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Tongass Land Management Plan Revision

Draft Environmental Impact Statement

Appendix, Volume III

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Appendix, Volume III

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APPENDIX F

MANAGEMENT AREA PRESCRIPTIONS

for the

Tongass National Forest

Land and Resource Management Plan

Revision

Tongass National Forest

June 1990

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Management Prescriptions and Forest-wide Direction and Standards & Guidelines

What is Forest Planning? Let's compare it to something that is familiar: land use zoning in your community. In your 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. Many uses may apply to the same zone, but they all are not required to occur there. 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 (*management areas*) are zoned (*allocated*) for different uses. The document which describes the uses to which the land may be put and the activities which may occur there is called a *prescription*. Since these prescriptions are applied to management areas, they are called *management area prescriptions*. Each management prescription gives general direction on what may occur in a management area, the standards for accomplishing each activity, and the guidelines on how to go about accomplishing the standards. These are called the "*Direction and Standards and Guidelines.*" Some of this direction and standards and guidelines may be common to many, but not necessarily all, areas of the Forest. These are called *Forest-wide Direction and Standards & Guidelines*.

Direction and standards & guidelines are designed so that all activities are integrated to meet land allocation objectives. Standards & guidelines represent the upward limitations within which all activities are carried out. Standards and guidelines also represent minimum achievement levels, but do not limit achievements, higher objectives may always be attained. For instance, if a management area 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*). Direction and 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.

Placement of management area boundaries is not meant to require exact on-the-ground survey at the Forest Plan level. During site-specific project area planning, such as a timber sale or recreation site development, the actual placement of the boundary for on-the-ground management may vary from the mapped location. Any management area boundary location disputes will be handled on a case-by-case basis during project planning and environmental analysis.

How to use these appendixes

Find the area of the Forest you are interested in on an Alternative map. Match the color of the area of interest with the color on the map legend and you'll find the name of the management area prescription. Go to the management area prescription in *Appendix F*.

A management area prescription is described in three parts:

1. Goals and a brief overview.

2. A table which refers to the *Forest-wide Direction and Standards & Guidelines* that apply. *Forest-wide Direction and Standards & Guidelines* are found in *Appendix G*. The order of the resources is shown in the table of contents.

3. The specific direction, called *Management Area Direction and Standards & Guidelines*, which apply to the management area. The *Management Area Direction and Standards & Guidelines* are grouped by resource, following the order established in the table. Resource codes are the same as those used in the *Forest-wide Direction and Standards & Guidelines*.

The following table will assist the reader in understanding the differences between management areas (*land use zones*). It gives a brief summary of the management areas. All the applicable resources are not included.

SUMMARY COMPARISON OF MANAGEMENT AREA PRESCRIPTIONS

Code	Management Area Prescription	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Enhancement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
WW	Wilderness	Preservation, Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	Compatible with Wilderness Objectives	Not Suitable, Beach Log Salvage	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Enhanced
WM	Wilderness National Monument	Preservation, Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	Compatible with Wilderness Monument Objectives	Not Suitable, Beach Log Salvage	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Enhanced
NM	Nonwilderness National Monument	Retention, Partial Retention, Modification, Maximum Modification	Primitive, Semi-primitive Motorized and Non-motorized, Roaded Natural, Roaded Modified	Open for Traditional Access	Compatible with Nonwilderness Monument Objectives	Not Suitable, Beach Log Salvage	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Generally Maintained or Enhanced
RA	Research Natural Area	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open, Restricted	Allowed if Compatible with RNA Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Withdrawn Subject to Valid Existing Rights	Maintained or Enhanced
BF	Beach Fringe and Estuary	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 Enhanced
PR	Primitive Recreation	Retention	Primitive	Open for Traditional Access	Compatible with Recreation Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitat	Open	Maintained or Enhanced

SUMMARY COMPARISON OF MANAGEMENT AREA PRESCRIPTIONS (continued)

Code	Management Area Prescription	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Enhancement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
MW	Enacted Municipal Watersheds	All	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 Enhanced
OG	Old-Growth Habitat	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	Allowed	Not Suitable	Case by Case Basis	Old-growth Habitat Maintained	Open	Maintained or Enhanced
SP	Semi-primitive Recreation	Retention, Partial Retention	Semi-primitive Motorized	Open	Compatible with Recreation Objectives	Not Suitable	Limited Transportation Network	Old-growth Habitat Maintained	Open	Maintained or Enhanced
EF	Experimental Forests	All	All	Open, Restricted	Allowed	Not Suitable, Range of Harvesting Varies with Research Needs	Full Transportation Network	Habitats Vary Depending Upon Research Activities	Open	Generally Maintain or Enhance
SV	Scenic Viewshed	Retention, Partial Retention	All	Open	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 Prescription WQ or SL
VT	Visual-Timber	Partial Retention	Roaded Natural and Modified	Open	Allowed	Moderate Even-aged Harvesting	Full Transportation Network	All Ages of Habitat with Slow Reduction in Amount of Old Growth	Open	Located in Prescription WQ or SL
RN	Roaded Natural/Rural Recreation	Partial Retention	Roaded Natural	Open	Encouraged	Selection, Limited Even-aged Harvesting	Full Transportation Network	All Ages of Habitat with Moderate Reduction in Amount of Old Growth	Open	Located in Prescription WQ or SL

SUMMARY COMPARISON OF MANAGEMENT AREA PRESCRIPTIONS (continued)

Code	Management Area Prescription	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Enhancement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
MM	Minerals	Maximum Modification	All	Open, Restricted	Allowed	Complete Range of Harvesting	Case by Case Basis	Habitats Vary Depending Upon Mining Development	Emphasized	Minimize Disturbance
TM	Timber Production	Maximum Modification	Roaded Natural and Modified	Open	Allowed	Intensive Even-aged Harvesting	Full Transportation Network	Early, Middle and Mature Habitats	Open	Located in Prescription WQ or SL
WQ	Fish Habitat and Water Quality Requirements	All	Semi-primitive Motorized, Rural, Roaded Natural	Open	Encouraged	No Harvest, Selection, Moderate to Intensive Evenaged Harvesting	Special Consideration	All Ages of Habitat with Some Old Growth Maintained	Open	No Serious and Adverse Effects to Water or Fish Habitat
SL	Stream and Lake Protection	All	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 Enhanced
SA	Special Areas	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open	Allowed if Compatible with Special Areas Objectives	Not Suitable	Case by Case Basis	Natural Distribution and Abundance of Habitats	Open, with Restrictions	Maintained or Enhanced
WR	Wild Rivers	Retention	Primitive, Semi-primitive Motorized and Non-motorized	Open for Traditional Access	Compatible with Wild River Objectives	Not Suitable	None	Natural Distribution and Abundance of Habitats	Withdrawn, Subject to Valid Existing Rights	Maintained or Enhanced
SR	Scenic Rivers	Retention, Partial Retention	Semi-primitive Motorized and Non-motorized	Open	Compatible with Scenic River Objectives	Selection, Limited Even-aged Harvesting	Limited Transportation Network	All Ages of Habitat with Minor Reduction in Amount of Old Growth	Open	Located in Prescription WQ or SL

SUMMARY COMPARISON OF MANAGEMENT AREA PRESCRIPTIONS (continued)

Code	Management Area Prescription	Visual Quality Objective	Recreation Opportunity Spectrum	Access	Fisheries Enhancement	Timber Management	Roads	Wildlife Habitats	Minerals Location & Leasing	Riparian
RR	Recreation Rivers	Retention, Partial Retention, Modification	All	Open	Compatible with Recreation River Objectives	Selection, Moderate Even-aged Harvesting	Full Transportation Network	All Ages of Habitat with Moderate Reduction in Amount of Old Growth	Open	Located in Prescription WQ or SL

WILDERNESS

Management Area WW

The emphasis of this management area is to provide for: 1) the protection and perpetuation of essentially primitive 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 for by ANILCA for the following purposes:

- For subsistence purposes by rural residents in accordance with Federal and State Regulations,
- For administrative purposes when specifically authorized by the Regional Forester, or for emergency situations,
- For specific activities provided for in ANILCA, and
- For the use of motorboats, snowmachines during periods of snow cover, airplanes, and non-motorized surface transport methods for traditional activities and for travel to and from villages and homesites.

Areas recommended for addition to the National Wilderness Preservation System are allocated and managed under the provisions of the Primitive Recreation prescription.

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.
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. Only infrequent presence of motorized activity exists which is associated with access to the wilderness, existing public use cabins, and subsistence use within the area.
Visual	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.
Fish	Fish habitat enhancement projects are designed to help achieve wilderness objectives and to meet the objectives of the Regional Comprehensive Salmon Plans.

Subsistence	Activities occur in accordance with Federal and State Regulations and may be seasonally prevalent in some areas.
Wildlife	Human use of habitat is monitored and appropriate actions taken to prevent the degradation of wilderness 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.
Tree Use	Activities are limited to subsistence use and beach log recovery, administrative use necessary for management and protection of wilderness values and as otherwise specified in ANILCA.
Soil and Water	Watersheds are managed in a natural condition.
Minerals	Mineral activity is limited to claims on which valid existing rights have been established. The designated Wilderness is withdrawn from mineral entry.
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.
Facilities	Structures consist of those needed for the protection of Wilderness resources; and those needed for the health and safety of visitors.
Transportation	Travel is primarily by use of trails and waterways. Travel is essentially nonmechanized except for the use of airplanes, motorboats, snowmachines and nonmotorized surface transportation methods. Access is provided for as specified in ANILCA Sections 811(b) and 1110(a).
Fire	Natural occurrences are allowed to play their normal role in the dynamics of ecosystem succession. The use of fire in its natural role will be by Fire Prescription and supported by an Escaped Fire Situation Analysis.
Insect and Disease	Natural occurrences are allowed to play their normal role in the dynamics of ecosystem succession. Scientific study of natural populations is encouraged using research methods appropriate for the wilderness setting and goals.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	I-IV; VI-X
SPECIAL AREAS	SPL	All
WILDERNESS	AW12	
RECREATION	AN111,AN121,AT12	All
	AN112	I(A,B,C); II(A)
	AN122	I; II(A,C); III; IV(B); VII
	AT	I(A-E,F:1,3,5,6)
VISUALS	AV1	I(A,B,C,D)
	AV11	I(A,B,G)
	AV12	I(B,C)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
	ET114	VI(C,D)
AIR	FA	All
RIPARIAN	RIP	All
SOIL AND WATER	FW	All
WETLANDS	WET	All
MINERALS AND GEOLOGY	GM11	All
	GM12	I, III-VII
LANDS	JL	All
FACILITIES	LF1	I(A)
	LF23	All
TRANSPORTATION	LT	None
FIRE	PF12	I(A:2-4)
	PF2	I(A:1,4,5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	I(A:1,2;B:1)
	QC122	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activity: AC

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, protection, and allocation within the Wilderness.
   1. Identify areas requiring intensive inventory/survey, including non-project areas.
   2. Identify cultural properties to be nominated to the National Register of Historic Places.
   3. Identify, classify and evaluate known cultural resources.
   4. Identify cultural properties that require stabilization or other protective measures.

WILDERNESS

Wilderness Resource Administration: AW12

Wilderness Resource Management

A. Manage all designated Wildernesses to maintain an enduring wilderness resource, while providing for public access and uses consistent with the purposes of the Wilderness Act of 1964, as amended, and 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. Adequate determination of the cumulative effects of activities and equipment use must be demonstrated as well as site-specific or singular effects.
   * 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.
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 for the administration of the Wildernesses is subject to the following conditions:
   * Aircraft:
     - 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.
     - 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.
   * Outboard Motors: (On freshwater lakes)
     - Outboard motors may be used by the Forest Service only for administering the Wilderness, gathering firewood for public recreation cabins, and transporting crews and equipment on lakes specified by the District Ranger.
     - Use of Forest Service outboard motors by employees for off duty recreation is not permitted.
     - Outboard motors will be 10 horsepower or less.
   * Chainsaws:
     - Chainsaws may be used for trail maintenance and firewood cutting from September 10 through June 30 of the following year.
     - 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:
     - Will not be used for normal maintenance work, or in field camps, except where specifically authorized in writing by the Regional Forester.
     - May be used for construction and reconstruction of projects only when use has been specifically authorized in writing by the Regional Forester.
   * Exceptions:
     - Aircraft and mechanized equipment may be used as needed for search and rescue purposes.
     - The temporary use of motorized equipment 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.

- 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.

Wilderness Resource Monitoring: AW121

Ecological Considerations

A. Develop baseline ecosystem inventories which identify reliable, and measurable, indicator factors and establish a systematic process to assess change. Establish limits of acceptable change (LAC) for biological and physical conditions. Recognize that long-term ecosystem change dynamics are the consequence of normal successional processes and patterns of periodic disruption by natural forces.

B. Effects of human activities and mechanized equipment will be determined through monitoring of the ecological and sociological conditions within the Wilderness.

C. Encourage scientific study of the Wilderness that enhances the opportunities to:

1. Provide ecological data and interpretations that identify:
   * What kinds of ecosystems are present
   * Distribution of ecosystems
   * Ecosystem composition and structure
   * Ecosystem dynamics including the rate and direction of succession
   * The key factors affecting (or likely to affect) the dynamics
2. Provide or enhance periodic monitoring of changes within ecosystems and at the ecotones between key ecosystems.
3. Identify a priority list of ecosystems which reflect the relative risk and consequences of change due to human activities; and will help identify management actions which are likely to be most effective in protecting ecosystems which are most vulnerable to human caused change.

Sociological Considerations

A. Social aspects of Wilderness management must be meshed with the ecological. Establish monitoring systems that will:
   * Help refine desired social capacities of Management Areas based on desired attributes of wildland settings.
   * Provide insight into the acceptability of given levels of group encounters; and the relative satisfaction of users with the evidence of human activities including trails, cabins, shelters, aircraft, motorboats, snowmachines, and non-conforming structures and/or activities.

B. Encourage scientific study of the Wilderness that:
   * Provides systematically documented information about the beneficial consequences of providing amenity goods and services from wildlands.
   * Provides a cross-check of the techniques being employed to measure wildland recreation values.
   * Provides information on the role of physical environmental amenities in the overall quality of life.

RECREATION

Recreation Use Administration: AN122

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 specifically closed to public use. Protect the integrity of wilderness resources through integrated project planning and implementation within the Wilderness.

   1. Provide the inherent 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 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, airplanes, and nonmotorized surface transportation method for traditional activities 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 fishing, hunting, boating, sightseeing and hiking.
   2. Traditional activities 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 airplane.
   3. 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, unless an area is specifically closed to public use. Such uses are subject to reasonable regulation by the Regional Forester to protect natural and other values of wilderness from damage.
   4. Restrictions or closures of specific areas to specific uses within the Wilderness may be envoked by the Regional Forester following adequate public notice and hearing, and it is determined that such use would be detrimental to wilderness resource values. Closure of broad areas is not contemplated.
   5. 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.
   6. 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 cabins and/or shelters when needed for health and safety purposes. (ANILCA, Sec. 1315.(d)).
    1. New cabin 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. New or replacement cabins or shelters will use design 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 surrounding the site.
    5. Decisions to construct new cabins or relocate or move existing cabins must be supported by the appropriate environmental analysis.
    6. The Forest Supervisor will report any proposed cabin or shelter removal or additions in the annual wilderness report for transmission to the appropriate congressional committees (ANILCA Sec. 1315(d).
F. 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 Wilderness management objectives, establish special management zones within the Wilderness to deal with unique situations, or to integrate local issues and concerns with management activities.
    1. The boundaries of sub-units should generally be located on identifiable topographic features and/or coincide with an established recreation opportunity classification (ROS) area.

Outfitter and Guide Operations

A. Special use permits authorizing 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 permits.
    1. In selecting persons to provide new visitor services, preference shall be given:
        * To the Native Corporation which the Regional Forester determines is most directly affected by the establishment of the subject Wilderness, and
        * to persons who are determined as 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 the Lands section of this prescription).

Trail Activities: AT

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

B. Emphasize opportunities in Primitive and Semi-primitive ROS classes for activities which are in harmony with the natural environment and consistent with the intent and purposes of the management of the Wilderness.

C. Emphasize trail systems that offer the following opportunities as may be appropriate and in a given area:

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 snow trails are feasible to develop.

Trail Administration: AT12

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 appurtenant 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)

VISUALS

Visual Resource Operations: AV1

A. Manage the area to provide a natural-appearing landscape, where activities are not evident to the casual observer.

1. Apply Forest-wide Direction and 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.

FISH

Fish Habitat Planning: CF112

Fish enhancement

A. Provide for fisheries habitat enhancement in the Wilderness, subject to the goal of restoring and maintaining fish production in the State of Alaska (consult sections 507 and 1315(b) of ANILCA, R-10 Supp. 46, and the Regional Comprehensive Salmon Plans). Consider the suitability of fish habitat enhancement, during project planning, by evaluating: 1) availability of suitable non-wilderness opportunities, 2) effects on wilderness conditions, in general; 3) effects on wilderness 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 Recreational Opportunity Spectrum Class (ROS) setting.

Fish Habitat Monitoring: CF121

A. Implement aspects of the monitoring plan which compare management effects between the affected Management Areas.
B. Stress protection of fish habitat to prevent the need for mitigation. Stocking of sportfish 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 Wilderness management.

Fish Habitat Improvement: CF22

A. Use construction techniques which are consistent with Wilderness 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.

SUBSISTENCE

Subsistence: SUBS

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. Wood gathering activities in Wilderness for subsistence uses (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 the individual does not have a suitable source equally accessible outside the Wilderness. There will be no restrictions on cutting dead or down tree for subsistence use unless monitoring indicates such activity in a given area is detrimental to Wilderness resources.
C. Assess the effect of continued existing subsistence uses on the long-term condition and natural succession of wilderness ecosystems.
D. Consult the Lands Section of this prescription.

WILDLIFE

Wildlife Habitat Monitoring: CW121

A. Assess human use to ascertain impacts on MIS and sensitive species and their habitats. Take appropriate corrective action when levels of allowable use or specific activities appear to be approaching unacceptable conditions.
    1. Develop wildlife habitat assessment techniques/methodology for Wilderness, including development of criteria to identify unacceptable habitat conditions and recommendations of appropriate corrective actions which can be implemented.

Wildlife Habitat Improvement: CW22

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

TIMBER

Timber Resource Planning: ET112

A. Forested land is classified as unsuitable and withdrawn from the timber base.
B. The following types of 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. 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 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.

SOIL AND WATER

Watershed Resource Improvements: FW2

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.
B. Utilize, whenever possible, indigenous plant species and materials in implementing watershed improvements.

MINERALS AND GEOLOGY

Minerals and Geology Administration: GM12

Forest Lands Withdrawn From Mineral Entry

A. Forest lands within the Wilderness are withdrawn from mineral entry.
B. Claimants with claims located within the Wilderness retain valid existing rights if such rights were established prior to the withdrawal date.
C. Permit reasonable access to mining claims in accordance with the provisions of approved operating plans.
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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. 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 and Facilities Forest-wide Direction and Standards & Guidelines to the location and construction of mining roads and facilities.

LANDS

Special Use Administration (non-Recreation): JL122

A. Authorize only activities which are allowed by the Wilderness Act (as amended by ANILCA), subsequent Wilderness legislation, and 36 CFR 293, and are otherwise in compliance with management direction of this plan. (Consult FSM 2700 and FSM 2320, Supp. 46)
   1. Analyze each proposal 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 such 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.
   5. New special use permits for private recreation cabins will not be issued.

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 on-going use otherwise allowed within 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 of the proposed structure(s) showing the specific geographical location.
   6. Special Use permits will contain the following provision: "Chainsaws, 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 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.

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.
2. Special Use permits will contain the following provision: "Chainsaws, 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 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. 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 structures 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 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 and fishing activities.
      * The applicant has no practical alternative location outside the Wilderness.
   3. Do not include cabins.
   4. Do 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.
   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, 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 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.

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. Mechanical 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 Agreement, documenting procedures which will minimize impacts on the wilderness resources without unreasonably limiting the operation and maintenance of the proposed facilities.

G. This management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be locate here only after a search for TUS windows has been exhausted.

Landline Location and Maintenance: JL231, JL24

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

Land Ownership Adjustments: JL26

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

FACILITIES

Facilities Improvements: LF2

A. No new permanent administrative facilities will be constructed 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.

TRANSPORTATION **Transportation Operations: LT1**

A. New roads are not permitted, except to access 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, airplanes and non-mechanized forms of surface transportation is permitted. (Consult the Wilderness and Recreation sections of this prescription.)
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 land owner, or his authorized representative, to work out reasonable solutions which will meet the intent of ANILCA (Sec. 110(b) and 1323)) while minimizing adverse impacts on wilderness resources and values.

INSECT AND DISEASE **FPM Suppression-Federal Lands: QC124-1**

A. Provide for safety of users.
   1. Remove trees near use areas and protect existing vegetation from pests.

WILDERNESS NATIONAL MONUMENTS

Management Area WM

The emphasis of this management area is to provide: 1) management direction for the designated Wilderness portions of Admiralty Island and Misty Fiords National Monument Wildernesses which protects 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 with regard to 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 Non-wilderness National Monuments prescription.

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:

- For subsistence purposes by rural residents in accordance with Federal and State Regulations,
- For administrative purposes when specifically authorized by the Regional Forester or for emergency situations,
- For specific activities provided for in ANILCA, and
- For the use of motorboats, snowmachines during periods of snow cover, airplanes, and non-motorized surface transport methods for traditional activities and for travel to and from villages and homesites.

At-a-Glance . . .

Wilderness — The National Monument Wilderness is managed in the same manner and intent as the other Wildernesses on the Forest. (See Prescription WW).

Cultural resources — Scientific study of cultural resources is encouraged and interpretation is provided in a manner consistent with other Monument Wilderness objectives.

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. There is only infrequent presence of motor-

	ized activity which is associated with access to the Monument Wilderness, existing public use cabins, and subsistence use within the area.
Visual	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.
Fish	Fish habitat enhancement projects are designed to help achieve wilderness objectives and to meet the objectives of the Regional Comprehensive Salmon Plans.
Subsistence	Activities occur in accordance with Federal and State Regulations and may be seasonally prevalent in some areas.
Wildlife	Human use of habitat is monitored and appropriate actions taken to prevent the degradation of wilderness 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.
Tree Use	Activities are limited to subsistence use and beach log recovery, administrative use necessary for management and protection of Monument Wilderness values and as otherwise specified in ANILCA.
Soil and Water	Watersheds are managed in a natural condition.
Minerals	Mineral activity is limited to claims on which valid existing rights have been established. The designated Monument Wilderness is withdrawn from entry.
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.
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.
Transportation	Travel is primarily by use of trails and waterways. Travel is essentially nonmechanized except for the use of airplanes, motorboats, snowmachines and nonmotorized surface transportation methods. Access is provided for as specified in ANILCA Sections 811(b) and 1110(a).
Fire	Natural occurrences are allowed to play their normal role in the dynamics of ecosystem succession. The use of fire in its natural role will be directed by a Fire Prescription and supported by an Escaped Fire Situation Analysis.
Insect and Disease	Natural occurrences are allowed to play their normal role in the dynamics of ecosystem succession. Scientific study of natural populations is encouraged using research methods appropriate for the wilderness setting and goals.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	I-IV; VI-X
SPECIAL AREAS	SPL	All
WILDERNESS	AW12	
RECREATION	AN111,AN121,AT12, AN112 AN122 AT	All I(A,B,C); II(A) I, II(A,C); III; IV(B); VII I(A-E,F:1,3,5,6)
VISUALS	AV1 AV11 AV12	I(A,B,C,D) I(A,B,G) I(B,C)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW111	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1 ET114	All VI(C,D)
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All I, III-VII
LANDS	JL	All
FACILITIES	LF1 LF23	I(A) All
TRANSPORTATION	LT	None
FIRE	PF 12 PF 2	I(A:2,3,4) I(A:1,4,5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activity: AC

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 areas requiring intensive inventory/survey, including non-project areas.
   2. Identify cultural properties to be nominated to the National Register of Historic Places.
   3. Identify, classify and evaluate known cultural resources.
   4. Identify cultural properties that require stabilization or other protective measures.

WILDERNESS

Wilderness Resource Administration: AW12

Wilderness Resource Management

A. Manage all designated Monument Wildernesses to maintain an enduring wilderness resource, while providing for public access and uses consistent with the purposes of the Wilderness Act of 1964, as amended, and 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 Monument Wilderness ecosystems. Adequate determination of the cumulative effects of activities and equipment use must be demonstrated as well as site-specific or singular effects.
   * 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 help

in educating 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 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.
        - 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.
      * Outboard Motors: (On freshwater lakes)
        - Outboard motors may be used only for administering the Monument Wilderness, gathering firewood for public recreation cabins, and transporting crews and equipment on lakes specified by the District Ranger.
        - Use of Forest Service outboard motors by employees for off duty recreation is not permitted.
        - Outboard motors will be 10 horsepower or less.
      * Chainsaws:
        - Chainsaws may be used for trail maintenance and firewood cutting from September 10 through June 30 each year.
        - 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:
        - will not be used for normal maintenance work, or in field camps, except where specifically authorized in writing by the regional Forester.
        - may be used for construction/reconstruction projects only when use has been specifically authorized in writing Regional Forester.
      * Exceptions:
        - Aircraft and mechanized equipment may be used as needed for search and rescue purposes.

