Annual Cost of Monitoring:

Three GS-12s 10 days a year.

(This assumes that there will continue to be about 15 plans of operation in effect Forest-wide; and that each inspection will take two days, 1/2 day in the office reviewing the project files, one day in the field, and 1/2 day in the office doing the follow-up documentation).

TOTAL ESTIMATE: \$ 6,000

References:

36 CFR 219.12 (k)

Monitoring Question:

Are the effects of mining activities on surface resources consistent with expectations in the Forest Plan, as embodied in the approved Plans of Operation?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Determine effects of mineral activities and development on other resources.

Sampling Methods:

Each Area should conduct an interdisciplinary field review of at least one mineral operation each year to determine—at least on a qualitative level—whether the standards and guidelines, as embodied in the mining plan of operation, adequately mitigate adverse impacts on other resources, including soil productivity, water quality, and wildlife and fish habitat.

Whenever such qualitative reviews identify potential adverse effects on other resources that cannot be judged by visual observation, follow-up quantitative effects analysis will be performed by the appropriate resource staff under other specific monitoring tasks listed elsewhere in this monitoring plan, including:

- Protection of riparian areas (see Fish Habitat monitoring item 2);
- Use of Best Management Practices to protect water quality (see Watershed monitoring items 2 and 4);
- Maintenance of soil productivity (see Watershed monitoring item 3); and
- Protection of cultural resources (see Cultural monitoring item 1).

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. In many cases, a qualitative review will suffice to ascertain the effects of mineral projects on other resources, but such determinations are inherently less precise than rigorous quantitative measurements, which will be used where necessary.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. To the extent that qualitative assessments are made, they include a degree of subjectivity, even when made by trained resource specialists.

Variability Indicating Action:

Any significant unanticipated adverse effects on surface resources.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Mineral operations can have significant effects on other resources.

Likelihood of error: Medium. The methods of mitigating potential adverse environmental effects of mineral activities are fairly well understood.

Reporting Period:

Annual

Lead Responsibility:

Area Minerals Staff Officer, with assistance from other District and Area staff.

Estimated Annual Cost of Monitoring:

ID Field Reviews (other costs shown in other worksheets):

Each Area does one review, which takes 4 GS 11/12 people 2 days + 2 hours of flight time.

TOTAL ESTIMATE: \$ 6,000

References:

36 CFR 219.12 (k)(2)

LAND OWNERSHIP

Monitoring Question:

Is the National Forest landbase changing to a degree that requires modification of Forest Plan objectives?

Type: Not applicable.

Land Use Designations Affected:

All

Action or Effect to be Measured:

Changes in the National Forest System landbase that affect Forest Plan objectives, such as State or Native land selections, Native allotments, or other land ownership adjustments.

Sampling Methods:

Document the changes in the Forest landbase on an annual basis. Every five years, compute the net change in Forest acreage by Land Use Designation, and determine the impacts on Forest outputs compared to Plan objectives. The Geographical Information System (GIS) should be used to document land ownership changes.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. Most of the estimates of changes in Forest landbase and the resulting changes in outputs are relatively easy to quantify.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. Since most of the necessary parameters are relatively quantifiable, repeated measurements of them should be very consistent.

Variability Indicating Action:

A 10 percent deviation from anticipated Forest Plan outputs due to changes in landbase.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 1 (low) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 2 (low)

Cost of error: Low. Potential changes in Forest landbase are relatively small, and are not likely to result in major Forest-wide changes in outputs.

Likelihood of error: Low. Both the precision and reliability of measurement are very high, therefore the likelihood of error is very low. In addition, the potential for significant changes in Forest outputs as a result of changes in landbase is very low.

Reporting Period:

Every five years

Lead Responsibility:

Area Lands and Planning Staff Officers. Regional Office Lands Staff Officer.

Estimated Annual Cost of Monitoring:

Recording in GIS Databases:

3 Areas x {(3D X GS-7) + \$500 misc.}

For 5 year review:

(3D X GS-12) (Obtain data on landbase size from GIS)

(5D X GS-12) (To determine changes in projected outputs)

TOTAL ESTIMATE: \$ 7,500

TRANSPORTATION - 1

Monitoring Question:

Are forest development roads and Log Transfer Facilities (LTFs) located, constructed, and managed as prescribed in the Forest Plan's standards and guidelines?

Type: Implementation

Land Use Designations Affected:

All which allow development

Action or Effect to be Measured:

Adherence to standards and guidelines for the construction and management of roads log transfer facilities.

Sampling Methods:

Annually conduct field inspections on a sample of at least 10% of newly constructed forest development roads, and at least one LTF per Administrative Area, to determine if applicable standards and guidelines have been implemented. Other facilities should be visited on an opportunistic basis.

The focus of these inspections should be on engineering standards. Compliance with standards and guidelines designed to avoid adverse effects on other resources will be determined by the appropriate resource staff under other specific monitoring tasks listed elsewhere in this monitoring plan, including:

- Maintenance of Recreation Opportunity Spectrum settings (see Recreation monitoring item 1);
- Maintenance of old growth (see Wildlife Habitat monitoring item 3);
- Protection of riparian areas (see Fish Habitat monitoring item 2);
- Use of Best Management Practices to protect beneficial uses of water (see Watershed monitoring item 1);
- Maintenance of soil productivity (see Watershed monitoring item 3);
- Protection of cultural resources (see Cultural monitoring item 1); and
- Maintenance of subsistence resources and opportunities (see Subsistence monitoring item 1).

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

Medium. Measuring adherence to standards and guidelines will necessitate subjective judgement, especially in aggregating a project's compliance with all applicable standards and guidelines.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

Medium. The subjectivity of the evaluation results in some variation between different observers.

Variability Indicating Action:

Significant variance from the standards and guidelines.

Risk Assessment: (*Risk to the resource from inappropriate implementation of the Forest Plan*)

COST OF ERROR 3 (high) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 5 (medium-high)

Cost of error: High. Road building has potential for significant adverse environmental consequences.

Likelihood of error: Medium. The standards and guidelines are fairly clear, well understood, and generally visually observable. There are many that apply, however, and many opportunities for error.

Reporting Period:

Annual, with a 5-year detailed report

Lead Responsibility:

Area Engineering Staff Officer

Estimated Annual Cost of Monitoring:

For each Area, 2 GS-11s for 2 days, plus 3 hours flight time

TOTAL ESTIMATE: \$ 5,000

References:

36 CFR 219.12 (k)

TRANSPORTATION - 2

Monitoring Question:

Are the standards and guidelines used for forest development roads and Log Transfer Facilities (LTFs) effective in limiting the environmental effects to anticipated levels?

Type: Effectiveness

Land Use Designations Affected:

All that allow development

Action or Effect to be Measured:

Environmental effects of forest development roads and log transfer facilities

Sampling Methods:

Each Area should conduct an interdisciplinary field review of at least one road project and one LTF each year to determine—at least on a qualitative level—whether the standards and guidelines adequately mitigate adverse impacts on other resources, including soil productivity, water quality, and wildlife and fish habitat. Specific items to be addressed include:

—Did the road result in mass wasting? Are rock pits draining freely? See also Watershed monitoring item 2.

—Are culverts allowing fish to pass freely? See also Fish monitoring item 2.

—Are open road densities and maintenance of road closures meeting recreation, wildlife and visual quality objectives? See also Recreation monitoring item 1, wildlife item 2, and visual quality item 1.

Whenever such qualitative reviews identify potential adverse impacts on other resources that cannot be judged by visual observation, follow-up quantitative effects analysis should be performed by the appropriate resource staff under other specific monitoring tasks, as indicated above.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?) **Medium.** Some impacts are not easily quantified.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?) **Medium.** Some subjective judgement is involved, so some variation between different observers is unavoidable.

Variability Indicating Action:

Any significant unanticipated adverse environmental consequences, or evidence that applicable standards and guides are unnecessarily restrictive.

Risk Assessment: (*Risk to the resource from inappropriate implementation of the Forest Plan*)

COST OF ERROR 3 (*high*) + LIKELIHOOD OF ERROR 2 (*medium*) = RISK INDEX 5 (*medium-high*)

Cost of error:	High. Errors in transportation system location, design and construction are expensive, both in terms of dollars and potential adverse environmental effects.
Likelihood of error:	Medium. The applicable standards and guidelines reflect considerable understanding of the potential effects of transportation facility construction, so major unanticipated problems, assuming full compliance with the standards and guidelines, is unlikely.

Reporting Period:

Annual, with a 5-year detailed report of findings

Lead Responsibility:

Area Engineering and Resource Staff Officers

Estimated Annual Cost of Monitoring:

Presume each Area will have the Area engineer participate in this review:
1 GS-13, 2 GS-12s, and 3 GS-11s for 1 day, plus 2 hours flight time, plus one day for a GS-12 to write up the report of findings

TOTAL ESTIMATE: \$ 6,000

References:

36 CFR 219.12 (k)(2)

Monitoring Question:

Is vegetative cover re-established on the disturbed area of all roads within a ten year period after termination of use, unless the road is determined to be necessary as a permanent part of the National Forest Transportation System.

Type: Effectiveness

Land Use Designations Affected:

All which allow road construction

Action or Effect to be Measured:

Establishment of vegetative cover on roads

Sampling Methods:

Annually conduct field inspections on a sample of at least 10% of roads not in use for the past ten years and for which a determination has been made that the road is not necessary as a permanent addition to the National Forest Transportation System. Determine whether vegetative cover is re-established. Overflight by helicopter, or use of aerial photography, may be the most efficient way to make this determination.

Expected precision and reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. It is a relatively easy process evaluating whether vegetative cover has been established on roads.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. Generally, there is very little subjectivity in determining whether vegetative cover has been re-established on roads.

Variability Indicating Action:

Roads without vegetative cover re-established

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 1 (low) + LIKELIHOOD OF ERROR 2 (medium) = RISK INDEX 3 (medium-low)

Cost of error: Low. If unused roads do not have vegetative cover re-established, it is unlikely that any significant adverse environmental consequences would occur to other resources.

Likelihood of error: Medium. Many roads require ripping of the surfaces to help with the re-establishment of vegetative cover. Where ripping is not adequate, establishment of the vegetative cover may not occur. Re-establishment of a vegetative cover may be difficult in areas where roads cross wetlands (such as muskegs).

Reporting Period:

Annual

Lead Responsibility:

Area Engineering Staff Officer

Estimated Annual Cost of Monitoring:

For each Area, 2 GS-11s for 3 days, 3 hours fixed-wing flight time, 3 hours helicopter time

Aggregation--1 GS-12 for 1 day.

TOTAL ESTIMATE: \$ 5,000

References:

36 CFR 219.27 (a)(11)

Off Road Vehicle Use (ORV)

Monitoring Question:

Is off road vehicle (ORV) use causing, or will it cause, considerable adverse effects on soil, water, vegetation, fish and wildlife, visitors, or cultural and historic resources of the Forest?

Type: Implementation and Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Existence and currency of off road vehicle plans.

Sampling Methods:

Off road vehicle plans which allow, restrict or prohibit specific vehicle types off roads are required by Executive Orders 11644 and 11989. The Forest Supervisors are responsible for these plans which consider whether off road vehicle (ORV) use is causing, or will cause, considerable adverse effects on soil, water, vegetation, fish and wildlife, visitors, or cultural and historic resources of the Forest. For this monitoring item, determine whether the Forest Supervisors have an approved off road vehicle plan for their Administrative Area (or smaller local plans which, in aggregate, consider the entire Area) which is developed through a public process and updated annually, as directed by the Executive Orders and the implementing Code of Federal Regulations.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?)

High. Only two possibilities exist for this monitoring: either the ORV plans have been completed or they haven't been.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?)

High. Only two possibilities exist for this monitoring: either the ORV plans have been completed or they haven't been. Remeasurement of this item should always result in the same answer.

Variability Indicating Action:

Lack of an off road vehicle plan which considers the effects of ORV use on Forest resources.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 2 (medium) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 3 (medium-low)

Cost of error: Medium. Without a plan, on a site-specific basis, the risks of not having a plan could be quite high due to the effects off road vehicles may have on Forest resources. However, on the Tongass, there are only a few places where off road vehicle use is common and could cause significant damage to Forest resources.

Likelihood of error: Low. It is relatively easy to check whether the plans are in place and updated on an annual basis.

Reporting Period:

Annual

Lead Responsibility:

Area Recreation Staff Officer

Estimated Annual Cost of Monitoring:

1P X GS-12 X 2D

TOTAL ESTIMATE: \$ 500

References:

36 CFR 295
Presidential Executive Orders 11644, 11989.

FIRE

Monitoring Question:

Does the use of prescribed fire comply with the Forest Plan's requirement for an approved project plan for each use?

Type = Implementation

Land Use Designations Affected:

All

Action or Effect to be Measured:

Compliance of prescribed fires with the requirement for an approved plan.

Sampling Methods:

Annually review the project files for each prescribed fire to determine if the project was conducted under an approved fire project plan.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?) **High.** This measurement is a simple and unambiguous yes or no.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?) **High.** This measurement is a simple and unambiguous yes or no.

Variability Indicating Action:

Any use of prescribed fire without an approved project plan.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 1 (low) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 2 (low)

Cost of error: Low. Prescribed fires are few, and small, on the Tongass, so relatively little damage could result from them.

Likelihood of error: Low. The requirement for an approved fire plan is unambiguous. Full compliance is likely.

Reporting Period:

Annual

Lead Responsibility:

Area Planning Staff Officer

Estimated Annual Cost of Monitoring:

For each Area, 1 GS-11 for 1 day each year.

TOTAL ESTIMATE: \$ 500

INSECT AND DISEASE CONTROL

Monitoring Question:

Are destructive insects or disease organisms a threat to desired Forest health?

Type: Effectiveness

Land Use Designations Affected:

All

Action or Effect to be Measured:

Areas and acres where insects or disease are a problem.

Sampling Methods:

Conduct aerial surveys annually, to assess insect and disease activity Forest-wide, including on adjacent lands.

Expected Precision and Reliability:

Precision: (precision = with what accuracy do the sampling methods measure the true conditions?) **High.** Infestation of insects or disease is fairly quantifiable.

Reliability: (reliability = how reproducible are the monitoring results on repeated measurements?) **Medium.** The measurements involved are currently being refined through research.

Variability Indicating Action:

Evidence that insects or disease are increasing to potentially damaging levels.

Risk Assessment: (Risk to the resource from inappropriate implementation of the Forest Plan)

COST OF ERROR 2 (medium) + LIKELIHOOD OF ERROR 1 (low) = RISK INDEX 3 (medium-low)

Cost of error: **Medium.** Resources at risk would likely be vegetation (timber) resource.

Likelihood of error: **Low.** Experience indicates that, in general, insects and disease have not been major threats to the Tongass National Forest.

Reporting Period:

Annual, in the Regional Conditions Report.

Lead Responsibility:

State and Private Forestry, Area Pests Management Staff Officer

Estimated Annual Cost of Monitoring:

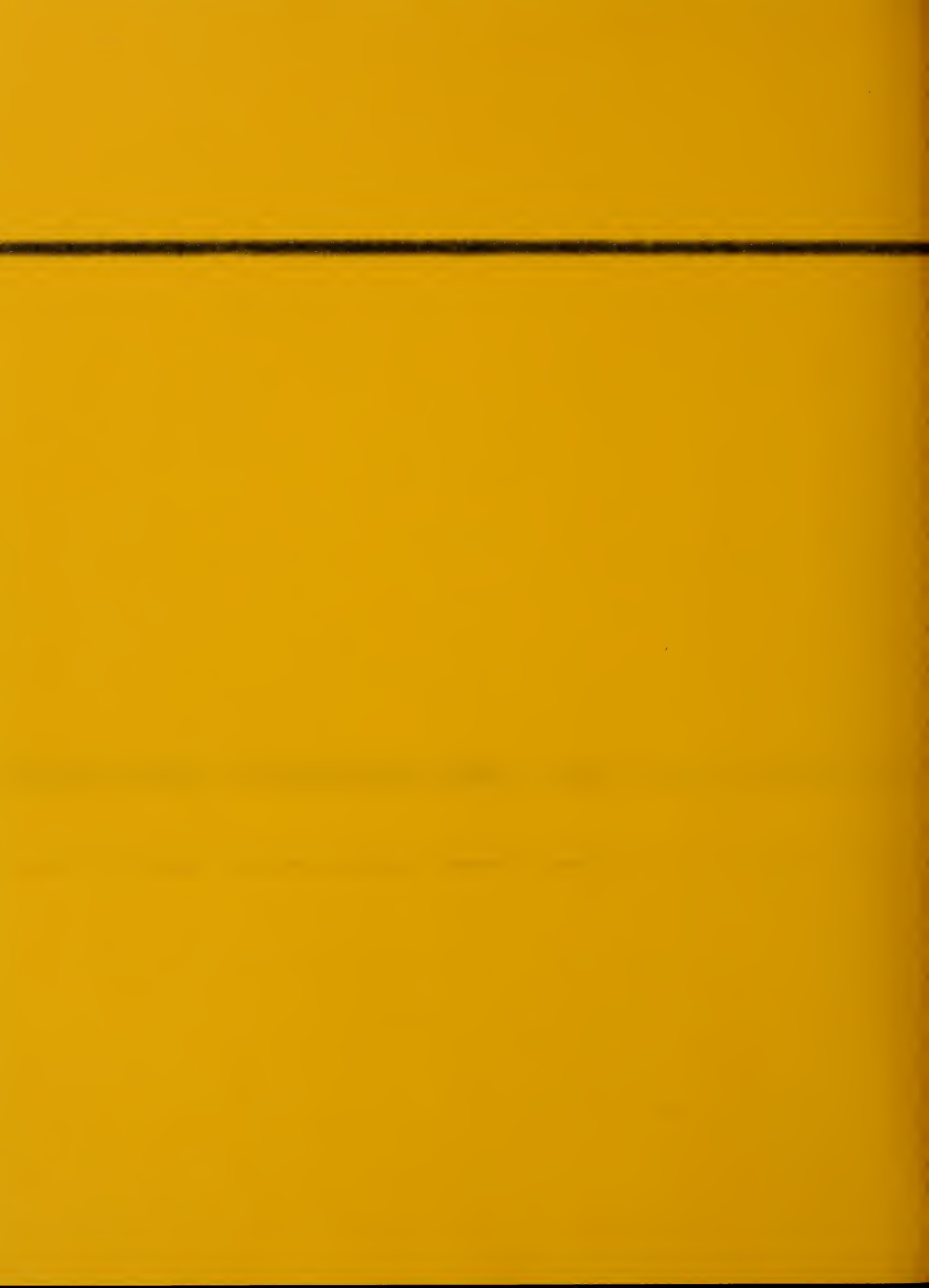
TOTAL ESTIMATE: \$ 100,000 (which is what we're currently spending)

References:

36 CFR 219.12 (k)(5)(iv)

Chapter 7

Glossary



Chapter 7

Glossary

These definitions apply to Forest Service land management and planning. Meanings may differ when used in another context. Glossary definitions are not legal unless otherwise noted. Definitions were shortened, paraphrased or adapted to fit local conditions and for ease of understanding.

A

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).
Active channel	Unstable portion of a stream where stream channels are frequently changing course.
Adfluvial fish	Species or populations of fish that do not go to sea, but live in lakes, and enter streams to spawn.
Adjudicate	To settle in the exercise of judicial authority. To determine finally (Black. 1979, Black's Law Dictionary).
Aggradation	The process of building up a land surface by deposition.
AHMU	Aquatic Habitat Management Unit.
AHRS	See Alaska Heritage Resource Survey.
Airshed	Geographical areas which, because of topography, meteorology, and climatic conditions, share the same air mass. Air is managed by airshed.
Alaska Heritage Resource Survey (AHRS)	The official list of cultural resources in the State of Alaska, maintained by the Office of History and Archaeology, Alaska Division of Parks and Outdoor Recreation.
Allowable Sale Quantity (ASQ)	The maximum quantity of timber that may be sold in each decade from suitable scheduled lands covered by the Forest Plan.
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.
Alluvium	Recent soil deposits resulting from modern rivers, including the sediment laid down in river beds, flood plains, lakes, and at the foot of mountain slopes and estuaries.
Alpine	Parts of mountains above tree growth and/or the organisms living there.

Alternative	One of several options proposed for decision making.
Ambient air	That air, external to buildings, encompassing or surrounding a specific region.
Ambient Air Quality Standard	The prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specified geographical area.
Amenity	Resource use, object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses. Amenity value typically describes those resource properties for which monetary values (or market values) are not or cannot be established.
Anadromous fish	Fish which mature and spend much of their adult life in the ocean, returning to inland waters to spawn. Salmon and steelhead are examples.
Analysis area	An area of land which has the same timber management costs and responses to timber management activities.
ANCSA	The Alaska Native Claims Settlement Act of December 18, 1971. Public Law 92-203, 92nd Congress, 85 Stat. 688-716.
ANILCA	The Alaska National Interest Lands Conservation Act of December 2, 1980. Public Law 96-487, 96th Congress, 94 Stat. 2371-2551.
Appropriate suppression action	The planned strategy for suppression action (in terms of kind, amount, and timing) on a wildfire which most efficiently meets fire management direction under current and expected burning conditions.
Critical protection	Areas where human life or habitation are present have priority over all others. Immediate and continuous efforts are made to minimize loss of life and damage to property.
Full protection	Valuable resources, such as commercial timber stands and historic structures exist; however, no human life or habitation exist in these areas. Immediate and aggressive action is taken to limit the number of acres burned.
Modified action	Uninhabited; with resources of lesser value. Land managers consider tradeoff of acres burned versus suppression expenses. Fires during critical burning months are attacked, but a lower level of protection is provided when the risks of large, damaging fires is less.
Limited action	Areas where the cost of fighting the fire is greater than the fire damage. Suppression efforts are limited to keeping a fire within a designated area or protecting critical sites within the areas.
Appropriation of land	The act of selecting, devoting, or setting apart land for a particular use or purpose, such as appropriating land for public buildings and military reservations or other public uses (Black, 1979).
Aquaculture	Maintaining, enhancing, and rehabilitating fish stocks through improvements and facilities, including the rearing of anadromous juvenile fish, generally in fresh water, for release into salt water for maturing, to become available as a common property resource.
Aquatic ecosystem	A stream channel, lake or estuary bed, the water itself, and the biotic communities that occur therein.
Aquatic farm	(or Aquafarming) - Growing, farming, or cultivating aquatic products in captivity or under positive control. Current State of Alaska law (AS 16.40.100 - 16.40.199, July 1, 1990), does not allow the aquatic farming of finfish, but does allow the farming of shellfish.

ARC/INFO	ARC/INFO is the name of the Geographic Information System (GIS) software used for the Revision database.
Area of potential effects	The geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist.
Arterial road	Roads usually developed and operated for long-term land and resource management purposes and constant service.
Associated grave goods	The items placed with human remains at the time of interment.
ASQ	See Allowable Sale Quantity.
Atmospheric dispersion	The lofting and distribution of particulate matter from wood smoke into the atmosphere over time.

B

Background	The distant part of a landscape. The seen, or viewed, area located from three or five miles to infinity from the viewer. (See "Foreground" and "Middleground".)
Beachlog salvage	The salvage of logs that have been washed-up on beaches. Special provisions in ANILCA allow beachlog salvage in Wilderness and National Monuments if it can be conducted without roads or use of vehicles on uplands.
Bedload	Sand, silt, and gravel, or soil and rock debris rolled along the bottom of a stream by the moving water. The particles of this material have a density or grain size which prevents movement far above or for a long distance out of contact with the streambed under natural flow conditions.
Benchmark	An analysis of the supply potential of a particular resource, or set of resources, subject to specific management objectives or constraints. Benchmarks define the limits within which alternatives can be formulated.
Best Management Practices (BMP's)	Land management methods, measures or practices intended to minimize or reduce water pollution. Usually BMP's are applied as a system of practices rather than a single practice. BMP's are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility.
Biological diversity	The distribution and abundance of different plant and animal communities and species within the area covered by a land management plan.
Biological potential	The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.
Biomass	The total quantity, at a given time, of living organisms of one or more species per unit area or all of the species in a community.
Blowdown	See windthrow.
BMP's	See Best Management Practices.
Board foot	A unit of timber measurement equaling the amount of wood contained in an unfinished board 1 inch thick, 12 inches long and 12 inches wide.

Bole	Trunk of the tree. A tree stem once it has grown to substantial thickness—roughly to that capable of yielding poles, sawlogs, or veneer logs.
Boulders	Rounded or angular rocks greater than 12 inches in size.
Braided streams or channels	A stream flowing in several dividing and reuniting channels resembling the strands of a braid, the cause of division being the obstruction by sediment deposited by the stream.
BTU	British thermal unit. The quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

C

Canopy gap	Openings created in second growth conifer stands by cutting all of the trees in a small area to maintain or increase the number of understory plant species.
Capability	The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity.
Capital investment cost	Costs generally associated with construction such as trails, roads, and physical structures.
Cave	Cave is legally defined under federal law as “any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or human-made. Such term shall include any natural pit, sinkhole or other feature which is an extension of the surface,” (Federal Cave Resource Protection Act of 1988). Speleologists use “cave” to refer to all parts, regardless of size, of an underground system that links openings and chambers and that may connect the system to the surface. Included in the term caves are tree molds and lava tubes associated with lava flows, erosional caves, and those formed by dissolution of bedrock.
CFL	See Commercial forest land.
CFR	Code of Federal Regulations.
Channel	A passage, either naturally or artificially created, which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water. River, creek, run, branch, and tributary are some of the terms used to describe natural channels. Natural channels may be single or braided. Canal and floodway are some of the terms used to describe artificial channels.
Channel migration	Movement of a stream or river channel within a floodplain area usually over an extended period of time.
Channel type	A means of distinguishing parts of a stream system into segments which have fairly consistent physical and biological characteristics. For descriptions, see “Channel Type Field Guide,” Publication R10-MB-6.
Claim	To demand as one’s own or as one’s right; to assert; to urge; to insist (Black 1979).
Class (streams)	See Stream class.
Class II area (Air)	Geographic area having air quality exceeding the National Ambient Air Quality Standards,

which is designated for a moderate degree of protection from future air quality degradation. Moderate increases in new pollution may be permitted.