- The temporary use of motorized equipment for fisheries research, management, rehabilitation, and enhancement activities, when such use is authorized in the project project environmental assessment or Decision Notice approved by the Forest Supervisor.

- 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.

Wilderness Resource Monitoring: AW121

Ecological Considerations

A. Develop baseline ecosystem inventories which identify reliable, and measurable, indicator factors and establish a systematic process to monitor change. Establish limits of acceptable change (LAC) for biological and physical conditions. Recognize that long-term ecosystem change dynamics are the consequence of normal successional processes and patterns of periodic disruption by natural forces.

B. Effects of human activities and mechanized equipment will be determined through monitoring of the ecological and sociological conditions within the Monument Wilderness.

C. Encourage scientific study of the Monument Wilderness that enhances the opportunities to:

1. Provide ecological data and interpretations that identify:
   * What kinds of ecosystems are present
   * Distribution of ecosystems
   * Ecosystem composition and structure
   * Ecosystem dynamics including the rate and direction of succession
   * The key factors affecting (or likely to affect) the dynamics
2. Provide or enhance periodic monitoring of changes within ecosystems and at the ecotones between key ecosystems.
3. Identify a priority list of ecosystems which reflect the relative risk and consequences of change due to human activities; and will help identify management actions which are likely to be most effective in protecting ecosystems which are most vulnerable to human caused change.

Sociological Considerations

A. Social aspects of Monument Wilderness management must be meshed with the ecological. Establish monitoring systems that will:
   * Helps refine desired social capacities of Management Areas based on desired attributes of wildland settings.
   * Provide insight into the acceptability of given levels of group encounters; and the relative satisfaction of users with the evidence of human activities including trails, cabins, shelters, aircraft, motorboats, snowmachines, and non-conforming structures and/or activities.

B. Encourage scientific study of the Monument Wilderness that:
   * Provides systematically documented information about the beneficial consequences of providing amenity goods and services from wildlands.

* Provides a cross-check of the techniques being employed to measure wildland recreation values.
* Provides information on the role of physical environmental amenities in the overall quality of life.

RECREATION

Recreation Use Administration: AN122

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 Monument Wilderness.

B. Provide for established ROS opportunities and appropriate activities throughout the Monument Wilderness, unless specifically closed to public use. Protect the integrity of National Monument and wilderness resources through integrated project planning and implementation within the Monument Wilderness.

1. Provide the inherent 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 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, airplanes, and nonmotorized surface transportation method for traditional activities 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 fishing, hunting, boating, sightseeing and hiking.
2. Traditional activities 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 airplane.
3. 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, unless an area is specifically closed to public use. Such uses are subject to reasonable regulation by the Regional Forester to protect natural and other values of wilderness from damage.
4. Restrictions or closures of specific areas within the Monument Wilderness may be envoked by the Regional Forester following adequate public notice and hearing, and it is determined that

such use would be detrimental to wilderness resource values. Closure of broad areas is not contemplated.

5. 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.
6. 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 cabins and/or shelters when needed for health and safety purposes. (ANILCA, Sec. 1315.(d)).
   1. New cabin 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 float plane 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. New or replacement cabins or shelters will use design 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 middle ground surrounding the site.
   5. Decisions to construct new cabins or relocate or move existing cabins must be supported by environmental analysis.
   6. The Forest Supervisor will report any proposed cabin or shelter removal or additions in the annual wilderness report for transmission to the appropriate congressional committees (ANILCA Sec. 1315(d).

F. 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 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 sub-units should generally be located on identifiable topographic features and/or coincide with an established recreation opportunity classification (ROS) area.

Outfitter and Guide Operations

A. Special use permits authorizing 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 permits.

1. In selecting persons to provide new visitor services, preference shall be given:
   * To the Native Corporation which the Regional Forester determines is most directly affected by the establishment of the subject Wilderness, and
   * to persons who are determined as 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 the section in this prescription on Lands).

Trail Activities: AT

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 ROS classes for activities 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 offer the following opportunities as may be appropriate and in a given area:
   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 snow trails are feasible to develop.

Trail Administration: AT12

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)

VISUALS

Visual Resource Operations: AV1

A. Manage the area 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.

FISH

Fish Habitat Planning: CF112

Fish Enhancement

A. Provide for fisheries habitat enhancement in the Monument Wilderness, subject to the goal of restoring and maintaining fish production in the State of Alaska (consult sections 507 and 1315(b) of ANILCA, R-10 Supp. 46, and the Regional Comprehensive Salmon Plans). Consider the suitability of fish habitat enhancement, during project planning, by evaluating: 1) availability of suitable non-wilderness opportunities, 2) effects on wilderness conditions, in general; 3) effects on wilderness 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 Recreational Opportunity Spectrum Class (ROS) setting.

Fish Habitat Monitoring: CF121

A. Monitor the effects of management activities on fish habitat and populations, as compared to activities affecting habitat and populations in prescriptions with other varying intensities of riparian management activities. The purpose of this monitoring is to identify differences in effects related to management intensity level.
   1. Implement aspects of the monitoring plan which compare management effects between the affected Management Areas.

B. Stress protection of fish habitat to prevent the need for mitigation. Stocking of sportfish 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 Wilderness management.

Fish Habitat Improvement: CF22

A. Use construction techniques which are consistent with Monument/ Wilderness 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.

SUBSISTENCE

Subsistence: SUBS

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 monument wilderness resource values. The use of other mechanical/motorized equipment, such as chainsaws, is allowed by permit only.

B. Wood gathering activities in Monument Wilderness for subsistence uses (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 the individual does not have a suitable source equally accessible outside the Monument Wilderness. There will be no restrictions on cutting dead or down tree for subsistence use unless monitoring indicates such activity in a given area is detrimental to Monument resources.

C. Monitor the effect of continued existing subsistence uses on the long-term condition and natural succession of wilderness ecosystems.

WILDLIFE

Wildlife Habitat Monitoring: CW121

A. Monitor human use to ascertain impacts on MIS and sensitive species and their habitats, and take appropriate corrective action when levels of allowable use or specific activities appear to be approaching unacceptable conditions.
   1. Develop wildlife habitat monitoring techniques/methodology for Wilderness, including development of criteria to identify unacceptable habitat conditions and recommendations of appropriate corrective actions which can be implemented.

Wildlife Habitat Improvement: CW22

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

TIMBER

Timber Resource Planning: ET112

A. Forested land is classified as unsuitable and withdrawn from the timber base.

B. The following types of uses may be authorized if done 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. 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 Monument Wilderness.

SOIL AND WATER

Watershed Resource Improvements: FW2

A. Only undertake watershed improvements 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.

B. Utilize, whenever possible, indigenous plant species and materials in implementing watershed improvements.

MINERALS AND GEOLOGY

Minerals and Geology Administration: GM12

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 withdrawal date.
C. Permit reasonable access to mining claims in accordance with the provisions of approved operating plans.
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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. 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 and Facilities Forest-wide Direction and Standards and Guidelines to the location and construction of mining roads and facilities.

LANDS

Special Use Administration (non-Recreation): JL122

A. Authorize only activities which are allowed by the Wilderness Act, (as amended by ANILCA), subsequent Wilderness legislation, and 36 CFR 293, and are otherwise in compliance with management direction of this plan. (Consult FSM 2700 and FSM 2320, Supp. 46)
    1. Analyze each proposal 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 such 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.
    5. New special use permits for private recreation cabins will not be issued.
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 contin-

uation of an on-going use otherwise allowed within the Monument Wilderness; where the applicant has no reasonable alternative site for constructing a cabin; and 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 of the proposed structure(s) showing the specific geographical location.
6. Special Use permits will contain the following provision: "Chainsaws, 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.
2. Special Use permits will contain the following provision: "Chainsaws, 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 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 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 only be issued 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. Do not include cabins.
4. Do not include motorized forms of transportation other than snowmachines, motorboats, or 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 this 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. On January 1, 1979, the permittee was Robert E. Nelson; spouse Edith H. Nelson, and the only child is Erik Nelson.
   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 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. Mechanical 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 Agreement, documenting procedures which will minimize impacts on the monument wilderness resources without unreasonably limiting the operation and maintenance of the proposed facilities.

H. This management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be located within this management area only after a search for TUS windows has been exhausted.

Landline Location and Maintenance: JL231, JL24

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

Land Ownership Adjustments: JL26

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

FACILITIES

Facilities Improvements: LF2

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 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.

TRANSPORTATION

Transportation Operations: LT1

A. New roads are not permitted, except to access 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 management area are closed to public use.
C. Use of snowmachines, motorboats, airplanes and non-mechanized forms of surface transportation is permitted.
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 land owner, or his authorized representative, to work out reasonable solutions which will meet the intent of ANILCA (Sec. 110(b) and 1323) while minimizing adverse impacts on monument wilderness resources and values.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Provide for safety of users.
    1. Remove trees near use areas and protect existing vegetation from pest.

NONWILDERNESS NATIONAL MONUMENTS

Management Area NM

The emphasis of this management area 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 non-wilderness National Forest Lands. Management direction for the Wilderness portions is provided in the Wilderness National Monuments Prescription. Admiralty Island National Monument contains 18,351 acres of nonwilderness National Forest lands. Misty Fiords National Monument contains 151,185 acres of nonwilderness National Forest lands.

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

At-a-Glance . . .

Cultural resources	Scientific study of cultural resources is encouraged and interpretation is provided visitors in a manner consistent with other Monument objectives.
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 monument.
Visual	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 Monument.
Fish	Where affected by mining activities, fish habitats are maintained to the maximum extent feasible. Fish habitat enhancement projects are designed to help achieve Monument objectives or to meet the objectives of the Regional Comprehensive Salmon Plans.
Subsistence	Activities occur in accordance with Federal and State Regulations and may be seasonally prevalent in some areas.
Wildlife	Human use of habitat is monitored 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.

Tree Use

Activities are limited to subsistence use, beach log recovery, and administrative use related to the development and operation of the mining activities. Timber harvest and sale is prohibited. Disposal of timber cleared for access and facility development will be handled through settlement sales.

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.

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.

Lands

Special use activities and structures needed to facilitate mineral operations may be present. Valid mining claims may be patented.

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.

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. All are closed to public use. Public transportation facilities outside the active mining area consist of only a few miles of constructed trails. Travel is essentially non-mechanized except for authorized traditional motorized recreation access, authorized resource management projects, emergency situations and subsistence uses.

Fire

Outside the active mining area natural occurrences are allowed to play their normal role in the dynamics of ecosystem succession. The use of fire in its natural role will be by Fire Prescription and supported by an Escaped Fire Situation Analysis.

Insect and Disease

Natural occurrences are allowed to play their normal roles in the dynamics of ecosystem succession. Scientific study of natural populations is encouraged using research methods appropriate for the wilderness setting and goals.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN111, AN121, AT12 AN112 AN122 AT	All I, II(A) I, II(A,C); III; IV(B); VII I(A-E, F:1,3,5)
VISUALS	AV	All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW111	All
OLD-GROWTH FORESTS	OLD	All
TIMBER	ET111, ET113 ET114	All VI, VII, VIII
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All I, III-VII
LANDS	JL	All
FACILITIES	LF1 LF23	I(A) All
TRANSPORTATION	LT	None
FIRE	PF12 PF2	I(A:2-4) I(A:1,4,5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: AC

Inventory

A. Activities which have the potential to affect cultural resources shall be in compliance with Section 106, 110 of the National Historic Preservation Act.
B. Valid, existing mineral claims shall be inventoried prior to the approval of a plan of operation for mineral activities.
C. 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 and authorized by a special use permit.
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.

RECREATION

Recreation Use Administration: AN122

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 inherent ecological, historical, and sociological conditions found within the Monument.
B. Continue to provide for established ROS opportunities and appropriate activities throughout the management 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 inherent 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 the management area in accordance with direction contained in the Operating Plans for the respective mining operations. Outside the area covered by the Operating Plans 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 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 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 sub-units should generally be located on identifiable topographic features and/or coincide with an established recreation opportunity classification (ROS) area.

Trail Administration: AT12

A. During the period of mining development and operation trails within the management area 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 wilderness environment and not an intrusion upon it. (Consult the Forest Service Trails Management Handbook)

VISUALS

Visual Resource Operations: AV1

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

FISH

Fish Habitat Planning: CF112

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, operating plans, and updates and amendments to each. Stocking of sportfish 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 mangement.
C. Mitigation of mining impacts to fish habitat shall be conducted 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 Monitoring: CF121

A. Monitor the effects of management activities on fish habitat and populations, as compared to activities affecting habitat and populations in prescriptions with other varying intensities of riparian management activities. The purpose of this monitoring is to identify differences in effects related to management intensity level.
   1. Implement aspects of the monitoring plan which compare management effects between the appropriate Management Areas.

Fish Habitat improvement: CF22

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.

SUBSISTENCE

Subsistence: SUBS

A. Traditional wood gathering activities in Monuments for subsistence uses (primarily firewood and trolling poles) will be allowed, subject to reasonable regulations to protect Monument resources. Cutting of green trees will be by permit only. There will be no restrictions on cutting dead or down tree 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.

WILDLIFE

Wildlife Habitat Planning: CW112

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

Wildlife Habitat Monitoring: CW121

A. Assess human use to ascertain impacts on MIS and sensitive species and their habitats, and take appropriate corrective action when levels of allowable use or specific activities appear to be approaching unacceptable conditions.
   1. Develop wildlife habitat assessment techniques/methodology for Monuments, including development of criteria to identify unac-

ceptable habitat conditions and recommendations of appropriate corrective actions which can be implemented.

Wildlife Habitat Improvement: CW22

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

TIMBER

Timber Resource Planning: ET112

A. 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. Beach log recovery from the coastline of the Monument is authorized by ANILCA. Permits will require that salvage operations be limited to the recovery of beached logs only and that operations be conducted from the water without roads or use of vehicles on uplands.

Timber Resource Improvements: ET2

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

MINERALS

Minerals and Geology Resource Preparation: GM11

Resource Preparation

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

Minerals and Geology Administration: GM12

Lands Withdrawn from Mineral Entry

A. National Forest System lands within this management area are withdrawn from additional mineral entry.
B. Claimants with claims located in areas withdrawn from mineral entry retain valid existing rights if such rights are established prior to the withdrawal date.
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 plan of operation, record of decision for both projects, and ANILCA. (Consult ANILCA Sec. 503 and 504).
C. Maintain the quality and continued productivity of anadromous and other fish habitats to the maximum extent feasible when they are affected by mining activities. (Consult ANILCA, Sec. 505).

LANDS

Special Use Administration (Non-Recreation): JL122

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.

Landline Location and Maintenance: JL231, JL24

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: JL26

A. Retain lands in Federal ownership; however, allow and assist in the process for valid mining claims embracing locatable commodities, to go to patent.
B. This management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and Utility sites and corridors may be located within the Management Area only after a search for TUS windows has been exhausted.

FACILITIES

Faciiities Improvements: LF2

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

TRANSPORTATION

Transportation Operations: LT1

A. New roads are not permitted, except for the following purposes:
   * To access valid mining claims and State or private lands not otherwise reasonably accessible.
   * 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.
   * For Transportation and Utility Corridors in accordance with ANILCA, Title XI.
B. Roads in this management area are closed to public use, unless opened by the operator.
C. Use of snowmachines, motorboats, aircrft and non-motorized methods of surface transportation are permitted.

RESEARCH NATURAL AREAS

Management Area RA

The emphasis of this management area is to provide a network of 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. Newly-proposed Research Natural Areas will require that an establishment report written for them with recommendation for the Chief of the Forest Service to approve. An individual management plan will be written for each Research Natural Area.

At-a-Glance . . .

Cultural resources	Interpretation of cultural resources and the natural environment may be provided to enhance the visitors experience when compatible with management objectives.
Recreation	Recreation management allows only forms and levels of recreation use which do not threaten or interfere with the objectives or purposes for which the Research Natural Area was established.
Visuals	Visual character of the area will evolve naturally.
Fish	Fish resources will be managed in natural evolving riparian and stream habitat conditions. Enhancement projects may be present when compatible with the objectives for which the Research Natural Area was established.
Subsistence	Subsistence activities will occur which do not compromise or degrade the purposes for which the Research Natural Area was established. This may require hearings and notices, as required by Section 810 of ANILCA.
Wildlife	Wildlife habitats will evolve in natural conditions.
Timber	Vegetation will be allowed to evolve in natural undisturbed conditions.
Soil and Water	Soil and water resources will evolve in natural conditions.
Lands	Low development special use activities which will preserve the Research Natural Area in an unmodified condition or those which serve research purposes will be allowed.
Minerals	Research Natural Area's will be withdrawn from mineral entry, subject to valid existing rights, in conformance with section 204 of the Federal Land Policy and Management Act of 1976, Section 204.

Facilities	No permanent administration facilities will be present. Temporary facilities will be present, if, they are compatible with Research Natural Area objectives.
Transportation	Roads will be located outside of the management area.
Fire	Use of appropriate suppression and prescribed fire measures will be utilized to protect resources as determined in the management plan for the Research Natural Area.
Insect and Disease	Natural endemic levels of insects and diseases will occur in this management area.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN111, AN112, AN121	All
	AN122	I, IV, VII
	AT	All
VISUALS	AV1	All
	AV11	I(A,G)
	AV12	I(D)
FISH	CF	All
SUBSISTENCE	SUBS	I(A-H)
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	I, III-VII
LANDS	JL11, JL123, JL231, JL24	All
	JL25,JL26	All
	JL122	I, II(B,D), III, VII, VIII, IX
FACILITIES	LF	None
TRANSPORTATION	LT	None
FIRE	PF12	I(A:3,4)
	PF2	I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

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 area.
B. Issue appropriate Orders regulating public use within the area necessary to assure non-degradation of the natural environments for which the area has been established.

VISUALS

Visual Resource Operations: AV1

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.

FISH

Fish Habitat Planning: CF112

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.

SUBSISTENCE

Subsistence

A. Customary and traditional subsistence uses will be allowed to continue to the extent they are compatible with the individual RNA objectives.

WILDLIFE

Wildlife Habitat Improvement: CW22

A. Wildlife habitat improvements are not allowed within RNA's.

Wildlife Habitat Maintenance: CW23

A. Wildlife habitat maintenance is not allowed within RNA's.

TIMBER

Timber Resource Planning: ET112

A. Forested lands are classified as unsuitable and withdrawn from the timber base.

SOIL AND WATER

Watershed Resource Planning: FW112

A. Plan the management of soil and water resources only if management is needed to meet the objectives for which the Research Natural Area was established.

Watershed Resource Improvement: FW2

A. Soil and water improvement measures may occur if they are compatible with the objectives for which the Research Natural Area was established.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

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

Minerals and Geology Administration: GM12

Forest Lands Withdrawn from Mineral Entry

A. Research Natural Areas will be withdrawn from mineral entry.
B. Claimants with claims located within this management area retain valid existing rights if such rights were established prior to the withdrawal date.
C. 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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and Standards and Guidelines to the location and construction of mining roads and facilities.

LANDS

Special Use Administration (Non-Recreation: JL122

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 on 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 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 responsible scientists and educators. Refer research applicants to the respon-

sible 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 management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be located within this Management Area only after a search for TUS windows has been exhausted.

Land Ownership Administration: JL123

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

Landline Location and Maintenance: JL231, JL24

A. Ensure that boundaries are clearly identifiable on-the-ground. Clearly identify and monument, corners and boundary turning points, upon establishment of a Research Natural Area. (Consult FSM 4060)

Land Ownership Adjustments: JL26

A. Retain National Forest lands and acquire private inholdings, through exchange or purchase from willing sellers, as opportunities arise.

FACILITIES

Facilities Improvements: LF2

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

TRANSPORTATION

Transportation Operations: LT1

A. New roads are not be permitted.

LAW ENFORCEMENT

Law Enforcement Activities: PL

A. Where a special closure is necessary to protect a Research Natural Area from harm, recommend a closure order be issued under provisions of 36 CFR 261 .50. Ensure that such orders incorporate the special closure provisions of 36 CFR 261.53. (Consult FSM 4060).

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insect and disease.

1. No action will be taken to control insects or diseases unless the outbreak threatens adjacent resources or would drastically alter the natural ecological processes within the Research Natural Area.

BEACH FRINGE AND ESTUARY

Management Area BF

The emphasis of this management area is to manage for natural beach fringe and estuary habitats to favor wildlife, fish, recreation, visual and other resources associated with beach fringe and 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 for near natural, undisturbed habitat conditions. Previously harvested areas are allowed to become future old-growth habitat.

At-a-Glance . . .

Cultural resources	Interpretation of cultural resources and the natural environment may be provided to enhance the visitors experience when compatible with management objectives.
Recreation	Recreation use and activities are managed to meet the appropriate levels of social encounters and visitor impacts for the inventoried ROS Class compatible with maintaining habitat conditions and wildlife population use of the area. Opportunities will exist for providing recreation users with solitude and a high chance of observing wildlife.
Visuals	Activities will be compatible with form and line found in the characteristic landscape.
Fish	Fish habitat, including protection and rehabilitation, is emphasized. Habitat projects may be identified and implemented to enhance habitat conditions.
Subsistence	Subsistence use will be allowed in accordance with applicable Federal and State regulations. Opportunities for harvesting beach fringe and estuary related resources will be maintained or enhanced. Subsistence use of timber resources will be present in this management area.
Wildlife	Wildlife habitats will evolve in near natural beach fringe and estuary habitat conditions. Habitat projects may be identified and implemented to enhance beach fringe and estuary habitat conditions for wildlife resources.
Timber	Vegetation will evolve in near natural old-growth beach fringe and estuary forest conditions.
Soil and Water	Soil and water resources will evolve in near natural beach fringe and estuary environments.
Lands	Low development 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 activities are managed to attain compatibility with management objectives.

Facilities	Developments requiring water access (docks, floats, boat ramps) will be present in areas where the least impact on resource values will occur.
Transportation	Roads not associated with LTF's will be located outside of the management area to the extent practicable. LTF's may be present.
Fire	Fires are normally suppressed in this management area. Appropriate suppression responses will be utilized.
Insect and Disease	Natural endemic levels of insects and diseases will occur in this management area.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN, AT	All
VISUALS	AV1 AV11 AV12	I(A-D) I(B,C,G) All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111, ET111-1 ET114	All V; VI; VII; VIII
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12 PF2	I(A:2,3) I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Management and Operations

A. Regulate recreation use based on studies reflecting the effect of recreation activities on wildlife resources and habitat.
   1. When human use adversely affects habitats or populations, 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-road 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 inherent capabilities of the Management Area.
   1. Provide the inherent 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 the Management Area.
   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 Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

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 is acceptable.

SUBSISTENCE

Subsistence: SUBS

A. Subsistence use of timber will be allowed. Subsistence users will be expected to follow regulations to protect bald eagle nest sites and other beach fringe resources.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Inventory the beach fringe and estuary habitat management areas to obtain better information on beach fringe habitat features, plant associations, wildlife use, and to establish some baseline conditions for monitoring long term natural, ecological changes 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: CW112

A. Allow previously harvested areas which have been included within the beach fringe to naturally evolve into old-growth habitats, or provide second-growth management to accelerate attainment of old-growth characteristics.
B. Maintain or enhance wetland habitats associated with this management area which receive high use by waterfowl species such as ducks, geese, shorebirds and seabirds (refer to Forest-wide Direction and Standards and Guidelines for Wildlife - Waterfowl).

Wildlife Habitat Monitoring: CW121

A. Consult the Forest Plan monitoring schedule.

TIMBER

Timber Resource Planning: ET112

A. Forest land is classified as unsuitable. Any programmed harvest from this management area is nonchargeable to the allowable sale quantity.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize wildlife objectives.
B. The Sale Area Improvement analysis will coordinate Knutson-Vandenburg (K-V) funds for wildlife and timber objectives. Reforestation will have highest priority for funds; other management objectives will have next priorities.

Timber Sale Preparation: ET114

A. Timber harvest 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).
B. Uneven-aged management will be limited to single tree or group selection (normally not to exceed 2 acres) within natural young-growth stands or second-growth stands resulting from earlier harvest. Commercial thinning will often be conducted to develop stand characteristics for future old-growth.
C. Salvage will be limited to dead and down materials resulting from catastrophic events (such as windthrow.) Salvage sales must be compatible with the objectives of the management area as determined through the environmental analysis. Stands once salvaged will remain part of this management area.

Timber Stand Improvement: ET25

A. Timber stand improvement activities may be used to improve the stand characteristics for wildlife objectives. These include precommercial thinning, release and weeding, pruning, and fertilization. These activi-

ties will be provided as a function of wildlife habitat development and not a silvicultural objective for timber harvest.

1. Utilize early thinnings to encourage understory shrubs and forbs; tree spacings will be 16 - 18 feet.
2. Maintain 10-15 percent of the stand in 2 acre openings evenly spaced throughout the stand.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include wildlife coordination.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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. Locate material sites and marine transfer facilities outside this management area if reasonable alternatives exist.
    5. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive travel routes.
    6. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive view points.
    7. Utilize 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.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only activities compatible with management area objectives.
   1. Coordinate all activities which directly affect the coastal zone, with 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 management area represents a Transportation and Utility System (TUS) avoidance area. Transportation and utility sites or corridors may be located within this management area only after a search for TUS "Windows" has been exhausted.

FACILITIES

Facilities Improvements: LF2

A. Permanent developments requiring water access (docks, floats, boat ramps) will be located in areas where the least impact on resource values are expected to occur. Those permanent facilities not requiring water access will be located outside this management area.
   1. Proposed facilities will be sited sufficiently distant from the mouths of intertidal channels of known anadromous fish streams to avoid significant interference.
   2. Proposed facilities will be sited 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 (e.g., 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.

TRANSPORTATION

Transportation Operations: LT1

A. Designate road corridors where necessary to allow access for management activities in this or other management areas.
   1. Perform integrated logging system and transportation analysis to determine if other practical upland routes avoiding this management area exist. Consider impacts to fish and wildlife and enforcement costs of road closures in the analysis. Also determine the optimum location of log transfer facilities. If no practical alternative upland routes exist, or 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 within this management area, clearing widths should be kept to a minimum.

2. Develop road locations and road management objectives through the interdisciplinary team process. 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.
   * 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.
   * 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 and log transfer facility location, design, and construction.

FIRE

Fuels Improvements: PF2

A. Fuels improvement varies by the activity prescribed.
   1. Prescribed fire should be considered for slash created during road construction and second-growth management.

PRIMITIVE RECREATION

Management Area PR

The emphasis of this management area is for providing Primitive recreation opportunities and experiences in unroaded areas outside Wilderness. The area is characterized by an extensive unmodified natural environment. The area provides a high probability for the opportunity for 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. All resource management activities are integrated in such a way that evidence of current human use, including subsistence activities, leaves no permanent or long lasting evidence.

Areas recommended for wilderness are allocated to this prescription on an interim basis to protect their inherent wilderness characteristics. Existing uses in these areas may continue at their present level of intensity.

At-a-Glance . . .

Cultural resources	Sites are protected and available for scientific study. Interpretive information is provided by media located outside the management area.
Recreation	Use is managed to perpetuate essentially natural biophysical conditions and remoteness from mechanized human activities, except for brief, intermittent periods of time. Motorized recreation use is limited to access to the area or to designated sites within the area.
Visual	Landscapes are managed to allow ecological changes only, except for low visual-impact recreation facilities, cabins or widely spaced fish or wildlife management activities and other authorized structures which can be accomplished without being visually evident.
Fish	Indigenous species are maintained. Habitat enhancement projects are limited to those that help achieve management area objectives or meet the requirements of Interagency Regional Salmon Plans.
Subsistence	Subsistence opportunities are perpetuated in harmony with the emphasized recreation opportunities.
Wildlife	Indigenous species are maintained. Habitat projects are designed to emulate natural conditions and appearance.
Timber	Silvicultural treatments are limited to control of insect & disease.
Soil and Water	Watersheds are managed to in a natural condition. Resource management activities are designed to emulate natural conditions and appearance.
Minerals	Lands are open to mineral entry. Minimum impact access and operating methods are required.

Facilities	Structures consist of those permitted for subsistence uses, recreation cabins, necessary boat and/or floatplane docks, and those needed for specially authorized activities.
Transportation	Facilities consist of infrequent constructed trails. No roads are present.
Fire	Natural fire may be allowed to burn. Human caused fires may be suppressed using the appropriate suppression response.
Insect and Disease	Control may be applied to protect adjacent areas.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	I-IV; VI-X
SPECIAL AREAS	SPL	All
RECREATION	AN111, AN112, AN121	All
	AN122	I-IV, VI, VII
	AT, AT12	All
VISUALS	AV1	All
	AV11	I(A,B,G)
	AV12	I(B,C)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
	ET114	VI(C,D)
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	II-VII
LANDS	JL	All
FACILITIES	LF1	I(A)
	LF23	All
TRANSPORTATION	LT	None
FIRE	PF12	I(A:2-4)
	PF2	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activity: AC

Enhancement

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

Evaluation

A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and allocation within the management area.
   1. Identify areas requiring intensive inventory/survey, including non-project areas.
   2. Identify cultural properties to be nominated to the National Register of Historic Places.
   3. Identify, classify and evaluate known cultural resources.
   4. Identify cultural properties that require stabilization or other protective measures.

RECREATION

Recreation Use Administration: AN122

Recreation Management and Operations

A. Provide for Primitive recreation opportunities and appropriate activities throughout the Management Area, unless specifically closed to public use.
B. 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. (Consult the FS ROS Handbook)

VISUALS

Visual Resource Operations: AV1

A. Provide a natural-appearing visual condition, where activities are not evident to the casual observer.
   1. Apply Forest-wide standards and guidelines for the Retention Visual Quality Objective.

FISH

Fish Habitat Planning: CF112

Fish Enhancement

A. Consider the suitability of fisheries enhancement by evaluating: 1) effects on desired solitude levels due to an enhanced fishery resulting in increased recreation use; 2) effects on primitive ecosystems due to the introduction of species not indigenous to the watershed; and, 3) the

appropriateness of structures both in type and scale to the Primitive Recreational Opportunity Spectrum (ROS) setting.

Fish Habitat Improvement: CF22

A. Use construction techniques which are consistent with the primitive recreation setting.
   1. Necessary land disturbing activities will be temporary.
   2. Design development to minimize impact on the management area character.

TIMBER

Timber Resource Planning: ET112

A. Forested land is classified as unsuitable.

SOIL AND WATER

Watershed Resource Improvements: FW2

A. Utilize, when ever possible, indigenous plants and materials in land treatment measures to protect or improve the quality and/or quantity of the water resource or when stabilizing the soil resource.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include recreation coordination.
B. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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 for 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 management area 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 in relation to the surrounding landscape as seen from sensitive view points.
8. Utilize 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.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only those activities which leave no permanent or long-lasting evidence of human use and are otherwise consistent with recreation objectives.
   1. Temporary structures and fisheries enhancement projects may be permitted but should be widely dispersed.
   2. Permitted activities and structures should not be visually evident from a sensitive viewpoint.
   3. In areas recommended for Wilderness designation do not issue special use permits for periods exceeding one year. Permits may be renewed on a year-by-year basis, if necessary, when not detrimental to inherent wilderness characteristics or values. Upon designation by Congress, notify all permittees that the permit expires at the end of its current term.

B. This management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be located within this Management Area only after a search for TUS windows has been exhausted.

FACILITIES

Facilities Improvements: LF2

A. No new permanent administrative facilities will be constructed in this management area.
B. Limit administrative use to existing cabins and temporary structures.

TRANSPORTATION

Transportation Operations: LT1

A. New roads are not permitted, except to access 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. Existing roads in this management area 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.

ENACTED MUNICIPAL WATERSHEDS

Management Area MW

The emphasis of this management area is to manage the areas of enacted municipal watersheds of Ketchikan, Sitka and Petersburg to meet the State of Alaska's Water Quality Standards for domestic use. These enacted municipal watersheds were established and are withdrawn from all forms of location, entry, or appropriation, whether under the mineral or 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 cities.

At-a-Glance . . .

Cultural resources	When evaluated and protected this resource will be interpreted to enhance the visitor's experience. Use will be allowed when such use is compatible with the objective for which the management area is established.
Recreation	Recreation use will be generally prohibited unless authorized by the municipality.
Visuals	Generally this resource is managed to allow only ecological changes. Small areas of modification occur for dams, assess roads and facilities, and in the Petersburg Watershed, timber sales and a trail.
Fish	Enhancement projects are prohibited within the boundaries of the watersheds unless determined by the municipality the projects are compatible with the objective for which the management area is established.
Subsistence	Subsistence use will be allowed in accordance with applicable Federal, State, and municipal regulations.
Wildlife	Wildlife will be managed for uses compatible with the objective for which the management area is established.
Timber	There is no scheduled harvest, but timber may be salvaged under conditions which safeguard the quantity and quality of water.
Soil and Water	Soil and water protective measures are applied to the degree that protects the watersheds and water resource for domestic use. Soil and water improvement will occur on all disturbances that threaten the values for which the watersheds are managed.
Minerals	The watersheds are withdrawn from minerals exploration and development.
Lands	Activities required for the development and maintenance of the watersheds to supply water for domestic uses can and may be present.
Facilities	Facilities are limited to those structures which are necessary to administer, and supply water for domestic use.

Transportation	Roads systems should be limited to those which are necessary to administer the municipal watershed.
Fire	Fires are normally suppressed in this management area. Appropriate suppression measures will be utilized.
Insect and Disease	Integrated pest management principles will be applied to maintain the objective for which the management area is established. When suppression measures are needed to control pests, only biological control measures will be utilized.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN111, AN112, AN121	All
	AN122	I, IV, VII
	AT	All
VISUALS	AV1	I(A-D)
	AV11	All
FISH	CF112	All
SUBSISTENCE	SUBS	None
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	I, III-VII
LANDS	JL	All
FACILITIES	LF	None
TRANSPORTATION	LT111, LT122, LT212	All
	LT121	I, II
	LT214	I-IV
	LT22, LT23	All
FIRE	PF12	I(A:2)
	PF2	I(A:4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

A. Provide only those specific types and intensities of recreation activities and opportunities that can be accommodated without being detrimental to the purposes of the watershed.
B. Issue appropriate Orders regulating public use within the area necessary to assure non-degradation of the natural environments for which the area has been established.

VISUALS

Visual Resource Operations: AV1

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

FISH

Fish Habitat Planning: CF112

A. Plan the construction and maintenance of fish enhancement projects only if they are compatible with the objectives for which the municipal watershed was established.
    1. Restrict fish enhancement resulting in reduced water quality for a municipality utilizing the water from the affected stream.

SUBSISTENCE

Subsistence:SUBS

A. Subsistence activities are permitted in accordance with the Federal, State and local laws and regulations establishing the Municipal Watersheds.

TIMBER

Timber Resource Planning: ET112

A. Forested land is considered withdrawn and classified as unsuitable.
B. There will be no scheduled harvest. Any salvage harvest will be considered on a case-by-case basis at the request of the city. Volume harvested will not be considered part of the allowable sale quantity.

SOIL AND WATER

Watershed Resource Planning: FW112

A. Manage to comply with the State of Alaska's water quality standards for domestic water.

Watershed Resource Improvement: FW2

A. Soil and water improvement projects will be implemented on sites that are causing degradation of water quality.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. Prepare geologic, paleontologic, and historic mining interpretations of Municipal Watersheds where appropriate.

Minerals and Geology Administration: GM12

Forest Lands Withdrawn from Mineral Entry

A. Municipal Watersheds will be withdrawn from mineral entry.
B. Claimants with claims located within this management area 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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and Standards and Guidelines to the location and construction of mining roads & facilities.

LANDS

Special Use Administration (Non-Recreation): JL122

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 management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be located within this management area only after a search for TUS "windows" has been exhausted.

Land Ownership Adjustments: JL26

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. Only dispose of lands when allowed by applicable 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. Consider exchange of these lands with the affected municipality, if legislation allows.
5. Do not acquire lands for municipal watershed purposes.

FACILITIES

Facilities Improvements: LF2

A. No Forest Service administrative facilities will be constructed.

TRANSPORTATION

Transportation Operations: LT1

A. Allow roads needed for the routine operation, maintenance and improvement of the municipal water system. Allow roads to provide for timber salvage operations if in accordance with applicable legislation establishing the watershed and after consultation with the affected municipality.
   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 city. Access will be managed in accordance with applicable legislation establishing the watershed.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insects and diseases.
   1. Suppression measures needed to control pests will only utilize biological control measures.

OLD-GROWTH HABITAT

Management Area OG

The emphasis of this management area is to maintain 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. These 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 (i.e., 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 counted as old-growth habitat until they are a minimum of 200 years old.

At-a-Glance . . .

Cultural resources	Interpretation of cultural resources and the natural environment may be provided to enhance the visitors experience when compatible with management objectives.
Recreation	Recreation use and activities are managed to meet the appropriate levels of social encounters and visitor impacts for the inventoried ROS Class compatible with maintaining habitat conditions and wildlife population use of the area.
Visuals	Landscape character will be maintained in a natural-appearing visual condition, where activities will not be evident to the casual observer.
Fish	Fish habitat, including protection and rehabilitation, is emphasized. Habitat projects may be identified and implemented to enhance habitat conditions.
Subsistence	Subsistence use will be allowed in accordance with applicable Federal and State regulations. Opportunities for harvesting wildlife and fish resources will be maintained or enhanced.
Wildlife	Wildlife habitats will evolve in natural old-growth conditions.
Timber	Vegetation will be allowed to evolve in a natural old-growth condition.
Soil and Water	Soil and water resources will evolve in a natural old-growth condition.
Minerals	Lands are open to mineral entry. Mineral activities are managed to attain compatibility with management objectives of this prescription.
Lands	Low development special use activities which are compatible with old-growth habitat objectives may be present.

Facilities	No permanent administration facilities will be present. Temporary facilities will be present if compatible with old-growth management objectives.
Transportation	Roads will be located outside of the management area to the extent practicable.
Fire	Fire will normally be suppressed in this management area. Appropriate suppression responses will be utilized.
Insect and Disease	Natural endemic levels of insects and diseases will occur in this management area.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN, AT	All
VISUALS	AV1, AV12 AV11	All I(B,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111, ET-111 ET114	All VI; VII; VIII
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	None
TRANSPORTATION	LT	All
FIRE	PF12 PF2	I(A:2,3) I(A:1-3)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN 122

Recreation Management and Operations

A. Regulate recreation use based on monitoring studies reflecting the effect of recreation activities on wildlife resources and habitat. See monitoring plan.
   1. When monitoring indicates human use adversely affects habitats or populations, 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-road 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 inherent capabilities of the Management Area.
   1. Provide the inherent 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 the Management Area.
   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 Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Visual character of the area will be maintained or enhanced 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.

FISH

Fish Habitat Planning: CF112

A. Emphasize the protection and enhancement of fish habitat and populations.

Monitoring: CF121

A. Implement aspects of the monitoring plan which compare management effects between the appropriate management areas.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Inventory the old-growth habitat management areas to obtain better information on old-growth habitat features, plant associations, wildlife use, and to establish some baseline conditions for monitoring long-term natural, ecological changes 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 old-growth habitat areas.

Wildlife Habitat Planning: CW112

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.

Wildlife Habitat Monitoring: CW121

A. Consult the Forest Plan monitoring schedule.

TIMBER

Timber Resource Planning: ET112

A. Forest land is classified as unsuitable.

Timber Sale Preparation: ET114

A. Salvage, of dead and down material although the exception, will be limited to the results of catastrophic events (such as windthrow.) Salvage sales must be compatible with the objectives of the management area as determined through the environmental analysis process. Stands once salvaged will remain part of this management area.
B. Personal use and free-use firewood will be discouraged in this management area to ensure old-growth stand characteristics are maintained in their natural state.

SOIL AND WATER

Watershed Resource Improvements: FW2

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 and its environment.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include wildlife coordination.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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 management area if reasonable alternatives exist.
    4. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive view points.
    5. Utilize 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.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only low development activities (such as tent platforms, minor waterlines, minor powerlines, etc.) which are compatible with management area objectives.
B. This management area represents a Transportation and Utility Systems (TUS) Avoidance Area. Transportation and utility sites or corridors may be located within this management area only after a search for "Windows" has been exhausted.

FACILITIES

Facilities Improvements: LF2

A. No permanent administration facilities are allowed. Temporary facilities are allowed if compatible with management area objectives.

TRANSPORTATION

Transportation Operations: LT1

A. Designate road corridors, where necessary, to allow access for management activities in this or other management areas.
    1. Perform integrated logging system and transportation analysis to determine if other practical routes avoiding this management area 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 management area, clearing widths should be kept to a minimum. If permits for log transfer facilities scheduled in other management areas cannot be obtained, sites in this management area will be considered only if no other practical alternative exists.

2. Develop road locations and road management objectives through the interdisciplinary team process. 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.
   * 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.
   * Provide recreational access where appropriate.
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 and log transfer facility location, design, and construction.

FIRE

Fuels Improvements: PF2

A. Fuels improvement varies by the activity prescribed.
   1. Prescribed fire should be considered for slash created during road construction.

SEMI-PRIMITIVE RECREATION

Management Area SP

The emphasis of this management area is to provide semi-primitive recreation opportunities and experiences in areas with predominantly natural or natural-appearing environments. Areas may include road corridors that provide access to and through the area.

The management area provides moderate to high probability to experience independence, closeness to nature, and self-reliance. Recreation activities in this environment offer a moderate to high degree of challenge using either motorized or non-motorized forms of transportation. Concentrations of users are low to moderate. Evidence of past use by other users may be present.

In recreation places where semi-primitive motorized recreation opportunities are traditionally appropriate, roads, trails and areas designated for motorized travel may be provided, including motorboat access to marine shorelines and bays or the use of small motorboats on freshwater lakes and streams.

In recreation places where semi-primitive non-motorized recreation opportunities are traditionally appropriate, travel is primarily cross country or on trails and waterways. Roads generally are absent and existing roads may be obliterated, closed, or regulated seasonally consistent with the recreation objectives. The use of traditional forms of motorized access such as airplanes and motorboat use of lakes and streams is allowed.

At-a-Glance . . .

Cultural resources	Sites are protected, available for study and may be interpreted on-site.
Recreation	Use is managed to maintain a high to moderate probability of experiencing isolation from the sights and sounds of human activity in an environment that offers challenge and risk. Concentration of users is low to moderate and there is often evidence of other users. On-site regimentation and control of use is subtle. Developed facilities are rustic and not visually evident.
Visual	All activities within the area are integrated is such a way that they are subordinate to the characteristic landscape. Landscape rehabilitation is used to restore existing landscapes to a desirable visual quality. Visual enhancement maybe used to improve the recreation experience, consistent with the management objectives for the area.
Fish	Fish habitat, including its protection and rehabilitation, is maintained. Projects may be identified and implemented to enhance habitat conditions.
Subsistence	Subsistence use occurs in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Wildlife	Naturally-occurring habitat conditions are maintained for indigenous species and enhancing viewing opportunities.

Timber	Forested lands are classified as unsuitable. Silvicultural treatment is conducted only for the purpose of maintaining or enhancing the desired recreation opportunity or to control insects and disease. Salvage sales of dead and down timber are limited to catastrophic events, and must be compatible with the objectives of the management area.
Soil and Water	Land use activities are carried out in a manner which avoids serious and adverse impacts to soil and water quality.
Minerals	Lands are open to mineral exploration and development. Minimum impact access and operating methods are required.
Facilities	Structures are located and designed to compliment management of the area.
Transportation	The transportation system within the area may include foot or ski trails, motorized trails or roads designed and maintained for recreation use. Roads required to access adjacent management areas should be located and designed to expand and enhance the semi-primitive recreation opportunities within the area. Use of roads and trails may be seasonally regulated and use may be restricted to designated travel routes.
Fire	Natural and human-caused fires are normally suppressed but may be allowed to burn under an approved prescription and supported by an Escaped Fire Situation Analysis to enhance wildlife habitat conditions.
Insect and Disease	Pest suppression and prevention should be undertaken when outbreaks threaten the recreation opportunity and/or threaten adjacent resource values.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	I-IV; VI-X
SPECIAL AREAS	SPL	All
RECREATION	AN, AT	All
VISUALS	AV1, AV12 AV11	All I(B,C,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FORESTS	OLD	All
TIMBER	ET111, ET111-1 ET114 ET214	All VI(B,C,D); VIII All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT111 LT122, LT212 LT214 LT22, LT23, LG	I All I(A,B,D-F); II-IV All
FIRE	PF12 PF2	I(A:2-4) I(A:1,3-5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activity: AC

Enhancement

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

Evaluation

A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, and allocation within the management area.
   1. Identify areas requiring intensive inventory/survey, including non-project areas.
   2. Identify cultural properties to be nominated to the National Register of Historic Places.
   3. Identify, classify and evaluate known cultural resources.
   4. Identify cultural properties that require stabilization or other protective measures.

RECREATION

Recreation Management and Operations: AN122

A. Provide for semi-primitive motorized opportunities in inventoried Recreation Places where roads, trails, and other areas traditionally used and appropriate for motorized travel and activities, including small motorboat use on freshwater lakes and streams and the area is suitable for such use.
B. Provide for semi-primitive non-motorized recreation opportunities in inventoried Recreation Places and other areas where traditional travel and related recreation activities are and primarily non-motorized.

VISUALS

Visual Resource Operations: AV1

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 is always subordinate to the characteristic landscape.
   1. Apply Forest-wide standards and guidelines for the Partial Retention Visual Quality Objective.

SUBSISTENCE

Subsistence:SUBS

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. Wood-gathering activities in the management area for subsistence uses (primarily firewood and trolling poles) will be allowed. Cutting of green trees will be by permit and only if the individual does not have a suitable source equally accessible outside the management area. There will be no restrictions on cutting dead or down tree for subsistence use unless monitoring indicates such activity in a given area is detrimental to the overall objectives of the management area.

TIMBER

Timber Resource Planning: ET112

A. Forested land is classified as unsuitable.

B. The following types of uses may be authorized when done in a manner that that meets the objective of the management area:
   * Removal or use of trees for enhancement 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 the managment area. 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 managment area.

Timber Sale Preparation: ET114

A. Salvage, of dead and down material although the exception, will be limited to the result of catastrophic events (such as windthrow.) Salvage sales must be compatible with the objectives of the management area as determined through site-specific analysis. Stands once salvaged will remain part of this management area.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include recreation coordination.

B. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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 minerals activities leave a natural-appearing condition.
    8. Shape landform modifications to simulate naturally-occurring forms.
    9. Revegetate disturbed areas in accordance with project plans.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only facilities and uses consistent with Semi-Primitive recreation management objectives of the area.
B. This management area represents a Transportation and utility system "Window" and provides opportunities for the future designation and location of Transportation and Utility Sites.

FACILITIES

Facilities Improvements: LF2

A. Design permanent structures needed for administrative use to have minimum impact on the character of the area.
    1. During all construction activity:
        *Minimize site modification.
        *Keep clearing of vegetation adjacent to the site to a minimum.
        *Use colors found in the natural environment.

TRANSPORTATION

Transportation Operations: LT1

A. Where semi-primitive motorized recreation opportunities are emphasized, existing roads are generally managed for use by high clearance

or all terrain vehicles, snowmobiles or motorcycles. Generally, new roads are not constructed in this area, except to link existing roads or provide access to an adjacent management area.

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.

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.

EXPERIMENTAL FORESTS

Management Area EF

The emphasis of this Management Area is the establishment and management of designated Experimental Forests on the Tongass National Forest. These Experimental Forests include:

1) Maybeso, on Prince of Wales Island
2) Youngs Bay, on Admiralty Island
3) others, depending on the selected alternative

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 Forest and Range Experiment Station in coordination and cooperation with the Ranger District within which they are located. Experimental Forests are located in a setting designed to satisfy research purposes. Experimental Forests are large enough to study the effects of alternative roading packages. Each Experimental Forest will have an associated development plan, separate from the Forest Plan, designed to achieve the desired research. This plan will be developed by the Pacific Northwest Forest and Range Experiment Station in cooperation and coordination with the associated 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	Cultural resources are evaluated for inclusion in the National Register of Historic Places, considered for nomination to the National Historic Landmark Program and interpreted to enhance the visitor's experience.
Recreation	Recreation use is allowed which will not interfere with the ongoing research in the Experimental Forest. Interpretive activities which help educate the public about Forest Management will be encouraged. Demonstration to the public of different silvicultural systems and their effects is an continuing occurrence in this management area.
Visuals	A range of visual conditions will be present in the management area. Some portions will have a natural-appearing visual condition where activities are not evident to the casual observer, while other portions will have management activities dominating the visual character of the landscape. The visual condition of the area will reflect the types of research being conducted in the management area.
Fish	Enhancement projects will occur if they are compatible with the objectives for which the Forest was established. Fish habitat improvement projects may be present in the area to provide research into the benefits of such projects.
Wildlife	Enhancement projects will occur if they are compatible with the objectives for which the Forest was established. Wildlife habitat improvement projects may be present in the area to provide research into the benefits of such projects.