Clearance	Cultural resources: Certification by the Forest Supervisor documenting that the requirements of 36 CFR 800 have been fully met for each undertaking.
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.
CMAI	See Culmination Mean Annual Increment.
Coarse gravel	Rounded rocks generally 3/4 of an inch to 3 inches in size.
Cobbles	Rounded rocks between 3 and 12 inches in size.
Colluvial	Soil and material produced by the disintegration and weathering of rocks, including cliff debris, material of avalanches, and alluvium. This material accumulates at the foot of a slope.
Commercial forest land (CFL)	Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions; and (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvesting.
Commodities	Resources with monetary (market) or commercial value; all resource products which are articles of commerce, such as timber and minerals.
Common variety	Deposits of sand, stone, gravel, and others of widespread occurrence not having distinct special value. These deposits are used generally for construction and decorative purposes and are disposed of under the Materials Act of 1947.
Confined streams	Streams that are confined within their channel banks; controlled by stream incision, geomorphic landform characteristics, and local geological conditions.
Confluence	The point where two streams meet.
Convey	To pass or transmit the title to property from one to another (Black 1979).
Conveyance	An instrument by which some estate or interest in lands is transferred from one person to another (Black 1979).
Corridor	A linear strip of land defined for the present or future location of transportation or utility rights-of-way within its boundaries. Also, 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.
Cost Efficiency	The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values, but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates-of-return may be appropriate.
Created opening	Openings in the Forest canopy created by silvicultural practices including shelterwood regeneration cutting, clearcutting, seed tree cutting, or group selection cutting.

Critical habitat	Specific terrain within the geographical area occupied by threatened or endangered species, on which are found those physical and biological features that are essential to conservation of the species and which may require special management considerations or protection.
Crown	The tree canopy. The upper part of a tree or woody plant that carries the main branch system and foliage.
Cull logs	Trees that do not meet certain quality specifications.
Culmination Mean Annual Increment (CMAI)	The point at which a tree (or stand) achieves its highest average growth, based on expected growth according to the management intensities and utilization standards assumed in the Forest Plan.
Cultural descendant	A person who, although not necessarily a direct descendant of a particular deceased person, is associated with a cultural religious tradition to which the human remains of the deceased person has significance.
Cultural resources	The physical remains of districts, sites, structures, buildings, networks, events, or objects used by humans in the past. They may be historic, prehistoric, architectural, or archival in nature. Cultural resources are non-renewable aspects of our national heritage.
Cumulative effects	See Effects.
Cumulative watershed effects (CWE)	The effects on a watershed's streams and lakes which result from the incremental impact of individual actions within a watershed when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative watershed effects can result from individually minor but collectively significant actions taking place over a period of time.

D

DBH	See Diameter at Breast Height.
Dead	A standing tree that is completely dead. May be in various stages of decay.
Debris flows	The movement of material resulting from the decay and disintegration of rocks, earth, and other materials.
Debris slides	The rapid downslope movement of a mixture of soil, rock, and forest litter with or without a relatively high water content. Also known as debris avalanches.
Debris torrents	Landslides that occur as a result of debris; avalanche materials which either dam a channel temporarily or accumulate behind temporary obstructions such as logs and forest debris. Debris torrents are usually confined within the stream channel until they reach the valley floor where the debris spreads out, inundating vegetation and forming a broad surface deposit.
Decision criteria	The rules or standards used to evaluate alternatives. They are measurements or indicators that are designed to assist a decision maker in identifying a preferred choice from an array of possible alternatives.
Decks	Cut timber, sawlogs, or cull logs that have been removed from logging units and stacked.
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.

Demand	The amount of goods or services that will be consumed if offered over a given range of prices at a particular point in time.
Demographic	Pertaining to the study of the characteristics of human populations, such as size, growth, density, distribution, and vital statistics.
Departure	A timber harvest level that cannot be continued at that level forever.
Detrimental soil disturbance	The condition where established threshold values soil properties are exceeded and result in significant change or impairment. (See also, Significant change and Significant impairment.)
Detritis	Material, produced by the disintegration and weathering of rocks, that has been moved from its site of origin.
Developed recreation	That type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area.
Diameter at Breast Height (DBH)	The diameter of a standing tree at a point four feet, six inches from ground level.
Digitize	The act of placing spatial information into a computer.
Discharge velocity	The speed of water outflow from a stream or river over a given period of time .
Discount rate	The rate used to adjust future benefits or costs to their present value.
Dispersed recreation	That type of recreation use that requires few, if any, improvements and may occur over a wide area. This type of recreation involves activities related to roads, trails and undeveloped waterways and beaches. The activities do not necessarily take place on or adjacent to a road, trail, or waterway, only in conjunction with it. Activities are often day-use oriented and include hunting, fishing, boating, off-road vehicle use, hiking, and among others.
Dispersion	To disperse the effects of timber harvest by distributing harvest units more or less uniformly throughout a drainage so that increased runoff and sediment from disturbed sites will be buffered by lower levels of runoff and sediment production from surrounding undisturbed lands.
Dissected landforms	A physical, recognizable form or feature of the earth's surface such as a mountain, hill, or valley, having a characteristic shape, that in part is the result of several shallow or deeply incised drainage channels.
Dissolved oxygen	The amount of free (not chemically combined) oxygen in water.
Distance zone	Areas of landscapes denoted by specified distances from the observer (foreground, middle-ground, or background). Used as a frame of reference in which to discuss landscape characteristics of management activities.
Diversity	The distribution and abundance of different plant and animal communities and species within the area controlled by the Forest Plan.
Down	A tree or portion of a tree which is dead and laying on the ground.
Draft Environmental Impact Statement (DEIS)	The version of the statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for review and comment. It is a formal document which must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) Guidelines, and directives of the agency responsible for the project proposal. (See also Environmental Impact Statement.)

Duff layer	The general term for vegetation material covering the mineral soils in forests including the fresh litter and well-decomposed organic material and humus.
Dust, fugitive or Fugitive dust	Particulate matter composed primarily of soil which is uncontaminated by industrial activities. Examples are emissions from haul roads and wind erosion.
Dying	A standing tree partially dead above ground and likely to die in the future.

E

Ecosystem	A complete, interacting system of organisms considered together with their environment (for example; a marsh, a watershed, or a lake).
Ecotone	A transition or junction zone between two or more naturally occurring diverse plant communities (ecosystems).
Ecotype	A species of plant or animal that displays different genetic or physiological adaptations. For example, the brown bear in Southeast Alaska is the same species as the grizzly bear in interior Alaska, but the brown bear is smaller than the grizzly.
Effect	In Cultural Resources, the potential of an undertaking to alter the characteristics that may qualify a property for inclusion in the National Register of Historic Places.
Effects	
Direct	Results of an action occurring when and where that action takes place.
Indirect	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	Results of collective past, present, and reasonably foreseeable future actions.
EIS	See Environmental Impact Statement.
Emergent	A plant rooted in shallow water and having most of its vegetation above water (cattails).
Encumbrance	A claim, lien, charge, or liability attached to and binding real property (Black 1979).
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 1978 Endangered Species Act.
Enhance	To improve, reinforce, enrich or strengthen the existing condition, value, or beauty of a resource.
Entitlement	Right to benefits, income or property which may not be abridged without due process (Black 1979).
Environmental analysis	An analysis of alternative actions and their predictable short- and long-term environmental effects, incorporating the physical, biological, economic, social and environmental design arts and their interactions.
Environmental Impact Statement (EIS)	A document prepared by a federal agency in which anticipated environmental effects of a planned course of action or development are evaluated. A federal statute (Section 102 of the National Environmental Policy Act of 1969) requires that such statements be prepared. It is prepared first in draft or review form, and then in a final form. An impact statement includes

the following points: (1) the environmental impact of the proposed action, (2) any adverse impacts which cannot be avoided by the action, (3) the alternative courses of actions, (4) the relationships between local short-term use of the human environment and the maintenance and enhancement of long-term productivity, and (5) a description of the irreversible and irretrievable commitment of resources which would occur if the action were accomplished.

Ephemeral channels	A stream that flows in direct response to rainfall and snowmelt but not during dry seasons. Its channel is above the level of the water table.
Equipment fires	Those wildfires originating from the use of equipment in forest operations such as logging, yarding, chainsaws, land clearing, road building, etc.
Erosion	The wearing away of the land surface by running water, wind, ice, gravity or other geological activities.
Escapement	Adult anadromous fish that escape from all causes of mortality (natural or human-caused) to return to streams to spawn.
Estuarine	Deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land, but have open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land.
Evaluation	The analysis and interpretation of information collected through monitoring.
EVC	See Existing Visual Condition.
Evapotranspiration	The sum total of water lost from the land by evaporation and plant transpiration. Transpiration is loss of water in vapor form from a plant.
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 in 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 direction.
Existing data search	A systematic check and evaluation of available records, documents, and informant sources to gather information pertinent to cultural resources within a given area.
Existing Visual Condition (EVC)	EVC ratings are established to give the land manager an indication of the current level of visual quality and visual evidence of management activities. EVC classes are as follows:
Type 1	Appears to be untouched by human activities, except for trails needed for access; only ecological changes have occurred.
Type 2	Changes in the landscape are not noticed unless pointed out.
Type 3	Changes in the landscape are noticed as minor disturbances, but the natural appearance of the landscape remains dominant.
Type 4	Changes in the landscape are easily noticed and perceived as disturbances, but resemble natural patterns.
Type 5	Changes stand out as a dominant impression on the landscape, yet are shaped to resemble natural patterns from 3-5 miles or more distant.

F

Facility	Structures needed to support the management, protection, and utilization of the National Forests, including buildings, utility systems, dams, and other construction features. There are three types of facilities: recreation, administrative, and permitted.
Fire Management Action Plan	A plan which provides detailed information for, and guides the implementation of, fire management activities for the approved alternative for the Forest Plan.
Fire severity	How hot a fire is for how long. The hotter a fire is and the longer it burns, the more severe it is.
Fire suppression	All the work of extinguishing or confining a fire, beginning with its discovery.
Fiscal Year (FY)	October 1 to September 30. The Fiscal Year is referred to by the calendar year which begins on January 1. For example, October 1, 1991, to September 30, 1992, is referred to as Fiscal Year 1992.
Fish User Day (FUD)	A recreation visitor day spent fishing or viewing fish.
Flash flooding	A very rapid responding, relatively high streamflow overtopping the banks in any reach of a stream.
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.
Fluvial	Of, or pertaining to, streams and rivers.
Foodfish	Fish consumed by humans.
Footslope	The inner, gently inclined surface at the base of a hill or mountain slope. The surface profile is dominantly concave, and is the transition zone between upslope erosional sites and downslope depositional sites.
Forbs	A grouping/category of herbaceous plants which are not included in the grass, shrub or tree groupings/categories; generally smaller flowering plants.
Foreground	A term used in visual management to describe the stand of trees immediately adjacent to a scenic area, recreation facility or forest highway. The area is located less than 1/4 mile from the viewer. (See Background and Middleground.)
Forest Development Transportation Plan	The plan for the system of access roads, trails, and airfields needed for the protection, administration, and utilization of the National Forests and other lands administered by the Forest Service, or the development and use of resources upon which communities within or adjacent to the National Forests are dependent (36 CFR 212.1).
Forest Facility Master Plan	The plan which depicts the development and management of the Forest's facilities. This includes current volume of business and projections for the future, locations for needed skills to perform program work, existing administrative sites and proposed locations of new sites, and management strategies concerning consolidation or sharing services between units (FSM 7312.1).

Forest health	A condition where biotic and abiotic influences on the forest (i.e., insects, diseases, atmospheric deposition, silvicultural treatments, harvesting practices) do not threaten management objectives for a given forest unit now or in the future.
Forest Plan	Source of management direction for an individual Forest specifying activity and output levels for a period of 10-15 years. Management direction in the plan is based on the issues identified at the time of the plan's development.
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-wide Standards and Guidelines	Establish the environmental quality, natural renewable and depletable resource requirements, conservation potential, and mitigation measures that apply to several land use designations.
FORPLAN	The forest planning model. A linear programming software package used to analyze planning decisions regarding land use patterns, capital investment, and timber harvest scheduling.
FSH	Forest Service Handbook.
FSM	Forest Service Manual.
FUD	See Fish User Day.
Fuel	The organic materials that will support the start and spread of a fire: duff, litter, grass, weeds, forbs, brush, trees, dead woody materials.
Fuel loading	The volume of the available or burnable fuels in a specified area.
FY	See Fiscal Year.

G

Genetic descendant	A person known or reliably assumed to have a genetic relationship to a deceased person.
Glacial refugia	The areas of Southeast Alaska that were not covered by glaciers during the last ice age.
Glacial rivers and streams	Rivers and streams that receive their main flow characteristics from the presence and activities of ice and glaciers and their meltwater.
Glide or placid streams	Grouping of channel types (L1 and L2) that have fairly consistent physical characteristics occurring on lowland landforms and are mostly associated with bogs, marshes, or lakes.
Goal	A concise statement that describes a desired future condition normally expressed in broad, general terms that are timeless, in that there is no specific date-by which to goal is to be achieved.
Goods and services	The various outputs and on-site uses produced from forest resources.
Groundwater	Water within the earth that supplies wells and springs. Specifically, water in the zone of saturation where all openings in soils and rocks are filled; the upper surface level forms the water table.
Group Selection	A harvesting method in which trees are removed in small groups at a time.

Guideline	An indication or outline of policy or conduct that is not a mandatory requirement (as opposed to a standard, which is mandatory.)
Guyline circle	Guylines are cables to brace the tower (spar) used in cable logging systems. Using the tower as the center, the guyline circle is the area between the tower and where the guylines are anchored. For safety reasons, this area is usually cleared of all trees.

H

Habitat	The sum total of environmental conditions of a specific place occupied by a wildlife or plant species or a population of each species.
Hard snags/soft snags	Terminology used to describe the state of the decay process in dead trees. Hard snags are dead trees which have little decay and are generally still hard wood. Soft snags are dead trees which have a considerable amount of decay and are generally soft, broken wood.
Haul out	Areas of land used by marine mammals for resting and other social/biological activities which occur out of the water.
Historic property	Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. The term includes artifacts, records, and remains that are related to and located within such properties.
Human remains	The physical remains of human bodies.
Humus	Substance of organic origin that is fairly but not entirely resistant to further bacterial decay.
Hydrologic cycle	The complete cycle through which water passes, commencing as atmospheric water vapor, passing into liquid and solid form as precipitation, thence along or into the ground surface, and finally again returning to the form of atmospheric water vapor by means of evaporation and transpiration. Also called Water Cycle.
Hydrophyte	Plants typically found in wet habitats.

I

IDT	See Interdisciplinary Team.
Ignition	The initiation of combustion.
Implementation	For cultural resources, that point in an undertaking when the proponent has full and complete authorization to proceed with the undertaking.
Infrastructure	The facilities, utilities, and transportation systems needed to meet public and administrative needs.
Inherent capability	Recreation capability for the physical, social and managerial setting for recreation, based on remoteness from modern human development and activity, modification of the land, and social factors such as crowding.
Integrated Pest	A process for selecting strategies to regulate forest pests in which all aspects of a pest-host

Management (IPM)	system are studied and weighed. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.
Intensity	How hot a fire is. Specifically, a measure (in BTU's per foot per second) of the energy released per unit of time in an area of actively burning fire. The amount of heat released per foot of fire front per second.
Inter	To place in a grave or tomb.
Interceptions	The process by which precipitation is caught and held by foliage, twigs, and branches of trees, shrubs, and other vegetation, and lost by evaporation, never reaching the surface of the ground. Interception equals the precipitation on the vegetation minus stemflow and throughfall.
Interest	A general term to denote a right, claim, title, or legal share in real estate (Black 1979).
Interdisciplinary Team (IDT)	A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. Through interaction, participants bring different points of view and a broader range of expertise to bear on the problem.
Invertebrate population	That population of creatures without a backbone. Context would depict whether land invertebrates, shore invertebrates, or water invertebrates.
Invertebrates	Animals without a backbone.
IPM	See Integrated Pest Management.
Irretrievable commitments	Applies to losses of production or use of renewable natural resources for a period of time. For example, timber production from an area is irretrievably lost during the time an area is allocated to a no-harvest prescription. If the allocation is changed to allow timber harvest, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.
Irreversible commitments	Decisions causing changes which cannot be reversed. For example, if a roadless area is allocated to allow timber harvest and timber is actually harvested, that area cannot, at a later date, be allocated to Wilderness. Once harvested, the ability of that area to meet Wilderness criteria has been irreversibly lost. Often applies to nonrenewable resources such as minerals and cultural resources.
Issue	A point, matter, or section of public discussion or interest to be addressed or decided.

K

Karst	A type of topography that develops in areas underlain by soluble rocks, primarily limestone. Dissolution of the subsurface strata results in areas of well-developed, surface drainage that are sinkholes, collapsed channels, or caves.
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L

Lacustrine wetland	Includes permanently flooded lakes and reservoirs, intermittent lakes, and tidal lakes with ocean-derived salinities of less than 0.5 percent. Typically, there are extensive areas of deep water and there is considerable wave action.
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 exchange	The conveyance of non-Federal land or interests to the United States in exchange for National Forest System land or interests in land.
Land Use Designation (LUD)	(As used in the 1979 Tongass Land Management Plan:) General management direction applied to a Value Comparison Unit or group of Value Comparison Units. These four land use designations are defined as follows.
LUD 1	Forest Service recommended Wilderness areas, most of which became Wilderness through the Alaska National Interest Lands Conservation Act. In general, these undeveloped areas are managed for solitude and primitive types of recreation, and contain unaltered habitats for plants and animal species. These areas are managed as directed in the 1964 Wilderness Act, as amended.
LUD 2	Lands under this designation are managed in a roadless state to retain their wildland character. Primitive recreational facilities can be built and habitat improvements for fish and wildlife are permitted. Timber harvest on these lands is limited to salvage operations to protect other resources.
LUD 3	These lands are managed for a variety of uses. The emphasis is on managing for both amenity and commodity oriented uses in a compatible manner to provide the greatest combination of benefits. These areas usually have high amenity values in conjunction with high commodity values. Allowances in calculated potential timber yield have been made to meet multiple-use coordination objectives.
LUD 4	These lands are managed to provide opportunities for intensive development of resources. Emphasis is primarily on commodity, or market resources and their use. Amenity values are also provided for. When conflicts over competing resource uses arise, conflicts would most often be resolved in favor of commodity values. Allowances in calculated potential timber yield have been made to provide for protection of physical and biological productivity.
Land Use Designation (LUD)	(As used in the Tongass Land Management Plan Revision:) A defined area of land specific to which management direction is applied. (See also Land Use Prescriptions.)
Land Use Prescriptions	Specific management direction applied to a defined area of land (land use designation as defined in the Revision) to attain multiple use and other goals and objectives.
Land Utilization Project (LUP)	A unit designated by the Secretary of Agriculture for conservation and utilization under Title III of the Bankhead-Jones Farm Tenant Act (USDA Forest Service, undated, Land Areas of the National Forest System).
Landform	Any physical, recognizable form or feature of the earth's surface, having a characteristic shape, and produced by natural causes. Major forms included are plains, plateaus, and mountains; minor forms are hills, valleys, slopes, eskers, and dunes.

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)	Any piece of relatively stable woody material, having a diameter of four inches or greater and a length greater than three feet, that intrudes into a stream channel. Formerly called large organic debris.
Leasable minerals	Generally includes minerals such as coal, oil, gas, phosphate, sodium, potassium, oil shale, sulfur, and geothermal steam.
Leave strips	The result of timber harvest activities where blocks of timber are left after harvest has occurred.
Lifeform	Any living entity, animal or plant.
Locatable minerals	Include gold, silver, lead, zinc, copper, and mercury.
Log Transfer Facilities (LTF)	Formerly referred to as Terminal Transfer Facilities, Log Transfer Facilities include the site and structures used for moving logs and timber products from land-based transportation forms to water-based transportation forms.
Logging slash	The wood residue left on the ground after harvesting. It includes unused logs, uprooted stumps, broken or uprooted stems, tops, branches, and leaves.
Logging systems	
Tractor	A system of log transportation in which logs are pulled from the woods to a landing by means of a crawler tractor, skidder, or similar ground-based equipment.
High-lead	A system of cable logging in which the working lines are elevated at the landing area by a rigged wooden tree or portable steel spar.
Skyline	A system of cable logging in which all or part of the weight of the logs is supported during yarding by a suspended cable.
Balloon	A system of cable logging in which the weight of the logs is counteracted by the lift provided by a lighter-than-air balloon.
Helicopter	A system of transporting logs from the woods to a landing as an external load on a helicopter.
Long-term Sustained Yield Timber Capacity (LTSY)	The highest uniform wood yield from suitable-scheduled lands that may be sustained in perpetuity consistent with the Forest Plan.
Lows	Atmospheric disturbances that can properly be considered as storms, for they bring changeable, unsettled weather that normally includes widespread, abundant, and often, intensive precipitation.
LTSY	See Long-term Sustained Yield Timber Capacity.
LTF	See Log Transfer Facilities.
LUD	See Land Use Designation. (Note that there are two definitions for Land Use Designation: as used in the 1979 Tongass Land Management Plan and as used in the Tongass Land Management Plan Revision.)
LUP	See Land Utilization Project.
LWD	See Large woody debris.

M

Macrophytes	Any plant species that can be readily observed without the aid of optical magnification.
Managed stand	A stand of trees in which stocking level control is applied to achieve maximum growth.
MAI	See Mean Annual Increment.
Management Area	Combinations of Value Comparison Units having common management direction. As defined in the Tongass Plan Revision.
Management concern	An issue, problem or a condition which constrains the range of management practices identified by the Forest Service in the planning process.
Management direction	A statement of multiple-use and other goals and objectives, the associated land use prescriptions, and standards and guidelines for attaining them.
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 practices	The activities applied to a defined area of land (land use designation as defined in the Revision) to attain multiple-use and other goals and objectives.
Management requirement	Standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, soil and water and diversity, to be met in accomplishing National Forest System goals and objectives. (See 36 CFR 219.17)
Mariculture	The cultivation of plants and animals in saltwater, with no freshwater component. Mariculture does not include anadromous fish farming.
Marine systems	Of, or belonging to, or caused by, the sea.
Maritime climate	Weather conditions controlled by an oceanic environment characterized by small annual temperature ranges and high precipitation..
Mass-wasting	A general term for a variety of processes by which large masses of earth material are moved by gravity either slowly or quickly from one place to another. Also, mass movement.
MBF	Thousand Board Feet.
Mean Annual Increment (MAI)	The total volume of a stand divided by its age.
Memorandum of Understanding (MOU)	A legal agreement between the Forest Service and others agencies resulting from consultation between agencies that states specific measures the agencies will follow to accomplish a large or complex project. A memorandum of understanding is not a fund obligating document.
Microclimate	The temperature, moisture, wind, pressure, and evaporation (climate) of a very small area that differs from the general climate of the larger surrounding area.
Middleground	The visible terrain beyond the foreground where individual trees are still visible but do not stand out distinctly from the landscape. The area is located from 1/4 to 5 miles from the viewer. (See Foreground and Background.)
Mineral development	The activities and facilities associated with extracting mineral deposits.

Mineral entry	Filing a mining claim on public land to obtain the right to mine any minerals it may contain. Also the filing for a mill site on Federal land for the purpose of processing off-site minerals.
Mineral exploration	The search for valuable minerals on lands open to mineral entry.
Mineral production	The extraction of mineral deposits.
Mineral soils	Soils consisting predominantly of, and having its properties determined by, mineral matter. These soils usually contain less than 20 percent organic matter, but can contain an organic surface layer up to within 20 inches of the surface.
Mineral withdrawal	A formal designation by the Secretary of Interior which precludes entry or disposal of mineral commodities under the mining and/or mineral leasing laws.
Minimum viable population	The low end of the number of individuals of a species needed to ensure the long-term existence of the species.
Mining claims	A geographic area of the public lands held under the general mining laws in which the right of exclusive possession is vested in the locator of a valuable mineral deposit.
MIS	See Management Indicator Species.
Mitigate	To lessen or make minimal the severity. For cultural resources, to lessen or minimize an adverse effect upon a cultural resource listed on or eligible for the National Register of Historic Places. The two categories of mitigation most often used are project modification and data recovery.
Mixed conifer	In Southeast Alaska, mixed conifer stands usually consist of the following species: western hemlock, mountain hemlock, Alaska yellow-cedar, redcedar, and Sitka spruce. Shorepine may occasionally be present depending on individual sites. Redcedar is not usually in mixed conifer stands on the Chatham or Stikine areas.
MMBF	Million Board Feet.
Moderately well-drained soil	Water in these soils is removed from them somewhat slowly, so that the profile is wet for a small, but significant, part of the time.
Modification	See Visual Quality Objectives.
Moisture regime	The variation of moisture content in a specified portion of soil during the year.
Monitoring and Evaluation	A process of collecting significant data from defined sources to identify departures or deviations from expected plan outputs.
Mop-up	Following suppression activities to stop the spread of the fire, the business of extinguishing the fire is called mop-up.
MOU	See Memorandum of Understanding.
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 surface resources of the National Forest System so that they are used in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of the resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform

to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

Muskeg

A muskeg in Southeast Alaska is a type of bog that has developed over thousands of years in depressions, or flat areas on gentle to steep slopes. These bogs have poorly drained, acidic, organic soils materials that support vegetation that can be either sphagnum moss or herbaceous plants or sedges, rushes, and forbs or may be a combination of sphagnum moss and herbaceous plants. These vegetation types may have a lesser abundance of shrubs and stunted trees.