	Wildlife habitats may be degraded in some areas by management activities to assess the impacts of such activities upon wildlife populations.
Timber	Timber harvesting will occur within these areas as specified in the Development Plan for each Experimental Forest. Timber harvesting will only occur for research and demonstration purposes. Evidence of logging will be quite noticeable in some portions of the management area, while other portions will resemble an old-growth stand. A variety of age classes will be present overall in the area.
Subsistence	All subsistence activities which do not interfere with the ongoing research in the Experimental Forest will occur. Firewood harvesting will exist only if it is compatible with research and demonstration activities in the area.
Soil and Water	Soil and water resources may be altered by experimental activities to assess the impacts of such activities. Soil and water treatment measures may occur if they are compatible with the ongoing research.
Lands	Special use permits will be issued if consistent with the research objectives. National Forest lands will be retained and private inholdings acquired through exchange or purchase from willing sellers, as opportunities arise.
Minerals	These areas may be withdrawn from mineral entry, subject to valid existing rights, depending upon the research objectives of the individual Experimental Forest as specified in its development plan.
Facilities	Provide facilities which promote the ongoing research and its interpretation as specified in the individual Experimental Forests development plan.
Transportation	Roads and trails will be developed to facilitate and interpret the ongoing research in the management area.
Fire	Use of appropriate suppression responses and prescribed fire measures will be utilized to protect resources as determined in the Experimental Forest Development Plan.
Insect and Disease	Pest suppression activities will be coordinated with the Pacific Northwest Research Station to assure compatibility with ongoing research projects, and to assure that the results of research data are made available.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN	All
	AT	All
VISUALS	AV	All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	I(A:1,2)
BIODIVERSITY	BIO	All
WILDLIFE	CW111	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	None
MINERALS AND GEOLOGY	GM	All
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12	I(A:2-4)
	PF2	All
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the Management Area.
   1. Provide the inherent 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 the Management Area.
   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 Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Consideration for the visual resource will be secondary to the objectives of the Experimental Forest.
   1. Dependent on the objectives of the individual Experimental Forest, Adopted Visual Quality Objectives will range from Preservation to Maximum Modification and will be identified in the Development Plan.

FISH

Fish Habitat Planning: CF112

A. Fish habitat may be managed differently than identified in the riparian oriented management prescriptions to help meet the research objectives for which the Experimental Forest was established. In some cases, Forest-wide direction listed under CF112 and CF22 may not apply.
B. Fish enhancement projects may occur if they are compatible with the objectives for which the experimental forest was established. Fish habitat manipulation may also occur to provide research into the costs, benefits, and effects of such manipulations.

SUBSISTENCE

Subsistence: SUBS

A. All subsistence activities which do not interfere with the research occurring in the management area are allowed. Firewood gathering will only be allowed if it is compatible with research and demonstration activities in the area.

T, E & S

Threatened, Endangered & Sensitive: CT11

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.

WILDIFE

Wildlife Habitat Planning: CW112

A. Wildlife habitat research and management will be identified in the development documents for each experimental forest.

TIMBER

Timber Resource Planning: ET112

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 the Development Plan for each Experimental Forest.

SOIL AND WATER

Watershed Resource Planning: FW112

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: FW2

A. Soil and water treatment measures may occur if they are compatible with the objectives for which the Experiment Forest was established. Different treatments may occur to provide research with information on treatment costs, benefits and effects of such treatments.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. Prepare geologic, paleontologic, and historic mining interpretations of experimental forests where appropriate.

Minerals and Geology Administration: GM12

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 management area 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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and to the location and construction of mining roads and facilities.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Issue only those special use permits consistent with research objectives of the area.

1. Coordinate all proposed new uses with the responsible Station Director to ensure compatibility with research objectives. Obtain approval of the Station Director, prior to issuing new new permits. (Consult FSM 2700)

B. This management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be located within this Management Area only after a search for TUS windows has been exhausted.

Land Ownership Administration: JL123

A. Depending upon the research objectives, request withdrawal from mineral entry, of portions of the Experimental Forest, subject to valid existing rights.

Land Ownership Adjustments: JL26

A. Retain National Forest lands and acquire private inholdings, through exchange or purchase from willing sellers, as opportunities arise.

FACILITIES

Facilities Improvements: LF2

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

TRANSPORTATION

Transportation Operations: LT1

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 management areas, unless this would interfere with accomplishment of research objectives.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insect and disease.

1. Pest suppression activities on the Forest or District should be coordinated with the Pacific Northwest Research Station to assure compatibility with on-going research projects, and to assure that the results of research data is available for the resource development and use decision processes.

SCENIC VIEWSHED

Management Area SV

The emphasis of this management area is to provide scenic landscapes as seen from land based or marine travel routes, recreation sites, popular bays and anchorages and small plane recreation routes. This management area reflects public use where there are moderate to high expectations for scenic quality.

This management area may include landscapes in a variety of visual conditions; however the intent is to provide a landscape where activities are not visually evident to the casual observer or are subordinate to the characteristic landscape.

At-a-Glance . . .

Cultural resources	Interpretation of sites could occur in this management area. Activities adjacent to known cultural sites would be protected following applicable Federal and State Regulations.
Recreation	Activities will be managed to be compatible with the scenic requirements of this management area. Experiences may range from those of isolation to those influenced by man in a modified setting.
Visuals	The landscape character of the area will closely resemble that of a naturally evolving scene. Management activities in the foreground distance will not be evident to the observer or, in the middleground distance, will be subordinate to the characteristic landscape.
Fish	Fisheries enhancement may be present in the area.
Subsistence	Activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Wildlife	Habitat management will provide a wide variety of vegetative conditions. This will favor species requiring early, middle and late successional stages. Habitat improvement may occur and would be designed to be compatible with the objectives of the management area.
Timber	Harvest activities will be limited and will utilize silvicultural treatments which will ensure compatibility with visual objectives of the area. Intensity of harvest will be dependent upon the landscape's ability to visually absorb the proposed activity.
Soil and Water	Emphasis will be to maintain soil cover, minimize slope failure and reduce the degree of risk and potential effects from mass wasting associated with management activities.
Minerals	Area is open to mineral entry. Activities will leave temporary evidence within the area and will meet the objectives of the management area.

Lands	Special use structures may be present if consistent with management area intent.
Facilities	LTF's, cabins or administrative sites will be designed to be compatible with form, line and color found in the characteristic landscape.
Transportation	Activities potentially visible from sensitive marine travel routes and road corridors will be designed to be compatible with elements found in the characteristic landscape.
Fire	For wildfires, appropriate suppression responses will be utilized to maintain the scenic quality of the management area. Landscape rehabilitation may include slash treatment adjacent to road corridors using approved prescribed fire plans.
Insect and Disease	Integrated pest management principles are applied to the extent necessary to maintain scenic quality of the area.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN AT	All All
VISUALS	AV1, AV12 AV11	All I(B,C,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF	All
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the Management Area.
   1. Provide the inherent 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 compatable with the objectives of the Management Area.
   2. In locations where scheduled activties change the recreation setting(s), manage the new setting(s) in accordance with the appropriate ROS guidelines. Maintain the capability of the Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Manage areas to maintain scenic quality as seen from recreation sites, popular bays and anchorages, small plane recreation routes and marine travel routes.
   1. Apply Forest-wide Standards and Guidelines for 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. Complete viewshed analysis in conjunction with project development to provide direction for retaining or creating a visually attractive landscape over time.
   3. Use available computer graphic capabilities in the design of harvest activities.

FISH

Fish Habitat Improvements: CF22

A. Design fish habitat improvements and aquaculture facilities to meet the visual quality objective.
   1. Facilities shall be constructed of materials which blend with, and are compatible with, the immediately surrounding landscape.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Establish a baseline inventory of wildlife habitat conditions to obtain information on habitat conditions and wildlife use prior to planned management activities.
   1. Conduct an inventory to include sampling of overstory canopy, understory forb and shrub production, current levels of wildlife use. Coordinate with, utilize and incorporate existing and/or ongoing inventory work and techniques such as plant association

inventories, soil inventories, timber stand exams, USFWS inventories, and ADF&G inventories.

2. Conduct baseline inventories on highest priority areas to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate wildlife habitat management activities with the visual management objectives.
   1. Use the habitat needs of MIS for coordinating and evaluating management activities in a particular area within the overall objectives of the management area.

B. Coordinate road management with the needs of wildlife.

Wildlife Habitat Improvement: CW22

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

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize visual objectives.

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 management area objectives will have next priority.

C. Coordinate wildlife habitat need with timber and visual objectives when management area goals can be achieved.
   1. Allow for the elevational migration of wildlife which is common in most of Southeast Alaska within the overall objectives of the management area.
   2. Use silvicultural techniques which prolong understory forb and shrub production when practical.

Timber Sale Preparation: ET114

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 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 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. The following criteria apply to Retention:

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash Life
Retention - Low VAC	single tree or group selection	8%	50%	2 years
Retention - Intermediate VAC	single tree or group selection	10%	50%	no limit
Retention - High VAC	small clearcut (appox. 20 acres)	10%	30%	no limit

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. The following criteria apply to Partial Retention:

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash Life
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	20%	20%	no limit

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. 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.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

A. Mineral activities may require a visual assessment and visual resource assistance with site planning and design.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide and Standards & Guidelines to the location and construction of mining roads and facilities.
C. Design mineral activities to be compatible with the emphasis of this management area. Apply the following management practices to mitigate visual impacts as seen from sensitive road, air, and marine travel routes.
    1. Recognize the effects of color, tone, texture, line, size, and edge on the scenic viewshed.
    2. Locate material sites and marine transfer facilities outside this management area if reasonable alternatives exist.
    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. Haul away, bury, burn or scatter vegetation removed from the project area when located adjacent to sensitive roads.
    6. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape as seen from sensitive view points.
    7. Utilize colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
    8. Shape landform modifications to simulate naturally occurring forms.
    9. Revegetate disturbed areas in accordance with project plans.

SPECIAL USES

Special Use Administration (non-Recreation): JL122

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 from sensitive travel routes, recreation sites, or other high use areas.
    2. Construct all new facilities of materials which blend with, and are compatible with, the immediately surrounding landscape.

FACILITIES

Facilities Improvements: LF2

A. Meet the visual quality objectives for the management area when siting and construction facilities for administrative use.
   1. *Retention*: Structures and clearing should not be visibly evident to the casual observer from the sensitive travel route.
   2. *Partial Retention*: Structures and clearing should be subordinate to the landscape character of the area.

TRANSPORTATION

Transportation Operations: LT1

A. Develop and manage cost effective transportation systems which integrate resource requirements consistent with management area direction.
   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 management area 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.

VISUAL-TIMBER

Management Area VT

The emphasis of this management area is to provide a combination of visual and timber opportunities with visual receiving the greatest emphasis. These lands are most often in the foreground to middleground distance zone, and are viewed from a travel corridor, marine transportation route, or an area of moderate recreation use.

At-a-Glance . . .

Cultural resource	Examination and mitigation will be conducted prior to development activities to provide reasonable assurance that potential cultural resource values are protected.
Recreation	Management activities are designed to harmonize with the appropriate ROS setting and purpose of the management area. Semi-primitive motorized and Roaded Natural recreation opportunities can be provided.
Visuals	Management activities may be evident, although they must remain subordinate to the characteristic landscape. Activities will not dominate the seen area, but will work with existing form, line, and texture found in the landscape.
Fish	Management activities will be coordinated with fish habitat objectives in adjacent management areas.
Subsistence	Subsistence use will be allowed in accordance with applicable Federal and State regulations.
Wildlife	A wide variety of vegetative conditions, including early, middle, and late successional stages will provide a full range of wildlife habitat conditions.
Timber	Timber harvest may include both even-aged and uneven-aged silvicultural methods. Silvicultural treatment is integrated with site and area development to provide healthy tree stands, vegetative diversity, and forage production for wildlife populations.
Soil and Water	Emphasis will be to maintain soil cover, minimize slope failure, and reduce the degree of risk and potential effects from mass wasting resulting from timber harvest and road construction.
Minerals	Lands are open to mineral entry. Access will be coordinated with timber sale road location when practicable.
Facilities	Permanent administrative facilities will be constructed to be compatible with the management area objective.

Transportation	All suitable forested lands will eventually be accessed in association with appropriate timber harvest activities while meeting the visual quality objective of the management area.
Fire	Appropriate suppression responses will be utilized for wildfires. Prescribed fire may be used for silvicultural site preparation, wildlife habitat improvement, and slash hazard reduction using an approved prescribed fire plan.
Insect and Disease	Maintain the health of the forest by applying integrated pest management principles in project design and implementation.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN,AT	All
VISUALS	AV1, AV12 AV11	All I(C,F,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12 PF2	I(A:2,3) I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: AC

Evaluation

A. Provide cultural resource assistance to the timber sale program. Coordination includes participation and support for environmental documentation, pre-sale inventory, evaluation, assessment, monitoring and protection of cultural resources during sale activities.
   1. The Area Cultural Resource Specialist shall be informed 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 as well as facilitation 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.
      * Cultural clearance for Independent Timber Sale Program shall be accomplished on areas of the selected alternative before the sale is implemented. Implementation is defined as the advertising of the sale.
      * Cultural clearance for Long-Term Sale Programs shall be 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, 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 an qualified Cultural Resource Specialist authorized by a special use permit.
   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 sale contracts, 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.

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the Management Area as indicated by the ROS inventory.
   1. Provide the inherent 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 the Management Area.
   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 Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Design management activities to be subordinate to the characteristic landscape, using existing form, line, color and texture found in the landscape.
   1. Apply Forest-wide Direction Standards & Guidelines for the Partial Retention Visual Quality Objective. This objective defines the maximum limit of allowable change; less visible evidence of activities is acceptable.
   2. Use available computer graphic capabilities in the design and evaluation of harvest activities.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Establish a baseline inventory of wildlife habitat conditions to obtain information on habitat conditions and wildlife use prior to planned management activities.
   1. Coordinate with, utilize and incorporate existing and/or ongoing inventory work and techniques such as plant association inventories, soil inventories, timber stand exams, USFWS inventories, and ADF&G inventories.
   2. Conduct baseline inventories on highest priority areas to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate timber harvest to emphasize the needs of wildlife while meeting the visual quality objectives.
   1. Consider the habitat needs of MIS to help coordinate and evaluate management activities.
   2. Consider opportunities to allow for the elevational migration of wildlife in project planning.
   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. Refer to NAS Codes ET113, ET114, ET25 for additional standards and guidelines.

B. Coordinate road management to emphasize the needs of wildlife. Refer to NAS Code LT1 in Transportation for more detail.

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize visual objectives.
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 management area objectives will have next priority.

Timber Sale Preparation: ET114

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 Capability (VAC) settings. The guidelines represent the maximum allowable disturbance for timber harvest. 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 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. The following criteria apply to Partial Retention:

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash Life
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	10%	30%	no limit

2. 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 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.

C. For wildlife diversity, during project analysis, evaluate the opportunity of maintaining the existing proportion of old-growth strata within the contiguous management area.

D. For wildlife objectives, consider maintaining the existing old-growth tree species mix in second-growth stands.

E. 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.

Timber Stand Improvement: ET25

A. Timber stand improvement activities that meet the visual and timber objectives of the management area may be used to improve the stand characteristics for wildlife habitat.

SOIL AND WATER

Soil Inventory: FW1111

A. Apply baseline soil, water and channel type inventory standards where it is determined that present inventories are not applicable for project planning.

Watershed Resource Planning: FW112

A. Delineate on appropriate project maps the location of soil and water protection areas to insure their recognition, proper consideration, and protection on the sale area.

B. Manage nondesignated domestic water use watersheds to meet the State's domestic water quality standards.

C. Manage riparian management areas to protect water quality to meet State Water Quality Standards by preventing degradation of the aquatic and terrestrial riparian habitats, channel and streambanks, and promoting floodplain stability.
   1. Identify soil and water quality requirements for the area during the environmental analysis for project-level activities.
   2. Apply prescribed Process or Standard BMP's to Riparian Areas to minimize the adverse effects on these areas from nearby logging and related land disturbance activities.
   3. Monitor soil disturbance and water quality on a sample basis for management activities that disturb the soil surface to mineral material and removes vegetation to determine effectiveness of BMP's.
   4. 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.

D. Non-designated domestic water use watersheds will be managed for multiple use while providing water suitable for human consumption within the realm of State Water Quality Standards and water supply regulations.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include visuals and timber coordination.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish habitat to the maximum extent feasible (Consult ANILCA, Sec. 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. 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 travel routes.
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.
7. Revegetate disturbed areas in accordance with project plans.
8. Apply timing restrictions to minerals activities as needed during critical wildlife mating, calving, and migrating periods.
9. Shape landform modifications to simulate naturally occurring forms.
10. Design reclamation plans so minerals activities leave a natural-appearing condition.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only those activities compatible with management area objectives.
   1. Permit only activities which will be compatible with a Partial Retention VQO.
   2. Avoid issuing new permits, or limit the duration of permits, for uses which require a more natural-appearing Visual Quality Objective than Partial Retention.

B. This Management Area 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: JL231, JL24

A. Provide adequate landline marking for Forest Service contractors.
   1. Prior to Forest Service management activities, survey, mark, and post adjacent property lines, to Forest Service standards, where there is a risk of trespass.
   2. These property lines will have high priority in the use of available LandLine Location funds.

FACILITIES

Facilities Improvements: LF2

A. Allow construction of permanent administrative facilities only where compatible with visual quality and wildlife objectives.

TRANSPORTATION

Transportation Operations: LT1

A. Develop and manage cost effective transportation systems which integrate resource requirements consistent with management area direction.
   1. 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 and log transfer facility location, design, and construction.

2. 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 yearlong, to minimize adverse effects on fish and wildlife.
   * Provide recreational access where appropriate.
3. 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 management area objectives.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Control of dwarf-mistletoe in hemlock.
   1. Where hemlock dwarf-mistletoe interferes with the visual/wildlife/timber management objectives, the spread of this disease should be controlled.
      * Remove infected trees at the time of commercial timber harvest.
      * Minimize the number of infected trees on boundaries of harvest units.
      * Remove infected trees during precommercial
B. Suppression of other insects or diseases
   1. Where bole fluting of western hemlock threatens resource objectives, such trees should be removed during timber harvest.
   2. Where dead and dying stands of Alaska-cedar threaten resource objectives, such trees can be salvaged. Alaska-cedar can be managed without the threat of spreading this disorder to new sites because a contagious organism is not the primary cause.
   3. Where other pests threaten resource objectives, they should be aggressively suppressed using the most cost-effective strategies, as recommended by Pest Management specialists.

ROADED NATURAL / RURAL RECREATION

Management Area RN

The emphasis of this management area is to provide Roaded Natural or Rural recreation opportunities associated with both motorized and non-motorized activities such as driving for pleasure, viewing scenery, picnicking, fishing, beachcombing, snowmobiling, hiking, and cross-country skiing. Such activities occur within 1/2 mile of highways and roads maintained open for conventional passenger vehicles or principal motorized waterways. Other resource management activities or structures are often readily evident, may be dominate, but harmonize and blend with the generally natural-appearing environment. Interaction between users may be moderate to high with evidence of other users prevalent. Facilities and roads are designed for conventional motorized vehicles.

At-a-Glance . . .

Cultural resources	Interpretation of the natural environment and cultural resources found within, or viewed from, the area is provided to enhance the visitor's experience.
Recreation	Use and activities are managed for safety and convenience of the user; and protection of the resources through site hardening techniques, structures, signing, and traffic control.
Visuals	All management activities within the area are integrated in such a way that the natural environment and landscape characteristics remains predominant. Other resource activities and structures remain visually subordinate or harmonize and blend with the characteristic landscape. Area enhancement activities are aimed at increasing positive elements of the landscape to improve visual variety and to remove discordant elements.
Fish	Fish habitat, including its protection and rehabilitation, is maintained. Projects may be identified and implemented to enhance habitat conditions.
Subsistence	Subsistence Use occurs in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.
Wildlife	Maintain healthy and productive habitat conditions for indigenous species and enhance viewing opportunities.
Timber	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 and performed to maintain the utility and attractiveness of both existing sites and to protect the inherent qualities of proposed recreation sites.
Soil and Water	Land use activities are carried out in a manner which avoids adverse soil impacts and protects water quality.

Minerals	Lands are open to mineral entry. Minimum impact access and operating methods are encouraged. Opportunities to enhance recreation access in conjunction with mineral activities is maximized when feasible.
Facilities	Structures are located and designed to compliment and facilitate management of the area.
Transportation	Conventional motorized use is provided for in the design, and location of roads and facilities. Ample opportunities for non-motorized recreation activities and user safety may be provided for through the restriction of motorized use to designated routes and areas. Both motorized and non-motorized trail opportunities are provided.
Fire	All fires are normally suppressed, but may be allowed to burn under an approved prescription and supported by an Escaped Fire Situation Analysis to improve wildlife habitat conditions or for insect and disease control.
Insect and Disease	Integrated pest management principals are applied during project implementation to improve the health of the vegetative cover.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN	All
	AT	All
VISUALS	AV1	I(A,B,C,D)
	AV11	I(D,G)
	AV12	All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF	All
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Management and Operations

A. Provide Roaded Natural recreation opportunities and appropriate activities throughout the management area, when located in a general forest setting. When the management area is located in proximity to a rural community setting provide Rural recreation opportunities, except where specifically closed to public use.

VISUALS

Visual Resource Operations: AV1

A. Design resource activities to utilize natural colors and materials found in the characteristic landscape. Activities may visually dominate the seen area as viewed from sensitive travel routes.
   1. Apply Forest-wide 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 is acceptable.

FISH

Fish Habitat Planning: CF112

A. Provide for public interpretation of fish habitats and associated special fisheries conditions, as appropriate.

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize recreation objectives.
B. The Sale Area Improvement Plan will coordinate K-V funds for recreation and timber objectives. Essential reforestation will have highest priority for funds; other management area objectives will have next priority.

Timber Sale Preparation: ET114

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 viewshed.
B. The following guidelines provide direction for timber harvest activities to meet Visual Quality Objectives(VQO) and Visual Absorption Capability (VAC) settings. The guidelines represent the maximum allowable disturbance for timber harvest. 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. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape. The following criteria apply to Partial Retention:

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash Life
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	20%	20%	no limit

2. Cumulative visual disturbance reflects the maximum allowable percent of a visual viewshed area 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 timber harvest to meet the intent of the Visual Quality Objective.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include recreation coordination.
B. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include

mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.

B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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. Minimize the scale of spoil/disposal areas in relation to the surrounding landscape.
   4. Utilize colors that simulate those found in the characteristic landscape.
   5. Design reclamation plans so minerals activities leave a natural appearing condition.
   6. Revegetate disturbed areas in accordance with project plans.

SPECIAL USES

Special Use Administration (Non-Recreation): JL122

A. Permit only facilities and uses consistent with Roaded Natural/Rural recreation management objectives of the area.

B. This Management Area represents a Transportation and Utility Systems (TUS) "window" and provides opportunities for the future designation and location of transportation and utility sites or corridors.

TRANSPORTATION

Transportation Operations: LT1

A. Develop and manage the transportation system to enhance motorized recreation opportunities in a generally natural appearing environment.
   1. Design and construct Forest Development Roads to safely accommodate all vehicles normally found on public roads (i.e., Traffic Service Level B or above).
   2. Maintain as necessary to provide for safe travel by a prudent driver in a passenger car (i.e., Maintenance Level 3 or above).
   3. Consider lower design standards and maintenance levels only when recreational use is not included in the road management objectives of a proposed road.

MINERALS

Management Area MM

The emphasis of this management area is to encourage and facilitate the prospecting, exploration, development, mining, and processing of mineral resources. Lands within this management area have a high potential for the development and production of any mineral commodity including nationally-designated critical and strategic minerals.

During any interim period, prior to the initiation of mineral activities, these lands will be managed in accordance with other management area direction specified in the EIS, and its accompanying maps. And, after the initiation of mineral activities, some interim direction may still apply if it does not unreasonably constrain mineral operations. Interim management will not inhibit future mineral development and its economic viability.

The direction in this management area will apply upon reception of a Notice of Intent or a Plan of Operations. Those portions of the management area not identified for mineral activity in a notice of intent or an approved plan of operations will continue to be managed under the interim direction. After mineral operations are completed management direction will revert to the previously established interim direction, to the extent possible.

At-a-Glance . . .

Cultural resources	Examination and mitigation requirements will be completed prior to development activities to provide reasonable assurance that potential cultural resource values are protected.
Recreation	The range of recreation opportunities will be limited to those which will be compatible with the level of mineral activities.
Visuals	The characteristic landscape may be dominated by activities associated with mineral development. Although minerals activities may dominate the seen area, they will be designed with consideration for existing form, line, and texture found in the landscape.
Fish	Management activities will be designed to maintain the present and continued fish productivity of anadromous fish and other food fish habitat to the maximum extent feasible.
Subsistence	Subsistence use will be allowed in accordance with applicable Federal and State regulations.
Wildlife	Wildlife habitat will emphasize managed forest conditions. A wide variety of vegetative conditions, including early, middle, and late successional stages will provide a full range of wildlife habitat conditions.
Timber	Timber harvest may be coordinated with mining activities to facilitate development. The harvest schedule will be based on the interim direction.

Soil and Water	Soil and water mitigation measures will be applied to reduce vegetative and riparian disturbance, soil erosion, and the degree of risk and potential effects of slope failure to the extent practicable.
Lands	Issue the appropriate permits and leases to allow mineral activities to proceed.
Minerals	Mineral activities will be managed by using environmental stipulations that enhance the economic viability of project proposals. Reclamation will be incorporated as provided in the plan of operations.
Facilities	Permanent administrative facilities will be constructed to be compatible with the management area objective.
Transportation	Provisions for adequate and feasible access will be emphasized. Roads may be closed to public use.
Fire	Prescribed fire may be used for silvicultural site preparation, wildlife habitat improvement, and slash hazard reduction using an approved prescribed fire plan.
Insect and disease	Maintain health of the forest by applying integrated pest management principles in project design and implementation.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	I-IV; VI-X
SPECIAL AREAS	SPL	All
RECREATION	AN	All
	AT	All
VISUALS	AV1	I(A-D)
	AV11	I(B-G)
	AV12	All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12	I(A:1-3)
	PF2	I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: AC

Project Clearance/Inventory

A. Provide cultural resource assistance to the minerals program for environmental documentation, inventory, evaluation, protection, interpretation and allocation within the management area.
   1. Notify the Area Cultural Resource Specialist when a Notice of Intent or Operating Plan is received to determine inventory and evaluation needs.
   2. Complete inventory and evaluation prior to the approval of the Plan of Operation.
   3. 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 an qualified Cultural Resource Specialist authorized by a special use permit.
   4. 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.

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the Management Area.
   1. Provide the inherent 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 the Management Area.
   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 Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Mineral development activities will dominate the visual character of the landscape.
   1. Apply Forest-wide Standards and Guidelines for the Maximum Modification 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. In areas visible from sensitive travel routes, incorporate landscape design techniques in the planning process to the extent that they are compatible with the objectives of the management area.

FISH

Fish Habitat Planning: CF112

Planning/mitigation

A. 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)).

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, operating plans, and updates and amendments to each.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Establish a base line inventory of wildlife habitat conditions
   1. Develop a standardized inventory methodology in cooperation with commodity resource management to establish at least a minimum habitat baseline inventory prior to management activities. Where possible obtain an inventory on MIS population use.
   2. Prioritize baseline inventories to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate all activities with consideration for the needs of wildlife within the overall objectives of the management area.
   1. Use the habitat needs of MIS to evaluate opportunities for wildlife within the overall objectives of the management area (see Forest-wide Standards and Guidelines: CW112, II. E.).
   2. Provide for windfirm boundaries, considering site-specific conditions such as soils, local wind patterns, minimum 3-tree height rule, and other relevant factors.

B. Coordinate road management with the needs of wildlife when practicable. Refer to NAS Code LT1 in Transportation for more detail.

TIMBER

Timber Resource Planning: ET112

A. Timber land suitability is based on the interim direction associated with the management area.

B. For areas with interim direction authorizing timber harvest, suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

C. For the portions of the management area with interim direction that does not allow timber harvest, the forested land is classified as unsuitable and withdrawn from the timber base. Any timber harvest associated with mineral access and facility development is nonchargeable to the allowable sale quantity.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents will emphasize silvicultural objectives 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 reforestation.

Timber Sale Preparation: ET114

A. Locate and design timber harvest activities in accordance with the management area interim direction while meeting the mineral management goals.

SOIL AND WATER

Soil Inventory: FW1111

A. Perform baseline soil, water and channel type inventory standards where it is determined that present inventories are not applicable for project planning.

Watershed Resource Planning: FW112

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

Watershed Resources Monitoring: FW121

A. Monitor the effects on soil and water resources resulting from roading and minerals activities. Apply Forest-wide direction Standards & Guidelines.
    1. Measure soil disturbance and water quality on a sample basis for management activities that disturb the soil surface to mineral material and removes vegetation to determine effectiveness of BMP's.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. Minerals management activities are emphasized. Project design, analysis, and development of environmental documents will include resource coordination as required. Alternatives will be selected that enhance the economic viability of the activity, while ensuring that the natural environment receives a requisite degree of protection.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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. Work with claimant to develop a plan of operation that provides a requisite degree of protection for the surface resources of the management area. The economic practicality of the protection measures in a primary concern. If there are two methods that obtain a similar degree of protection, the method that is economically attractive to the operator shall be selected. 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 and Facilities Forest-wide Direction and to the location and construction of mining roads and facilities.
3. Revegetate disturbed areas in accordance with the plan of operations.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Generally, authorize special uses to facilitate mineral-related activities. Authorize other uses if they will not substantially conflict with present or future mineral-related activities.
   1. Do not authorize activities that will substantially conflict or interfere with mineral development.
   2. Utilize permits (such as temporary or annual permits) which will maintain options for future mineral development.

B. This management area represents a Transportation and Utility Systems (TUS) "Window" and provides opportunities for the future designation and location of transportation and utility sites or corridors.

TRANSPORTATION

Transportation Operations: LT1

A. Emphasize adequate and feasible access to encourage 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 management area may be closed to public use.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Control of dwarf-mistletoe in hemlock.
   1. Where hemlock dwarf mistletoe interferes with the visual/wildlife/timber management objectives, the spread of this disease should be controlled.
      * Remove infected trees at the time of commercial timber harvest.
      * Minimize the number of infected trees on boundaries of harvest units.
      * Remove infected trees during precommercial thinning

B. Suppression of other insects or diseases
   1. Where bole fluting of western hemlock threatens resource objectives, such trees should be removed during timber harvest.
   2. Where dead and dying stands of Alaska-cedar threaten resource objectives, such trees can be salvaged. Alaska-cedar can be managed without the threat of spreading this disorder to new sites because a contagious organism is not the primary cause.
   3. Where other pests threaten resource objectives, they should be aggressively suppressed using the most cost-effective strategies, as recommended by Pest Management specialists.

TIMBER PRODUCTION

Management Area TM

The emphasis of this management area is for timber production. The primary objective is to manage the area, using sound 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	Examination and mitigation will be conducted prior to development activities to provide reasonable assurance that potential cultural resource values are protected.
Recreation	Management activities are designed to harmonize with the appropriate ROS setting and purpose of the management area. Semi-primitive motorized, roaded natural, and roaded modified recreation opportunities can be provided.
Visuals	The characteristic landscape may be dominated by harvest activities. Although harvest activities may dominate the seen area, they will be designed with consideration for existing form, line, and texture found in the landscape.
Fish	Management activities will be coordinated with fish habitat objectives in adjacent management areas.
Subsistence	Subsistence use will be allowed in accordance with applicable Federal and State regulations.
Wildlife	A wide variety of vegetative conditions, including early, middle, and late successional stages will provide a full range of wildlife habitat conditions.
Timber	Timber harvest may include both even-aged and uneven-aged silvicultural methods, although clearcutting is likely to be the dominate method applied. 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.
Soil and Water	Emphasis will be to maintain soil cover, minimize slope failure, and reduce the degree of risk and potential effects from mass-wasting resulting from timber harvest and road construction.
Minerals	Lands are open to mineral entry. Access will be coordinated with timber sale road location when practicable.
Facilities	Permanent administrative facilities will be constructed to be compatible with the management area objective.

Transportation	All suitable forested lands will eventually be accessed in association with appropriate timber harvest activities while meeting wildlife considerations of the management area.
Fire	Appropriate suppression responses will be utilized for wildfires. Prescribed fire may be used for silvicultural site preparation, wildlife habitat improvement, and slash hazard reduction, supported by an approved prescribed fire plan.
Insect and Disease	Maintain the health of the forest by applying integrated pest management principles in project design and implementation.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN	All
	AT	All
VISUALS	AV1	I(A-D)
	AV11	I(B-G)
	AV12	All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12	I(A:1,2)
	PF2	I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: AC

A. Provide cultural resource assistance to the timber sale program. Coordination includes participation and support for environmental documentation, pre-sale inventory, evaluation, assessment, monitoring and protection of cultural resources during sale activities.
   1. The Area Cultural Resource Specialist shall be informed 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 as well as facilitation 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 after the SHPO consultation process has been completed the the cultural resource clearance has been approved by the Forest Supervisor
      * Cultural clearance for Independent Timber Sale Programs shall be accomplished on areas of the selected alternative before the sale is implemented. Implementation is defined as the advertising of the sale.
      * Cultural clearance for Long-Term Sale Programs shall be 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, 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 has been completed.
   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 an qualified Cultural Resource Specialist authorized by a special use permit.
   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 sale contracts, 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.

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the Management Area.
   1. Provide the inherent 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 the Management Area.
   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 Management Area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Timber management activities may dominate the visual character of the landscape.
   1. Apply Forest-wide Standards and Guidelines for the Maximum Modification 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. Consider roadside clean up as a mitigation measure when recreational use is included in the road management objectives of the proposed road.
   3. In areas visible from sensitive travel routes, incorporate landscape design techniques in the planning process to the extent that they are compatible with the objectives of the management area.
   4. Use available computer graphic capabilities in the design and evaluation of proposed harvest activities.

WILDLIFE

Wildlife Habitat Inventory - CW111

A. Establish a baseline inventory of wildlife habitat conditions
   1. Develop a standardized inventory methodology in cooperation with commodity resource management to establish at least a minimum habitat base line inventory prior to management activities. Where possible obtain an inventory on MIS population use.
   2. Prioritize baseline inventories to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate all activities with consideration for the needs of wildlife within the overall objectives of the management area.
   1. Use the habitat needs of MIS to evaluate opportunities for wildlife within the overall objectives of the management area (see Forest-wide Standards and Guidelines: CW112, II. E.).
   2. Provide for windfirm boundaries, considering site specific conditions such as soils, local wind patterns, minimum 3-tree height rule, and other relevant factors.

B. Coordinate road management with the needs of wildlife when practicable. (Refer to NAS Code LT1 in Transportation for more detail.)

TIMBER

Timber Resource Planning: ET112

A. Timber management is emphasized. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents will emphasize silvicultural objectives 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: ET114

A. Locate and design timber harvest activities primarily to meet silvicultural objectives. Integration of other resources objectives, particularly wildlife and vegetative diversity, will be included if they do not have a significant adverse impact on the timber resource goals. Even aged and unevenaged systems are available although clearcutting is the predominant harvest method.
   1. The following criteria represent the maximum allowable disturbance for timber harvest:

VQO/VAC Setting	Silviculture Method	Cumulative Dispersion	Height When no Longer Open	Logging Slash Life
Maximum Modification - All VAC Settings	clearcut	50%	5 feet	no limit

   2. Cumulative timber dispersion reflects the maximum allowable percent of a geographic area to be in an opening at any one point in time. For efficiency, the maximum is the aggregated percentage over 3 consecutive decades. 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 timber dispersion.

B. Final harvest will be equal to or greater than 95% culmination of mean annual increment (the age which the volume increment for a stand of trees has achieved its highest mean volume).

C. NFMA regulations provide that 100 acres is the maximum size of created openings to be 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 will also be governed by the 100-acre limit.

D. 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. Exceptions to the maximum size of created openings 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 management areas
      * Effect on water quality and quantity
      * Visual absorption capability
      * Effect on wildlife and fish habitat, including implementation of the landscape ecology concept in which large blocks of timber may be harvested
      * Regeneration requirements for desirable tree species
      * Transportation and harvest system requirements
      * Relative total costs of preparation, logging, and administration of harvest

E. 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. 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.

F. 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 attack, or windthrow.

G. 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 limitations on scheduling, locations, and size of additional created openings.

H. Special consideration will be required in the design of harvest units adjacent to management areas 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 this management area.

SOIL AND WATER

Soil Inventory: FW1111

A. Apply baseline soil, water and channel type inventory standards where it is determined that present inventories are not applicable for project planning.

Watershed Resource Planning: FW112

A. Delineate on appropriate project maps the location of soil and water protection areas 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 the realm of State Water Quality Standards and water supply regulations.

Watershed Resources Monitoring: FW121

A. Monitor soil and water resources with relation to effect of roading and logging with applied BMP's. Apply Common Standards and Guidelines (NAS Code FW121) for developing and applying monitoring for sale area activities.
    1. Monitor soil disturbance and water quality on a sample basis for management activities that disturb the soil surface to mineral material and removes vegetation to determine effectiveness of BMP's.

Watershed Resource Improvements: FW2

A. Soil and water improvement projects needs on nondesignated domestic water use watersheds will be done at a level to prevent degradation of water quality below State of Alaska's Water Quality Standard for domestic use.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents, include resource coordination.
B. Coordinate the location of timber and mining transportations systems when practical.
C. 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: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 operation that is compatible with the emphasis of this management area. 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 food fish habitat to the maximum extent feasible (Consult ANILCA, Sec. 505 (a).)
2. Apply appropriate Transportation and Facilities Forest-wide Direction and 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.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only those uses which are compatible with management area objectives. Avoid issuing, or limit the duration of, permits for uses which require natural surroundings.
B. This management area 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: JL231, JL24

A. Provide adequate landline marking for Forest Service contractors.
    1. Prior to Forest Service management activities, survey, mark, and post adjacent property lines, to Forest Service standards, where there is risk of trespass.

TRANSPORTATION

Transportation Operations: LT1

A. Develop and manage cost-effective transportation systems which integrate resource requirements consistent with management area 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 management area objectives.
    2. 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.
    3. Provide recreational access where appropriate.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Control of dwarf-mistletoe in hemlock.
    1. Where hemlock dwarf-mistletoe interferes with the visual/wildlife/timber management objectives, the spread of this disease should be controlled.
        * Remove infected trees at the time of commercial timber harvest.

* Minimize the number of infected trees on boundaries of harvest units.
* Remove infected trees during precommercial thinning

B. Suppression of other insects or diseases
   1. Where bole fluting of western hemlock threatens resource objectives, such trees should be removed during timber harvest.
   2. Where dead and dying stands of Alaska-cedar threaten resource objectives, such trees can be salvaged. Because a contagious organism is not the primary cause Alaska-cedar can be managed without the threat of spreading this disorder to new sites.
   3. Where other pest threaten resource objectives, they should be aggressively suppressed using the most cost-effective strategies, as recommended by Pest Management specialists.

FISH HABITAT AND WATER QUALITY REQUIREMENTS

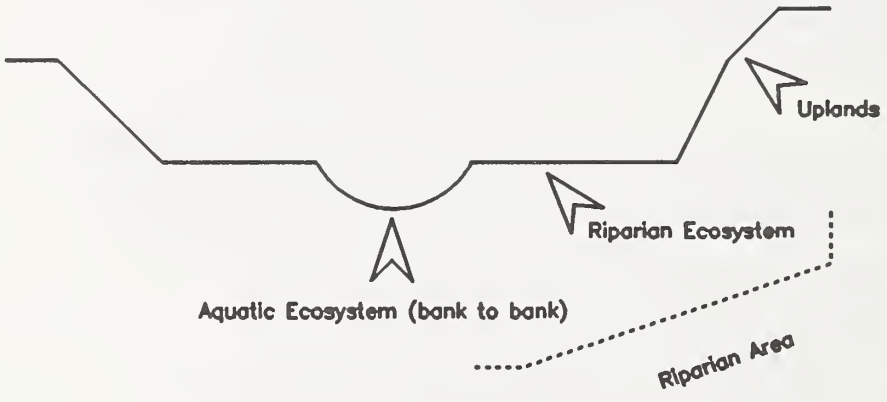
Management Area WQ

The emphasis of this management area is to meet the basic requirements for riparian areas for fish habitat and water quality, as defined by the National Forest Management Act's implementing regulations (36 CFR 219.27(e)). No management practices causing detrimental changes in water temperature or chemical composition, blockages of water-courses, or deposits of sediment shall be permitted which seriously and adversely affect water conditions or fish habitat.

This management area has been defined as a minimum of one hundred horizontal feet distance from all sides of perennial streams, lakes and other bodies of fresh water, or to the recognizable area dominated by associated riparian vegetation, whichever is greater. To determine where the riparian vegetation is located, a combination of soils, plant associations and channel types are used. The management area also includes very high landslide and erosion hazard areas adjacent to streams and riparian areas for water quality protection.

For channel types B3, B5, B8, C1, C3, C6, D3, D4, D5, and L2, greater than the minimum distance may often be required.

Riparian related definitions relating to this management area are as follows:



At-a-Glance . . .

Cultural resources — Interpretation of cultural resources and the natural environment may be provided to enhance the visitors' experience. Cultural sites adjacent to activities will be protected following applicable Federal and State Regulations.

Recreation — Recreation use will be managed to protect water quality and fish habitat from serious and adverse effects. Activities are managed to harmonize with the adopted ROS setting and purpose of the adjacent management areas.

Visuals	Visual quality may vary, based on the adopted Visual Quality Objectives for the surrounding area.
Fish	Fish habitat will be protected so that no serious and adverse effects are induced. Enhancement is emphasized in this Area.
Subsistence	Subsistence use occurs in accordance with applicable Federal and State regulations. Opportunities for harvesting riparian-related resources, including both fish and wildlife species, are generally maintained or enhanced.
Wildlife	A wide variety of vegetative conditions and types will be present, often benefiting a variety of riparian-associated wildlife species. The area should provide for wildlife travel corridors and snags for cavity nesters.
Timber	Timber harvest and other silvicultural treatments may be present where not in conflict with the objectives for water quality and fish habitat. Generally, only limited treatment is suitable within a variable distance of streamcourses.
Soil and Water	Soil and water protective measures are applied to a greater degree than in most other areas due to the proximity to, and density of, watercourses. Emphasis is for no serious and adverse effect to water quality and fish habitat.
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 activities are designed to be compatible to the extent practicable with the management emphasis. Often special mitigating measures to protect water quality and fish habitat will be required.
Facilities	Generally, facilities will not be present within this management area, unless the use is compatible or cannot be located outside of the riparian area.
Transportation	Transportation developments should be located and designed so as to not to seriously and adversely affect water conditions or fish habitat.
Fire	For wildfires, appropriate suppression responses will be used to maintain water quality and fish habitat.
Insect and Disease	Integrated pest management principles are applied to maintain water quality and fish habitat.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN, AT	All
VISUALS	AV1 AV11, AV12	I(A-D) All
FISH	CF111,121,22,23 CF112	All I, III-VI
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12 PF2	I(A:2,3) I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Management and Operations

A. Regulate recreation use based on studies reflecting the effect of recreation activities on wildlife and fish resources and habitat.

B. Provide for inventoried ROS opportunities and appropriate activities throughout the Management Area, unless 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 facilities 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). Locate parking, sanitation and other recreation facilities outside the management area where practical. Design all facilities within the management area to avoid adverse effects on riparian shorelines and water quality.

VISUALS

Visual Resource Operations: AV1

A. A variety of visual conditions may exist within the management area.

   1. Adopt the Visual Quality Objective of the adjacent management area.
   2. Visual Quality Objectives may range from Retention to Maximum Modification.

FISH

Fish Habitat Planning: CF112

A. Emphasize the protection and enhancement of fish habitat and populations by integrating the management of the aquatic and terrestrial ecosystems. In this management area, the requirements for riparian vegetation for protection of fish habitat and water quality, as defined by the National Forest Management Act's (NFMA) implementing regulations (CFR 219.27(e)), will be met.

B. Manage fish resources (populations and habitat) so that no serious and adverse effects to fish habitat are induced. Allow some reductions in fish habitat capability as a result of allocating land to this management area.

Objectives for Management Affecting Fish Habitat

A. Provide for short and long-term maintenance of fish habitat capability in all channel process groups.

   1. *Stream Class I*: Allow no serious and adverse effects to anadromous and adfluvial fish habitat and high value resident sport fish habitat capability within each individual Class I stream system.
   2. *Stream Class II*: Allow no serious and adverse effects to resident fish species.

3. *Stream Class III*: This stream class has no fish inhabitants, but provides quality water for downstream Class I and II stream systems.

B. Maintain natural stream bank and stream channel processes.
   1. *Stream Class I*: Allow no serious and adverse effects to anadromous and adfluvial fish habitat and high value resident sport fish habitat capability by providing natural cover/pool ratios, pool-riffle sequences, and habitat features, such as stable debris. Design management activities to maintain streambank, channel, and floodplain integrity.
   2. *Stream Class II*: Design management activities to maintain streambank, channel, and floodplain integrity. Avoid sediment impacts into downstream Class I streams.
   3. *Stream Class III*: Design management activities to maintain streambank, channel, and floodplain integrity. Avoid sediment impacts to downstream Class I and II streams.

C. Maintain natural and beneficial quantities of large woody debris (LWD) over the short and long term.
   1. *Stream Class I*: Allow no serious and adverse effects to anadromous and adfluvial fish high value resident sport fish habitat capability by managing for natural and beneficial volumes of LWD for rearing and spawning, stream energy dissipation, and sources of energy and wood to the stream ecosystem. Use channel type considerations to determine size classes and distribution.
   2. *Stream Class II*: Maintain LWD, and design for future sources at volumes determined by channel type considerations, in order to provide for no serious and adverse effects to resident fish habitat capability.
   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. *Classes I, II and III*: Prevent serious and adverse effects to rearing and spawning habitat, when present. Assure no chronic sediment input following soil-disturbing activities (stabilization should always occur within one year). Minimize siltation to prevent downstream serious and adverse impacts to fish habitat.
   2. Implement applicable Best Management Practices (see section on soil and water resources).

E. Maintain or improve water temperature at a level suitable for salmonid populations.
   1. *Stream Class I*: Allow no serious and adverse effects to anadromous and adfluvial fish habitat and high value resident sport fish habitat capability by providing for summer stream temperatures below 68 degrees F, or at natural levels. Manage watersheds and riparian streamsides to attain favorable stream temperature regimes.
   2. *Stream Class II*: Maintain water temperatures below 68 degrees F, or at natural levels, to provide no serious and adverse effects to resident fish species and to provide for downstream Class I streams.
   3. *Stream Class III*: Manage riparian streamside vegetation 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*: Allow no serious and adverse effects to anadromous and adfluvial fish habitat and high value resident sport fish habitat capability by sustaining primary and secondary biological production in streams.
   2. *Stream Class II*: Manage vegetation and biological productivity to provide for no serious and adverse effects to resident fish species and to maintain nutrient sources for downstream waters.
   3. *Stream Class III*: Manage vegetation to provide maintenance of nutrient sources for downstream waters.

G. Maintain fish passage through stream crossing structures.
   1. *Stream Class I*: Maintain or improve the opportunities for migration of adult and juvenile anadromous and adfluvial sport fish. For resident fish, maintain or improve the opportunities for natural migration, where economically feasible. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
   2. *Stream Class II*: Maintain or improve the opportunities for the natural migration of resident sport fish where economically feasible. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
   3. *Stream Class III*: No fish are found in this stream class.

Enhancement

A. Enhancement of fish resources may be emphasized in this Area.

Monitoring: CF121

A. Implement aspects of the monitoring plan concerning riparian areas.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Establish a baseline inventory of riparian wildlife habitats to obtain information on habitat conditions and wildlife use prior to planned management activities.
   1. Coordinate with, utilize and incorporate existing and/or ongoing inventory work and techniques such as plant association inventories, soil inventories, timber stand exams, USFWS inventories, and ADF&G inventories.
   2. Conduct baseline inventories on highest priority areas to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate management activities with the needs of wildlife.
   1. Use the habitat needs of MIS to help identify important coordination considerations.
   2. Allow for the migration and movement of wildlife along riparian areas.
   3. Utilize silvicultural techniques which prolong understory forb and shrub production when practical.

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 activity.
   * After harvest, snags may be designated as wildlife trees and marked to make them illegal for cutting.
   * Consider retaining live trees for future snag recruitment.
5. Maintain or enhance wetland habitats associated with this management area which receive high use by waterfowl species such as ducks, geese and shorebirds (refer to Forest-wide Direction and Standards & Guidelines for Wildlife - Waterfowl).

B. Coordinate road management to emphasize the needs of wildlife.
   1. Use road management including year-long or seasonal closures to reduce human disturbance to wildlife. Particular emphasis needs to be given to road management in important brown bear riparian habitats.
   2. Locate and design roads in riparian areas to minimize human disturbance to wildlife, with particular emphasis given to brown bear habitat.

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize fisheries and water quality objectives.
B. The Sale Area Improvement Plan will prioritize K-V funds. Reforestation will have highest priority for funds; other management area objectives will have next priorities.

Timber Sale Preparation: ET114

A. Location and design of timber harvest activities require special consideration to ensure that riparian area characteristics for fish habitat and water quality be protected. This can be accomplished with both even-aged and uneven-aged silvicultural systems.
B. Tailhold and yarding corridors may be allowed to cross all channel process groups on a site-by-site basis where management area objectives are met.
C. Timber harvest settings that cross or include streamcourses or V-notches or other streams should be planned to minimize adverse impacts on the soil and water resource. Unless stated otherwise in the Process Group direction, the following apply management area-wide.
   1. Trees or products yarded across or down streamcourses shall be fully suspended when yarding across the streamcourse or yard-

ing the full length of the stream or drainage, unless alternatives are developed in the Operating Plan which meet the objectives of the management area.

2. Unless agreed otherwise in the Operating Plan, trees identified for harvest will be felled in such a manner so that the direction of fall is away from streamcourse. These trees may be wedged, jacked, lined, or otherwise pulled when necessary. Where directional falling is not practical, trees will be yarded from streamcourses immediately after they are felled. Unless the Forest Service provides a written waiver, felled or windfallen trees shall not be bucked or limbed until they are clear of streamcourses (whole tree yarding).
3. At the time agreed in the Operating Plan, 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 guyline circle will be felled as agreed in the Operating Plan.
4. Use streams as split lines whenever possible (i.e., logs should be yarded away from the stream in both directions rather than across the channel).
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; blowdown potential; and yarding capability.
6. Allow salvage if objectives of management area can be met.