N

National Cooperative Soil Survey (NCSS)

A program consisting of a joint effort of cooperating Federal agencies, land-grant universities, and other state and local agencies to map soils, collect soil data, interpret the maps and data, and promote their use. Federal leadership is provided by the Soil Conservation Service (SCS).

National Environmental Policy Act of 1969 (NEPA)

An act declaring a National policy to encourage productive harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and the biosphere and simulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on Environmental Quality.

National Fire Management Analysis System (NFMAS)

A broad umbrella process to help fire managers identify the most efficient fire program meeting the direction in the Forest plan. This includes information for the planning record on program composition, annual programmed costs, emergency fire fighting costs, expected resource impacts, and net value change.

National Forest Management Act (NFMA)

A law passed in 1976 that amends the Forest and Rangeland Renewable Resources Planning Act and requires the preparation of Forest Plans.

National Forest System (NFS) Land

Federal lands that have been designated by Executive order or statute as National Forests, National Grasslands, or Purchase Units, or other lands under the administration of the Forest Service.

National Register of Historic Places

A register of cultural resources of national, state, or local significance, maintained by the Department of the Interior.

National Wild and Scenic River System

Rivers with outstanding scenic, recreational, geological, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.

Native selection

Application by Native corporations formed under authority of the Alaska Native Claims Settlement Act of 1971 (ANCSA - Public Law 92-203, 85 Stat. 688) and by Native individuals (under Section 14(h)(5), ANCSA) to the USDI Bureau of Land Management (BLM) for conveyance of a portion of lands withdrawn under ANCSA in fulfillment of Native entitlements established under ANCSA. Native village corporations had three years from the date of ANCSA (December 18, 1971) to make their selections and regional corporations had four years. Native individuals who met the criteria had two years from the date of ANCSA to make

application under Section 14(h)(5). BLM regulations allowed Native corporations formed under ANCSA to select in excess of their entitlements to ensure sufficient land would be available to meet full entitlement. Remaining lands in excess of entitlement which have been selected but not conveyed will revert back to unencumbered National Forest System land status after full entitlement is reached.

Net public benefit	The overall long-term value to the Nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index.
Net sawlog volume	Trees suitable in size and quality for producing logs that can be processed into lumber. In Southeast Alaska, depending on the market, the volume may be processed as pulp or lumber.
No action alternative (Alternative C)	The most likely condition expected to exist in the future if current management direction were to continue unchanged.
No adverse effect	When the effect on a cultural resource would not be considered harmful to those characteristics that qualify the property for inclusion in the National Register.
Noncommercial species	Species that have no economic values at this time nor anticipated timber value within the near future.
Nondeclining even flow	A policy governing the volume of timber removed from a National Forest, which states that the volume planned for removal in each succeeding decade will equal or exceed that volume planned for removal in the previous decade.
Nonforest land	Land that has never supported forests and lands formerly forested but now developed for such nonforest uses as crops, improved pasture, etc.
Nonmarket	Products derived from National Forest resources that do not have a well-established monetary (market) value, for example, wilderness, wildlife. (Noncash economic benefits.)

O

Objectives	The precise steps to be taken and the resources to be used in achieving goals.
Off-Highway Vehicle (OHV)	Any vehicle which is restricted by law from operating on public roads for general motor vehicle traffic. Includes motorbikes, minibikes, trailbikes, snowmobiles, dunebuggies, all-terrain vehicles, and four-wheel drive, high clearance vehicles (FSM 2355.01). Sometimes referred to as Off-Road Vehicle or "ORV".
OHV	See Off-Highway Vehicle.
Old growth	Ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include larger tree size, higher accumulations of large dead woody material, multiple canopy layers, different species 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.
Open road density	The length of forest development roads open for public access and use per unit area of land; usually expressed as miles of open road per square mile of land.

Operability	Operability refers to timber harvest operability, defined as the method(s) of timber harvest necessary to get the trees from stump to landing. There are three different classes of operability: normal (tractor and highlead cable), difficult (long span skyline), and isolated (helicopter).
Operation and maintenance costs	Costs associated with operating and maintaining facilities, program management, and support costs associated with management of other resources.
ORACLE	A relational database management system software package.
Order three inventory	A level of soil surveys made for extensive land uses that do not require precise knowledge of small areas or detailed soils information. Such survey areas are usually dominated by a single land use and have few subordinate uses. This information can be used in planning for range, forest, recreational areas, and similarly extensive land uses and in community planning.
Order four inventory	A soil survey level made for extensive land uses that require general information for broad statements concerning land-use potential and general land management. This information can be used in locating, comparing, and selecting suitable areas for major kinds of land use in regional land-use planning, and in selecting areas for more intensive study and investigation.
Ordinary high water mark	The mark along the bank or shore up to which the presence and action of the nontidal water are common and usual, and so long continued in all ordinary years, as to leave a natural line impressed on the bank or shore and indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics. (Consult 11 AAC 53.900 — Alaska Code.)
Organic soils	Soils which contain a high percentage (greater than 15 percent) of organic matter throughout the soil depth.
ORV	Off-Road Vehicle. (See Off-Highway Vehicle.)
Output	The measurable goods, end products, or services resulting from management activities that are purchased, consumed, or used directly by people.
Overflow	High runoff which overflows natural stream and river banks. Also known as flooding.
Overmature	The stage at which a tree declines in vigor and soundness, for example, height growth has usually stopped and probability of mortality is high.
Overselection	Unconveyed lands selected in excess of entitlement. Overselections by the State of Alaska are authorized in Section 906 (f), ANILCA. They are authorized for Native Corporations organized under ANCSA in Federal Regulations (43 CFR 2650).
Overstory	The portion of trees in a forest which forms the upper most layer of foliage.

P

Palustrine wetland	Pertaining to swamps or marshes and to material deposited in a swamp environment.
Parent material	The unconsolidated, and more or less chemically weathered, mineral or organic matter from which soils develop.
Partial cut	Any cutting other than a clearcut. This may include thinning, selection, shelterwood or an overstory removal.
Partial retention	See "Visual Quality Objectives."

Parts per million (PPM)	A measurement of concentration indicating the quantity of a substance per unit volume of a solution.
Parturient	Of or relating to giving birth.
Payments to states	A fund consisting of approximately 25 percent of the gross annual timber receipts received by the National Forests in that state. This is returned to the State for use on roads and schools.
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.
pH	The degree of soil acidity or alkalinity.
Plan of operations	A plan of operations is required from anyone whose proposed operations, under the 1872 Mining Law, would cause, "significant surface disturbance." It is a document by which mineral operators identify themselves, describe the work they intend to do, where and when they intend to do it, the nature of any proposed disturbance of surface resources, and the steps they will take to protect these resources. An approved plan of operations is basically an agreement between the Forest Service and the operator. The operator agrees to observe necessary and reasonable precautions, spelled out in this plan, to reduce damage to surface resources during operation activities and to rehabilitate disturbed areas as and when feasible. In turn, the Forest Service agrees that protection of surface resources will be adequate if operations are carried out in accordance with the provisions of the approved plan.
Plan period	The period of time a Forest Plan is in effect, normally 10 years, but no longer than 15 years.
Planning area	The area of the National Forest System controlled by a decision document.
Planning horizon	The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions.
Planning period	Generally one decade. The time interval within the planning horizon that is used to show incremental changes to yields, costs, effects, and benefits.
Planning records	A system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment.
Plant association	Climax plant community type.
Plant communities	A homogeneous unit in respect to the number and relationship of plants in the tree, shrub, and ground cover strata.
Plant communities	Aggregations of living plants having mutual relationships among themselves and to their environment. More than one individual plant community.
Point source (pollution)	A point at which pollution is added to a system, either instantaneously or continuously. An example is a smokestack.
Pole	An immature tree between 5 and 9 inches diameter breast height.
Pollution	The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.
Poorly drained soils	Water in these soils is removed so slowly that the soil remains wet for a large part of the time. The water table is commonly at or near the surface during a considerable part of the year.

Population viability	Ability of a population to sustain itself.
Positive control	The condition that exists when fish and other mobile species are enclosed in an escape-proof barrier for rearing and other clams (bivalves) or aquatic plants are managed for cultivation in unenclosed water.
Potential yield	The maximum, perpetual, sustained-yield harvest attainable through intensive forestry on regulated areas considering the productivity of the land, conventional logging technology, standard cultural treatments, and interrelationships with other resource uses and the environment.
PPM	See Parts per million.
Present Net Value (PNV)	The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.
Prescribed fire	A wildland fire burning under planned conditions to accomplish specific land and resource objectives. It may result from either a management or natural ignition.
Preservation	A technique of conservation which maintains the resource in or on the ground in perpetuity.
Prevention of Significant Deterioration (PSD)	The process incorporated in the Clean Air Act which requires emission limitations for certain new or modified sources. (See also Class II Area.)
Primary stream production	Results from photosynthesis by green plants. In streams, includes production from algae and aquatic plants, and from non-stream sources such as leaf litter.
Primary succession	Vegetation development is initiated on newly formed soils or upon surfaces exposed for the first time (as by landslides) which have, as a consequence, never borne vegetation before. Any succession beginning on a bare area not previously occupied by plants or animals.
Priority use	A Forest Service commitment to the holder of a permit for outfitting and guiding to give priority consideration to granting the holder a specific amount of available future use.
Process Group	A combination of similar channel types based on major differences in landform, gradient and channel shapes.
Programmatic Environmental Impact Statement	The document disclosing the environmental consequences of a program or plan which guides or prescribes the use of resources, allocates resources, or establishes rules and policies in contrast to disclosure of the environmental consequences of a site-specific project.
Proponent	An agency, institution, or individual applying to perform an activity on National Forest System lands under authority of a mining plan of operation, contract, license, special use authorization, or other agreement.
Project	One or more site-specific activities designed to accomplish a specific on-the-ground purpose or result.
PSD	See Prevention of Significant Deterioration.
Public issue	A subject or question of widespread public interest relating to management of the National Forest System.
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 planning.

Purchase unit	A unit designated by the Secretary of Agriculture or previously approved by the National Forest Reservation Commission for purposes of Weeks Law acquisition. (USDA Forest Service, undated, Land Areas of the National Forest System)
Purchaser road credit	Credit earned by the purchaser of a National Forest timber sale by construction of contract-specified roads. Earned purchaser credit may be used by the purchaser as payment for National Forest timber removed.

R

Real dollar value	A monetary value which compensates for the effects of inflation.
Reconstruction	Road or trail construction activities which take place on an existing road or trail and raise the standard of the road or trail. This can include relocation of the facility in a completely new location.
Recreation capacity	The number of people that can take advantage of the supply of a recreation opportunity during an established use period without substantially diminishing the quality of the recreation experience or the resources.
Reburial and reinterment	The replacement of disinterred human remains into the ground or otherwise disposing of such remains in a manner likely to approximate the wishes of the deceased (e.g., placement in burial caves, legal cemeteries, surface mortuary structures, or cremation where traditionally practiced).
Recreation Opportunity Spectrum (ROS)	A system for planning and managing recreation resources that categorizes recreation opportunities into six classes. 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. The six classes are:
Primitive	An essentially unmodified natural environment of fairly large size. Interaction between users is very low, and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use is generally not permitted.
Semi-Primitive Non-Motorized	A natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed to minimize onsite controls and restrictions. Use of local roads for recreational purposes is not allowed.
Semi-Primitive Motorized	A natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed to minimize onsite controls and restrictions. Local roads used for other resource management activities may be present.
Roaded Natural	A natural-appearing environment with moderate evidence of the sights and sounds of humans. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high with evidence of other users prevalent. Motorized use is allowed.
Roaded Modified	A natural environment that has been substantially modified particularly by vegetative manipulation. There is strong evidence of roads and/or highways. Frequency of contact is low to moderate.

Rural	A natural environment that has been substantially modified by development of structures, vegetative manipulation. Structures are readily apparent and may range from scattered to small dominant clusters. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high.
Recreation places	Identified geographical areas having one or more physical characteristics that are particularly attractive to people engaging in recreation activities. They may be beaches, streamside or roadside areas, trail corridors, hunting areas of the immediate area surrounding a lake, cabin site, or campground.
Recreation Visitor Day (RVD)	A measure of recreation use of an area. One recreation visitor day consists of 12 hours of recreation use of a site or area. Recreation visitor days are used to measure recreation production or output capacity.
Reducing soil condition	An environment in the soil conducive to the removal of oxygen and chemical reduction of ions caused by saturated soil conditions.
Reforestation	The natural or artificial restocking of an area usually to produce timber and other wood products, but also to protect watersheds, prevent soil erosion, and improve wildlife, recreation and other natural resources. Natural reforestation includes site preparation to reduce competing vegetation and provide a mineral seed bed for seed provided by seed trees. Artificial reforestation is the planting of seedlings, cuttings or seeds by hand or mechanical means and may include site preparation.
Regeneration treatment	Treatments and activities that relate to the reestablishment of stands of trees. Includes planting, seeding, and preparing the ground for seeding from adjacent stands where ground preparation is not necessary.
Regulated volume	The quantity of timber in the allowable sale quantity that is based on the growth and yield projections for growing stock.
Rehabilitation	Actions taken to protect or enhance site productivity, water quality, or other values for a short period of time.
Relinquish	To abandon, to give up, to surrender, to renounce some right or thing (Black 1979).
Research and Experiment Area	A unit reserved and dedicated by the Secretary of Agriculture for forest or range research and experimentation. (USDA Forest Service, undated, Land Areas of the National Forest System)
Research design	A statement of work to be done toward a particular goal. The research design details what will be done, how it will be done, what is required to do it, and why it is important or useful to do the work .
Research Natural Area (RNA)	An area in as near a natural condition as possible, which exemplifies typical or unique vegetation and associated biotic, soil, geologic, and aquatic features. The area is set aside to preserve a representative sample of an ecological community primarily for scientific and educational purposes; commercial and most public uses are not allowed.
Resident fish	Fish that are not migratory and complete their entire life cycle in fresh water.
Resource values	The tangible and intangible worth of forest resources.
Responsible Official	The Forest Service employee who has the delegated authority to make a specific decision.
Restoration	The long-term placement of land back into its natural condition or state of productivity.

Retention	The amount of commercial forest land removed from the timber base to protect other resource values.
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 reseedling.
Riffles	Shallow rapids in an open stream, where the water surface is broken by waves caused by wholly or partially submerged obstructions.
Right-of-Way	The right to pass through another person's land as obtained by condemnation or purchase.
Riparian area	The area including a stream channel, lake or estuary bed, the water itself, and the plants that grow in the water and on the land next to the water.
Riparian ecosystem	Land next to water where plants that are dependent on a perpetual source of water occur.
Riparian management area	The area including water, land and plants that is at least 100 slope feet away from each side of perennial streams, lakes and other bodies of fresh water.
Riverine wetland	A category in wetland classification which includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5 percent.
RNA	See Research Natural Area.
Road density	The number of road miles per square mile of land area.
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.
Road Maintenance Level	Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria (FSH 7709.58, section 12.3).
Maintenance Level 1	Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period is one year or longer. Basic custodial maintenance is performed.
Maintenance Level 2	Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration.
Maintenance Level 3	Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.
Maintenance Level 4	Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds.
Maintenance Level 5	Assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-laned and paved, or aggregate surfaced with dust abatement.
ROS	See Recreation Opportunity Spectrum.
ROS Existing	See ROS Inventoried.
ROS Inventoried	A general inventory of the physical, social and managerial setting for recreation, based on remoteness from modern human development and activity, modification of the land, and social factors such as crowding.

Rotation	The planned number of years between the formation or the regeneration of a crop or stand of trees and its final cutting at a specified stage of maturity.
Rotation age	The age of a stand when harvested at the end of a rotation.
RPA	Forest and Rangeland Renewable Resources Planning Act.
RPA Assessment and Program	The RPA Assessment is prepared every ten years and describes the potential of the nation's forests and rangelands to provide a sustained flow of goods and services. The RPA Program is prepared every five years to chart the long-term course of Forest Service management of the National Forests, assistance to State and private landowners, and research. They are prepared in response to Sections 3 and 4 of the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) (16 U.S.C. 1601).
Rubble	All accumulations of loose angular rock fragments, commonly overlying outcropping rock.
Rural development	Rural Development is the management of human, natural, technical, and financial resources needed to improve living conditions, provide employment opportunities, enrich the cultural life, and enhance the environment of rural America. In the National Forest System, rural development is accomplished through partnerships.

S

Saleable minerals	Include common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay. In general, these minerals are of wide-spread occurrence and are of relatively low unit value. They are generally used for construction materials and for road building purposes.
Salvage harvest	Removal of dead or dying trees resulting from insect and disease epidemics or wildfire.
Saturated soils	Soil condition where all the spaces between soil particles are filled with water.
Sawlogs (Saw timber)	That portion of a tree that is suitable in size and quality for the production of dimension lumber collectively known as saw timber.
Scoping	Determination of the significant issues to be addressed in an environmental impact statement.
Scrub-Shrub wetland	Wetlands dominated by woody vegetation less than 20 feet tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. In Southeast Alaska this includes forested lands where trees are stunted because of poor soil drainage.
Second growth	Forest growth that has come up naturally or has been planted after some drastic interference (for example, clearcut harvest, serious fire, or insect attack) with the previous forest growth.
Secondary stream production	Results from consumption by animals of materials produced in primary production in streams; this includes production of macroinvertebrates and some fish species.
Secondary succession	The process of reestablishing vegetation after normal succession is disrupted by fire, cultivation, lumbering, windthrow, or any similar disturbance.
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 either above or below sea level.

Seed tree	Small number of seed-bearing trees left singly or in small groups after timber harvest to provide seed for regeneration of the site.
Selection cutting	The annual or periodic removal of trees (particularly the mature), individually or in small groups from an uneven-aged forest to achieve the balance among diameter classes needed for sustained yields, and in order to realize the yield, and establish a new crop of irregular constitution. Note: The improvement of the Forest is a primary consideration.
Selection system	A silviculture system in which trees in an uneven-aged stand are removed individually, here and there, from a large area each year in order to achieve a balance among diameter classes needed for sustained yield by selection cutting.
Sensitive species	Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations. Species that have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered or threatened species, that are on an official state list, or that are recognized by the Regional Forester as needing special consideration to assure viable populations and to prevent their being placed on Federal or state lists.
Sensitive travel route	A road system or marine water way which receives a moderate to high degree of use by the public, both Alaskan residents and tourists.
Sensitivity level	A measure of the people's concern for the scenic quality of the National Forest applied to travel routes, use areas, and water bodies.
Sensitivity zone	A body of land which has been classified on the basis of cultural and environmental data, as having a high, medium, or low likelihood for containing cultural resources.
Settlement sale	The disposition of timber or other national forest products, cut, damaged or destroyed in conjunction with an authorized occupancy of a right-of-way or other use of National Forest Land. In wilderness it would be the sale of timber removed from an inholding access road or privately developed hatchery site. Also, the compensation of the United States for property taken or rendered unusable for other purposes incidental to some lawful use of National Forest land. When timber has a value, clearing the land for some use other than growing timber constitutes a forced sale.
Shelterwood harvest	The removal of a stand of trees through a series of cuttings designed to establish a new crop with seed and protection provided by a portion of the stand.
SHPO	See State Historic Preservation Officer.
Significant change	(Soils) Change in productivity of the land as indicated by changes in soil properties that are expected to result in a reduced productive capacity over the planning horizon. Based on available research and current technology, a guideline of 15 percent reduction in inherent soil productivity potential is used as a basis for setting threshold values for measurable or observable soil properties or conditions. The threshold values, along with areal extent limits, will serve as an early warning signal of reduced productive capacity. A more stringent basis than 15 percent can be used where appropriate and documented.
Significant impairment	(Soils) Changes in the productivity of the land as indicated by changes in soil properties which would result in significant changes in the inherent productive capacity that last beyond the planning horizon.

Silvicultural system	A management process whereby forests are tended, harvested, and replaced resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the process (See single-tree selection, shelterwood cutting, group selection, even-aged management, uneven-aged management, and clearcut).
Silviculture	The science and art of growing and tending crops of forest trees to attain the desired level of marketable and unmarketable products.
Significant surface disturbance	Changing the above-ground environment so much that returning that site to the condition it was in before the change is difficult or impossible. Road construction, use of mechanical earthmoving equipment including backhoes and bulldozers, construction of buildings, and cutting of timber are all examples of activities that are considered to cause significant disturbance to surface resources. An evaluation of proposed operations must be made on a case by case basis to determine if disturbance is considered significant. For example, a mining activity in an alpine area may result in significant disturbance that takes years to reclaim while the same activity conducted at a lower elevation where natural conditions are not as severe may result in a disturbance that would take only a few months to successfully reclaim.
Single-tree selection	A cutting method to develop and maintain uneven-aged stands by removal of selected trees from specified age classes over the entire stand area in order to meet a predetermined goal of age distribution and species in the remaining stand.
Site index	A measure of the relative productive capacity of an area for growing wood. Measurement of site index is based on height of the dominant trees in a stand at a given age.
Site preparation	Removing unwanted vegetation and debris from a site and preparing the soil before reforestation.
Site productivity	Production capability of specific areas of land.
Skyline logging	See "Logging systems".
Slash	Debris left after logging, pruning, thinning, or brush cutting, and large accumulations of debris resulting from windstorms. It includes logs, bark, branches, and stumps.
Slope distance	Distance measured along the contour of the ground.
Slough	A section of an abandoned river channel containing stagnant water and occurring on a floodplain or delta.
Smolt	A young silvery-colored salmon or trout which moves from freshwater streams to saltwater.
Snag	A non-living standing tree usually greater than 5 feet tall and 6 inches in diameter at breast height. The interior of the snag may be sound or rotted.
Soil conservation practices	Practices that are mechanisms used to protect soil quality while managing for other resource goals and objectives. They can be administrative, preventive or corrective measures. They are identified during project planning and design.
Soil drainage	The rapidity and extent of the removal of water from the soil, in relation to additions especially by surface runoff and by flow through the soil to underground spaces.
Soil mass movement	See mass movement.
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.

Soil quality standards	Standards that are a combination of 1) "threshold" values for severity of soil property alteration, or significant change in soil properties conditions, and 2) areal extent of disturbance.
Soil Resource Inventory (SRI)	An inventory of the soil resource based on landform, vegetative characteristics, soil characteristics, and management potentials.
Somewhat poorly drained soil	Water in the soil is removed from the soil slowly enough to keep it wet for significant periods but not all of the time.
Special habitats	Structural elements of ecosystems. These may include, but are not limited to: snags, spawning gravels, fallen trees, aquatic reefs, caves, seeps, and springs.
Special Use Authorization	A permit, term permit, temporary permit, lease, or easement that allows occupancy or use of, or rights and privileges on National Forest System lands.
Special Use Permit	Permits and granting of easements (excluding road permits and highway easements) authorizing the occupancy and use of land.
Speleotherm	Any secondary mineral deposit or cave formation that is formed by the action of water. Examples are stalagmites, stalactites, flow stone, bacon rind drapery, helictites, soda straws, and crystal growths.
Split lines	The process of separating the direction of timber harvest yarding into opposite directions.
SRI	See Soil Resources Inventory.
Stabilization	The process of arresting the deterioration of a damaged cultural resource in order to prevent further damage from occurring. Stabilization may include reconstructing portions of the cultural resource.
Stand	A group of trees occupying a specific area and sufficiently uniform in composition, age arrangement, and condition as to be distinguishable from the trees in adjoining areas.
Standards and Guidelines	Requirements which preclude or impose limitations on resource management activities, generally for the purposes of environmental protection and safety.
State Historic Preservation Officer (SHPO)	The official appointed or designated pursuant to Section 101(b)(1) of the National Historic Preservation Act of 1966, as amended, to administer the State Historic Preservation Program.
State selection	(from National Forest System lands) Application by Alaska Department of Natural Resources to the USDI Bureau of Land Management for conveyance of a portion of the 400,000 acre State entitlement from vacant and unappropriated National Forest System lands in Alaska, under authority of Section 6(a) of the Alaska Statehood Act of 1959 (Public Law 85-508, 72 Stat. 340). For lands to be conveyed, State selections must be approved by the USDA Forest Service, Regional Forester, Alaska Region under criteria of the Statehood Act. Until approved by the Regional Forester, the State application is not considered a valid selection. The State can select up to 25 percent in excess of its remaining entitlement.

Strata	The process of aggregating areas with similar resource conditions into broad categories for analysis purposes. For example, existing timber stands are aggregated into Stratas A through D, with A having the lowest timber values and D having the highest. In the geographic information system (GIS), several resource strata can be layered for multiresource analysis.
Strata A	Synonymous with Volume Class 4 (8-20,000 net board feet/acre.)
Strata B	Synonymous with Volume Class 5 (20-30,000 net board feet/acre.)
Strata C	Synonymous with Volume Class 6 (30-50,000 net board feet/acre.)
Strata D	Synonymous with Volume Class 7 (50,000+ net board feet/acre.)
Stratigraphic	Depositional units or layers of sediment distinguished by composition or appearance that are associated with archaeological and historic sites.
Stream class	A means to categorize stream channels based on their fish production values. There are three stream classes on the Tongass National Forest. They are:
Class I	Streams with anadromous (fish ascending from oceans to breed in freshwater) or adfluvial (fish ascending from freshwater lakes to breed in streams) lake and stream fish habitat. Also included is the habitat upstream from migration barriers known to be reasonable enhancement opportunities for anadromous fish and habitat with high value resident sport fish populations.
Class II	Streams with resident fish populations and generally steep (often 6-15 percent) gradient (can also include streams from 0-5 percent gradient where no anadromous fish occur). These populations have limited sport fisheries values. These streams generally occur upstream of migration barriers or are steep gradient streams with other habitat features that preclude anadromous fish use.
Class III	Streams with no fish populations but have potential water quality influence on the downstream aquatic habitat.
Streamflow	The discharge of water from a watershed that occurs in a natural stream channel.
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.
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 byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade."
Substrate	The size of rock in the bed (bottom) of rivers and streams.
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.
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.
unscheduled lands	Lands suitable but not scheduled for timber production and which are not in the land base for the calculation of the allowable sale quantity nor long-term sustained yield timber capacity.