D. The following tables provide the Standards and Guidelines for timber harvest activities. Distances are in horizontal feet. Distances shown are for windfirm leavestrips; greater distance may be required to achieve reasonable assurance that windthrow will not occur within the windfirm distance as a result of adjacent harvest activity. Forest-wide and Management Area-wide Direction and Standards & Guidelines apply for each Channel Process Group.
   1. See the following charts -

Fish Habitat and Water Quality Requirements

Low Gradient Floodplain Process Group

(Channel types B1, B8, C1, C3, C4, C6, D4, D5)

Stream Class

	I
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain long term supply of woody debris sources within the process group - Allow no activities causing floodplain destabilization
Harvest Control	- Allow no programmed harvest within 0 to 25 windfirm feet of B1 or B8 channel types not associated with other channel types - Allow single tree selection harvest method within 25 to 60 windfirm feet of B1 or B8 channel types not associated with other channel types; no restriction outside 60 feet - Allow no programmed harvest within floodplain or within 0 to 200 feet, whichever is less, for remainder of channel types
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16" + dbh within the no programmed harvest area
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in the no programmed harvest area while meeting objectives

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

Fish Habitat and Water Quality Requirements

Alluvial Fan Process Group

(Channel types A3, B5, D1, D6)

Stream Class

<table>
<tr><th></th><th>I</th><th>II</th><th>III</th></tr>
<tr><td>Objectives</td><td>- Allow no serious and adverse affect of water quality or fish habitat

- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
- Allow no activities causing floodplain destabilization</td><td>- Allow no serious and adverse affect of water quality or resident fish habitat

- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
- Allow no activities causing floodplain destabilization</td><td>- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
- Allow no activities causing floodplain destabilization</td></tr>
<tr><td>Harvest Control</td><td>- Allow no programmed harvest within active portion of fan or 25 windfirm feet of streambank, whichever is greater
- Single tree selection 25 to 60 windfirm feet from streambank if not within active portion of fan
- All harvest methods are available on remaining inactive portion of fan while meeting objectives</td><td colspan="2">- Allow no programmed harvest within active portion of fan or 25 windfirm feet of streambank, whichever is greater

- All harvest methods are available on remaining inactive portion of fan while meeting objectives</td></tr>
<tr><td>Harvest Rate</td><td colspan="3">- Harvest not to exceed 1/2 forest land of individual fan
- Remaining forest land not to be harvested until created openings contain 50 foot conifer trees (approximately 30 yrs.)</td></tr>
<tr><td>Salvage</td><td colspan="2">- Generally, do not salvage windthrown trees suspended over or in streams
- Allow salvage in the no programmed harvest areas while meeting objectives</td><td>- Allow salvage in all areas while meeting objectives</td></tr>
<tr><td>Roading</td><td colspan="3">- Special road construction techniques may be required to ensure fish passage</td></tr>
</table>

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Fish Habitat and Water Quality Requirements

Mixed Controlled Moderate Gradient Process Group

(Channel types B2, B3, D3)

Stream Class

	I	II	III
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Allow no serious and adverse affect of water quality or resident fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel Integrity	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow single tree selection within 25 windfirm feet of B2 channels - Allow single tree selection withIn 60 windfirm feet of B3 and D3 channels - Final harvest should incorporate undulating harvest unit boundaries in the process group to limit the amount of continuous disturbance parallel to the streambank	- Allow single tree selection within 25 windfirm feet of all channels - Management Area Wide Direction and Standards and Guidelines apply for remainder of Area	- Allow single tree selection within 25 windfirm feet of B2 channels - Management Area Wide Direction and Standards and Guidelines apply for remainder of Area
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in the no programmed harvest areas while meeting the objectives		- Allow salvage in all areas while meeting objectives
Roading	- Special road construction techniques may be required to ensure fish passage		

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Fish Habitat and Water Quality Requirements
Large Low Gradient Contained Process Group
(Channel types C2, C5)

Stream Class

	I	II
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Allow no serious and adverse affect of water quality or resident fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow no programmed harvest within 25 windfirm feet of streams - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding is required to cross stream channel	
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply	
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams	
Roading	- Road construction is generally not appropriate in this process group	

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

Fish Habitat and Water Quality Requirements

Moderate Gradient Contained Process Group

(Channel types B4, B6)

Stream Class

	I	II	III
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Allow no serious and adverse affect of water quality or resident fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Selectively leave trees with crowns that do not extend above slope break - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding required to cross stream channel		- All harvest methods apply while meeting objectives
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams		

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.

Fish Habitat and Water Quality Requirements

High Gradient Contained Process Group

(Channel types A1, A2, A4, A5, A6, A7, B7, D2, D7)

Stream Class

	III
Objectives	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow harvest to streambank while meeting objectives - Full suspension required to cross stream channel
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply
Salvage	- Allow salvage while meeting objectives

NOTES: - 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.

Fish Habitat and Water Quality Requirements

Placid or Glide Streams Process Group

(Channel types L1, L2)

Stream Class

	I	II
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Allow no serious and adverse affect of water quality or resident fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow no programmed harvest within 60 windfirm feet of streambank - Allow single tree selection for remainder of stream class	- Allow no ground disturbing harvest within 60 windfirm feet of streambank (e.g. helicopter) - Allow single tree selection for remainder of stream class
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply	
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Non ground disturbing salvage permitted while meeting objectives (e.g. helicopter)	
Roading	- Roading is generally not appropriate in this process group	

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

Fish Habitat and Water Quality Requirements

Lakes and Ponds Process Group

(Channel types L, L3, L4, L5)

	Stream Class		
	I	II	III
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance	- Allow no serious and adverse affect of water quality or resident fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
Harvest Control	- Allow single tree selection within 100 windfirm feet of lake or L channel - Leave 75% of shade trees within 75 windfirm feet of lake or L channel - Any harvest methods apply if greater than 100 windfirm feet from lake or L channel	- Leave 65% of shade trees within 75 windfirm feet of lake or L channel - Any harvest methods apply if greater than 100 windfirm feet from lake or L channel - Treat as adjacent Management Area if lake or pond is less than 5 acres in size	- Maintain a minimum of 50% of shading vegetation for temperature sensitive channels - Any harvest methods apply while meeting objectives - Treat as adjacent Management Area if lake or pond is less than 5 acres in size
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in lakes, ponds, or sloughs - Allow salvage in all other areas while meeting objectives		- Allow salvage in all areas while meeting objectives
Roading	- 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: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Fish Habitat and Water Quality Requirements

Estuarine Process Group

(Channel types E1, E2, E3, E5)

Stream Class

	I
Objectives	- Allow no serious and adverse affect of water quality or fish habitat - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow no programmed harvest within 200 windfirm feet of E1 and E5 estuarine channels - All harvest methods allowed further than 200 windfirm feet from E1 and E5 estuarine channels - Allow no programmed harvest within 25 windfirm feet of E2 and E3 estuarine channels - Allow single tree selection within 25 to 60 windfirm feet of E2 and E3 estuarine channels - Any harvest methods apply further than 60 windfirm feet from E2 and E3 estuarine channels
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16"+ dbh within the no programmed harvest area
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in all other areas while meeting objectives

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

SOIL AND WATER

Soil Inventory: FW1111

A. Verify and define riparian areas on the ground during project level planning.

Watershed Resource Planning: FW112

A. Manage activities to meet the minimum requirements to protect water quality from degradation and to protect the aquatic and terrestrial riparian habitats, channel and streambanks, and promote floodplain stability.
   1. Identify soil and water quality requirements for the area during the environmental analysis for project level activities.
   2. Apply Process or Standard BMP's to minimize the adverse effects from on site and from nearby logging and related land disturbance activities.
   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.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include watershed and fisheries coordination.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish habitat to the maximum extent feasible (consult ANILCA, Section 505 (a)).

2. Apply timing restrictions to instream construction as needed to protect fisheries habitat and mitigate adverse disturbance of stream sediments.
3. Use sedimentation traps as needed to mitigate adverse stream sedimentation and meet State and Federal water quality regulations.
4. Locate material sites and marine transfer facilities outside this management area 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.

LANDS

Special Use Administration (Non-Recreation): JL122

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 enhance associated fish or wildlife habitat, or (2) protect water quality.
   1. Analyze each new proposal on a case-by-case basis, using an interdisciplinary process, to determine probable effects.
   2. Apply standards and guidelines for transportation operations, when granting new rights-of-way.

B. This management area represents a Transportation and Utility System (TUS) Avoidance Area. Transportation and utility sites and corridors may be located within this Management Area only after a search for TUS windows has been exhausted.

FACILITIES

Facilities Improvements: LF2

A. Permit only those facilities which do not significantly reduce the capability of the area to maintain fish or wildlife habitat or water quality.

TRANSPORTATION

Transportation Operations: LT1

A. Locate, design, and construct roads in a manner which will minimize effects on wildlife and fish habitat 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 in project plans an erosion control and stabilization plan for stabilizing all human-caused soil disturbances.
   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. 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. Location of roads parallel to fish bearing streams and crossing fish streams will be permitted 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 ground cover as possible shall be left between the road and the stream. Complete endhaul of waste material will be required where roads are located near fish streams when there is the probability of downhill movement of the material into the stream below. Fill will be placed into fish streams only when considered through the IDT process to be the best alternative.
4. Meet fish passage direction at all locations where roads cross fish streams (consult Forest-wide Direction and Standards and Guidelines for fish habitat planning, CF112). 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 road-bed 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 waterfowl high use areas.

B. If the need to restrict access is identified during project interdisciplinary team review, roads will 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.

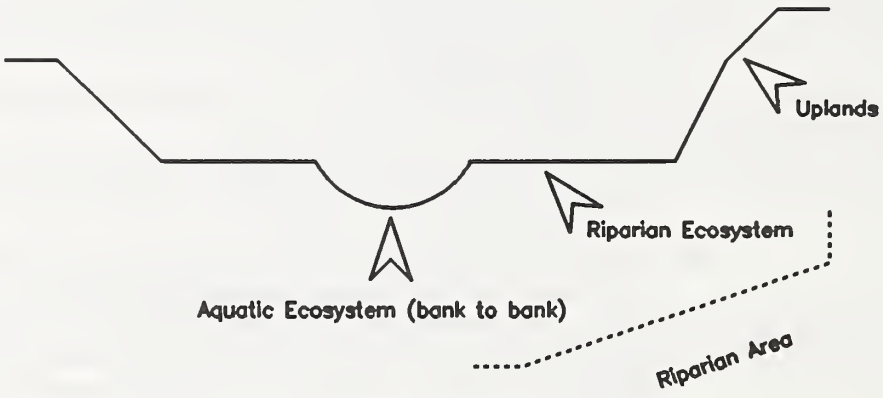
STREAM AND LAKE PROTECTION

Management Area SL

The emphasis of this management area is to maintain optimum riparian habitat for fish and other riparian associated resources. This prescription applies to areas comprised of aquatic and riparian ecosystems, including riparian streamsides, lakes and floodplains, with distinctive resource values and characteristics. This area 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 to be settled in favor of the riparian-associated fish and wildlife species.

At a minimum, this Management Area includes the riparian area required to meet the National Forest Management Act's implementing regulations for fish habitat and water quality (see description of Management Area WQ.)

Riparian-related definitions relating to this management area are as follows:



At-a-Glance . . .

Cultural resources — Interpretation of cultural resources and the natural environment may be provided to enhance the visitors experience. Cultural sites adjacent to activities will be protected following applicable Federal and State Regulations.

Recreation — Recreation use will be managed to preserve the natural attributes of the riparian area. Activities are managed to harmonize with the adopted ROS setting and purpose of adjacent areas. Recreation developments should generally be located in other management areas, unless the use is compatible or cannot practicably be located outside of riparian areas.

Visuals — Visual quality may vary, based on the adopted Visual Quality Objectives for the surrounding area.

Fish	Fish habitat, including its protection, rehabilitation, and enhancement is emphasized. Other resource activities should maintain or enhance stream habitat conditions. Included will be the protection and 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 considerations.
Subsistence	Subsistence use occurs in accordance with applicable Federal and State regulations. Opportunities for harvesting riparian-related resources, including both fish and wildlife species, will be maintained or enhanced.
Wildlife	A wide variety of vegetative conditions and types will be present, often benefiting a variety of riparian-associated wildlife species. Often, the area will provide snags for associated wildlife species, maintain a vegetative component of large trees for brown bear bedding areas and other riparian-associated species, maintain waterfowl habitats associated with riparian areas, and provide for wildlife travel corridors.
Timber	Timber harvest and other silvicultural treatments will be allowed where not in conflict with the protection and enhancement of riparian associated resources. Generally, only limited treatment is suitable within a variable distance of stream courses, with uneven-aged management being the predominant harvest method.
Soil and Water	Soil and water protective measures are applied to a greater degree than in most other areas due to the proximity to, and density of, water courses. Emphasis is for no impacts to water quality or fish habitat.
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 activities are designed to be compatible to the extent practicable with the management emphasis, and will often include special mitigating measures to protect water conditions and fish habitat.
Facilities	Generally, facilities will not be present within this management area, unless the use is compatible or cannot be located outside of the riparian area.
Transportation	Transportation developments should be located outside of the area, to the extent practicable. Developments should result in no impairment to the production and migration of anadromous fish and only minor effects on resident fish.
Fire	Appropriate suppression measures will be used to maintain water quality and fish habitat.
Insect and Disease	Integrated pest management principles are applied to maintain water quality and fish habitat.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN,AT	All
VISUALS	AV1 AV11, AV12	I(A-D) All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT	All
FIRE	PF12 PF2	I(A:2,3) I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Management and Operations

A. Regulate recreation use based on studies reflecting the effect of recreation activities on wildlife and fish resources and habitat.

B. Provide for inventoried ROS opportunities and appropriate activities throughout the Management Area, unless 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 facilities 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). Locate parking, sanitation and other recreation facilities outside the management area where practical. Design all facilities within the management area to avoid adverse effects on riparian shorelines and water quality.

VISUALS

Visual Resource Operations: AV1

A. A variety of visual conditions may exist within the management area.

   1. Adopt the Visual Quality Objective of the adjacent management area.
   2. Visual Quality Objectives may range from Retention to Maximum Modification.

FISH

Fish Habitat Planning: CF112

A. Emphasize the protection and enhancement of fish habitat and populations by integrating the management of the aquatic and terrestrial ecosystems. The objectives for management in this Management Area are that activities do not result in any decrease in anadromous and adfluvial fish habitat, or high value resident sport fish, habitat capability.

Objectives for Management Affecting Fish Habitat

A. Provide for short and long-term maintenance of fish habitat capability in all channel process groups.

   1. *Stream Class I*: Maintain or enhance aquatic biological productivity within each individual Class I stream system.
   2. *Stream Class II*: Maintain habitat capability for resident fish populations, to the extent practicable.
   3. *Stream Class III*: This stream class has no fish inhabitants but provides quality water for downstream Class I and II stream systems.

B. Maintain natural stream bank and stream channel processes.

   1. *Stream Class I*: Maintain or improve anadromous and adfluvial fish habitat 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 debris. Design management activities to maintain stream bank, channel and floodplain integrity.

2. *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 debris. Design management activities to maintain stream bank, channel and floodplain integrity. Avoid sediment impacts into downstream Class I streams.
3. *Stream Class III*: Design management activities to maintain stream bank, channel and floodplain integrity. Avoid sediment impacts into downstream Class I and II streams.

C. Maintain natural and beneficial quantities of large woody debris (LWD) over the short and long term.
   1. *Stream Class I*: Maintain anadromous and adfluvial fish habitat 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 energy and wood to the stream ecosystem. Use channel type considerations to determine size classes and distribution.
   2. *Stream Class II*: Maintain habitat capability for resident fish populations, to the extent practicable, by providing for existing levels of LWD, and by designing for future sources at volumes determined by channel type considerations.
   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. *Classes I, II, and III*: Prevent adverse effects to rearing and spawning habitat, when present. Maintain anadromous and adfluvial fish habitat 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 (stabilization should always occur within one year). Minimize siltation to prevent downstream adverse impacts to fish habitat.
   2. Implement applicable Best Management Practices (see section on soil and water resources).

E. Maintain or improve water temperature at a level to optimize salmonid populations.
   1. *Stream Class I*: Maintain optimum salmonid summer stream temperatures at between 50 and 68 degrees F or at natural levels. Manage watersheds and riparian streamsides to attain optimum stream temperature regimes.
   2. *Stream Class II*: Maintain water temperatures below 68 degrees F, or at natural levels, to maintain habitat capability for resident fish populations, to the extent practicable.
   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*: Maintain natural or enhanced 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. *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*: Maintain or improve the opportunities for the migration of adult and juvenile anadromous and adfluvial sport fish. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
2. *Stream Class II*: Maintain or improve the opportunities for the natural migration of resident fish where economically feasible. For resident fish, maintain for improve the opportunities for natural migration, where economically feasible. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
3. *Stream Class III*: No fish are found in this stream class.

Enhancement

A. Enhancement of fish resources is emphasized in this Management Area.

Monitoring: CF121

A. Implement aspects of the monitoring plan concerning riparian areas.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Establish a baseline inventory of riparian wildlife habitats to obtain information on habitat conditions and wildlife use prior to planned management activities.
1. Coordinate with, utilize and incorporate existing and/or ongoing inventory work and techniques such as plant association inventories, soil inventories, timber stand exams, USFWS inventories, and ADF&G inventories.
2. Conduct baseline inventories on highest priority areas to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate management activities with the needs of wildlife.
1. Use the habitat needs of MIS to help identify important coordination considerations.
2. Allow for the migration and movement of wildlife along riparian areas.
3. Utilize silvicultural techniques which prolong understory forb and shrub production when practical.
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 activity.
* After harvest, snags may be designated as wildlife trees and marked to make them illegal for cutting.
* Consider retaining live trees for future snag recruitment.

5. Manage for old-growth characteristics in those stream process groups which are designated for uneven-aged management (single tree selection or group selection).
6. Maintain or enhance wetland habitats associated with this management area which receive high use by waterfowl species such as ducks, geese and shorebirds (refer to Forest-wide Direction and Standards & Guidelines for Wildlife - Waterfowl.)

B. Coordinate road management to emphasize the needs of wildlife.
   1. Utilize road management including year-long or seasonal closures to reduce human disturbance on wildlife. Particular emphasis needs to be given to road management in important brown bear riparian habitats.
   2. Locate and design roads in riparian areas to minimize human disturbance to wildlife, with particular emphasis given to brown bear habitat.

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize riparian-associated resource objectives.
B. The Sale Area Improvement Plan will prioritize K-V funds. Reforestation will have highest priority for funds; other management area objectives will have next priorities.

Timber Sale Preparation: ET114

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 be protected. This may be accomplished with both even-aged and uneven-aged silvicultural systems.
B. To provide protection to fish and wildlife during critical periods of their life cycle, seasonal restrictions on harvest activities may be required.
C. Tailhold and yarding corridors may be allowed to cross all channel process groups on a site-by-site basis where management area objectives are met.
D. Timber harvest settings that cross or include streamcourses or V-notches or other streams should be planned to minimize adverse impacts on the soil and water resource. Unless stated otherwise in the Process Group direction, the following apply management area wide.

1. Trees or products yarded across or down streamcourses shall be fully suspended when yarding across the streamcourse or yarding the full length of the stream or drainage, unless alternatives are developed in the Operating Plan which meet the objectives of the management area.
2. Unless agreed otherwise in the Operating Plan, trees identified for harvest will be felled in such a manner so that the direction of fall is away from streamcourse. These trees may be wedged, jacked, lined, or otherwise pulled when necessary. Unless the Forest Service provides a written waiver, trees accidentally felled or windfallen trees in streamcourses shall not be bucked or limbed until they are clear of streamcourses (whole tree yarding).
3. At the time agreed in the Operating Plan, 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 guyline circle will be felled as agreed in the Operating Plan.
4. Use streams as split lines whenever possible (i.e. logs should be yarded away from the stream in both directions rather than across the channel).
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; blowdown potential; and yarding capability.
6. Allow salvage if objectives of management area can be met.

E. The following tables provide the Standards and Guidelines for timber harvest activities. Distances are in horizontal feet. Distances shown are for windfirm leave strips; greater distance may be required to achieve reasonable assurance that windthrow will not occur within the windfirm distance as a result of adjacent harvest activity. To ensure that leave strips are windfirm, consider conditions such as soils, local wind patterns, 3-tree height general rule, and other site-specific factors. Forestwide and Management Area-wide Direction and Standards & Guidelines apply for each Channel Process Group.
   1. See the following charts -

Stream and Lake Protection
Low Gradient Floodplain Process Group
(Channel types B1, B8, C1, C3, C4, C6, D4, D5)

Stream Class

	I
Objectives	- Maintain or enhance aquatic biological productivity - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Restore stream and/or watershed condition - Maintain/manage old growth characteristic habitat for riparian associated wildlife species - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain long term supply of woody debris sources within the process group - Allow no activities causing floodplain destabilization
Harvest Control	- Allow no programmed harvest within 0 to 60 windfirm feet of B1 or B8 channel types not associated with other channel types - Allow single tree selection harvest method within 60 to 200 windfirm feet of B1 or B8 channel types not associated with other channel types - Allow no programmed harvest within 0 to 200 feet for remainder of channel types - Consider all harvest methods, on a case-by-case basis, if riparian is greater than 200 feet
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16" + dbh within the no programmed harvest area
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in the no programmed harvest area while meeting objectives
Roading	- Locate roads in this area only when other reasonably feasible routes do not exist

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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 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	- Maintain or enhance aquatic biological productivity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Allow no activities causing floodplain destabilization - Restore stream and/or watershed condition - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species	- Maintain habitat capability for resident fish to the extent practicable - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Allow no activities causing floodplain destabilization	- Allow no activities causing floodplain destabilization - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
Harvest Control	- Allow no programmed harvest within active portion of fan or 60 windfirm feet of streambank, whichever is greater - All harvest methods are available on remaining inactive portion of fan while meeting objectives	- Allow no programmed harvest within active portion of fan or 25 windfirm feet of streambank, whichever is greater - Single tree selection 25 to 60 windfirm feet from streambank if not within active portion of fan - All harvest methods are available on remaining inactive portion of fan while meeting objectives	- Allow no programmed harvest within active portion of fan or 25 windfirm feet of streambank, whichever is greater - All harvest methods are available on remaining inactive portion of fan while meeting objectives
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16"+ dbh within the no programmed harvest area	- Harvest not to exceed 50% of the forest land of individual fan. Remaining forest land not to be harvested until created openings contain 50 foot conifer trees (approximately 30 yrs.)	
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in the no programmed harvest areas while meeting objectives		- Allow salvage in all areas while meeting objectives
Roading	- Special road construction techniques may be required to ensure fish passage		

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Stream and Lake Protection

Mixed Controlled Moderate Gradient Process Group

(Channel types B2, B3, D3)

Stream Class

	I	II	III
Objectives	- Maintain or enhance aquatic biological productivity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species	- Maintain habitat capability for resident fish to the extent practicable - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Maintain streambank and channel integrity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
Harvest Control	- Allow single tree selection within 60 windfirm feet of B2 channels - Allow single tree selection within 100 windfirm feet of B3 and D3 channels - Allow single tree selection on remainder of area	- Allow single tree selection within 25 windfirm feet of B2 channels - Allow single tree selection within 60 windfirm feet of B3 and D3 channels - All harvest methods are available on remaining area; final harvest should incorporate undulating harvest unit boundaries in the process group to limit the amount of continuous disturbance parallel to the streambank	- Allow single tree selection within 25 windfirm feet of B2 channels - All harvest methods are available on remaining area while meeting objectives - Management Area Wide Direction and Standards and Guidelines apply for remainder of Area
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in the no programmed harvest areas while meeting the objectives		- Allow salvage in all areas while meeting objectives
Roading	- Special road construction techniques may be required to ensure fish passage		

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, In order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Stream and Lake Protection

Large Low Gradient Contained Process Group

(Channel types C2, C5)

	Stream Class I	Stream Class II
Objectives	- Maintain or enhance aquatic biological productivity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species	- Maintain habitat capability for resident fish to the extent practicable - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow no programmed harvest	- Allow no programmed harvest within 25 windfirm feet of streams - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding is required to cross stream channel
Harvest Rate	- Allow no programmed harvest	- Management Area Wide Direction and Standards and Guidelines apply
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams	
Roading	- 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:

- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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)

	Stream Class		
	I	II	III
Objectives	- Maintain or enhance aquatic biological productivity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species	- Maintain habitat capability for resident fish to the extent practicable - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity	- Maintain streambank and channel integrity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
Harvest Control	- Selectively leave trees with crowns that do not extend above slope break - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding required to cross stream channel - Maintain near natural snag component of stand - No harvest within 25 feet of bank	- Selectively leave trees with crowns that do not extend above slope break - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding required to cross stream channel	- All harvest methods apply while meeting objectives
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams		
Roading	- 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: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Stream and Lake Protection

High Gradient Contained Process Group

(Channel types A1, A2, A4, A5, A6, A7, B7, D2, D7)

Stream Class

	III
Objectives	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow harvest to streambank while meeting objectives - Full suspension required to cross stream channel
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply - Harvest rate not to exceed 25% every 20 years of a 3rd order or larger watershed
Salvage	- Allow salvage while meeting objectives

NOTES:

- 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	- Maintain or enhance aquatic biological productivity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species	- Maintain habitat capability for resident fish to the extent practicable - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel integrity
Harvest Control	- Allow no programmed harvest - Allow incidental tree selection (e.g. bridge stringers)	
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply	
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Non-ground disturbing salvage permitted while meeting objectives (e.g. helicopter)	
Roading	- Roading is generally not appropriate in this process group	

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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	- Maintain or enhance aquatic biological productivity - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species	- Maintain habitat capability for resident fish to the extent practicable - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance
Harvest Control	- Allow unevenage management within 500 feet of lake, pond or L channel, or the extent of the management area, whichever is less - Any harvest method applies for remainder of area while meeting objectives	- Allow unevenage management within 100 feet of lakes and ponds less than 50 acres in size or L channels - Allow unevenage management within 500 feet, or extent of management area, whichever is less, of lakes greater than 50 acres in size - Any harvest methods apply for the remainder of the area while meeting objectives - Treat as adjacent Management Area if lake or pond is less than 5 acres in size	- Maintain a minimum of 50% of shading vegetation for temperature sensitive lakes or channels - Any harvest methods apply while meeting objectives - Treat as adjacent Management Area if lake or pond is less than 5 acres in size
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in lakes, ponds, or sloughs - Allow salvage in all other areas while meeting objectives		- Allow salvage in all areas while meeting objectives
Roading	- 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: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Stream and Lake Protection
Estuarine Process Group
(Channel types E1, E2, E3, E5)

Stream Class

	I
Objectives	- Maintain or enhance aquatic biological productivity - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change - Maintain/manage old growth characteristic habitat for riparian associated wildlife species - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance - Maintain streambank and channel Integrity
Harvest Control	- Allow no programmed harvest within 500 windfirm feet of E1 and E5 estuarine channels, or extent of management area, whichever is less - Allow no programmed harvest within 200 windfirm feet of E2 and E3 estuarine channels, or extent of management area, whichever is less - Allow unevenage management for remainder of area
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16"+ dbh within the no programmed harvest area
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams - Allow salvage in all other areas while meeting objectives
Roading	- Juvenile fish passages may require special attention - Generally, no roading should occur in estuarine wetland areas.