Suppression	The act of extinguishing or confining a fire.
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.
Swale	A slight, marshy depression in generally level land. A depression in glacial ground moraine.

T

Targets	Objectives assigned to the Forest by the Regional Plan.
Temporary facility	Any structure or other human-made improvement which can be readily and completely dismantled and removed from the site when the authorized use terminates.
Temporary roads	Low-level roads constructed for a single purpose and short-term use. Once use of the road has been completed, it is obliterated, and the land it occupied is returned to production.
Tentatively suitable Forest Land	Forest land that is producing or is capable of producing crops of industrial wood and: (a) has not been withdrawn by Congress, the Secretary of Agriculture or the Chief of the Forest Service; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities.
Terrestrial ecosystems	Plant communities that are not dependent on a perpetual source of water to grow.
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	Removing trees that are too small to make a merchantable product to improve tree spacing and promote more rapid growth.
Commercial	Removing trees that have reached sufficient size to be manufactured into a product to improve tree spacing and promote more rapid growth.
Threatened Species	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of the Interior as a threatened species.
Threshold	The point or level of activity beyond which an undesirable set of responses begins to take place within a given resource system.
Tiering	Elimination of repetitive discussions of the same issue by incorporating by reference the general discussion in an environmental impact statement of broader scope. For example, a project environmental assessment could be tiered to the Forest Plan EIS.
Timber	A general term for the major woody growth of vegetation in a forest area.

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.
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	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.
Commercial forest	Forest land tentatively suitable for the production of continuous crops of timber and that has not been withdrawn.
Timber dispersion	When an opening created from a final timber harvest is no longer considered an opening for the purpose of scheduling adjacent timber harvest. This is often expressed as the maximum amount of disturbance in a watershed at any given time.
Timber harvest schedule	The quantity of timber planned for sale and harvest, by time period, from the area of land covered by the Forest Plan.
Timber production	The purposeful growing, tending, harvesting, and regeneration of trees for industrial or consumer use.
Timber Stand Improvement (TSI)	All noncommercial intermediate cuttings and other treatments to improve composition, condition, and volume growth of a timber stand.
Tongass Resource Use Cooperative Survey (TRUCS)	A study done to gather information on subsistence uses of the Forest.
Top filing	The filing of a future selection application by the State of Alaska, subject to valid existing rights, for lands which are not available for selection on the date of filing. If otherwise valid, these applications become an effective selection, without further action by the state, upon the date included lands become available for selection. Top filings for the State of Alaska are authorized by Section 906(e), ANILCA.
Total stream discharge	Total water outflow from stream or river.
Traffic Service Level (TSL)	Describes a road's significant traffic characteristics and operating conditions. The levels reflect a number of factors, such as speed, travel time, traffic interruptions, freedom to maneuver, safety driver comfort, convenience, and operating costs. These factors, in turn, affect design elements such as number of lanes, turnout pacing, lane widths, type of driving surface, sight distances, design speed, clearance, horizontal and vertical alignment, curve widening, and turnarounds.
TSL A	Reflects transportation efficiency and mobility with few interruptions to flow and a stable smooth driving surface.
TSL B	Generally would have alignment more influenced by topography, more interruptions but still usually a stable smooth driving surface.

TSL C	One could expect much more sinuous alignment to reduce construction costs with a surface that may not be stable under all traffic or weather conditions.
TSL D	Generally constructed for a single purpose and traffic is discouraged for other purposes; surface and alignment is rough and irregular; very low speeds are anticipated to be able to safely negotiate the road.
Transportation and Utility System (TUS)	Significant corridors, with their associated sites used to accommodate public transportation and energy transmission needs.
Avoidance Area	An area where the establishment and use of transportation or utility corridors and sites is not desirable given the land use designation emphasis. A search for "windows" should be exhausted before TUS facilities are considered in avoidance areas. When practical, these areas should be avoided through site-specific analysis during project-level planning. Avoidance areas often include Congressionally and administratively designated areas. Although special environmental and procedural considerations may be required for these areas, these special designations do not preclude consideration and use as a TUS. Avoidance areas are designated through the allocation of lands to management prescriptions specifically identified as TUS avoidance areas in their standards and guidelines.
Exclusion Area	A large area (large enough to cause significant barriers) which legislatively precludes transportation and utility systems. Due to special authorities provided in Title XI, ANILCA, there will be no exclusion areas on the Tongass.
Window	An area potentially available for the location of transportation or utility corridors and sites.
Transportation/Utility corridor	A linear strip of land identified for the present location of transportation or utility rights-of-way within its boundaries (USDA Forest Service, Region 6 memo dated December 2, 1987 from Director of Lands and Minerals to Director of Planning).
Travel management	Providing for the safe, environmentally responsible, and customer responsive movement of vehicles and people to and through public lands (social attributes).
TRUCS	See Tongass Resource Use Cooperative Survey.
Trust	A right of property, real or personal, held by one party for the benefit of another (Black 1979).
TSI	See Timber Stand Improvement.
TSL	Traffic Service Level.
TTRA	Tongass Timber Reform Act of 1990.
Turbidity	An expression of the optical property that causes light to be scattered and absorbed rather than transmitted in straight lines through a water sample; turbidity in water is caused by the presence of suspended matter such as clay, silt, finely divided organic and inorganic matter, plankton, and other microscopic organisms.
TUS	See Transportation and Utility System.

U

Unconfined streams	Streams that, due to lack of stream incision, and effects of geomorphic landform characteristics and local geologic conditions, result in streams overflowing their banks, changing flows to other channels, and establishing new channels during flood conditions.
Understory vegetation	Grass, small trees, shrubs, and other plants found beneath the overstory (the trees comprising the forest).
Undertaking	In cultural resources, any project, activity, or program that can result in changes in the character or use of historic properties, if any such properties are located in the area of potential effects. The project, activity, or program must be under the direct or indirect jurisdiction of a Federal Agency or be licensed or assisted by a Federal agency. Undertakings include new and continuing projects, activities, or programs and any of their elements not previously considered under Section 106, National Historic Preservation Act of 1966, as amended.
Uneven-aged management	The application of actions needed to maintain 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 methods that develop and maintain uneven-aged stands are single-tree and group selection.
Unsuppressed	A fire that remains unextinguished or unconfined. The spread has not been halted.
Utility (Pulp) volume	Logs that do not meet minimum requirements for sawtimber but are suitable for the production of usable pulp chips.
Utilization standards	Standards guiding the use and removal of timber. They are measured in terms of diameter at breast height (DBH) and top of the tree inside the bark (top DIB) and the percentages of "soundness" of the wood.

V

V-Notches	A deeply incised valley along some waterways that would look like a "V" from a frontal view. These abrupt changes in terrain features are often used as harvest unit or yarding boundaries.
VAC	See Visual Absorption Capability.
Valid	Having legal strength or force, executed with proper formalities, incapable of being rightfully overthrown or set aside (Black 1979).
Valid existing rights	The rights afforded someone to explore and extract minerals from an area that has been withdrawn from mineral entry because they staked their claim before the area was withdrawn.
Valley	An elongated, relatively large, externally drained depression of the earth's surface that is primarily developed by stream erosion.
Valley bottom	A general term for the nearly level to gently sloping part of a valley. Also referred to as the valley floor.
Value Comparison	A distinct geographic area that generally encompasses a drainage basin containing one or more

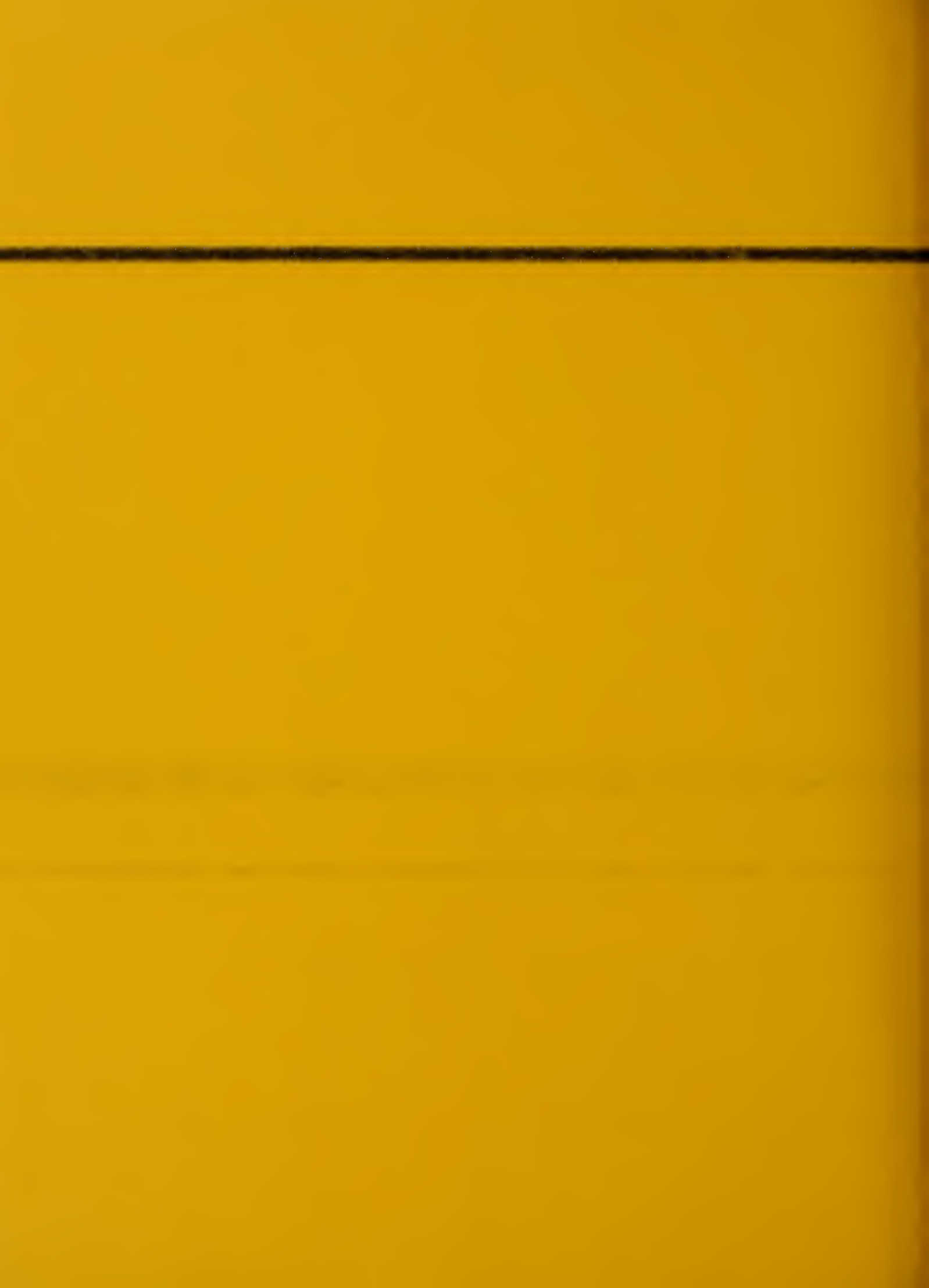
Unit (VCU)	large stream systems. Boundaries usually follow easily recognizable watershed divides. These units were established to provide a common set of areas for which resource inventories could be conducted and resource value interpretations made.
VCU	See Value Comparison Unit.
Vegetation release	The freeing of vegetation (grass, forbs, brush, trees) by eliminating the competition for nutrients, water, and sunlight. Once competition for these items has been eliminated, subdued, or stagnated, vegetation will display vigor and growth.
Veneer log	A log considered suitable in size and quality for producing veneer which is a thin sheet of wood of uniform thickness.
Very poorly drained soils	Water is removed from the soil so slowly that the water table remains at or on the surface the greater part of the time. Soils of this drainage class usually occupy level or depressed sites and are frequently ponded.
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 water way or specific viewpoint.
Visual Absorption Capability (VAC)	The capability of the landscape to visually absorb management activities. Landscapes are rated with high, moderate or low abilities to absorb management activities. These ratings reflect the degree of landscape variety in an area, viewing distance and topographic characteristics. As an example, steep, evenly sloped landscapes viewed in the foreground to middleground are typically given a low VAC rating.
Visual Quality Objective (VQO)	A desired level of scenic quality and diversity of natural features based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape.
Inventory VQO	Derived through application of the USDA Visual Management System. Uses three elements to determine the inventory: Sensitivity levels, distance zones and landscape variety class. Provides a benchmark and illustrates the optimum objective based on current use patterns and sensitivity.
Adopted VQO	The VQO to be achieved as a result of management direction identified in the approved forest plan. Adopted VQO's represent the visual resource objective for the Forest Land Management Plan period, normally 10 years. (FSH 2309.22, R-10 Landscape Management Handbook.)
Preservation	Management activities are generally not allowed in this setting. The landscape is allowed to evolve naturally.
Retention	Management activities are not evident to the casual Forest visitor.
Partial Retention	Management activities may be evident, but are subordinate to the characteristic landscape.
Modification	Management activities may dominate the characteristic landscape but will, at the same time, use naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed as middleground (1/4 to 5 miles from viewer).
Maximum Modification	Management activities may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.
VQO	See Visual Quality Objective.

W

- WAA** See Wildlife Analysis Area.
- 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.
- Third order watershed** A watershed where there are (generally) two major branches to the mainstream of the watershed. (Also see Stream order.)
- Fourth order watershed** A watershed which contains at least two third order watersheds.
- Water table** The upper surface of the ground water or that level below which the soil is saturated with water.
- Well-drained soils** Water is removed from the soil readily, but not rapidly.
- Wetlands** Areas that are inundated by surface or ground water with a frequency sufficient, under normal circumstances, to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include muskegs, marshes, bogs, sloughs, potholes, river overflows, mud flats, wet meadows, seeps, and springs.
- WFUD** See Wildlife and Fish User Day.
- Wild and Scenic Rivers** Rivers or sections of rivers designated by congressional actions under the 1968 Wild and Scenic Rivers Act, as wild, scenic, or recreational by an act of the Legislature of the State or States through which they flow. Wild and scenic rivers may be classified and administered under one or more of the following categories:
- Wild river areas** Rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- Scenic river areas** Rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- Recreational river areas** Rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.
- Wilderness** Areas designated by congressional action under the 1964 Wilderness Act or subsequent Acts. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature, with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historic value as well as ecologic and geologic interest. In Alaska, Wilderness has been designated by ANILCA and TTRA.

Wildfire	Any wildland fire not designated and managed as a prescribed fire within an approved prescription. All wildfires will be given an appropriate suppression action.
Wildlife Analysis Area (WAA)	A division of land used by the Alaska Department of Fish and Game for wildlife analysis.
Wildlife and Fish User Day (WFUD)	One Wildlife and Fish User Day (WFUD) consists of 12 hours of recreation viewing or utilizing fish or wildlife.
Wildlife habitat diversity	The distribution and abundance of different plant and animal communities and species within a specific area.
Windfirm	Trees not likely to be blown over by the wind. These are usually 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 destroy hundreds of acres; and management related, where the clearing of trees in an area make the adjacent standing trees vulnerable to windthrow.
Winter range	An area, usually at lower elevation, used by big game during the winter months; usually smaller and better-defined than summer ranges.
Withdrawal	The withholding of an area of Federal land from settlement, sale, location, or entry under some or all of the general land laws for the purpose of limiting activities under those laws in order to maintain other public values in the area.

Appendices



Appendix A

Timber Suitability Classification

APPENDIX A

TENTATIVELY SUITABLE FOREST LAND CLASSIFICATION

INTRODUCTION

The Tongass Forest Plan Revision IDT's recommendation on the Criteria for Determining the Tentatively Suitable Forest Land Classification was sent to each Area on April 28, 1988 for review. Review comments have been incorporated and the criteria have been approved by the Tongass National Forest Supervisors. The criteria listed in this document will be used in the Draft Forest Plan to determine the tentatively suitable forest land classification.

TASK FORCE OBJECTIVE

On October 23, 1987 a task force was established to determine the criteria for the tentatively suitable forest land in conjunction with the Revision of the Tongass National Forest Land Management Plan. The task force is comprised of a technical working group and consultant/reviewer group. Working group members are:

Bill Wilson	-	IDT Timber Planner - Chairman
Bob Gerdes	-	Stikine Area Forester
Dave Loggy	-	Ketchikan Area Soils Scientist
Jim Russell	-	Chatham Area Silviculturist
Jim Douglas	-	SAF Representative

Consultant/reviewer members are:

Paul Alaback	-	Forest Science Lab
Don Finney	-	Alaska Loggers Association
Bart Koehler	-	SEACC

The role of the task force is limited to identifying the biologic criteria and availability of forest lands to be considered as capable of producing industrial wood products as described in the National Forest Management Act (NFMA) Regulations 36 CFR 219.14 (a)(1) through (4). These forested lands are those that are producing or capable of producing crops of industrial wood and (a) have not been withdrawn by Congress, the Secretary, or the Chief; (b) where existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities. The determination of lands actually suitable for timber production will begin in the analysis of the management situation (AMS) and culminate with the Forest Plan. Suitable lands in the

Forest Plan will constitute the land base for determining the allowable sale quantity (ASQ) and all vegetation management practices associated with timber production. The AMS and each alternative in the Forest Plan will be limited to no more than the acres identified as tentatively suitable.

National Forest Management Act Regulations 36 CFR 219.14 - Timber Resource Land Suitability is provided for review. This task force is responsible for Section (a)(1) through (4).

36 CFR Part 219

NATIONAL FOREST SYSTEMS LAND AND RESOURCE MANAGEMENT PLANNING

36 CFR Part 219.14 - Timber Resource Land Suitability

During the forest planning process, lands which are not suited for timber production shall be identified in accordance with the criteria in paragraphs (a) through (d) of this section.

TENTATIVELY SUITABLE (BIOLOGICALLY CAPABLE)

(a) During the analysis of the management situation, data on all National Forest System lands within the planning area shall be reviewed, and those lands within any one of the categories described in paragraphs (a)(1) through (4) of this section shall be identified as not suited for timber production

(1) The land is not forest land as defined in 219.3.

(2) Technology is not available to ensure timber production from the land without irreversible resource damage to soils productivity, or watershed conditions.

(3) There is not reasonable assurance that such lands can be adequately restocked as provided in 219.27(c)(3).

(4) The land has been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture or the Chief of the Forest Service.

ECONOMICALLY SUITABLE

(b) Forest lands other than those that have been identified as not suited for timber production in paragraph (a) of this section shall be further reviewed and assessed prior to formulation of alternatives to determine the costs and benefits for a range of management intensities for timber production. For the purpose of analysis, the planning area shall be stratified into categories of land with similar management costs and returns. The stratification shall consider appropriate factors that influence the costs and returns such as physical and biological conditions of the site and transportation requirements. This analysis shall identify the management intensity for timber production for each category of land which results in the largest excess of discounted benefits less discounted costs and shall compare the direct costs of growing and harvesting trees, including capital expenditures required for timber production, to the anticipated

receipts to the government, in accordance with 219.12 and paragraphs (b)(1) through (b)(3) of this section.

(1) Direct benefits are expressed as expected gross receipts to the government. Such receipts shall be based upon expected stumpage prices and payments-in-kind from timber harvest considering future supply and demand situation for timber and upon timber production goals of the regional guide.

(2) Direct costs include the anticipated investments, maintenance, operating, management, and planning costs attributable to timber production activities, including mitigation measures necessitated by the impacts of timber production.

(3) In addition to long-term yield, the financial analysis must consider costs and returns of managing the existing timber inventory.

**SUITABLE BY
MANAGEMENT
OBJECTIVES**

(c) During formulation and evaluation of alternative as required in 219.12 (f) and (g), combinations of resource management prescriptions shall be defined to meet management objectives for the various multiple uses including outdoor recreation, timber, watershed, range, wildlife and fish, and wilderness. The formulation and evaluation of each alternative shall consider the costs and benefits of alternative management intensities for timber production as identified pursuant to paragraph (b) of this section in accordance with 219.12 (f). Lands shall be tentatively identified as not appropriate for timber production to meet objectives of the alternative being considered if -

(1) Based upon a consideration of multiple-use objectives for alternative, the land is proposed for resource uses that preclude timber production, such as wilderness;

(2) Other management objectives for alternative limit timber production activities to the point where management requirements set forth in 219.27 cannot be met; or

(3) The lands are not cost-efficient, over the planning horizon, in meeting forest objectives, which include timber production.

**REVIEW OF
NOT SUITED**

(d) Lands identified as not suited for timber production in paragraph (a) of this section and lands tentatively identified as not appropriate for timber production in paragraph (c) of this section shall be designated as not suited for timber production in the preferred alternative. Designation in the plan of lands not suited for timber production shall be reviewed at least every 10 years. Such lands may be reviewed and redesignated as suited for timber production due to changed conditions at any time, according to the criteria in paragraphs (a) and (c) of this section, and according to the procedures for amendment or revision of the forest plan in 219.10 (f) and (g).

NFMA Sections cited in Part 219.14 (a)(1) through (4) -

219.3 Definitions and Terminology

Forest 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. Lands developed for non-forest use include areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearing and powerline clearing of any width.

219.27 Management Requirements - (c) Silvicultural Practices

(3) When trees are cut to achieve timber production objectives, the cuttings shall be made in such a way as to assure that the technology and knowledge exists to adequately restock the lands within 5 years after final harvest. Research and experience shall be the basis for determining whether the harvest and regeneration practices planned can be expected to result in adequate restocking. Adequate restocking means that the cut area will contain the minimum number, size, distribution, and species composition of regeneration as specified in regional silvicultural guides for each forest type. Five years after final harvest means 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting.

PROCESS 1.

Is Land Forested?

Forest Land. Land at least 10-percent occupied by forest trees or formerly having had such tree cover and not currently developed for nonforest use. Forest trees are defined as woody plants having a well-developed stem and usually more than 12 feet in height at maturity. Lands developed for nonforest use include areas for crops, improved pasture, residential or administrative areas, improved (constructed) roads of any width and adjoining road clearing, and powerline clearing of any width. The term occupancy, when used to define forest land, shall be measured by canopy cover of live forest trees at maturity. The minimum area for classification of forest land is 5 acre or greater, consistent with Regional mapping standards. Unimproved roads, trails, streams, and clearings in forest areas are classified as forest, if they are less than 120 feet in width.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the definition will be classified as forested.

a. Vegetative Inventory - National Forest lands identified as having a forested Cover Type (CT) in the Forest Plan Geographic Information System (GIS) Data Base includes all existing forest types meeting the 10% crown cover and currently nonstocked forest land formerly having had 10% crown cover.

<i>Code</i>	<i>Description</i>
F	Forested

b. Soils Inventory - National Forest lands with soils inventoried as having forested plant association in the Forest Plan GIS Data Base will be compared to the vegetative inventory to insure all nonwilderness forested lands are identified. Forested lands in the Soil Mapping Unit (SMU) are identified in the Cover Type of the SMU look-up table (SMUT).

<i>Code</i>	<i>Descriptions</i>
F	Forested

c. Lands Inventory - National Forest lands currently developed for non-forest use, including administrative sites and powerline clearings, will be identified in the Forest Plan GIS Data Base and classified as unsuitable.

Forested encumbered National Forest lands satisfy the forested criteria until selections are conveyed to the State of Alaska or Native Corporations.

d. Roads Inventory - Existing specified roads and adjoining road clearings on National Forest lands will be identified in the Forest Plan GIS Data Base and classified as unsuitable. The existing road status (STATUS) is:

<i>Code</i>	<i>Description</i>
E	Existing

NOTE: All resource inventory information will not be available for existing Wilderness. As a minimum, the vegetative inventory will be used to identify forested lands within Wilderness.

PROCESS 2.

Is Land Capable of Producing Crops of Industrial Wood?

Forest Land Capable of Producing Industrial Wood. Lands that are not capable of producing crops of industrial wood are by definition to be classified as unsuitable for timber production. Species of trees which are not currently utilized or not expected to be utilized within the next 10 years, constitute the primary criterion for assigning lands to this category. This does not preclude, however, the formulation of an alternative to display management opportunities, if a demand develops.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), but are not capable of producing industrial wood products, will be classified as unsuitable.

a. Vegetative Inventory - Mature stands of nonindustrial forest types will be identified in the Forest Plan GIS Data Base and classified as unsuitable. Forest Type (FT) codes are:

<i>Codes</i>	<i>Description</i>
P	Black Cottonwood
L	Lodgepole Pine
A	Alder

NOTE: A review of the soils GIS inventory indicates that there are no SMUs which have occurrences of Plant Associations with 50% or greater of the non-commercial species listed above on the Tongass National Forest. The vegetation inventory will be used to identify unsuitable lands in both wilderness and nonwilderness.

Physically Suitable Forest Land. Forest lands physically suitable for timber production are lands where technology is available to ensure timber production, without irreversible resource damage to soil productivity or watershed conditions and lands where there is reasonable assurance that they can be adequately restocked within 5 years. The latest developments in technology that are documented in current research and experience are to be considered in these determinations. Economic efficiency is not a factor in the determination of physical suitability.

The next two steps (Process 3 and Process 4) are subparts of the Physically Suitable screen.

PROCESS 3.

Is Irreversible Damage Likely to Occur?

Irreversible Damage. The first test of physically suitable forest land is for irreversible damage. This test shall be performed by an interdisciplinary team. It shall determine if activities involved in timber production can be carried out on forest land without irreversible resource damage to soil productivity or watershed conditions. As a minimum, activities considered should include access, harvesting, slash disposal, and regeneration. If these items can be accomplished with available technology and without impairment to the site or drainage, the land shall be considered tentatively suitable. Available technology is that technology that is in use or which current research and experience indicates is feasible to use. Current research and experience should indicate that the technology is feasible to use successfully for the site, species, and other factors involved. Current does not have to be within the Forest or Region.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1) and capable (Process 2), but cannot be managed for industrial wood products without irreversible resource damage, will be classified as unsuitable.

a. Soil Inventory - Soils identified as meeting criteria for irreversible resource damage will be identified in the Forest Plan GIS Data Base and classified as unsuitable.

(1) SMUs that are unsuitable will be identified in an interpretation lookup table for very high (code 4) mass movement probability rating.

(2) Those SMUs in the table having high (code 3) mass movement probability ratings will be identified as needing technology capable of supplying partial or full suspension over nearly the entire length of the yarding distance to ensure timber production without irreversible resource damage to soil productivity or watershed conditions. These lands satisfy the criteria for tentatively suitable, but will continue to be tracked to insure that alternatives include the appropriate logging system.

(3) SMUs with any occurrence of McGilvery soils will be still meet the criteria for tentatively suitable in this process, but will be identified as requiring harvest systems capable of at least partial suspension over nearly the entire length of the yarding distance.

Classes of McGilvery Soils

HOCL
MCG
MCGF
MCGC

NOTE: The soils inventory is not available for all existing Wilderness. As a minimum, the Digital Elevation Model (DEM) will be used to identify forested lands (from the vegetative inventory) with slopes 75% or greater. These lands will be classified as unsuitable.

PROCESS 4.

Can Area be Restocked Within 5 years?

Restocking Within 5 years. The second test of physically suitable forest land (after irreversible damage discussed in PROCESS 3) is whether there is reasonable assurance that the remaining forest lands can be adequately restocked within 5 years of final harvest, based on existing technology and knowledge. Current research and experience shall be the basis for determining whether the practice planned can be expected to be successful at the time final harvest is

planned. If existing knowledge is inadequate to determine which practices will be successful on certain lands, but research is underway which should resolve this question prior to when final harvest is planned; then, the applicable lands may be included as tentatively suitable, but shall be maintained as a separate, noninterchangeable component of the allowable sale quantity. For the purpose of this test, final harvest is defined in 36 CFR 219.27(c)(3). Such assurance applies to normal conditions for the site and does not constitute a guarantee. Abnormal conditions, such as drought, disease, or other unplanned events, may preclude meeting this requirement. Forest lands failing to meet this test shall be classed as unsuitable for timber production.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), capable (Process 2), and not causing irreversible resource damage (Process 3), but restocking cannot be assured within 5 years, will be classified as unsuitable.

a. Soils Inventory - Soils Mapping Units not restockable will be identified in the Forest Plan GIS Data Base and are classified as unsuitable. These include:

(1) SMUs with greater than 41% McGilvery Series.

(2) SMUs in the data base identified with the dominant plant associations as listed below can be restocked but require special technology to meet restocking within 5 years. These plant associations will satisfy the restocking criteria for tentatively suitable, but will be tracked to insure that alternatives include the cost of these special restocking requirements (planting and site preparation).

<i>Code</i>	<i>Description</i>
330	Spruce - Devils Club
335	Spruce - Devils Club/Salmon Berry
340	Spruce - Devils Club/Skunk Cabbage
350	Spruce - Alder
380	Spruce - Salmon Berry
800	Spruce - Black Cottonwood/Alder
810	Spruce - Black Cottonwood/Willow
830	Spruce - Cottonwood/Devils Club
840	Spruce - Cottonwood/Alder - Devils Club
850	Spruce - Cottonwood/Blueberry - Devils Club

NOTE: The soils inventory is not available for all existing Wilderness. The vegetation layer will be used to establish a correlation between soils and vegetation outside of wilderness to be applied within wilderness.

PROCESS 5.

Is Adequate Response Information Available?

Inadequate Response Information. Forest land shall be classified as unsuitable for timber production, if there is not adequate information available, based on current research and experience, to project response to timber management practices. These lands shall be identified as needing further inventory, research, or information and shall not be considered as part of the tentatively suitable land base, until such time that adequate response data are available. Give special attention to lands classified as incapable of producing 20 cubic feet/acre/year if they formerly met this criterion and were included in the timber base. In those situations where significant acreages are involved, the lands shall be considered tentatively suitable for timber production. The yield projections for these lands shall be limited to regeneration harvest practices, where response data to intensive management practices is inadequate, during the development of management prescriptions.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), capable (Process 2), not causing irreversible resource damage (Process 3), and restocking assured within 5 years (Process 4), but have inadequate response information, will be classified as unsuitable.

a. Vegetative Inventory - Low site forested lands that have never been managed for industrial wood products have no response information and will be identified in the Forest Plan GIS Data Base and classified as unsuitable. These include forested lands with Forest Productivity (FPROD) identified as:

<i>Code</i>	<i>Description</i>
A	Low Productivity due to Alder
G	Low Productivity due to Glacier Forest
H	Low Productivity due to High Elevation
M	Low Productivity due to Muskeg
R	Low Productivity due to Rock cover
S	Low Productivity due to Recurrent Slide Zone
T	Low Productivity due to Willow
L	Low Productivity due to Low Site Index

b. Soils Inventory - Soils with inadequate response information will be identified in the Forest Plan GIS Data Base and classified as unsuitable. These include:

(1) All Soil Mapping Units having site index of less than 40 (on a 50 year base).

(2) Soil Mapping Units which have never been logged and have no response information available.

<i>Code</i>	<i>Description</i>
305	Spruce - Myrica Gale/Sedge
315	Spruce - Willow
325	Spruce - Blueberry/Willow

NOTE: The soils inventory will not be available for all existing Wilderness. As a minimum, the vegetative inventory will be used to identify land with inadequate response information.

PROCESS 6.

Is Land Withdrawn from Timber Production?

Forest Land Withdrawn From Timber Production. Lands designated by the Congress, the Secretary, or the Chief for purposes that preclude timber production are to be classified as unsuitable. The act, order, or decision must include a legal description of the designated land, or a reference to a map, pending boundary survey and description, and include an effective date. Congressionally designated wilderness study areas and roadless areas endorsed by the Administration for wilderness classification are also withdrawn from timber production. Examples are units of the National Wilderness Preservation System, Primitive Areas, Research Natural Areas, and areas withdrawn by the Tongass Timber Reform Act. No other RARE II lands shall be considered withdrawn unless an individual State wilderness act so designates. Lands not withdrawn shall be further considered for timber production suitability.

Management objectives for Experimental Forests shall be obtained from the Station Director. Where objectives preclude timber production, the areas shall be considered withdrawn.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), capable (Process 2), not causing irreversible resource damage (Process 3), restocking assured within 5 years (Process 4), and having adequate response information (Process 5), but are withdrawn from timber management, will be classified as unsuitable.

a. Administrative Inventory - National Forest Wilderness and Monument Areas identified in the Forest Plan GIS Data Base. Forested land within these areas will be classified as unsuitable.

b. Boundaries Inventory - Existing Research Natural Areas, Enacted Municipal Watersheds, and Experimental Forest identified in the Forest Plan GIS Data Base are classified as withdrawn. These include:

Research Natural Areas

Municipal Watersheds

Cape Fanshaw
Dog Island
Limestone Inlet
Old Tom Creek
Pack Creek
Red River
Gambier Bay

Ketchikan
Petersburg
Sitka

Experimental Forests

Young Bay
Maybeso

c. Tongass Timber Reform Act:

- Lands within 100 feet of either side of all Class I streams, and Class II streams that flow directly into Class I streams
- Lands given a Congressional designation of "Land Use Designation II"
- Additional Wilderness

Tentatively Suitable Forest Lands. Tentatively suitable lands, identified in accordance with the process, shall be fixed input to the Forest planning model in the establishment and evaluation of benchmarks and alternatives, unless trade-offs, such as wilderness areas, are to be analyzed.

The criteria provided to determine the tentatively suitable forest land base is for modeling purposes. The timber schedule in the Revised Forest Plan will be limited to no more than the acres identified as tentatively suitable. Site specific inspection during implementation may indicate that exceptions to the Forest wide criterion are necessary for project implementation. These exceptions are valid provided the assessment is made through the National Environmental Policy Act process.

Tentatively Suitable Land Classification

A. Chatham Area

* Category	Chatham Available	Chatham Withdrawn	Chatham Total
Nonforest	2945398	1560914	4506312
Forested Land	-	-	-
Nonproductive Forest Land	713357	709712	1423069
Productive Forest Land	-	-	-
1. Nonindustrial Wood	24974	38740	63714
2. Irreversible Damage	112196	144917	257112
3. Regeneration Risk	25719	19754	45473
4. Inadequate Response	209855	168694	378549
5. Withdrawn From Tbr Prod	-	-	-
- TLMP Wilderness	0	524131	524131
- Nonwilderness RNA	0	1886	1886
- Municipal Watershed	0	300	300
- Experimental Forest	0	2743	2743
- TTRA Wilderness	0	49785	49785
- TTRA LUD II	0	126114	126114
- TTRA Streams	0	36962	36962
6. Tentatively Suitable	743019	0	743019
Total	4774518	3384652	8159170

B. Stikine Area

* Category	Stikine Available	Stikine Withdrawn	Stikine Total
Nonforest	872645	362148	1234793
Forested Land	-	-	-
Nonproductive Forest Land	828999	180665	1009664
Productive Forest Land	-	-	-
1. Nonindustrial Wood	3557	1662	5218
2. Irreversible Damage	170363	52416	222779
3. Regeneration Risk	0	460	460
4. Inadequate Response	181744	42413	224157
5. Withdrawn From Tbr Prod	-	-	-
- TLMP Wilderness	0	95740	95740
- Nonwilderness RNA	0	463	463
- Municipal Watershed	0	600	600
- Experimental Forest	0	0	0
- TTRA Wilderness	0	55023	55023
- TTRA LUD II	0	10497	10497
- TTRA Streams	0	34971	34971
6. Tentatively Suitable	699644	0	699644
Total	2756951	837058	3594009

C. Ketchikan Area

* Category	Ketchikan Available	Ketchikan Withdrawn	Ketchikan Total
Nonforest	313461	933560	1247021
Forested Land	-	-	-
Nonproductive Forest Land	865427	947233	1812660
Productive Forest Land	-	-	-
1. Nonindustrial Wood	2728	1874	4602
2. Irreversible Damage	13639	13259	26898
3. Regeneration Risk	56090	37233	93323
4. Inadequate Response	98029	58753	156782
5. Withdrawn From Tbr Prod	-	-	-
- TLMP Wilderness	0	590303	590303
- Nonwilderness RNA	0	3385	3385
- Municipal Watershed	0	1918	1918
- Experimental Forest	0	6696	6696
- TTRA Wilderness	0	21634	21634
- TTRA LUD II	0	104823	104823
- TTRA Streams	0	55059	55059
6. Tentatively Suitable	1118898	0	1118898
Total	2468271	2775731	5244002

D. Forest-wide Totals

* Category	Tongass Available	Tongass Withdrawn	Tongass Total
Nonforest	4131504	2856622	6988126
Forested Land	-	-	-
Nonproductive Forest Land	2407783	1837610	4245393
Productive Forest Land	-	-	-
1. Nonindustrial Wood	31258	42276	73534
2. Irreversible Damage	296197	210592	506789
3. Regeneration Risk	81809	57448	139257
4. Inadequate Response	489628	269860	759488
5. Withdrawn From Tbr Prod	-	-	-
- TLMP Wilderness	0	1210174	1210174
- Nonwilderness RNA	0	5734	5734
- Municipal Watershed	0	2818	2818
- Experimental Forest	0	9439	9439
- TTRA Wilderness	0	126442	126442
- TTRA LUD II	0	241434	241434
- TTRA Streams	0	126992	126992
6. Tentatively Suitable	2561561	0	2561561
Total	9999740	6997441	16997181

Appendix B

Information Needs

1. [Faint text]

2. [Faint text]

3. [Faint text]

4. [Faint text]

5. [Faint text]

6. [Faint text]

7. [Faint text]

8. [Faint text]

9. [Faint text]

10. [Faint text]

11. [Faint text]

12. [Faint text]

13. [Faint text]

APPENDIX B

INFORMATION NEEDS

This appendix lists the information, inventory, and research needs that have been identified for the Tongass National Forest during revision of the Land and Resource Management Plan. This information recognizes gaps in data or scientific knowledge. Many of the items would be desirable for implementation of this revision to the Tongass National Forest Land and Resource Management Plan. Some of the items overlap with the validation or effectiveness monitoring in the Monitoring Plan. Funding for some items are included in the Forest budgets. Additional funding will be by resource and will vary depending on the resource emphasis and needs in any given year. Prior to the next revision of the Forest Plan, it would be useful to obtain the information items listed.

CULTURAL RESOURCES

1. Identify non-project areas requiring intensive site inventory.
2. Document all discovered sites and maintain an up-to-date automated database in conjunction with Alaska Heritage Resource Surveys (AHRs).
3. Develop a comprehensive compilation of known cultural resources information in overview form which describes the location, description, status and other management data for all project clearance and non-project surveys.

SPECIAL AREAS

1. Compile a Forest-wide inventory of potential Special Interest Areas prior to the next Forest Plan Revision.

RESEARCH NATURAL AREAS

1. Identify plant and animal communities and features still needing representation in Research Natural Areas.

WILDERNESS

1. Develop information on baseline ecologic conditions.
2. Develop information on the effects of indirect external conditions on wilderness ecosystems.
3. Develop information on direct effects of human activity on wilderness ecosystems, including the effect of wildlife viewing activities on wildlife use and behavior.
4. Continue and expand ongoing ecologic studies, such as lichen research, migratory bird use, and brown bear population dynamics.

5. Study effects of frequent aircraft overflights on primitive recreation settings.
6. Develop information on the amount and location of recreation, subsistence and other uses in wilderness.
7. Develop information on customer satisfaction (see also Recreation Information Needs).
8. Identify indicators and establish Limits of Acceptable Change (LAC) for designated Wilderness areas. (See also Wilderness in the Monitoring Plan).

RIVERS

1. Wild, scenic and recreation river information needs will be developed following designation of the river by Congress, and will be displayed in the river management plan.

RECREATION

1. Further develop and apply methods for determining the kinds and amounts of recreation use occurring on the Forest.
2. Assess customer satisfaction, and those attributes which contribute to customer satisfaction, of both resident and non-resident recreationists.
3. Validate the long-range demand (as assessed in the Plan) for recreation activities, opportunities, and setting preferences.
4. Update and refine the Recreation Places inventory and database.
5. Identify capacities, both physical and social, for Recreation Places consistent with management objectives for the Land Use Designation and/or ROS.
6. Update information on benefits realized by recreationists, and the values of recreation to local and regional economies.
7. Periodically update the Southeast Alaska Pleasure Visitor Research Program. Cooperate with the State and other groups or agencies on conducting recreation or tourism studies.
8. Assess the importance of the tourism and outfitting and guiding industry, such as numbers of clients, activities, trends, economic values, and relationship to resident recreationists in terms of competition and displacement.
9. Develop information about the effects of landscape modification and forest management activities on residents and tourists, including on the cruise ship and flightseeing industries.
10. Identify the value placed on Southeast Alaskan resources by those who may never visit.

FISH

1. Maintain and update channel type and stream class inventories.
2. Inventory aquatic habitats for fish improvement opportunities.
3. Determine success, in terms of habitat capability and numbers of fish, of fish improvement projects. (This item may be entirely covered in the monitoring plan.)
4. Develop a model using channel types to indicate potential locations for stream improvement.
5. Develop a lake classification system which complements the channel type inventory.
6. Collect information to validate or change habitat management standards and guidelines for lakes and estuaries. Information which might be needed includes: use of, and interactions between, coho, sockeye and cutthroat trout; cumulative effects from upstream influences; and, nutrient cycling resulting from salmon spawning.
7. The Alaska Cooperative Working Group on Forestry/Fisheries Related Research has developed the following recommended goals, and research issues and questions (April, 1991 letter from Chairman Ronald R. Wolfe to Regional Forester Michael Barton). Many of these apply directly to information and research needs for the Tongass National Forest. Committee recommended goals are:
 - a) Evaluate the cumulative effects of forest management on water quality and fish habitat.
 - b) Determine the effectiveness of rehabilitation/restoration techniques to improve fish habitat and production.
 - c) Determine best management practices for riparian habitat.

The recommended research issues and questions include:

- a) What are the long-term natural variations in salmonid habitat and production?
- b) How do land use practices affect delivery and in-stream sediment dynamics?
- c) How can management of riparian vegetation be used to maintain, restore or enhance fish habitat?
- d) How do instream sediment dynamics affect survival, growth and development of fish eggs, juveniles and adults?
- e) How much large woody debris is required to maintain (1) natural habitat conditions and (2) desirable salmonid production?
- f) How can buffer strips be designed to minimize excessive slowdown?

SUBSISTENCE

1. Evaluate changes in subsistence use patterns and activities in cooperation with appropriate state and federal agencies. (This item may be entirely covered in the monitoring plan.)

2. Periodically update the Tongass Resource Use Cooperative Survey (TRUCS).

**THREATENED,
ENDANGERED AND
SENSITIVE SPECIES**

1. Obtain additional information on the distribution, life history, genetics, habitat requirements, populations, and population trends of the threatened, endangered, and sensitive species, as well as candidate species. From a Forest management perspective, priority for obtaining this information would be as follows: terrestrial species considered most sensitive to forest management activities; fresh water aquatic species considered most sensitive to forest management activities (including anadromous fish species); marine species which utilize upland forest habitats for a portion of their habitat needs; other marine species affected primarily by activities in the marine environment.
2. Evaluate levels of lead in habitat areas, and effects on trumpeter swan populations.
3. Obtain additional information on the distribution, life history, genetics, habitat requirements, populations, and population trends of plants and animals identified as potential sensitive species. Currently the Region and Forest have a Challenge Cost Share agreement with the Alaska Natural Heritage Program to inventory plants and mammals for potential sensitive species status.

WILDLIFE

1. Implement a Forest-wide habitat inventory program to accomplish the following objectives: 1) to obtain and establish "baseline" habitat conditions in important habitat areas; 2) to provide documentation of natural and/or modified habitat conditions; 3) to identify opportunities for management actions which will help maintain or improve habitats. Important habitats are: marine mammal haul outs, old-growth conifer habitats, Regional sensitive species habitats, marine bird rookeries and colonies, important seasonal habitats and concentration areas for the Management Indicator Species, and moose habitats. Coordinate the inventory work with other appropriate agencies and institutions.
2. Collect the necessary resource information to complete a Forest-wide inventory of old growth using the 1991 Regional old-growth definitions. (May be in conjunction with item #1).
3. Inventory vegetative conditions in moose habitat areas to help identify short and long-term changes in habitat conditions; identify the relationship of these habitat changes to moose population trends; assess the effects of various management activities in changing habitat conditions and moose populations. (May be in conjunction with item #1).
4. Identify opportunities for management actions which will help maintain or improve habitats for:

Important waterfowl habitat
Marine mammal haulouts
Marine bird rookeries and colonies
Important seasonal habitats for Management Indicator Species

5. Cooperate with other agencies and institutions to inventory the geographic distribution of small mammals and birds throughout the Forest (to increase our understanding of the island biogeography of Southeast Alaska).
6. Obtain information on snow-pack conditions, Forest-wide, within second-growth and old-growth timber stands. The objectives of this are: 1) to gain a better understanding of the influence of stand age and canopy closure on snow interception; and, 2) to assess snow accumulation on winter ranges to obtain a Forest-wide index of winter conditions.
7. Continue to assess the second-growth management program and methods to enhance second-growth habitat conditions for wildlife.
8. Determine effectiveness of wildlife enhancement projects, in terms of habitat capability and populations or population trends.
9. Obtain information on the distribution, life history, genetics, habitat requirements, populations, and population trends of hawks and owls, with special emphasis on those species associated with old-growth forests.
10. Obtain information on the effectiveness of old growth stands of various sizes to provide for wildlife habitat. Questions to ask include: what species are associated with various stand sizes; how to measure and assess the effects of fragmentation; what is the function and value of edge between old growth stands and younger successional stages.
11. Obtain information on whether individual trees, snags, or clumps of trees retained within clearcuts provide useful wildlife habitat, and for what period of time? Do the clumps tend to blow over?
12. Determine whether wintering bird and breeding bird populations vary over the long-term?
13. Determine whether roads and the human use of the roads affect old-growth habitat ecosystems and the usefulness of old-growth blocks to dependent wildlife?

**OLD-GROWTH
FORESTS**

1. Develop a Forest-wide vegetative inventory which allows accurate quantification and mapping of old-growth forest types.
2. Assess the quantity of old-growth habitats throughout the Forest. Document the amount of blowdown, other natural events, and other habitat disturbing activities within old-growth forests. (This item may be entirely covered in the monitoring plan.)

TIMBER

1. Conduct an extensive timber inventory covering the entire Forest every 10 to 15 years to reflect the timber stand conditions at the time of each forest plan revision.
2. Complete inventories of forested plant associations.
3. Maintain existing timber stand inventories.
4. Assess areas that have received pre-commercial thinning or release and weeding treatments to insure management objectives have been met.
5. Develop (and demonstrate) state-of-the-art timber harvest management methods which can be used in Southeast Alaska as alternatives to commonly used clearcut harvest techniques.
6. Design and evaluate methods to provide for windfirm timber harvest areas, especially in the vicinity of riparian areas. Determine whether feathering of clearcut edges increases the windfirmness of the uncut stand?

AIR

1. Determine air quality conditions on National Forest lands. Consult FSM 2580.
2. Assess and document the potential effects, if any, of air pollution on forest resources.
3. Assess use of lichens as indicators of forest health and air quality conditions.
4. Develop seasonal surface and aloft airflow (wind) maps.

RIPARIAN

1. Conduct on-the-ground inventories of riparian areas on which to base management actions.
2. Determine methods to maintain or enhance riparian associated resources, including in intensively developed areas.

SOIL AND WATER

1. Maintain a Soil Resource Inventory or an Integrated Resource Inventory.
2. Continue to obtain soil and water baseline data to assess land-disturbing activities on soils (e.g. productivity, erosion), water quality and quantity, and sediment yield. (Note: This is also necessary for soil and water monitoring, as described in the Monitoring Plan.)
3. Conduct Watershed Condition Surveys to determine improvement needs as part of the development of the watershed improvement plan.
4. Determine whether native or non-native seed mixtures are more useful for erosion control and for wildlife forage plantings? Do non-native seed

mixtures invade and threaten any native species or the function of natural ecosystems?

5. Develop and validate cumulative watershed effects models.

MINERALS AND GEOLOGY

1. Maintain the Mineral Resource Inventory.
2. Develop and maintain a Geologic Resource Inventory. Inventories may include mineral material sources, unique geology or paleontology sites, geological hazards, caves, and groundwater resources.

TRANSPORTATION

1. Maintain an inventory of all Forest development transportation facilities including roads, bridges, and major culverts, log transfer facilities, and airfields.

FIRE

1. Evaluate changes in vegetative/fuel component(s) and site productivity as a result of the presence of prescribed fire or wildfire versus areas with prescribed or wildfire absent.
2. Evaluate changes in vegetative/fuels component(s) and site productivity as a result of the non-treatment of activity generated fuels.
3. Evaluate the effects of prescribed fire as it relates to such areas as intensity, duration, scorch height, etc.

PEST MANAGEMENT

1. Evaluate incidence and impact of insects and diseases in even-aged young-growth stands.
2. Determine the influence that selection cutting and the retention of wildlife trees will have on the presence, spread, and impact of hemlock dwarf mistletoe.
3. Determine the abiotic factors that cause or contribute to yellow-cedar decline.
4. Identify and resolve problems related to the natural regeneration of yellow-cedar.
5. Evaluate the feasibility of salvaging dead yellow-cedar across the 400,000 acres where cedar decline is known to occur. Determine the volume of salvageable timber.
6. Determine the impact of wood decay fungi on residual trees that are wounded during partial cuts or commercial thinnings.
7. Evaluate bark beetle activity in slash from partial cuts and commercial thinnings.

8. Determine impact due to porcupine damage in managed stands including tree death, bole deformity, growth loss and introduction of wood decay fungi.

**SOCIAL AND
ECONOMIC**

1. Assess the relationship between Forest Service management activities and the opportunities for Southeast Alaska residents to pursue and maintain differing lifestyles.
2. Determine the contribution of the Forest to the social and economic health of communities in Southeast Alaska.
3. Look for new and different ways the Forest can contribute to local economic diversity.

FACILITIES

1. Determine the type and location of facilities required to efficiently provide administrative support for Forest management activities.

The following information is provided for your information and is not intended to be used as a substitute for professional advice. The information is provided as a general guide only and should not be relied upon for any specific purpose. The information is provided as a general guide only and should not be relied upon for any specific purpose.

Appendix C

Best Management Practices

The following information is provided for your information and is not intended to be used as a substitute for professional advice. The information is provided as a general guide only and should not be relied upon for any specific purpose. The information is provided as a general guide only and should not be relied upon for any specific purpose.