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, In order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

WATER AND SOIL

Soil Inventory: FW1111

A. Verify and define riparian areas on the ground during project level planning.

Watershed Resource Planning: FW112

A. Manage activities to protect water quality from degradation and to protect the aquatic and terrestrial riparian habitats, channel and streambanks, and promote floodplain stability.
   1. Identify soil and water quality requirements for the area during the environmental analysis for project-level activities.
   2. Apply Process BMP's to minimize effects from nearby logging and related land disturbance activities.
   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.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

A. Project design, analysis, and development of environmental documents for minerals activities, include watershed and fisheries coordination.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish habitat to the maximum extent feasible (Consult ANILCA, Sec.505 (a).)
   2. Apply timing restrictions to in stream construction as needed to protect fisheries habitat and mitigate adverse disturbance of stream sediments.

3. Use sedimentation traps as needed to mitigate adverse stream sedimentation and meet State and Federal water quality regulations.
4. Locate material sites and marine transfer facilities outside this management area 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.

LANDS

Special Use Administration (Non-Recreation): JL122

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 enhance associated fish or wildlife habitat, or (2) protect water quality.
   1. Analyze each new proposal on a case-by-case basis, using an interdisciplinary process, to determine probable effects.
   2. Apply standards and guidelines for transportation operations, when granting new rights-of-way.

B. This management area represents a Transportation and Utility System (TUS) "Avoidance Area." Transportation and utility sites and corridors may be located within this management area only after a search for TUS "windows" has been exhausted.

FACILITIES

Facilities Improvements: LF2

A. Permit only those facilities which do not significantly reduce the capability of the area to maintain fish or wildlife habitat or water quality.

TRANSPORTATION

Transportation Operations: LT1

A. Locate, design, and construct roads in a manner which will minimize effects on wildlife and fish habitat 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 in project plans an erosion control and stabilization plan for stabilizing all human-caused soil disturbances.
   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. 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. Location of roads parallel to fish-bearing streams and crossing fish streams will be permitted 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 stream course and as much undisturbed ground cover as possible shall be left between the road and the stream. Complete endhaul of waste material will be required where roads are located near fish streams when there is the probability of downhill movement of the material into the stream below. Fill will be placed into fish streams only when considered through the IDT process to be the best alternative.
4. Meet fish passage direction at all locations where roads cross fish streams (consult Forest-wide Direction and Standards & Guidelines for Fish Habitat Planning, CF112). 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 road-bed 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 waterfowl high use areas.

B. If the need to restrict access is identified during project interdisciplinary team review, roads will 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.

SPECIAL AREAS

Management Area SA

The emphasis of this management area is to provide for the inventory, maintenance, interpretation, and protection of the inherent characteristics and attributes of areas with cultural, scenic, geological, botanical, zoological, palentological or other special features which qualify them for designation as unique within the National Forest. Included in Special Areas 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, including those of glaciers, alpine, diverse vegetative patterns/coverage, etc. These areas could also be viewed for long durations from specific vantage points, such as developed recreation sites, trails, anchorages, travel routes, 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 the management area, 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 fully described and designed to perpetuate their special values.

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

Existing Designated Special Areas include: Mendenhall Glacier Recreation Area, Ward Lake Recreation Area, Walker Cove-Rudyard Bay Scenic Area, Admiralty Lakes Recreation Area, New Eddystone Rock Geological Area, Hubbard Glacier Geological area, Tracy Arm-Ford's Terror Scenic Area, and Fort Durham Historic Landmark. Other Special Areas may be designated during the implementation of this Plan (see Forest-wide Direction and Standards & Guidelines for Special Areas).

At-a-Glance . . .

Cultural resources	Cultural resources are evaluated for inclusion in the National Register of Historic Places, considered for nomination to the National Historic Landmark Program and interpreted to enhance the visitor's experience.

Recreation	Use and interpretation are developed when adequate provisions for protection are available and the resource is suitable for the activity.
Visuals	Integrity will be maintained in a natural-appearing visual condition that is compatible with the objectives for which the Special Area was established.
Fish	Enhancement projects maintain indigenous species present when the Special Area was established.
Subsistence	Subsistence use will be allowed in accordance with Federal and State Regulations.
Wildlife	Enhancement projects maintain indigenous species present when the Special Area was established.
Timber	Harvest authorized for development and maintenance of Special Areas. No harvest is scheduled.
Soil and Water	Maintain the natural conditions to perpetuate the unique qualities of the Special Area.
Minerals	Maintain the natural condition and perpetuate the unique qualities of the Special Area. Entry may be withdrawn if not consistent with the objectives for which the Special Area was established.
Facilities	Provide interpretive facilities that blend with and compliment the unique qualities of each area.
Transportation	Roads and trails will not be permitted unless they are compatible with the interpretive objectives for which the Special Area was established.
Fire	Managed to protect significant resources within or outside the Special Area.
Insect and Disease	Managed to allow natural ecological successions insofar as they do not endanger resources outside the Special Area.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	I-IV; VI-X
SPECIAL AREAS	SPL	All
RECREATION	AN	All
	AT	All
VISUALS	AV1, AV12	All
	AV11	I(B,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11	All
	GM12	I, III-VII
LANDS	JL	All
FACILITIES	LF2	All
TRANSPORTATION	LT111, LT122, LT212	All
	LT121	I, II
	LT214	I-IV
	LT22, LT23	All
FIRE	PF12	All
	PF2	I(A:4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: AC

Evaluation

A. Cultural Resource properties which are classified as Special 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. Designate and classify Special Areas through interdisciplinary analysis utilizing public comment, established procedures and regulation, individualized study and planning for each area to determine further standards and guidelines.
      * Review proposed Special Areas during Plan Revision.
   2. Establish the exterior boundary of the management area so that they are 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 management areas.
   4. Preserve and protect the physical and scientific integrity of the Special Area by preventing artificial disturbance.
   5. Provide interpretive devices to explain special features and protective regulations.
   6. Provide for recreation activities that enhance the interpretive experience while protecting the unique values for which the Special Area was designated.
   7. Prevent the use of Special Areas when national policy or sensitivity of unique values requires closure.

RECREATION

Recreation Use Administration: AN122

Recreation Management and Operations

A. Regulate use based on monitoring studies reflecting the effect of recreation activities on the unique features for which the Special Area is established.
   1. When monitoring indicates human use adversely affects the special features, regulate use to eliminate the adverse effects or reduce use to acceptable levels.
   2. 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)
   3. Public motorized travel is restricted 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 appropriate activities within the Management Area, unless specifically restricted to public use for resource protection. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the management area as indicated by the ROS inventory.

1. Provide the inherent 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 the Management Area.
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 management area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Maintain the visual integrity of the Special Area. Design activities to not be evident to the casual observer.
   1. Apply Forest-wide Standards and Guidelines for the Retention Visual Quality Objective.

FISH

Fish Habitat Planning: CF112

A. Provide for public interpretation of fish habitats, habitat improvement projects, and associated special fisheries conditions in appropriate Special Areas.

WILDLIFE

Wildlife Habitat Planning: CW112

A. Provide for public interpretation of wildlife habitats and associated special wildlife conditions in appropriate special areas.

TIMBER

Timber Resource Planning: ET112

A. Forested land is classified as unsuitable. Timber removal associated with development or maintenance of Special Areas is nonchargeable to the allowable sale quantity.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

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

Minerals and Geology Administration: GM12

Forest Lands Withdrawn from Mineral Entry

A. Special Areas will be withdrawn from mineral entry.
B. Claimants with claims located within this management area 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. Work with claimants to develop a plan of operations that adequately mitigates adverse impacts to management area objectives. Include

mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.

B. Apply appropriate Transportation and Facilities Forest-wide Direction and Standards & Guidelines to the location and construction of mining roads and facilities.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Issue only those permits which will perpetuate the unique values that led to the designation or proposal to designate the Special Area.
   1. Issue permits which will aid in the maintenance, enhancement, and protection of the inherent characteristics and attributes of the Special Area.
   2. Analyze each proposal on a case-by-case basis, using an inter-disciplinary process.

B. This management area represents a Transportation and Utility System (TUS) "Avoidance Area". Transportation and utility sites and corridors may be located within this management area only after a search for TUS "windows" has been exhausted.

Land Ownership Adjustments: JL26

A. Retain National Forest lands and acquire private inholdings through exchange or purchase from willing sellers, as opportunities arise.

FACILITIES

Facilities Improvements: LF2

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

TRANSPORTATION

Transportation Operations: LT1

A. Provide and manage a transportation system compatible with, or which will enhance the interpretation of, the unique values of the management area.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insect and disease.
   1. No action will be taken to control insects or diseases unless the outbreak threatens adjacent resources or would drastically alter the natural ecological processes within the Research Natural Area.

WILD RIVERS

Management Area WR

The emphasis of this management area is to maintain, enhance and protect the freeflowing 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 essentially natural and unmodified. Management maintains or enhances 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. The area 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 roads are absent except where required for access to private inholdings or permitted activities.

At-a-Glance . . .

Cultural resources	Sites are protected and available for scientific study. Interpretive information is provided by media located outside the management area.
Recreation	Use is managed to perpetuate essentially natural biophysical conditions and remoteness from mechanized human activities, except for brief, intermittent periods of time. Motorized recreation use is limited to access to the area or to designated sites within the area.
Visuals	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 can be accomplished without being visually evident.
Fish	Indigenous species are maintained. Habitat enhancement projects are limited to those that help achieve management area objectives or meet the objectives of the Interagency Regional Salmon Plans.
Subsistence	Opportunities are perpetuated consistent with the protection of the outstandingly remarkable values identified for the river.
Wildlife	Indigenous species are maintained. Habitat projects are designed to emulate natural conditions and appearance.

Timber	Silvicultural treatments are limited to control of insect & disease. Scheduled timber harvest does not occur.
Soil and Water	Watersheds are managed in a natural condition.
Minerals	Exploration and development are subject to regulations prescribed by the Secretary of Agriculture to protect the river. Existing and new activity must minimize surface disturbance, sedimentation, and visual impairment. Reasonable access will be permitted. Wild River segments are withdrawn from mineral entry within 1/4 mile of the river, subject to valid existing rights.
Facilities	Structures consist of those permitted for subsistence uses, Forest Service public use cabins, necessary boat and/or floatplane landings, and those needed for specially authorized activities.
Transportation	Facilities consist of infrequent constructed trails and trail bridges. Generally no roads are present. There is only infrequent presence of low-flying aircraft. Existing motorized subsistence activities may be allowed.
Fire	Natural fire may be allowed to burn under an approved prescription and supported by an Escaped Fire Situation Analysis. Human-caused fires are suppressed.
Insect and Disease	Control, prevention and/or suppression strategies may be applied to protect adjacent areas.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN111, AN121, AT12	All
	AN112	I(A,B,D); II(A)
	AN122	I, II(A,B)
	AT	I(B,C,D,E,F:1,3,5,6)
VISUALS	AV1	I(A-E)
	AV11	I(B,G)
	AV12	I(B,C)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET111-1	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM	All
LANDS	JL	All
FACILITIES	LF	None
TRANSPORTATION	LT	None
FIRE	PF12	I(A:2-4)
	PF2	I(A:1,3-5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines

RECREATION

Recreation Use Administration: AN122

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 segment and adjacent lands.

B. Provide for Primitive ROS experience opportunities and appropriate activities throughout the river segment, unless specifically closed to public use. 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 the management area. Maintain the capability of the management area to provide appropriate quality recreation opportunities on a sustained basis.

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 FS ROS Handbook)

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 established the specific management area, 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 using public in the appropriate conduct of activities and uses within wild river segments.

Wild River Monitoring: AN121

Ecological Considerations

A. Develop baseline ecosystem inventories and establish a systematic process to monitor change. Recognize that long-term ecosystem dynamics are the consequence of normal successional processes and patterns of periodic disruption by natural forces.
B. Effects of human activities and mechanized equipment will be determined through monitoring of the ecological and sociological conditions within the river segment.
C. Encourage scientific study of the Wild River that enhances the opportunities to:
    1. Provide ecological data and interpretations that identify:
        * What kinds of ecosystems are present
        * Distribution of ecosystems
        * Ecosystem composition and structure
        * Ecosystem dynamics including the rate and direction of succession
        * The key factors affecting (or likely to affect) the dynamics
    2. Will provide or enhance periodic monitoring of changes within and at the ecotones between key ecosystems.
    3. Identify a priority list of ecosystems which reflect the relative risk and consequences of change due to human activities; and will help identify management actions which are likely to be most effective in protecting ecosystems which are most vulnerable to human caused change.

Sociological Considerations

A. Social aspects of Wild River management must be meshed with the ecological. Establish analysis that:
    1. Helps refine desired social capacities of management areas based on desired attributes of wildland and water settings.
    2. Provides insight into the acceptability of given levels of group encounters; and the relative satisfaction of users with the evidence of human activities including trails, cabins, shelters, aircraft and other non-conforming structures and/or activities.
B. Encourage scientific study of the Wild Rivers that:
    1. Provide systematically documented information about the beneficial consequences of providing amenity goods and services from wildlands and waters.
    2. Provides a cross-check of the techniques being employed to measure wildland recreation values.
    3. Provides information on the role of physical environmental amenities in the overall quality of life.

VISUALS

Visual Resource Operations: AV1

A. Provide a natural appearing visual condition, where activities are not evident to the casual observer.
    1. Apply Forest-wide for the Retention Visual Quality Objective within the river corridor.
    2. Use materials compatible with colors and textures found in the characteristic landscape.

FISH

Fish Habitat Planning: CF112

Fish Enhancement

A. Consider the suitability of fisheries enhancement by evaluating: 1) effects on desired solitude levels due to 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; and, 3) the appropriateness of structures both in type and scale to the Recreational Opportunity Spectrum (ROS) setting.

Fish Habitat Improvement: CF22

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 management area character.

SUBSISTENCE

Subsistence: SUBS

A. Traditional wood gathering activities in Wild Rivers for subsistence uses will be allowed, subject to reasonable regulations to protect Wild River resources.
B. Monitor the effect of continued existing subsistence uses on the long-term condition and natural succession of Wild River ecosystems.

WILDLIFE

Wildlife Habitat Improvement: CW22

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

TIMBER

Timber Resource Planning: ET112

A. Forested land is classified as unsuitable.

WATER

Watershed Resource Improvements: FW2

A. Only undertake watershed improvements where deteriorated soil or hydrologic conditions create a threat to the values for which the river is managed. Utilize, 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.)

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include recreation coordination.
B. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: GM12

Wild Rivers

A. Forest lands within 1/4 mile of the river are withdrawn from mineral entry.
B. Claimants with claims located in areas withdrawn from mineral entry retain valid existing rights if such rights are established prior to the withdrawal date.
C. 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.
D. 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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 assess for economic and other purposes.
    5. Locate material sites and marine transfer facilities outside this management area 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 view points.
    8. Utilize colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
    9. Apply timing restrictions to in stream 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.

LANDS

Special Use Administration (Non-Recreation): JL122

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 authorize development of hydroelectric power facilities.
   3. Maintain the natural appearance and primitive character of the river area. Do not authorize flood control dams, levees, pipelines, or similar structures, in the channel or river corridor.
   4. Do not permit new roads or trails for access to special use activities within a narrow incised river valley. If the river valley is broad, do not permit roads or trails within 1/4 mile of the river bank.
   5. Allow minor existing structures to remain, unless they are incompatible with the primitive and natural values of the viewshed. Do not authorize new permanent structures except to achieve management objectives consistent with designation of the river, such as fish habitat enhancement.
   6. Transportation and utility corridors will be allowed in accordance with ANILCA, Title XI.
   7. This Management Area represents a Transportation and Utility Systems (TUS) "Avoidance Area". Transportation and utility sites and corridors may be located within this management area only after a search for windows has been exhausted.
   8. Allow motorized access in accordance with ANILCA Sections 811 and 1110 (b).

Land Ownership Administration: JL123

A. Retain National Forest lands. Acquire private inholdings as opportunities arise through donation, exchange, or purchase from willing sellers.

FACILITIES

Facilities Improvements: LF2

A. Locate administrative facilities and interpretive centers outside the management area. Recreation facilities in the river corridor are limited to trails, trail bridges, infrequent public recreation cabins and other minor, rustic improvements.

TRANSPORTATION

Transportation Operations: LT1

A. New roads are not permitted, except to access 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 management area 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.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insects and diseases.

1. Resource use and development programs and projects will include pest suppression and prevention methods which maintain the visual and recreation attributes of these areas and protect adjacent resource values.

SCENIC RIVERS

Management Area SR

The emphasis of this management area is to to maintain, enhance and protect the freeflowing 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 river corridor is managed to protect and enhance the outstandingly remarkable fish and wildlife, scenic, recreational, historic, cultural or ecologic 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 to remain. New development and uses must not degrade the values which qualify the river to be considered eligible. Recreation facilities of a rustic nature, including boat access, cabins, access roads leading to the river and trails are appropriate. Management of the river maintains a visual quality objective of retention in sensitive visual foreground and middleground areas as seen from the river, its banks and from recreation sites. In other portions of the corridor timber harvest must meet at least a partial retential visual quality objective. The area may include landscapes in a variety of visual conditions; however, the intent is to provide a waterway and associated shorelines where activities are not visually evident to the casual observer or are subordinate to the characteristic landscape.

The management area reflects public use where there are high expectations for scenic quality associated with an essentially natural appearing environment and a free-flowing river. Motorized use within the area may be permitted for boats, aircraft, snowmachines, construction and maintenance of needed facilities, and established subsistence uses. Motorized land travel for recreation purposes is allowed but may be restricted. The exterior boundaries of the Management Area are established to assure adequate protection for the inherent conditions which qualified a river segment for consideration.

At-a-Glance . . .

Cultural resources	Interpretation of sites could occur in this management area. Known cultural sites, adjacent to activities, would be protected following applicable Federal and State Regulations.
Recreation	Activities will be designed to be compatible with the scenic requirements of this management area. Experiences may range from those of isolation to those influenced by activities of humans in a modified setting.
Visuals	The landscape character of the area will closely resemble that of a naturally-evolving scene. Management activities in the foreground and middleground distance as seen from the river, roads or recreation facilities will not be evident to the casual observer.
Fish	Fish habitat, including its protection and rehabilitation, is maintained. Projects may be identified and implemented to enhance habitat conditions.
Subsistence	Subsistence activities occur in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.

Wildlife	Management will emphasize maintenance of a wide variety of vegetative conditions, including early, middle and late successional stages. Habitat improvement may occur and would be designed to be visually compatible with the intent of the management area.
Timber	Harvest activities in the corridor will be limited and will utilize silvicultural treatments which will ensure compatibility with visual objectives of the area. Intensity of harvest will be dependent upon the landscape's ability to visually absorb the proposed activity.
Soil and Water	Emphasis will be to maintain soil cover, minimize slope failure and reduce the degree of risk and potential effects from mass wasting associated with management activities.
Minerals	Lands are open to mineral entry but may be subject to regulations prescribed by the Secretary of Agriculture to protect the river. Existing and new activity must minimize surface disturbance, sedimentation, and visual impairment. Reasonable access will be permitted.
Lands	Special use structures may be present if consistent with management area intent.
Facilities	Authorized structures will be designed to be compatible with form, line and color found in the characteristic landscape.
Transportation	Activities potentially visible from sensitive waterways and travel routes will be designed to be compatible with elements found in the characteristic landscape.
Fire	For wildfires, appropriate suppression measures will be utilized to maintain the scenic quality of the management area. Landscape rehabilitation may include slash treatment adjacent to travel corridors, supported by an approved prescribed fire plan.
Insect and Disease	Integrated pest management principles are applied to the extent necessary to maintain scenic quality of the area.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN, AT	All
VISUALS	AV1, AV12 AV11	All I(C,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FORESTS	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT111, LT122, LT212 LT22, LT23 LT121 LT214	All All I,II I-IV
FIRE	PF12 PF2	I(A:2-4) I(A:1,3-5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the management area as indicated by the ROS inventory.
   1. Provide the inherent 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 the management area.
   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 management area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Maintain or enhance the visual character of the river segments which qualified the river as a scenic river.
B. Design activities to be subordinate to the characteristic landscape, utilizing existing form, line, color and texture found in the landscape. Travelways including the river are classified as Sensitivity Level 1.
   1. Apply Forest-wide Direction and Standards & Guidelines for the Retention Visual Quality Objective in the foreground and middleground areas as viewed from the river, other travelways and recreation sites.
   2. Other areas will not exceed the Forest-wide Direction and Standards & 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 is acceptable.
   3. Use materials compatible with the color and textures found in the characteristic landscape.

FISH

Fish Habitat Planning: CF112

A. Provide for public interpretation of fish habitats, habitat improvement projects and special fisheries conditions in appropriate scenic rivers.

SUBSISTENCE

Subsistence: SUBS

A. Traditional wood gathering activities in Scenic Rivers for subsistence uses will be allowed, subject to reasonable regulations to protect Scenic River resources.
B. Monitor the effect of continued existing subsistence uses on the long-term condition and natural succession of Scenic River ecosystems.

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize recreation and visual objectives.

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; management area objectives will have next priority.

Timber Sale Preparation: ET114

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) 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. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape. The following criteria apply to Partial Retention:

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash Life
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	20%	20%	no limit

2. 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 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.

WATER AND SOIL

Watershed Resource Improvements: FW2

A. Only undertake watershed improvements where deteriorated soil or hydrologic conditions create a threat to the values for which the river is managed. Utilize, 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.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include recreation coordination.
B. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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 management area 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 in relation to the surrounding landscape as seen from sensitive view points.
    8. Utilize colors that simulate those found in the characteristic landscape. Avoid use of reflective materials in project facilities.
    9. Apply timing restrictions to in-stream 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.

LANDS

Special Use Administration (Non-Recreation): JL122

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 authorize development of hydroelectric power facilities.
    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. Limit any concentrations of habitation to relatively short reaches of the river corridor.
6. Transportation and utility corridors will be allowed in accordance with ANILCA, Title XI.
7. This management area represents a Transportation and Utility Systems (TUS) "Avoidance Area". Transportation and utility sites or corridors may be located within this management area only after a search for "windows" has been exhausted.
8. Allow motorized access in accordance with ANILCA, Sections 811 and 1110 (b).

Land Ownership Administration: JL123

A. Retain National Forest lands. Acquire private inholdings as opportunities arise through donation, exchange, or purchase from willing sellers.