1. *Introduction*

2. *Methodology*

3. *Results*

4. *Discussion*

5. *Conclusion*

3. Results

3.1. *Descriptive Statistics*

4. *References*

APPENDIX C

BEST MANAGEMENT PRACTICES

The Clean Water Act of 1972 (Public Law 92-500), as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4), has the objective to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Act provides a means to protect and improve the quality of the water resources and maintain their beneficial uses. The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. To provide environmental protection and improvement emphasis for water and soil resources and water-related beneficial uses, the National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) were developed. Best Management Practices (BMPs) were recognized as the primary control mechanisms for nonpoint sources of pollution on National Forest System lands.

To comply with State water quality standards, the Forest Service is required to apply BMPs that are "consistent" with State Forest Practices and other applicable State water quality regulations. The site-specific application of these is designed with the consideration of geology, land type, hydrology, soil type, erosion hazard, climate, cumulative effects, and other factors in order to fully protect and maintain soil, water, and water-related beneficial uses, and to prevent or reduce nonpoint source pollution.

Direction for the use of BMPs on National Forest System lands in Alaska is included in Chapter 10 of FSH 2509.22, Soil and Water Conservation Handbook. The handbook describes the application, monitoring, evaluation, and refinement of these BMPs. This appendix provides a listing and brief summary of the Best Management Practices used in the Alaska Region.

Best Management Practices may be defined as: land management methods, measures or practices intended to minimize or reduce water pollution including, but not limited to, structural and nonstructural controls, operation and maintenance procedures, other requirements and scheduling and distribution of activities. The following list includes the practice number (from the Soil and Water Conservation Handbook), name and objective.

NUM-BER	PRACTICE	OBJECTIVE
12.1	Cumulative Watershed Effects Analysis	To determine the Cumulative Watershed Effects (CWE) on the beneficial uses of water caused by multiple land management activities, distributed over both time and space.
12.2	Soil and Water Resource Monitoring and Evaluation	To determine the effects of land management activities on water quality through a well planned, coordinated, and executed monitoring program; to ensure the health and safety of water users; to evaluate BMP effectiveness; and to determine the adequacy of data, assumptions, and coefficients in the Forest Plans.
12.3	Watershed Improvement Planning and Implementation	To improve degraded watershed conditions, to minimize soil erosion, and to improve water availability or quality.
12.4	Floodplain Analysis and Evaluation	To protect floodplain values and avoid, where possible, the long and short-term adverse impacts to soil and water resources associated with the occupancy and modification of floodplains.
12.5	Wetlands Analysis and Evaluation	To maintain wetland functions and avoid adverse soil and water resource impacts associated with the destruction or modification of wetlands.
12.6	Riparian Area Designation and Protection	To maintain and protect water quality and fisheries habitat, and to minimize adverse effects on riparian areas from logging and other land disturbing management activities.
12.7	Streambank Protection	To minimize sediment production from streambanks and structural abutments in natural waterways.
12.8	Oil Pollution Prevention and Servicing/Refueling Operations	To prevent contamination of surface and subsurface soil and water resources from spills of petroleum products.
12.9	Oil and Hazardous Substances Pollution Contingency Planning.	To minimize contamination of waters from accidental spills of oil and hazardous substances by use of appropriate contingency plans.
12.10	Control of Activities Under Special Use Permit	To protect surface and subsurface soil and water resources from physical, chemical, and biological pollutants resulting from activities that are under special-use permit.
12.11	Management by Closure to Use	To exclude activities that could result in significant damage to facilities which would result in impaired water quality.
12.12	Water Well Construction and Management	To protect ground water resources from contamination transmitted from water well developments.

NUMBER	PRACTICE	OBJECTIVE
12.13	Administrative Site Planning and Management	To locate, design, and manage administrative sites to prevent water pollution and other adverse environmental and health impacts.
12.14	Planning, Design and Management of Utility Corridors	To assure that construction and maintenance of powerlines and pipelines are accomplished in a manner that minimize effects on water quality.
12.15	Management of Sanitary Facilities and Sanitary Guidelines for Temporary Camps	To prevent water pollution and health risks from the disposal of sewage at Forest Service Facilities, facilities under special use permit, and temporary camps of all types.
12.16	Control of Solid Waste Disposal	To protect surface and subsurface soil and water resources from nutrients, bacteria, and chemicals associated with solid waste disposal.
12.17	Revegetation of Disturbed Areas	To protect water quality by minimizing soil erosion.
13.1	Timber Sale Planning	To incorporate soil and water resource considerations into Timber Sale Planning.
13.2	Timber Harvest Unit Design	To ensure that timber harvest unit design will secure favorable conditions of water flow, or maintain water quality and soil productivity, and minimize soil erosion and sedimentation.
13.3	Designating Water Quality Protection Needs on Sale Area/Unit Release Maps	To delineate the location of protection areas and to ensure their recognition, proper consideration, and protection on the ground.
13.4	Limiting the Operating Period of Timber Sale Activities	To minimize soil erosion and sedimentation by ensuring the Purchaser conducts operations, including erosion control work and road maintenance, in a timely manner.
13.5	Protection of Potentially Unstable Areas	To protect potentially unstable areas and to avoid triggering mass movements of the soil mantle and resultant erosion and sedimentation.
13.6	Determining Suitability for Tractor Logging	To protect water quality from degradation by identifying those areas where tractor yarding techniques are appropriate, and by establishing guidelines for the yarding operation.
13.7	Determining Suitability for Shovel Logging	To protect soil resources and water quality from degradation by identifying those areas where shovel yarding techniques are appropriate, and by establishing guidelines for the yarding operation.

NUM-BER	PRACTICE	OBJECTIVE
13.8	Protection of Alluvial Soils With Shallow Organic Layers	To protect alluvial soils and the overlying organic layer to maintain soil productivity.
13.9	Suspended Log Yarding in Timber Harvesting	To protect water quality by protecting the soil from excessive disturbance and accelerated erosion and to maintain the integrity of the riparian area and other sensitive watershed areas where it is determined that ground-based machinery is inappropriate.
13.10	Log Landing Location and Design for Erosion Control	To design and construct landings to minimize soil erosion and water quality degradation.
13.11	Erosion Prevention and Control Measures During Timber Sale Operations	To ensure that the Purchaser's operations shall be conducted reasonably to minimize soil erosion and water quality degradation.
13.12	Revegetation of Areas Disturbed by Harvest Activities	To establish a vegetative cover on disturbed sites to minimize erosion and sedimentation.
13.13	Erosion Control Structure Maintenance	To ensure that constructed erosion control structures are stabilized and working effectively.
13.14	Acceptance of Erosion Control Measures Before Sale Closure	To assure the adequacy of required erosion control work on timber sales.
13.15	Wetland Protection During Timber Harvest	To avoid damage to the ground cover, soil, and water quality in wetlands during timber harvest.
13.16	Stream Channel Protection (Implementation and Enforcement)	1) To protect the natural flow of streams; (2) to provide unobstructed passage of stormflows; (3) to reduce sediment and other pollutants from entering streams; and (4) to restore the natural course of any stream as soon as practicable, if the stream is diverted as a result of timber management activities, (5) to maintain channel integrity and stability for protection of aquatic habitat and other beneficial uses, and (6) to avoid adverse changes in the natural stream temperature regime.
13.17	Nonrecurring "C" Provisions For Soil and Water Quality Protection	To insert nonrecurring (Special) "C" provisions into the Timber Sale Contract to protect soil and water resources, where standard "B" or "C" provisions do not apply or are inadequate to protect watershed values.
13.18	Modification of the Timber Sale Contract	To seek an Environmental Modification of the timber sale contract if new circumstances or conditions indicate that the timber sale will cause irreparable damage to soil, water, or watershed values.

NUM- BER	PRACTICE	OBJECTIVE
13.19	Reforestation Requirement	To promote prompt reforestation and to mitigate watershed disturbance on areas with limited regeneration potential.
14.1	Transportation Planning	To assure soil and water resource considerations in Transportation Planning activities.
14.2	Location of Transportation Facilities	To locate roads and trails with minimal soil and water resource impact.
14.3	Design of Transportation Facilities	To design roads and trails with minimal soil and water resource impact.
14.4	Location and Design of Log Transfer Facilities (LTF's).	To locate and design LTF's with minimal soil, water and biological impact.
14.5	Road and Trail Erosion Control Plan	Design to minimize and mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities. Ensure compliance through effective contract administration and timely implementation of erosion control measures.
14.6	Timing Restrictions for Construction Activities	Where effective minimize erosion by conducting operations during low risk periods.
14.7	Slope Stabilization to Minimize Mass Failures	To reduce sedimentation by minimizing the chances for road-related mass failures, including landslides and embankment slumps.
14.8	Slope Stabilization to Minimize Surface Erosion	To minimize soil erosion from cutslopes, fillslopes, and the travelway.
14.9	Control of Road Drainage	To minimize the erosive effects of concentrated water and the degradation of water quality by proper design and construction of road drainage systems and drainage control structures.
14.10	Pioneer Road Construction	To minimize sediment production associated with pioneer road construction.
14.11	Timely Erosion Control Measures on Incomplete Roads and Streamcrossing Projects	To minimize erosion of and sedimentation from disturbed ground on incomplete projects.
14.12	Control of Excavation and Sidecast Material	To reduce sedimentation from unconsolidated excavated and sidecast material caused by road construction, reconstruction, or maintenance.

NUM-BER	PRACTICE	OBJECTIVE
14.13	Control of Construction in Riparian Areas	To minimize the adverse effects of road and trail construction on riparian areas.
14.14	Control of In-Channel Operations	To minimize stream channel disturbances and related sediment production.
14.15	Diversion of Flows Around Construction Sites	To minimize downstream sedimentation.
14.16	Streamcrossings on Temporary Roads	To prevent temporary roads from damaging streamcourses, degrading water quality, or obstructing fish passage.
14.17	Bridge and Culvert Design and Installation	To minimize the impact on water quality and fisheries resources from the installation of bridges and culverts.
14.18	Development of Borrow Pits, Gravel Sources and Quarries	To minimize sediment production from borrow pits, gravel sources, and quarries, and limit channel disturbance in those gravel sources suitable for development in floodplains.
14.19	Disposal of Right-of-Way and Roadside Debris	To ensure that debris generated during road construction is kept out of streams and to prevent slash and debris from subsequently obstructing channels.
14.20	Road Maintenance	To maintain all roads in a manner which provides for soil and water resource protection by minimizing rutting, failures, sidecasting, and blockage of drainage facilities.
14.21	Road Surface Treatment to Prevent Loss of Materials	To minimize the erosion of road surface materials and consequently reduce the likelihood of sediment production.
14.22	Access and Travel Management	Reduce the potential for erosion and sedimentation from road surface disturbance during periods of high runoff and spring thaw conditions.
14.23	Snow Removal Controls	To minimize the impact of snow melt on road surfaces and embankments and to reduce the probability of sediment production resulting from snow removal operations.
14.24	Obliteration of Temporary Roads	To reduce sediment generated from temporary roads and return land to production by obliterating them at the completion of their intended use.
14.25	Surface Erosion Control at Facilities	To minimize the amount of erosion and sedimentation at facilities.
15.1	Pesticide Use Planning	To incorporate water quality and hydrologic considerations into the Pesticide Use Planning Process.

NUM- BER	PRACTICE	OBJECTIVE
15.2	Follow Pesticide Label and EPA Registration Directions	To prevent water contamination and risk to humans from pesticide application, cleaning of equipment, and disposal of pesticide containers.
15.3	Pesticide Application Monitoring and Evaluation	To determine and document that pesticides have been applied safely and to provide an early warning for any contamination of water or non-target areas or resources.
15.4	Pesticide Spill Contingency Planning	To reduce contamination of water from accidental pesticide spills.
15.5	Protection of Water Quality, Wetlands, and Riparian Areas During Pesticide Application	To minimize the risk of pesticide contamination of surface or subsurface waters, riparian areas, wetlands, and other non-target areas.
16.1	Recreation Facilities Planning	To protect soil and water resources through appropriate planning, design and location of recreational facilities.
16.2	Providing Safe Drinking Water Supplies	To protect water quality and provide safe drinking water to Forest Service facilities such as campgrounds, picnic grounds, trailheads, Visitor Information Centers, winter sport areas, and developed roadside facilities.
16.3	Assuring Proper Sanitation and Water Supplies For Special Use Facilities and Administrative Sites	To protect the quality of water both consumed by and discharged from facilities under Special Use Permit, and from administrative sites not on public water and sewer systems.
16.4	Trail Construction and Maintenance	To minimize soil erosion and water quality problems originating from trails and their drainage structures.
16.5	Management of Off-Road Vehicle Use	To control Off-Road Vehicle (ORV) use which is causing soil erosion and adverse effects on water quality and to identify corrective measures.
16.6	Protection of Water Quality Within Developed Recreation Areas	To protect water quality by regulating the discharge and disposal of potential pollutants.
16.7	Protection of Water Quality Within Dispersed Recreation Areas	To avoid slope erosion and trampling in riparian and wetland areas, and consequent loss of vegetation and degradation of water quality.
17.1	Mining Site Conditions, Planning, and Design	To incorporate soil and water resource considerations into the planning process for mining and mineral exploration operations.

NUM- BER	PRACTICE	OBJECTIVE
17.2	Placer Mining	To incorporate soil and water resource considerations into the planning process for mining plans of operation for placer mining.
17.3	Hard Rock Mining	To incorporate soil and water resource considerations into the planning process for mining plans of operation for lode mining operations.
17.4	Permits and Administration of Geophysical Operations	To protect the quality of surface and ground water from degradation resulting from geophysical activities on National Forest System lands.
17.5	Site Closure and Rehabilitation	To incorporate soil and water resource considerations into the planning process for mining plans of operation
17.6	Abandoned Mine Land Reclamation	To reduce erosion and water quality degradation by sediment and toxic substances from abandoned mined lands and mining facilities through reclamation of these lands.
18.1	Fish and Wildlife Habitat Improvement Planning	To incorporate soil and water resource considerations into planning for fish and wildlife improvement projects.
18.2	Development of Groundwater-fed Spawning and Rearing Habitat from Gravel Extraction and Other Sites	To minimize sediment production from gravel extraction and/or ground reshaping during and following construction of groundwater-fed spawning and rearing streams and ponds.
18.3	In-Channel Excavation or Disturbance During Fish and Wildlife Habitat Improvement Projects	To minimize stream channel disturbances and related sediment production during and after development of fish and wildlife habitat improvement projects.
18.4	Ground Fertilization for Wildlife Habitat Improvement	To minimize impacts to water quality in stream systems and lakes within and adjacent to areas being fertilized.
18.5	Lake Fertilization for Fish Habitat Improvement	To limit eutrophication in Forest lakes.
19.1	Fire and Fuel Management Activities and Prescriptions	To reduce flooding and erosion by reducing the frequency, intensity, and destructiveness of wildfire.
19.2	Protection of Water Quality Through Prescribed Burning Prescriptions	To maintain soil productivity, minimize erosion, and prevent ash, sediment, nutrients, and debris from entering surface waters, through the formulation of the burning prescription.

NUM- BER	PRACTICE	OBJECTIVE
19.3	Minimizing Watershed Im- pacts from Fire Suppression Efforts	To avoid watershed impacts in excess of that which would be caused by the fire itself.
19.4	Stabilization of Fire Suppres- sion Related Watershed Damage	To stabilize all areas that have had their erosion potential significantly increased, or their drainage pattern altered by suppression related activities.
19.5	Emergency Watershed Reha- bilitation Following Wildfires	To minimize the loss of soil and on-site productivity, the deterioration of water quality, and threats to life and property, both on-site and off-site.

Appendix D

Stream Process Groups

Stream Process Group	Stream Process Group	Stream Process Group
1. Headwater Streams	2. Intermediate Streams	3. Large Streams
4. Small Streams	5. Medium Streams	6. Large Streams
7. Small Streams	8. Medium Streams	9. Large Streams
10. Small Streams	11. Medium Streams	12. Large Streams
13. Small Streams	14. Medium Streams	15. Large Streams
16. Small Streams	17. Medium Streams	18. Large Streams
19. Small Streams	20. Medium Streams	21. Large Streams
22. Small Streams	23. Medium Streams	24. Large Streams
25. Small Streams	26. Medium Streams	27. Large Streams
28. Small Streams	29. Medium Streams	30. Large Streams
31. Small Streams	32. Medium Streams	33. Large Streams
34. Small Streams	35. Medium Streams	36. Large Streams
37. Small Streams	38. Medium Streams	39. Large Streams
40. Small Streams	41. Medium Streams	42. Large Streams
43. Small Streams	44. Medium Streams	45. Large Streams
46. Small Streams	47. Medium Streams	48. Large Streams
49. Small Streams	50. Medium Streams	51. Large Streams
52. Small Streams	53. Medium Streams	54. Large Streams
55. Small Streams	56. Medium Streams	57. Large Streams
58. Small Streams	59. Medium Streams	60. Large Streams
61. Small Streams	62. Medium Streams	63. Large Streams
64. Small Streams	65. Medium Streams	66. Large Streams
67. Small Streams	68. Medium Streams	69. Large Streams
70. Small Streams	71. Medium Streams	72. Large Streams
73. Small Streams	74. Medium Streams	75. Large Streams
76. Small Streams	77. Medium Streams	78. Large Streams
79. Small Streams	80. Medium Streams	81. Large Streams
82. Small Streams	83. Medium Streams	84. Large Streams
85. Small Streams	86. Medium Streams	87. Large Streams
88. Small Streams	89. Medium Streams	90. Large Streams
91. Small Streams	92. Medium Streams	93. Large Streams
94. Small Streams	95. Medium Streams	96. Large Streams
97. Small Streams	98. Medium Streams	99. Large Streams
100. Small Streams	101. Medium Streams	102. Large Streams

THE UNIVERSITY OF CHICAGO
PHYSICS DEPARTMENT

APPENDIX D

STREAM PROCESS GROUPS

INTRODUCTION

In the early 1980's a method of inventorying channel types was developed on the Forest to identify, classify, and map the distinguishing parts of streams or river systems (Marion et al. unpub. 1986). This inventory system allows definition of stream and river channels characteristics and provides a process for defining the channel characteristics and predicting their response to management or naturally caused changes. In addition to the above, the system also stratifies watershed stream and lake habitats into distinctly different groups which are useful in inventorying and assessing watershed condition and fish habitat production capability and sensitivity to management activities. A description of each channel type is listed in Table D-2. For planning purposes, channel types are grouped into nine categories called "stream process groups" as shown in Table D-1.

TABLE D-1
STREAM CLASSIFICATION AND STREAM LENGTH BY PROCESS GROUP

<i>Stream Process Groups</i>	<i>Channel Type Classification</i>	<i>Miles</i>
Low Gradient Floodplain	B1, B8, C1, C3, C4, C6, D4, D5, D8	5,242
Alluvial Fan	A3, B5, D1, D6	2,015
Large Low Gradient Contained	C2, C5	714
Mixed Control Moderate Gradient	B2, B3, D3	4,726
Moderate Gradient Contained	B4, B6, B7	2,652
High Gradient Contained	A1, A2, A4, A5, A6, A7, D2, D7	24,609
Placid or Glide Streams	L1, L2	1,265
Lakes and ponds	L, L3, L4, L5	528
Estuarine	E1, E2, E3, E4, E5	678

Source: Revision GIS Database

PROCESS GROUPS

Beginning on page D-3 is a discussion of each process group, including a listing of the channel types. An illustration of each group is included.

TABLE D-2
CHANNEL TYPE DESCRIPTIONS

<i>Channel Type</i>	<i>Description</i>
A1	Steep Mountain Slope Channel
A2	High Gradient Upper Valley Forested Channel
A3	Alluvial Cone Channel
A4	High Gradient Mountain Slope Cascade Channel
A5	High Gradient Incised Lowland Muskeg Channel
A6	High Gradient Shallow Lowland Muskeg Channel
A7	High Gradient Forested Footslope Channel
B1	Lowland Low Gradient Forest Channel
B2	Moderate Gradient Forest Channel
B3	Moderate Gradient Upper Valley Forest Channel
B4	Shallow Incision Moderate Gradient Channel
B5	Alluvial Fan Channel
B6	Moderate Gradient Lowland Muskeg Channel
B7	Gorge Channel
B8	Yakutat Narrow Uplifted Estuary Channel
C1	Low Gradient Lower Valley Forested Channel
C2	Structural Control Low Gradient Lowland Channel
C3	Broad Alluvial Sinuous Lowland Channel
C4	Beach And Sand Dune Channel
C5	Confined Narrow Valley Forested Channel
C6	Yakutat Wide Uplifted Estuary Channel
D1	Low Gradient Cirque Basin Glacial Channel
D2	Upper Valley Glacial Torrent Channel
D3	Moderate Gradient Upper Valley Glacial Channel
D4	Broad Low Gradient Lower Valley Meandering
D5	Broad Braided Lower Valley Glacial Channel
D6	High Gradient Alluvial Fan Glacial Channel
D7	Moderate-high Gradient Glacial Cascade Channel
D8	Glacial Outwash Floodplain Side-channel
E1	Large Estuarine Channel
E2	Small Rocky Estuarine Channel
E3	Small Sandy Estuarine Channel
E4	Yakutat Small Estuarine Channel
E5	Broad Braided Glacial Estuarine Channel
L	Bodies Of Water Greater than 5 Acres
L1	Low Gradient Lowland Muskeg Placid Flow Channel
L2	Wide Low Gradient Deep Water Channel
L3	Stable Beaver Dam/Pond Channel
L4	Shallow Braided Glacial Floodplain Cut-off Channel
L5	Deep Slough (backwater) Floodplain Channel

**Low Gradient
Floodplain**

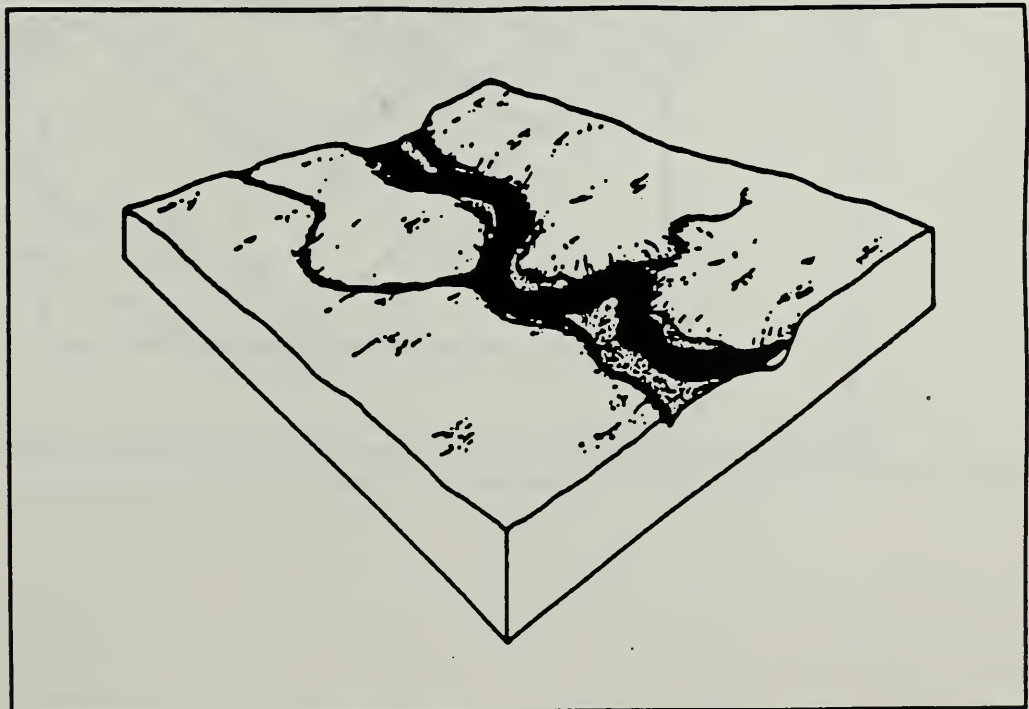
Stream channels in this process group include: B1, B8, C1, C3, C4, C6, D4, D5 and D8 channels with less than 2 percent slope and active floodplain development. Channel materials are composed of fine sediments, small boulders and cobble which are deposited by the stream.

Flooding is a fundamental process in these channels with streams typically overflowing their banks during high water. The floodplain stream channels and floodplains interact with each other through bank erosion, channel migration and overflow, leaf fall, and blowdown/tree fall. Alluvial channels process dissipate flood energy (velocity) and are an important nutrient source.

The low gradient floodplain riparian areas include the channel banks, active channel floodplains, sloughs, backwater overflow channels, and ponded swales and may extend well beyond 100 feet of the streambank. These riparian areas are extremely dynamic because floodplain streams are likely to overflow their banks during individual or seasonal storms. Because of the stream's interaction with adjacent landforms, these alluvial channels contain a rich, abundant community of aquatic life.

Streambanks consist of unconsolidated materials such as sand, gravel, or organic materials and are often unstable. Channel migration and braiding may occur. Root networks of trees and shrubs are often the only things holding unconsolidated streambanks together. Large organic debris (LOD) also plays an important role in controlling streambed and bank stability by regulating the stream's energy dissipation. Riffles formed when the stream velocity slows form good fish habitat.

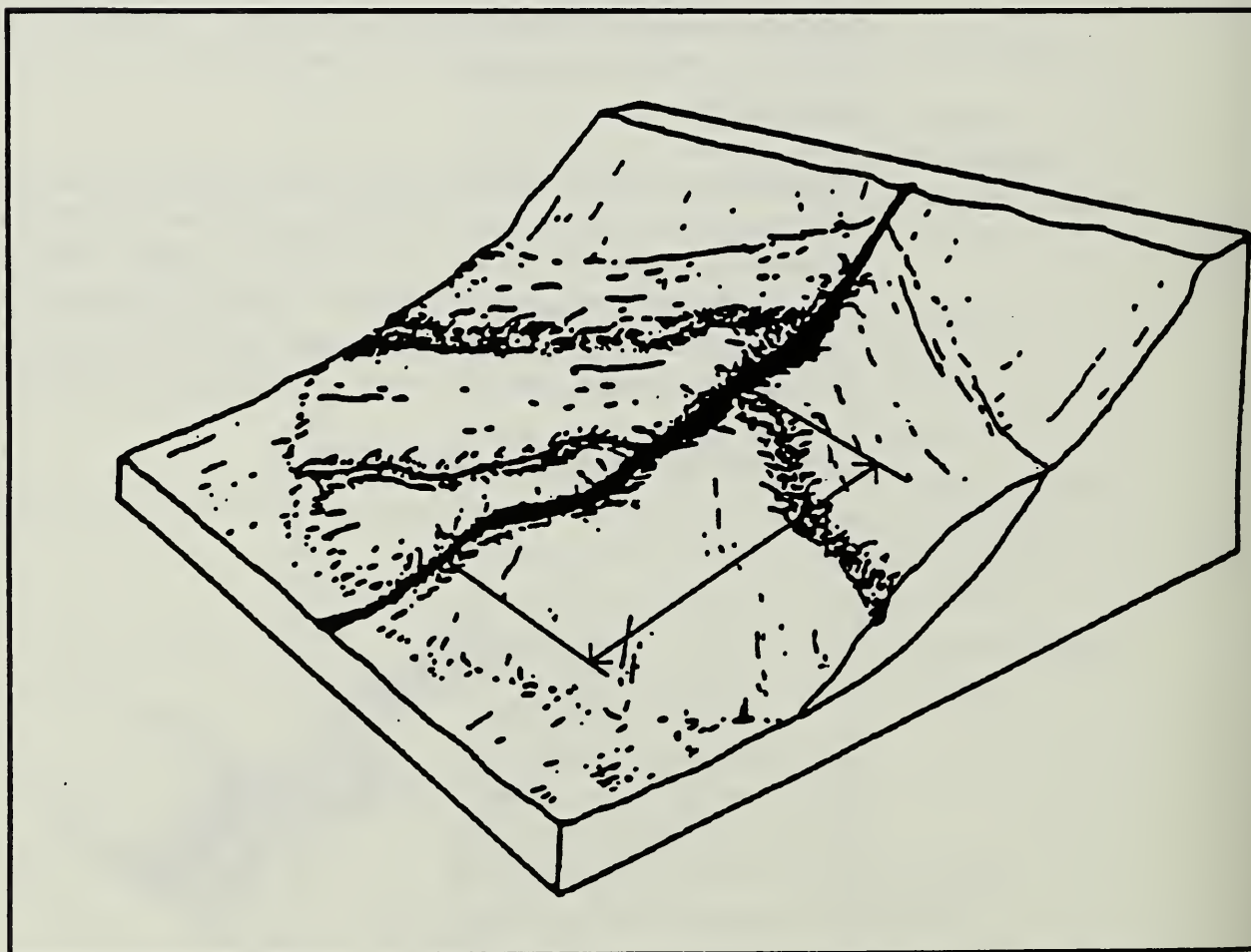
LOW GRADIENT FLOODPLAIN CHANNELS



Alluvial Fans

Stream channels in this process group include: A3, B5, D1, and D6 transitional streams that both transport and deposit sediment. When the stream makes the transition from mountain slopes to low gradient floodplains, stream velocity slows, and cobbles and coarse gravel are deposited. Stream channels frequently change course, generally after flash floods or debris torrents, when high volumes of sediment are quickly deposited on the streambeds, streambanks, and areas adjacent to streams. Alluvial fan stream channels are often unstable; the water flow in them may be intermittent during the summer and winter months. Due to the complex stream network, riparian areas for alluvial fan channels may be extensive.

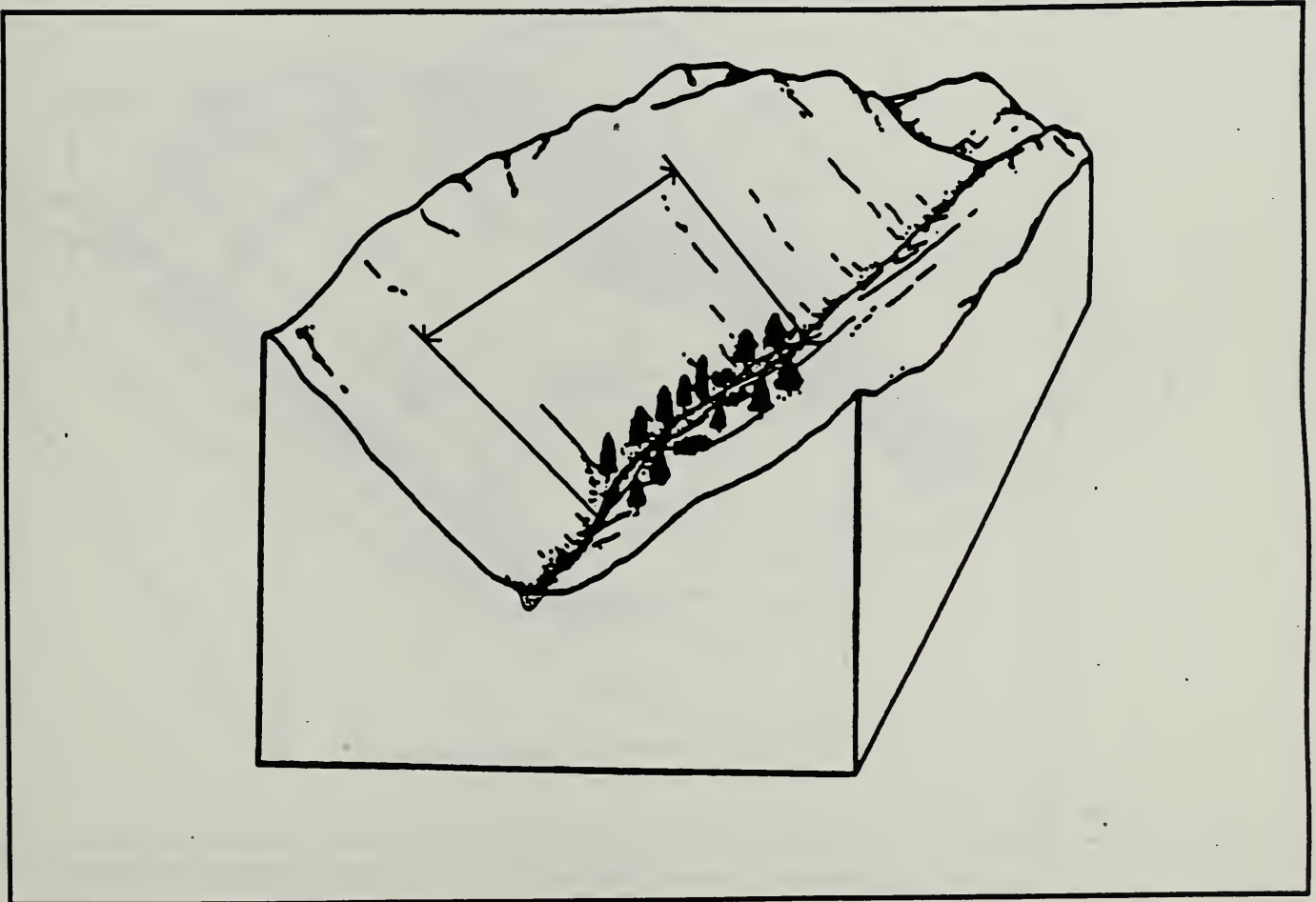
ALLUVIAL FAN CHANNELS



**Mixed Control,
Moderate
Gradient**

As the name implies, these channels (designated as B2, B3 and D3 channel types) are a mixture of stream channel containment. Some segments are controlled by bedrock or the valley walls, while other areas develop narrow floodplains. Streambanks may be boulders, cobbles or bedrock. An increased volume of water introduced into these streams, does not cause bank overflow. Bedrock segments of these channels act as sediment transport systems; sediment is deposited in the lower gradient (flatter) and floodplain segments. Riparian vegetation is important in regulating stream energy losses thru large woody debris (LWD) input. LWD forms water energy dissipators such as log step pools and lateral scour pools. LWD strongly influences channel form, sediment transport and fish habitat in these channels.

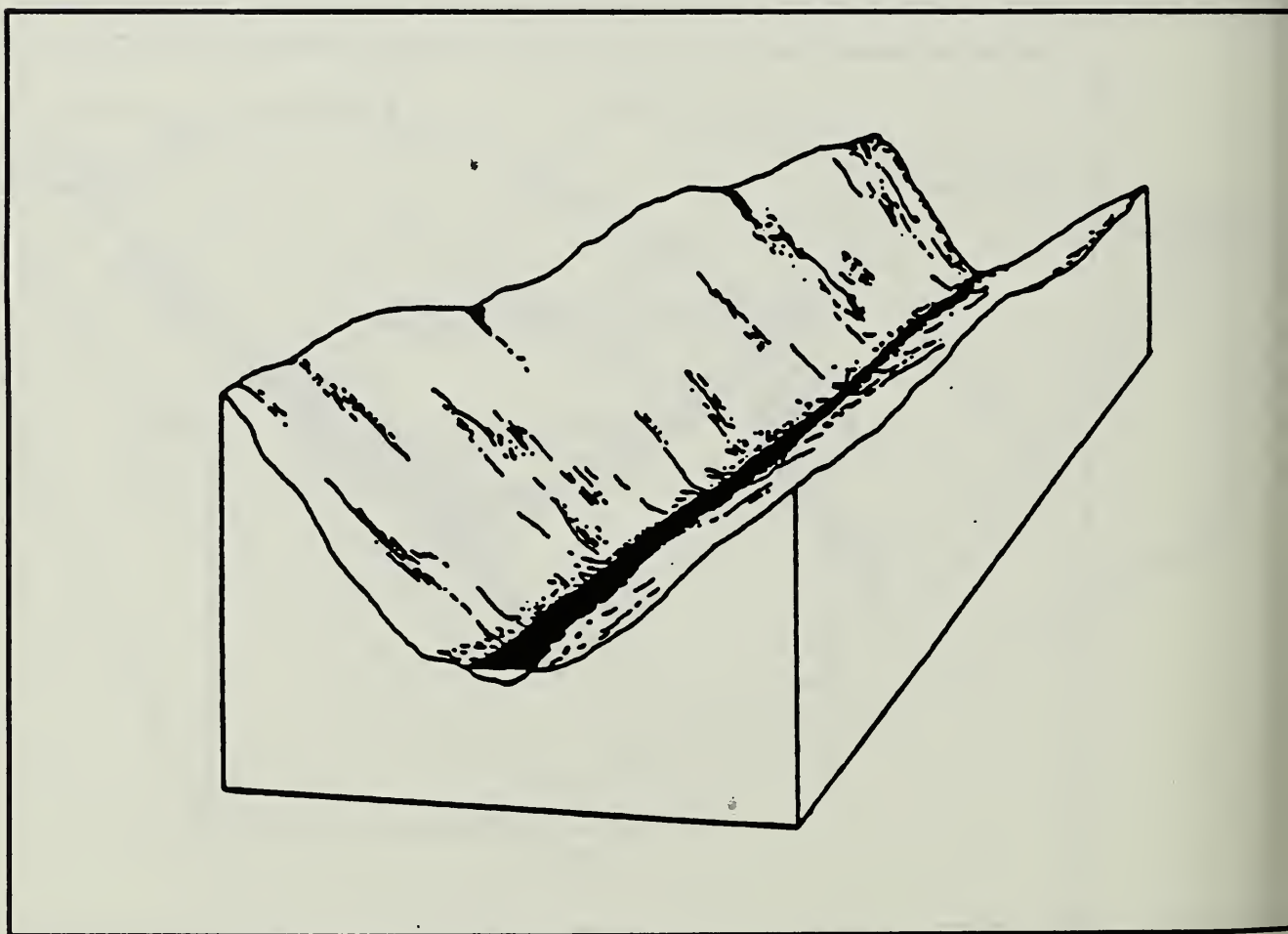
MIXED CONTROL, MODERATE GRADIENT CHANNELS



**Large Low
Gradient
Contained .**

Stream channels in this process group are contained by adjacent landforms, but the channels have little effect on those landforms. Included are C2 and C5 channel types. The adjacent influence zone often extends to the slope break above the cut valley slope. Adjacent vegetation plays a major role in controlling the rate of downslope soil movement and large woody debris (LWD) into stream channels. LWD accumulations dissipate stream energy (slow its velocity) and trap and store sediment that is being transported downstream. The area the stream influences is dependent upon upland soils and vegetation (primarily trees).

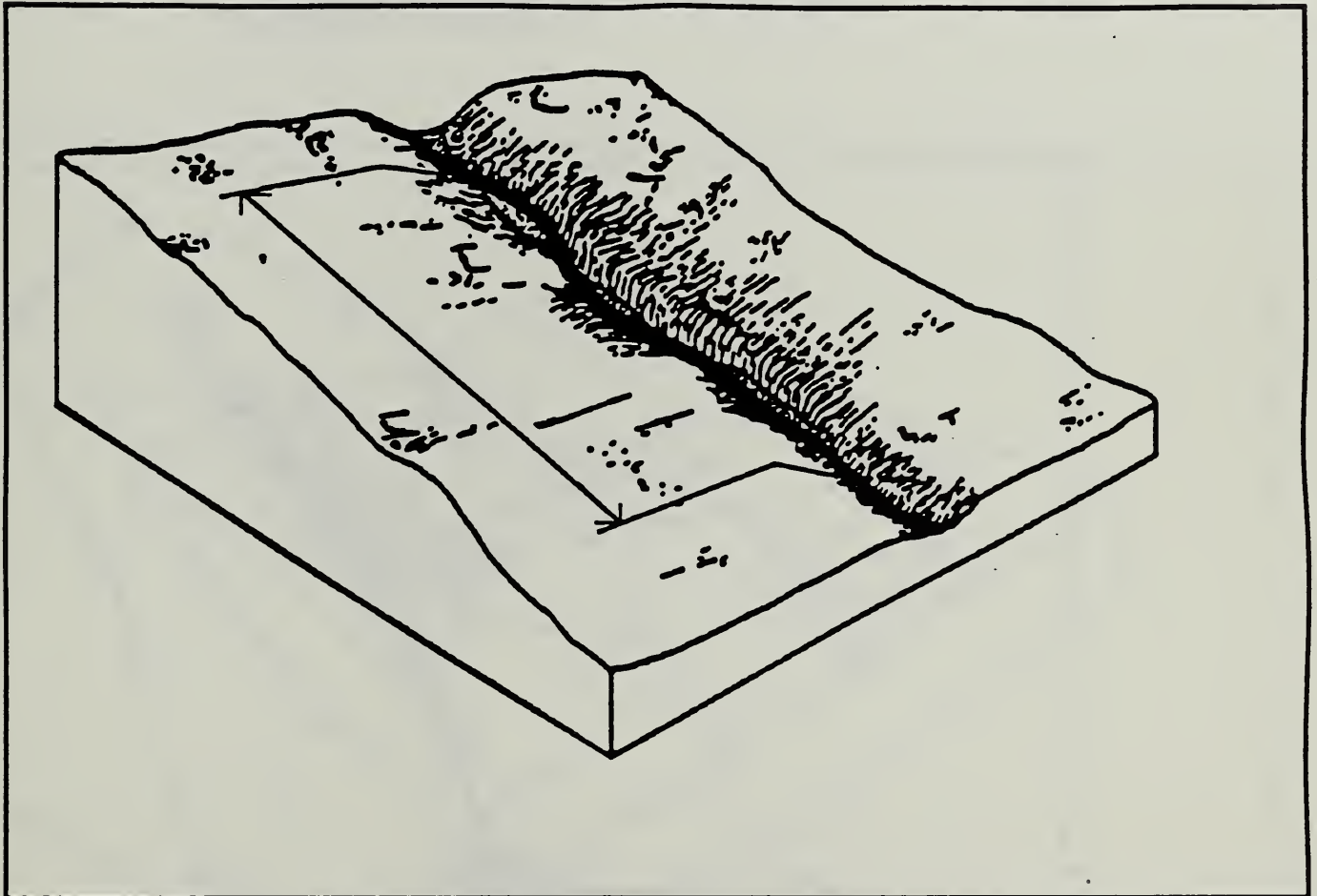
LARGE LOW GRADIENT, CONTAINED CHANNELS



**Moderate
Gradient
Contained**

Stream channels in this process group include: B4, B6 and B7 channels and streamflows. They are completely contained by adjacent landforms. Streambank and streambed erosion are often influenced by bedrock outcrops. Although they transport and deposit sediment downstream very efficiently, sediment deposition is very limited in the channels themselves. Stream influence zones are dependent on the streambank slopes. Where the slopes are short, low gradient, or there are no slopes, the influence zone is narrow. If these streams have very large, high gradient sideslopes, then larger areas influence stream conditions.

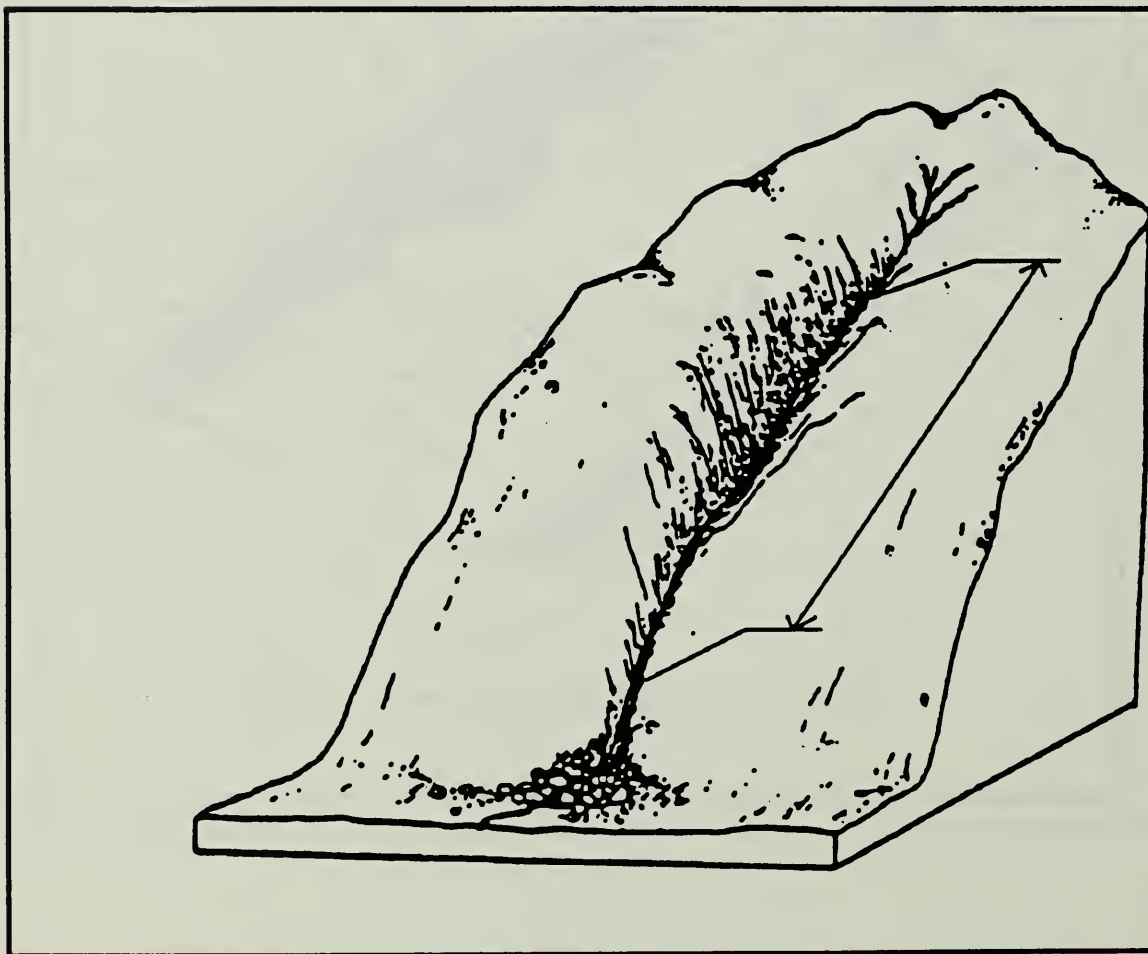
MODERATE GRADIENT, CONTAINED CHANNELS



**High Gradient
Contained**

Channels in this process group (A1, A2, A4, A5, A6, A7, B7, D2, and D7 channels) are source streams for downstream waters and transport organic and inorganic sediments to the downstream habitats. Their stream channels are well contained within the narrow valley bottoms. Channel banks are steep and generally composed of large material, either consolidated bedrock or well-packed boulders and cobbles. The riparian vegetation when present along these streams are narrow strips (< 20 feet) of alder, salmonberry, devil's club, or currant/brush communities. The upper steep banks of these incised streams have a mosaic plant communities of dense conifers and shrubs. The channels are predominantly influenced by the upland or terrestrial plant communities. Soils in the adjacent upland area are often shallow and subject to downslope movement. Leaves, forest litter, and trees often move downslope into these incised channels when disturbance occurs.

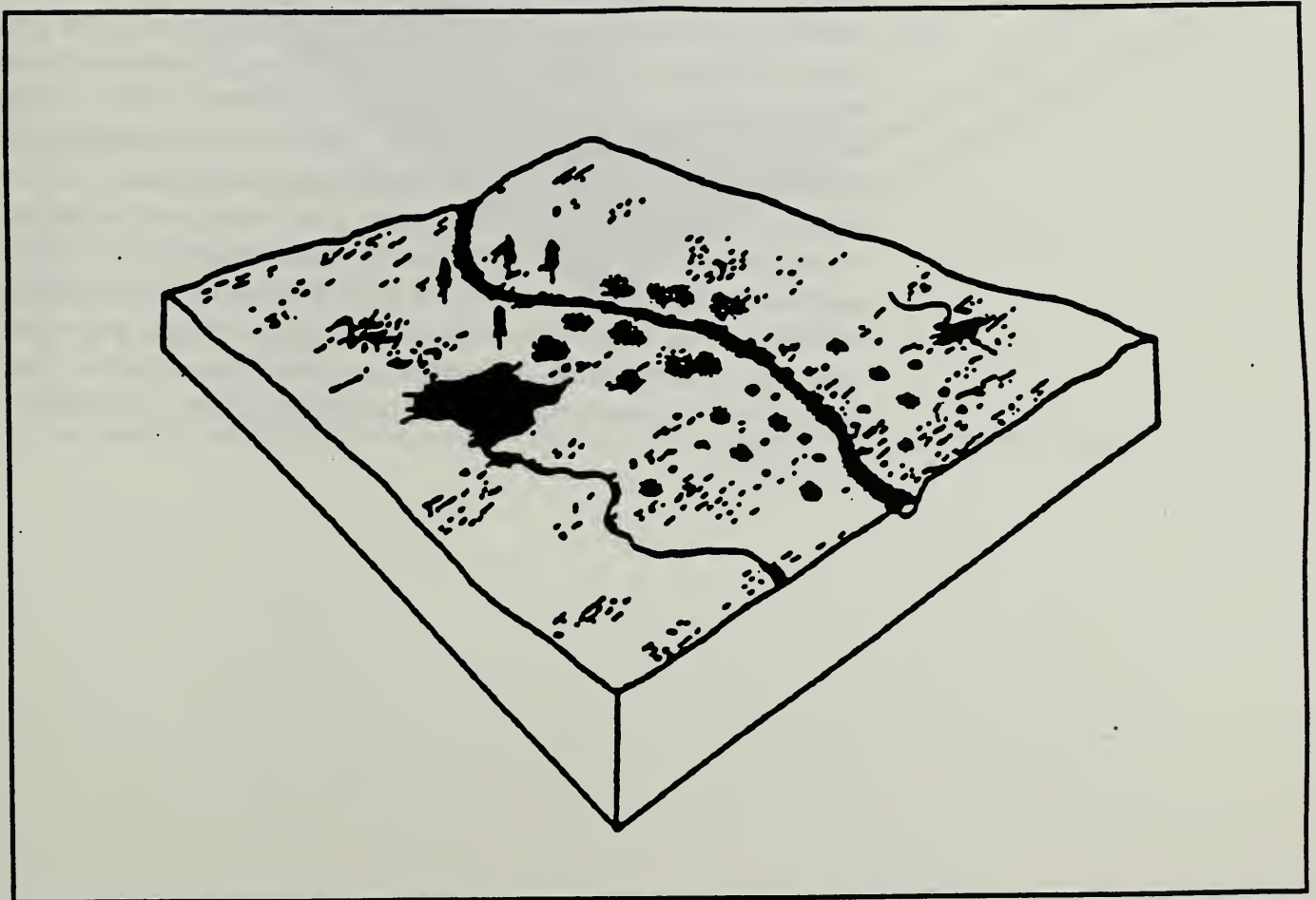
HIGH GRADIENT, CONTAINED CHANNELS



**Placid or Glide
Streams**

Stream channels in this process group (L1 and L2 channel types) occur throughout the watershed on gently sloping, lowland landforms and are frequently associated with bogs, marshes, or lakes. Most of the sediment being transported through these channels is sand sized or smaller, much of which settles out in these gentle gradient channels. Stream channels are fairly stable and contain their flows fairly well. Channel stability is controlled mainly by dense root systems formed by sedges and sphagnum mosses and by some bank trees when they are present. Flood waters often flow over adjacent landforms, an action which may lessen downstream flooding, and may serve as a buffer during major storms. Low gradient, slow flowing streams, such as those in placid or glide channels, are often associated with temperature sensitive watersheds. Channel productivity is moderately tied to the riparian/terrestrial interaction. Although they are highly variable, riparian areas associated with these streams may be located within very large wetlands areas.

PLACID/GLIDE STREAMS



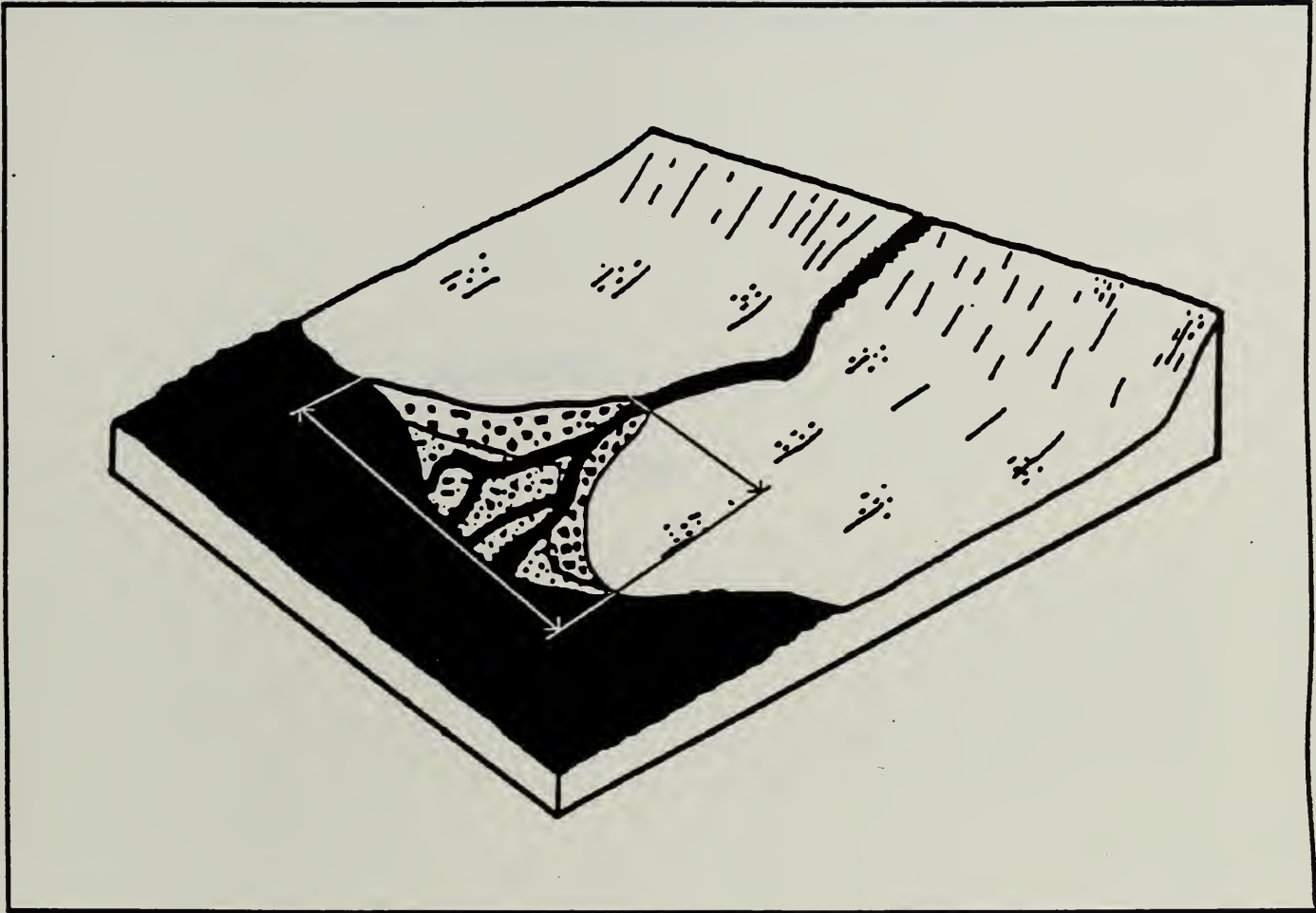
**Lakes and
Ponds**

Stream channels in this process group are lakes and ponds and are designated L, L3, L4, and L5 channels types. Lakes and ponds are water habitats that are situated in topographic depressions, dammed river channels or floodplain terraces of large glacial rivers. This channel group includes all lakes and ponds greater than 2 acres in size; beaver ponds are also included in this channel classification. (Isolated muskeg potholes or ponds less than 2 areas were not mapped.) Vegetation includes muskeg sedges, rushes, and grasses or coniferous forest with shrub and herb understory. Their surface size and depth is dependent on the landform they occupy. Lakes contain valuable aquatic habitat for some fish species, primarily sockeye and coho salmon, and trout. (Illustration not included.)

**Estuarine
Streams**

Stream channels in this process group include: E1, E2, E3, E4 and E5 channel types. They occur at the mouths of watersheds with estuarine landforms. (Estuarine landforms are defined as major stream deltas at heads of bays or along inlets.) They include all intertidal streams and streams that are inundated during high tides. This channel type is often associated with saltwater marshes, meadows, mudflats, and gravel deltas. Stream stage fluctuations, channel structure, sediment transport, and water chemistry are influenced by saltwater inundation. Estuarine stream channels are usually single or multi-channeled, generally shallowly cut, and characterized by small, loose, fine textured water-deposited materials which are easily eroded. Streams containment varies from a poor to fair extent. Much of the sediment produced from any given watershed is ultimately deposited in the estuarine channels, consequently, these channels are highly sensitive to upstream management activities. As a result, bank widths and depths are highly variable and bank and channel beds are unstable. Sedge and marshland plants dominate the streamside, interaction with plants that are further upland is minor. The amount of stream migration and braiding may vary, depending on bank and bed stability.

ESTUARINE CHANNELS



Appendix E
Electronic Sites

17. 1880
18. 1881

APPENDIX E

Electronic Sites

Tables 1, 2, 3, and 4 provide a listing of existing and proposed electronic sites on the Tongass National Forest. These sites are used for electronic communication systems, including electronic transmitters, receivers, and resource monitoring equipment. An electronic site is a parcel of land on which buildings, antenna towers, and other electronic equipment designed for communication are located. These uses are authorized by the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. 1761) (FSM 2720).

Table 1 is an update of a previous listing found in Appendix E of the 1985-86 Amendment to the Tongass Land Management Plan (USDA Forest Service, 1985-86, Alaska Region Admin. Doc. Number 147). Errors in the previous listing have been corrected in Table 1. Table 2 lists sites that were existing prior to 1985 but were inadvertently omitted from Appendix E of the 1985-86 Amendment to the Tongass Land Management Plan. Table 3 lists electronic sites designated in places other than the Forest Plan. Table 4 lists sites that have not yet been designated as electronic sites which will require a separate site-specific analysis for designation. Unless otherwise specified, the primary types of use at each site will be

Electronic sites will be analyzed in the Forest Plan Revision to determine geographic areas of coverage within the Forest. This analysis will identify areas of electronic signal coverage for existing and proposed electronic sites, and it will identify areas where the coverage is lacking which may require additional future sites. The study will be accomplished using computer modeling with the assistance of the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA, undated). Although this study will not directly result in the designation of new electronic sites, it will provide data necessary for followup site-specific analyses which may result in the designation of new electronic sites in the future.

The following sites described in Table 1 were previously designated as electronic sites in Appendix E of the 1985-86 Amendment to the Tongass Land Management Plan (USDA Forest Service, 1985-86, Alaska Region Admin. Doc. Number 147). These previous designations are hereby confirmed.

Table 1 - Electronic sites previously designated in the Forest Plan.

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
STIKINE AREA:					
Petersburg R.D.	Lindenberg Peak	SW4NE4, Sec. 23, T59S, R78E, CRM 56° 44' 38" N, 133° 04' 30" W	1 ac.	Forast Service ACE (VHF/UHF)	3,249
Petersburg R.D.	Farragut Peak	NE4, Sec. 8, T55S, R78E, CRM 75° 07' 22" N, 133° 02' 35" W	1 ac.	Forest Service (VHF repeater)	3,810
(Previously designated as Franklin Peak)					
Petersburg R.D.	Kufu Mtn. #2	NW4, Sec. 9 T61S, R73E, CRM 56° 36' 42" N, 132° 02' 50" W	1 ac.	Forest Service Icicle (VHF)	3,355
Petersburg R.D.	Duncan Canal	SW4NW4, Sec. 17, T59S, R78E, CRM 56° 45' 12" N, 133° 09' 50" W	2 ac.	Alascom, Coast Guard	2,606
Petersburg R.D.	Petersburg Mtn.	SW4SW4, Sec. 21, T58S, R79E, CRM 56° 49' 33" N, 132° 59' 10" W	1 ac.	Alascom (passive microwave)	1,600
Petersburg R.D.	Horn Cliff	SW4NW4, Sec. 14, T58S, R80E, CRM 56° 50' 50" N, 132° 46' 35" W	1 ac.	Alascom (passive microwave)	2,880
Wrangell R.D.	Elbow Mtn.	NW4, Sec. 3, T60S, R86E, CRM 56° 42' 12" N, 133° 52' 45" W	1 ac.	Forest Service (micro wave/VHF)	3,900
Wrangell R.D.	Fools Peak	SW4, Sec. 21, T65S, R87E, CRM 56° 13' 02" N, 131° 58' 27" W	1 ac.	Forest Service (VHF repeater)	3,133
Wrangell R.D.	Keshevarof (Shrubby Island)	NW4, Sec. 13, T65S, R80E, CRM 56° 04' 10" N, 132° 58' 35" W	1 ec.	Alascom (microwave)	500
Wrangell R.D.	Navy Peak	NW4SW4, Sec. 15, T66S, R84E, CRM 56° 08' 45" N, 132° 24' 37" W	2 ec.	Alaska Power Authority Seley (VHF)	3,665
CHATHAM AREA:					
Sitka R.D.	Moore Mtn.	NW4NE4, Sec. 31, T49S, R64E, CRM 57° 35' 04" N, 135° 11' 58" W (NTIA run at both 200 MH and 450 MH.)	1 ac.	Alaska Pulp Corporation, Forest Service	3,075
Sitka R.D.	Steelhead	NW4SE4, Sec. 13, T47S, R59E, CRM	1 ac.	Forest Service	2,339

Sitka R.D.	South Passage	57° 47' 27" N, 135° 56' 26" W	5 ac.	Alascom	2,031
Sitka R.D.	Rodman Bay	57° 44' 48" N, 134° 58' 04" W	2 ac.	Alascom	3,100
Sitka R.D.	Upper Krusof	57° 22' 55" N, 135° 18' 45" W	1 ac.	Forest Service, Island Communications	2,350
Sitka R.D.	Mud Bay	SE4NW4, Sec. 18, T53S, R61E, CRM 57° 16' 30" N, 135° 46' 36" W	1 ac.	Alascom, Forest Service	1,055
Sitka R.D.	Manley Mtn.	SE4SW4, Sec. 25, T54S, R61E, CRM 57° 09' 09" N, 135° 38' 45" W	5 ac.	Alascom, Forest Service	2,215
Sitka R.D.	Mt. Furuheim Area	57° 06' 55" N, 134° 18' 30" W	1 ac.	Forest Service	5,328
Sitka R.D.	Biotka Island	SW4SW4, Sec. 18, T56S, R66E, CRM 57° 00' 52" N, 134° 59' 17" W	151 ac.	FAA, Forest Service	230
Hoonah R.D.	Pelican	56° 51' 32" N, 135° 33' 40" W Non-NFS land administered by FAA.	1 ac.	Alascom	2,095
Hoonah R.D.	Adolphus	SE4SE4, Sec. 26, T44S, R55E, CRM 58° 01' 08" N, 136° 22' 04" W	0.43 ac.	Alascom	1,670
Hoonah R.D.	Neka Mtn.	NE4NE4, Sec. 6, T49S, R59E, CRM 58° 15' 06" N, 135° 48' 42" W	1 ac.	Forest Service	3,139
Hoonah R.D.	Sisters Island	SW4NW4NW4, Sec. 33, T43S, R59E, CRM 58° 06' 11" N, 135° 47' 15" W	42 ac.	FAA	30
Juneau R.D.	Bessie Mtn.	E2NW4, Sec. 3, T43S, R62E, CRM 58° 10' 20" N, 135° 15' 24" W	0.9 ac.	Alascom	2,850
Juneau R.D.	Auke Mtn. #1	SW4, Sec. 16, T38S, R64E, CRM 58° 34' 43" N, 134° 51' 16" W	0.7 ac.	Forest Service	1,870
Juneau R.D.	Beeser Mtn.	NW4NE4, Sec. 20, T40S, R65E, CRM 58° 23' 26" N, 134° 42' 37" W	1 ac.	Alascom, Forest Service	4,100
Juneau R.D.	William Henry Peak	SE4SW4, Sec. 17, T36S, R61E, CRM 58° 44' 50" N, 135° 17' 00" W	1 ac.	Forest Service	3,458
Juneau R.D.	Point Howard	E2, Sec. 3, T41S, R63E, CRM 58° 20' 23" N, 135° 04' 38" W	1.3 ac.	Alascom	1,748
Juneau R.D.	Mt. Robert Barron	SE4, Sec. 18, T42S, R65E, CRM 58° 13' 50" N, 134° 50' 45" W	1 ac.	Forest Service, Coast Guard, FAA, Alaska State Troopers	3,475
Admiralty N.M.	Washburn Peak	NE4SW4, Sec. 14, T46S, R70E, CRM 57° 49' 51" N, 133° 56' 52" W	1 ac.	Snettisham	1,400
Admiralty N.M.	Wheeler Creek	(Previously designated as Randolph Peak) NW4, Sec. 28, T44S, R65E, CRM 58° 01' 58" N, 134° 41' 49" W	1 ac.	Alascom	100
Admiralty N.M.	Windfall Harbor	SW4NW4, Sec. 34, T47S, R69E, CRM	1 ac.	Forest Service	2,920

Admiralty N.M.	Angoon Admin. Site	57° 45' 15" N, 134° 13' 30" W SW4, Sec. 31, T50S, R68E, CRM 57° 30' 02" N, 134° 34' 44" W	1 ac.	Alascom	100
Yakutat R.D.	Russell Fiord #1	Most of site is either city or Kootznookoo land, except for a small sliver of NFS. NW4NE4, Sec. 3, T24S, R34E, CRM 59° 51' 33" N, 139° 36' 20" W	1 ac.	Park Service	3,950
Yakutat R.D.	Akve River	SW4SW4, Sec. 9, T30S, R39E, CRM 59° 20' 40" N, 139° 53' 50" W	5 ac.	FAA, Forest Service	1,210
KETCHIKAN AREA:					
Craig R.D.	1/2 Mile	SW4NW4, Sec. 6, T73S, R82E, CRM 55° 34' 13" N, 133° 00' 54" W	1 ac.	Alascom	2,166
Craig R.D.	Hill 1400	Located on private land owned by Klawock Heenya Corp. Section 31, T75S, R82E, CRM 55° 19' 25" N, 133° 00' 21" W	1.25 ac.	Alascom	1,399
Ketchikan R.D.	Ball Island	SE4, Sec. 11, T68S, R89E, CRM 55° 54' 30" N, 131° 42' 05" W	0.5 ac.	Rediscovery Lodge	2,000
Ketchikan R.D.	Black Mountain #1	NW4, Sec. 14, T75S, R92E, CRM 55° 17' 30" N, 131° 22' 00" W	0.25 ac.	Rainbird Broadcasting	2,052
Ketchikan R.D.	Betton Head	SE4, Sec. 25, T73S, R89E, CRM 55° 30' 32" N, 131° 49' 21" W	0.46 ac.	Rainbird Broadcasting	1,138
Ketchikan R.D.	High Mtn. (Gravina)	SW4, Sec. 18, T75S, R90E, CRM 55° 21' 45" N, 131° 45' 15" W	0.01 ac.	Rainbird Broadcasting, Alaska Aviation, KPU	2,506
Thorne Bay R.D.	Cape Pole	(NTIA run at both 200 MH and 450 MH.) NE4SE4NW4, Sec. 22, T68S, R75E, CRM 55° 57' 57" N, 133° 47' 33" W	0.04 ac.	Pond Reef Fire Dept., Forest Service Alascom	10
Thorne Bay R.D.	Ratz Mtn. #1	SE4, Sec. 9, T70S, R83E, CRM 55° 37' 07" N, 132° 22' 39" W	0.1 ac.	Alascom	2,862
Thorne Bay R.D.	Ratz Mtn. #2	SE4SE4, Sec. 26, T69S, R82E, CRM 55° 51' 10" N, 132° 47' 30" W	0.005 ac.	South Coast	3,161
Thorne Bay R.D.	Ratz Mtn. #3	SE4, Sec. 26, T69S, R82E, CRM 55° 51' 10" N, 132° 47' 30" W	1 ac.	Alaska Aviation, Alaska Loggers	3,156
Thorne Bay R.D.	Coffman	SE4, Sec. 35, T67S, R81E, CRM 56° 48' 02" N, 132° 48' 16" W	0.156 ac.	Alascom, Sitka Telephone	30
Thorne Bay R.D.	Thorne Bay	NW4NW4, Sec. 27, T71S, R84E, CRM 55° 41' 30" N, 132° 31' 30" W	0.45 ac.	Alascom	87
Thorne Bay R.D.	Tolstoi II	Located on private land. Section 16, T72S, R85E, CRM	1 ac.	Alascom	2,210

Misty Fiords N.M. Quartz Hill	55° 37' 07" N, 132° 22' 39" W	0.1 ec.	U.S. Borax	3,800
	SE4, Sec. 35, T74S, R98E, CRM			
	55° 18' 10" N, 130° 32' 10" W			
Misty Fiords N.M. High Mtn. (Revilla)	NE4, Sec. 19, T80S, R97E, CRM	0.459 ec.	Alescom	1,976'
	54° 55' 05" N, 130° 50' 26" W		(Proposed for Forest Service)	
Misty Fiords N.M. Mt. Dolly	NE4, Sec. 18, T68S, R100E, CRM	0.5 ec.	Scotties Gold Mine	5,475
	55° 58' 16" N, 130° 00' 30" W		(Proposed for Forest Service)	

The following sites listed in Table 2 were existing prior to 1985 but were inadvertently omitted from the listing in the 1985-86 Forest Plan Amendment which designated then existing sites. These sites are hereby designated as electronic sites for future additional joint occupancy and use, as provided in Forest Service Manual 2728.

Table 2. Electronic sites existing prior to 1985 which were inadvertently omitted from the 1985-86 Forest Plan Amendment.

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
STIKINE AREA:					
Petersburg R.D.	Fenshaw	SE4, Sec. 10, T54S, R75E, CRM	2 ec.	Forest Service	2,100
		57° 12' 22" N, 133° 28' 07" W		(VHF repeater)	
Petersburg R.D.	Kake	NW4, Sec. 23, T56S, R74E, CRM	0.1 ec.	Forest Service	600
		56° 57' 48" N, 133° 40' 24" W		(VHF)	
Petersburg R.D.	Level	Section 28, T62S, R79E, CRM	120 ac.	FAA	25
		56° 28' 05" N, 133° 05' 00" W		(VHF)	
Petersburg R.D.	Kuiu Mtn. #1	SW4NW4, Sec. 5, T61S, R73E, CRM	2 ac.	FAA	3,500
		56° 36' 45" N, 134° 02' 07" W		(VHF)	
Wrangell R.D.	Etolin	W2SW4, Sec. 18, T66S, R83E, CRM	1 ac.	Forest Service	3,051
		56° 08' 50" N, 132° 37' 20" W		(VHF repeater)	
Wrangell R.D.	Zerembo	SE4SW4, Sec. 1, T64S, R80E, CRM	2 ec.	Forest Service,	2,444
		56° 20' 45" N, 132° 51' 35" W		Coast Guard	
				(micro wave/VHF)	

CHATAM AREA:

Juneau R.D.	Point Bishop	NW4, Sec. 28, T42S, R69E, CRM	0.1 ec.	National Weather Service	20
		58° 12' 12" N, 134° 08' 36" W			

Uses were approved by 9/2/82 Regional Forester letter.

Juneau R.D.	Heintzleman Ridge	SW4, Sec. 29, T40S, R66E, CRM 58' 22' 12" N, 134' 32' 54" W Site was established 9/9/68.	1 ac.	KJUD, KSUP	1,400
Juneau R.D.	Sullivan River	NE4, Sec. 23, T34S, R60E, CRM 58' 54' 31" N, 135' 21' 18" W Site was established 4/6/81.	0.9 ac.	Alascom	182
Juneau R.D.	Coughlan Island	NW4, Sec. 33, T41S, R65E, CRM 58' 21' 10" N, 134' 42' 09" W Site was established 11/13/58.	3.6 ac.	FAA	50
KETCHIKAN AREA:					
Ketchikan R.D.	Shoal Cove	Secs. 22 and 23, T74S, R93E, CRM 55' 26' 26" N, 131' 15' 25" W Site was authorized by R-10/USCG MOU of 12/7/75.	241 ac.	U.S. Coast Guard (Loran C Station)	300

The following sites listed in Table 3 have been designated as electronic sites through separate analysis and designation.

Table 3. Electronic sites designated other than in the Forest Plan.

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
CHATHAM AREA:					
Juneau R.D.	Williams Mtn. (Proposed)	SW4, Sec. 7, T40S, R66E, CRM 58' 09' 09" N, 134' 01' 55" W Designated by EA approved 6/5/91 by Regional Forester.	0.1 ac.	FAA	3,336
Yakutat R.D.	Russell Fiord #2	Section 7, T26S, R36E, CRM 59' 40' 40" N, 139' 22' 35" W Designated by EA approved 8/28/87 by Regional Forester.	1 ac.	Forest Service	2,505
KETCHIKAN AREA:					
Ketchikan R.D.	Saw Ridge	NE4, Sec. 25, T76S, R93E, CRM 55' 15' 25" N, 131' 12' 22" W Designated by an EA titled "FAA Remote Communication Outlet (RCO)", approved by Regional Forester on 5/27/88.	1 ac.	FAA	2,250

The following sites listed in Table 4 have not yet been designated as electronic sites. Future designation will require a site-specific analysis.

Table 4. Sites not yet designated as electronic sites.

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
STIKINE AREA:					
Petersburg R.D.	Rowen Mountain (Proposed)	SW4, Sec. 6, T60S, R71E, CRM		Forest Service-CA (VHF)	3,210
Petersburg R.D.	Crystal Mountain (Proposed)	SW4NW4, Sec. 13, T61S, R80E, CRM		Crystal Mtn. Comm. (VHF/UHF)	3,317
Wrangell R.D.	Tyea (Proposed)	NE4, Sec. 26, T65S, R90E, CRM		Alaska Power Authority	4,716
Petersburg R.D.	Sumner	NW4N2, Sec. 26, T61S, R80E, CRM			2,730
Wrangell R.D.	Voronkofski	SW4SE4, Sec. 20, T63S, R83E, CRM			3,204
Petersburg R.D.	S. Kupreenof	Section 4, T62S, R76E, CRM		Alascom (VHF/microwave)	1,960
CHATHAM AREA:					
Sitka R.D.	Sukoí	SW4, Sec. 9, T53S, R61E, CRM	1 ec.	FAA	1,897
Sitka R.D.	Doolith Mountain (Proposed)	SW4, Sec. 25, T48S, R57E, CRM		Forest Service	2,159
Sitka R.D.	Catherine Island	NE4, Sec. 19, T52S, R62E, CRM	1 ec.	Forest Service	2,256
Hooneh R.D.	Seel Mtn.	NE4, Sec. 11, T45S, R63E, CRM	5 ec	Forest Service	3,250

KETCHIKAN AREA:

Craig R.D.	12-Mile	55° 18' 50" N, 132° 47' 10" W	Forest Service	2,351
Craig R.D.	Sunny Hay Mountain (Proposed)	55° 28' 05" N, 133° 05' 10" W Non-NFS Native land.	Forest Service	2,500
Craig R.D.	Polk (Proposed)	55° 22' 30" N, 132° 33' 00" W	Forest Service	2,925
Ketchikan R.D.	Black Mountain #2	55° 16' 50" N, 131° 23' 55" W	Forest Service	2,058
Ketchikan R.D.	Mount Burnette	55° 44' 50" N, 132° 05' 20" W	Forest Service	2,450
Ketchikan R.D.	Orchard	55° 50' 10" N, 131° 21' 05" W	Forest Service	2,850
Thorne Bay R.D.	Twin Peaks	55° 46' 00" N, 133° 08' 30" W	Forest Service	2,271
Thorne Bay R.D.	Setters Lake	SE4, Sec. 32, T71S, R84E, CRM 55° 40' 02" N, 132° 33' 18" W	Alascom	800
Thorne Bay R.D.	Thorne Bay Hill	55° 44' 30" N, 132° 45' 30" W	Forest Service	1,100
Thorne Bay R.D.	Red Bay Mountain	56° 15' 20" N, 133° 24' 30" W (Stikine Area analyzed this site through NTIA.)	Forest Service	2,800
Misty Fiords N.M.	Boca	55° 22' 15" N, 130° 28' 00" W	Forest Service	3,645
Misty Fiords N.M.	Punchbowl	55° 30' 45" N, 130° 48' 32" W	Forest Service	2,450
Misty Fiords N.M.	Bakewell	55° 16' 30" N, 130° 41' 30" W	Forest Service	2,000

LANDS LOCATED OUTSIDE THE TONGASS N.F.:

Haines State Forest	Rainbow Glacier (Proposed)	SW4, Sec. 33, T31S, R59E, CRM 59° 08' 26" N, 135° 29' 31" W Non-NFS State land.	Forest Service-CA	3,472
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