FACILITIES

Facilities Improvements: LF2

A. Allow administrative facilities and modest public information centers in the management area provided they are not readily visible from the river.

TRANSPORTATION

Transportation Operations: LT1

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 area.
   2. Locate and design roads which, except for short segments or at bridge crossings, are not evident to the casual observer travelling 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 management area during development of road management objectives.

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insects and diseases.
   1. Resource use and development programs and projects will include pest suppression and preventions methods which maintain the visual and recreation attributes of these areas and protect adjacent resource values.

RECREATION RIVERS

Management Area RR

The emphasis of this management area is to maintain, enhance and protect the the essentially freeflowing 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. The are 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; however, the intent is to provide a waterway and associated shorelines where activities and structures may be dominate, but harmonize and blend with the generally natural-appearing environment to provide a pleasing setting for recreation activities. This management area reflects public use where the interaction between users may be moderate to high with evidence of current and past use prevalent. Facilities and roads are designed for conventional motorized vehicles, boats and aircraft.

There are high expectations for quality recreation opportunities associated with an essentially natural-appearing river. Motorized use within the area may be permitted for boat, aircraft, snowmachines, construction and maintenance of needed facilities, and established subsistence uses. Motorized land travel for recreation purposes allowed but may be restricted. All scheduled resource management activities are integrated in such a way that the recreation and water quality values remain paramount. The exterior boundaries of the Management Area are established to assure adequate protection for the inherent conditions which qualified a river segment for consideration.

At-a-Glance . . .

Cultural resources	Interpretation of the natural environment and cultural sites found within, or viewed from, the area is provided to enhance the visitor's experience.
Recreation	Use and activities are managed for safety and convenience of the user; protection and interpretation of the river resources; and compatible with the scenic requirements of the management area. Experiences may range from those of moderate isolation to those influenced by man in a modified setting.
Visuals	All management activities within the area are integrated in such a way that the natural environment and landscape characteristics remains predominant. Other resource activities and structures remain visually subordinate or harmonize and blend with the characteristic landscape. Visual enhancement activities are aimed at maintaining diversity and harmony in the landscape.
Fish	Fish habitat conditions are maintained or enhanced. Projects may be identified and implemented which create or enhance angling opportunity or that help meet the objectives of the Interagency Regional Salmon Plans.
Subsistence	Subsistence use occurs in accordance with Federal and State Regulations and may be seasonally prevalent throughout the area.

Wildlife	Emphasis is on maintaining healthy and productive habitat conditions for indigenous species and enhancing viewing opportunities.
Timber	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 is performed to maintain the utility and attractiveness of both existing recreation sites and to protect the inherent qualities of proposed recreation sites.
Soil and Water	Land use activities are carried out in a manner which avoids adverse soil impacts and protects water quality. Existing low dams, diversion works, and flood control works will remain; but new structures and hydroelectric power facilities are prohibited.
Minerals	Exploration and development is subject to regulations prescribed by the Secretary of Agriculture to protect the river. Existing and new activity are carried out in a manner that minimizes surface disturbance, sedimentation, and visual degradation. Reasonable access will be permitted.
Facilities	Structures are located and designed to compliment and facilitate management of the area.
Transportation	Conventional motorized use is provided for in the design, and location of roads and facilities. Ample opportunities for non-motorized recreation activities and user safety may be provided for through the restriction of motorized use to designated routes and areas. Both motorized and non-motorized trail opportunities are provided.
Fire	Fires are normally suppressed, but may be allowed to burn under an approved prescription and supported by an Escaped Fire Situation Analysis to improve wildlife habitat conditions or for insect and disease control.
Insect and Disease	Integrated pest management principals are applied during project implementation to improve the health of the vegetative cover.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
SPECIAL AREAS	SPL	All
RECREATION	AN, AT	All
VISUALS	AV1, AV12 AV11	All I(B,C,G)
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
OLD-GROWTH FOREST	OLD	All
TIMBER	ET	All
AIR	FA	All
RIPARIAN	RIP	All
WETLANDS	WET	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	All
TRANSPORTATION	LT111, LT122, LT212 LT22, LT23 LT121 LT214	All All I,II I-IV
FIRE	PF12 PF2	I(A:2-4) I(A:1,3-5)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

RECREATION

Recreation Use Administration: AN122

Recreation Settings

A. Continue to provide the spectrum of outdoor recreation opportunities in accordance with the inherent capabilities of the management area as indicated by the ROS inventory.
   1. Provide the inherent 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 the management area.
   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 management area to provide appropriate quality recreation opportunities on a sustained basis.

VISUALS

Visual Resource Operations: AV1

A. Design activities to be subordinate to the characteristic landscape, utilizing existing form, line, color and texture found in the landscape.
   1. Apply Forest-wide 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 is acceptable.
   2. Use materials that are compatible with colors and textures found in the characteristic landscape.

FISH

Fish Habitat Planning: CF112

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

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of environmental documents for timber activities will emphasize recreation and visual objectives.
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; management area objectives will have next priority.

Timber Sale Preparation: ET114

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) 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. *Partial Retention* - The partial retention visual quality objective requires that, although timber harvest activities are evident, they must remain subordinate to the characteristic landscape. The following criteria apply to Partial Retention:

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance	Height to Adjacent Mature Stand	Logging Slash Life
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	20%	20%	no limit

2. 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 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.

SOIL AND WATER

Watershed Resource Improvements: FW2

A. Only undertake watershed improvements where deteriorated soil or hydrologic conditions create a threat to the values for which the river is managed. Utilize, 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.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of environmental documents for minerals activities, include recreation coordination.
B. Prepare geologic, paleontologic, and historic mining interpretations where appropriate.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish 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 view points.
    5. Utilize colors that simulate those found in the characteristic landscape.
    6. Apply timing restrictions to in stream 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.

LANDS

Special Use Administration (Non-Recreation): JL122

A. Permit only those uses consistent with management objectives. (Consult the Land and Resource Management Planning Handbook)

1. Allow existing low dams, diversion works, rip rap, and other minor similar water structures, to remain, providing the waterway remains generally natural in appearance. Prohibit new structures of this nature.
2. Do not allow development of hydroelectric power facilities.
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.
5. Permit new structures, as necessary and appropriate.
6. Transportation and utility corridors will be allowed in accordance with ANILCA, Title XI.
7. This management area represents a Transportation and Utility Systems (TUS) Avoidance Area. Transportation and Utility Sites or Corridors may be located within this management only after a search for "Windows" have been exhausted.
8. Allow motorized access in accordance with ANILCA, Sections 811 and 1110 (b).

Land Ownership Administration: JL123

A. Retain National Forest lands. Acquire private inholdings as opportunities arise through donation, exchange, or purchase from willing sellers.

FACILITIES

Facilities Improvements-LF2

A. Allow the location of administrative facilities and public information centers along the river shoreline providing they do not have adverse effects on the values the management area is intended to protect.

TRANSPORTATION

Transportation Operations: LT1

A. Develop and manage the transportation system in a manner compatible with Recreation River classification.
   1. Allow the construction of Forest Development Roads which will create a condition in which the river is 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, roads will be designed to accommodate passenger cars and will be open to public use, although traffic controls may be used during periods of high use (i.e., design to Traffic Service Level C or above).

INSECT AND DISEASE

FPM Suppression-Federal Lands: QC124-1

A. Suppression of forest insects and diseases.
   1. Resource use and development programs and projects will include pest suppression and preventions methods which maintain the visual and recreation attributes of these areas and protect adjacent resource values.

APPENDIX G

APPENDIX G

FOREST-WIDE DIRECTION

AND

STANDARDS & GUIDELINES

for the

Tongass National Forest

Land and Resource Management Plan

Revision

Tongass National Forest

June 1990

TABLE OF CONTENTS

HOW TO USE APPENDIXES F & G

Management Prescriptions and Forest-wide Direction and Standards & Guidelines

What is Forest Planning? Let's compare it to something that is familiar: land use zoning in your community. In your 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. Many uses may apply to the same zone, but they all are not required to occur there. 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 (*management areas*) are zoned (*allocated*) for different uses. The document which describes the uses to which the land may be put and the activities which may occur there is called a *prescription*. Since these prescriptions are applied to management areas, they are called *management area prescriptions*. Each management prescription gives general direction on what may occur in a management area, the standards for accomplishing each activity, and the guidelines on how to go about accomplishing the standards. These are called the "*Direction and Standards and Guidelines*." Some of this direction and standards and guidelines may be common to many, but not necessarily all, areas of the Forest. These are called *Forest-wide Direction and Standards & Guidelines*.

Direction and standards & guidelines are designed so that all activities are integrated to meet land allocation objectives. Standards & guidelines represent the upward limitations within which all activities are carried out. Standards and guidelines also represent minimum achievement levels, but do not limit achievements, higher objectives may always be attained. For instance, if a management area 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*). Direction and 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.

Placement of management area boundaries is not meant to require exact on-the-ground survey at the Forest Plan level. During site-specific project area planning, such as a timber sale or recreation site development, the actual placement of the boundary for on-the-ground management may vary from the mapped location. Any management area boundary location disputes will be handled on a case-by-case basis during project planning and environmental analysis.

How to use these appendixes

Find the area of the Forest you are interested in on an Alternative map. Match the color of the area of interest with the color on the map legend and you'll find the name of the management area prescription. Go to the management area prescription in *Appendix F*.

A management area prescription is described in three parts:

1. Goals and a brief overview.

2. A table which refers to the *Forest-wide Direction and Standards & Guidelines* that apply. *Forest-wide Direction and Standards & Guidelines* are found in *Appendix G*. The order of the resources is shown in the table of contents.

3. The specific direction, called *Management Area Direction and Standards & Guidelines*, which apply to the management area. The *Management Area Direction and Standards & Guidelines* are grouped by resource, following the order established in the table. Resource codes are the same as those used in the *Forest-wide Direction and Standards & Guidelines*.

The table on pages F-3 to F-6 of appendix F will assist the reader in understanding the differences between management areas (*land use zones*). It gives a brief summary of the management areas. All the applicable resources are not included.

CULTURAL RESOURCES
Forest-wide Direction and Standards & Guidelines

Cultural Resource Activities: AC

I. *Management*

A. The Forest shall maintain a cultural resource management program supervised by qualified professionals 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 implementing regulations. Consult 36 CFR 800 and FSM 2300.

B. Coordinate management of cultural resources with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. 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.

II. *Overview*

A. Update the Tongass Cultural Resource Overview concurrently with the Forest Plan to address the management situation and planning needs of the Forest. Information from the Overview and from other sources, shall be used to develop a framework for the identification, classification and evaluation of known and predicted properties in the Forest.

III. *Planning*

A. Develop a cultural resource management assessment that will provide a framework for the update of the Overview and Plan Resource Implementation Schedule, 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 allocation

1. The cultural resource assessment shall be updated annually, for budget implementation.
2. The assessment shall include:
   * An overview of new data.
   * An identification of areas requiring intensive site inventory, including non-project areas of the Forest.
   * An 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 significant cultural resources from vandalism, other human depredation, 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 monitoring 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. In each project area, prior to implementation, cultural resource sites shall be marked for protection.
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. The Forest Supervisor shall immediately consult the State Historic Preservation Officer. 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 formal "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 shall 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 shall be 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. Document all discovered sites and maintain 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 shall be located solely in a removable appendix, which shall not be 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. Appendices (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. In questionable cases, the Cultural Resource Specialist shall recommend to the Forest Supervisor that the State Historic Preservation Officer be consulted. 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 areas.
   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. Inventory of project specific areas shall be completed 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. Develop and maintain an inventory of sites identified by Native Americans to have religious or traditional significance in consultation with Native Americans.

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 1,000 feet in elevation and with slope angles of 30 percent or less.
   3. *Low*: All areas between 100 and 1,000 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. *Evaluation*

A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, interpretation and allocation within the management area.
   1. Identify areas requiring intensive inventory/survey, including non-project areas.
   2. Identify cultural properties to be nominated to the National Register of Historic Places.
   3. Identify, classify and evaluate known cultural resources.
   4. Identify cultural properties that require stabilization or other protective measures.
   5. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

VI. *Evaluation - Assessment 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 their eligibility for the National Register of Historic Places and the effect of proposed activities on a 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 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. Consult the Forest Service Manual 2300.
   1. Designate and classify Special Areas through interdisciplinary review utilizing 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 Areas during Plan Revision.
   2. Establish the exterior boundary of the management area so as to 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 management areas.

C. Evaluate all cultural resources 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 shall be 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 for 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 disintered 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. Significant and suitable cultural resource sites should be managed so as 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 shall be based upon accessibility, feasibility for protection, condition of the property, compatibility with other management activities, and value to the public.
   2. Areas shall enhance suitable cultural values through interpretation, restoration, and the publication of reports, brochures or films, videos, and slide programs. Interpretive services and facilities shall be compatible with the nature, quality, and integrity of the resource selected for enhancement.
   3. Areas shall 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. Cultural resources shall be managed 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. *Monitoring*

A. Assess cultural site condition, interpretation potential, and restoration and stabilization needs. Utilize monitoring data to develop or test predictive models, determine the effectiveness of mitigation measures, and provide information for the preparation of the WO Annual Report on the condition of National Register eligible sites and the actions taken to ensure their 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 of damage, recentness of damage;
      * Initial assessment of the scientific and interpretive values;
      * Make suggestion for protection, 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 of damage, 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 by 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 individuals should be aware of the laws and regulations pertaining to the protection or disturbance of cultural resources. All legal methods will be utilized 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.

Management Activities: SPL

I. *Special Area Inventory and Analysis*

A. The Forest shall identify special areas during project planning, and develop a special areas inventory prior to the next Forest Plan Revision. Special areas have unique features or values including archaeological, historical, scenic, geological, botanical, zoological and paleontological. Consult FSM 2300.

1. Consider areas with unique values and evaluate as potential special areas during project-level environmental analysis. Criteria for identifying and evaluating special areas should include:
   * Represents an outstanding example of local, regional or national significance.
   * Best illustrates the resource represented.
   * Best represents a rare type of resource.
   * Contains a large number of high-quality examples of different natural resources.
   * Best represents scientific value, discovery or concept, possesses an exceptional record of research, or offers unusual opportunities for public interpretation of natural history.
2. Compile a Forest-wide inventory of potential special areas prior to the next Forest Plan Revision. Include a description, map and discussion of special features for each area.
3. Recommendations for designation of special areas shall be based on the following priorities:
   * Areas that may be adversely affected by proposed land management activities.
   * Areas undergoing deterioration due to vandalism, public use, erosion, or other forces.
   * Areas of known significance that have been identified, but not previously evaluated.
   * Other areas.

II. *Interpretation*

A. Identify and develop appropriate interpretive material and activities for special areas that relate the area's unique features to local, regional and national significance.

1. Special areas should be managed to realize their recreational and educational values to the public. Interpretive programs should include in-service funding as well as opportunity for establishing partnerships with the private sector.
2. Highlight significant values through interpretation, restoration, and the publication of reports, brochures, films, videos, and slide programs. Interpretive services and facilities shall be compatible with the nature, quality, and integrity of the special area.
3. Cooperate with museums, universities, and other recognized institutions, agencies, and knowledgeable persons in planning exhibits and providing opportunities for scientific use.

III. *Protection*

A. Manage inventoried special areas to ensure that the 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 exclude management activities until a determination of future status and management has been made.
2. Inspect inventoried special areas on a regular basis to prevent vandalism, natural destruction, or project activities with potentially adverse effects.

RECREATION
Forest-wide Direction and Standards & Guidelines

Recreation Resource Inventory: AN111

I. *Recreation Resource Opportunities*

A. Conduct, as needed, and maintain an inventory of the recreation resource opportunities throughout the Forest.

1. Use the Recreation Opportunity Spectrum (ROS) system. (Consult FSM 2310; and National/Regional ROS Handbooks)
2. Update existing ROS inventories as a part of specific project planning and implementation 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: AN112

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 will 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. Compliment 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 scheduled 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 appropriate recreation opportunities, services and facilities.
   4. Verify the basis for scheduling Forest Service recreation-related projects and maintaining appropriate recreation settings on National Forest lands.
   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 project planning and scheduling, search for and identify opportunities to enhance recreation opportunities and services. Particular attention will be given to opportunities and settings which are in relatively short supply within the practicable travel distance of affected communities and service centers.

   Identify opportunities to provide for the spectrum of recreation activities, opportunities and services where desirable to meet local or Forest-wide recreation demands. Consider such opportunities as:
   * Freshwater fishing and access.
   * Ice fishing.
   * Fuelwood gathering.
   * Wildlife viewing places.
   * Interpretation of natural or cultural resources.
   * Interpretation of management activities.
   * Snowmobile and/or cross-country skiing places 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, bikers, and boaters.

   Assure that the integrity of critical physical and social ROS setting factors are maintained for each planned recreation place and associated facilities.
   1. Consult FSM 2300 and Internal Service-wide Handbooks.

B. Project planning and design will consider valid substitutes for recreation places, and appropriate activity opportunities, whenever existing areas and opportunities may be displaced by scheduled resource management actions. Substitute places should meet the following criteria:
   1. Serve the same community or service center as the displaced opportunity.
   2. Provide essentially the same choice of activities, settings and resource attributes.
   3. Provide essentially the same capacity for use.

4. Be acceptable to the affected segments of the public.

Recreation Resource Monitoring: AN121

I. *Forest-wide Monitoring*

A. Implement the Forest-wide monitoring plan to assess accomplishment of recreation management goals and objectives.

B. Evaluate ROS classes, recreation places, and their associated sites and facilities to determine the effects of implementing the Forest Plan direction and standards and guidelines. (Consult the Monitoring Plan).

1. Evaluation is designed to:
   * Assess on-the-ground implementation of all resource management activities for actual or potential effects on recreation setting factors to determine if integrated management objectives have been met and are effective.
   * If objectives have not been met, or results appear to be degrading setting conditions, determine and implement mitigation measures.
   * Use results of monitoring to direct future project design.
2. Coordinate with State and Federal agencies and the Forestry Science Laboratory in maintaining a program of research which will aid in assessing the effects of human-use and resource management activities on recreation settings.

II. *Project Monitoring*

A. Evaluate all resource management projects to determine whether recreation objectives have been met.

1. Evaluate effects of resource project activities to determine the effects on overall ROS settings within and adjacent to the project area. Determine the amount and direction of change in ROS acreage, if any.
2. Assess the effects of resource projects and activities on the diversity and quality of recreation settings and activity opportunities within and adjacent to the project area. Intensity shall be governed by the type of project, the risk of degradation to opportunity settings, and the relative abundance or scarcity of the recreation setting or opportunity affected.
3. To the extent practicable provide for the mitigation of setting and activity opportunities which may be foregone due to project activities.
4. Assure that substitute settings or activity opportunities are "real" substitutes that provide adequate mitigation for the user groups and/or communities impacted.

Recreation Use Administration: AN122

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 NAS JL122-Cabins.

B. New recreation-related cabins shall only be allowed upon a determination that location and use is compatible with the objectives of the Management Area in which it would be located.

C. No permit shall be issued for the construction of a private recreation cabin.

III. *Outfitter/Guide Operations*

A. Provide 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 Management Areas. The services of outfitter and guides should facilitate the use, enjoyment, understanding, and appreciation of National Forest recreation settings.

B. Manage Outfitter and Guide operations as partnerships with the Forest Service; and as a way to nurture and encourage assistance and support for attaining the objectives of the Management Area; and to assist the Forest Service in the development of increased public understanding and appreciation of 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 Guide and Outfitter special use permits in accordance with the direction in FSM 2720.

1. Outfitting and guide operations should not require permanent improvements occupying National Forest lands. Encourage operations which require only temporary facilities easily removable 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 composition and structure.
   * Existing or proposed operations and activities are appropriate for the specific ROS settings within the Management Area.
   * 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 management area.
   * 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. Provide outfitting and guide operations through the issuance of priority use permits whenever possible, supplemented with temporary permits. Assign priority use and temporary use permits within a Management Area based on the following:
   * Allocate no more than one-half the appropriate capacity of the Management Area to outfitter/guide operations. (Refer to the desired future condition for the Management Area 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 fully 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 inherent capabilities of the National Forest as indicated by the ROS inventory.

In Management Areas allocated to specific recreation settings and opportunities manage public use and other resource project activities in accordance with established direction. Maintain or reach the desired recreation setting condition in accordance with the Forest Plan Implementation schedule.

In Management Areas where other resource management activities are given precedence, 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 Management Area.

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 Management Areas 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 receive heavy aircraft travel. Provide access to recreation activity opportunities and facilities within the area. Adopted visual management objectives do not exceed maximum modification, but are primarily Partial Retention or Modification in the foreground of 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 receive heavy small aircraft travel. Provide access to recreation activity opportunities and facilities within the area. Adopted visual management objectives do not exceed Modification, but are primarily Retention, and Partial Retention in the foreground of sites and travel routes.
3. Provide *Roaded Modified* recreation opportunities and appropriate facilities within cutover areas with a VQO of Maximum Modification: 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, fisherman 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 maintained for passage by high clearance and four-wheeled drive vehicles (Maintenance Level 2), open to public use, and provide access to appropriate 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 infrequently traveled waterways, or roads and trails open to motorized recreation use, and clearcut 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 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 a 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 in implemented. 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 where information is provided users can enhance or detract from the desired experience. Generally, on-site information is appropriate at the developed end of the spectrum while off-site sources are better accepted at the primitive end. Information should always be factual and timely.

   Irresponsible user behavior (reflecting inappropriate social norms and land use ethics) can affect the recreational experiences and settings throughout the spectrum. Resolving behavioral problems should be given a high priority in managing recreation places.
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 management area?
   * 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 management area.
6. *Social Encounters* - Social encounters refers to the number and type of other recreationists 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, where, and the actions needed for control. In general, user expectations are for minimum signs of human-caused alterations at the primitive end of the spectrum and more acceptance of alterations near the urban end.

   Recreation use can also affect air, water resources and wildlife habitats, even to the point of displacement of species. Indicator species are an important means of monitoring recreation related impacts on fish and wildlife populations. (Consult Forest Service ROS Handbooks)
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.

LEGEND FOR THE FOLLOWING CHARTS

ROS SETTING INDICATORS

Fully Compatible:	Conditions that meet or exceed the norm.
Norm:	Normal conditions found in the setting.
Unacceptable:	Unacceptable conditions under any circumstances for a given setting.

DEVELOPMENT SCALE

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 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, extensive barrier work, etc.) is done to reduce visitor impacts.

ROS Class
Rural

Setting Indicators	Norm/Fully Compatible	Unacceptable
Visual Quality of Non-recreation Activities	Not to exceed Modification in the foreground and Maximum Modification in middle ground as seen from Sensitivity Level I travel routes.	Unacceptable Modification (VQM handbook) in foreground or middle ground
Access	All forms of access and travel modes may occur within the Management Area or designated ROS zone	Lack of Traffic control facilities and signing
Remoteness	Remoteness is of little importance, and moderate to high concentrations of people and sights and sounds of human activity are acceptable when not of a continuous nature.	Continuous high levels of use or human caused sounds
Visitor Managment	On-site regimentation and controls are obvious. Control facilities harmonize with natural/exotic landscaping. Information facilities may be complex and dominant on developed sites.	Use of inappropriate or hostile traffic control structures or signs
On-site Recreation Development	All development levels are appropriate and maintained at intended standards necessary to accommodate the types and levels of use anticipated for the site and area.	Sites which are allowed to deteriorate to unsafe or unsightly condition
Social Encounters	User may meet more than 20 other parties per day on trails and in dispersed areas. Developed sites often are at full capacity, but do not exceed 20% of the design capacity more than one half the season of operation.	Site and/or area capacities exceeded more than 20% for more than half the season
Visitor Impacts	Visitor caused impacts 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.	Not applicable

ROS Class
Roaded Natural

Setting Indicators	Norm/Fully Compatible	Unacceptable
Visual Quality of Non-recreation Activities	Not to exceed a visual quality objective of Partial Retention. Existing visual conditions ranging from Preservation through Retention are fully compatible and encouraged.	Existing visual condition of Modification
Access	All forms of access and travel modes may occur within the Management Area or designated ROS zone which are compatible with intended activities. Zones of non-motorized use may be established for resource protection and user safety/comfort.	Lack of Traffic control facilities and signing
Remoteness	Remoteness of little importance, but low to moderate concentrations of human sights and sounds are preferred.	Continuous high levels of human use and/or sounds
Visitor Management	On-site regimentation and controls are obvious. Control facilities harmonize with the natural environment. Visitor information facilities are not elaborate or complex.	Highly sophisticated visitor information facilities. Use of military-type control structures
On-site Recreation Development	Facilities and structures generally do not exceed Level III standards and are maintained at intended standards necessary to accommodate the types and levels of use anticipated for the site and area.	Sites which exceed Level IV
Social Encounters	User meets less than 20 other parties per day on trails and dispersed areas. Developed sites often are at full capacity but do not exceed 20% of the design capacity more than one half the season of operation.	Site and/or area capacities exceeded more than one half the operation season
Visitor Impacts	Visitor caused impacts 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 appearing landscape and appropriate for the site and setting.	Not applicable

ROS Class
Roaded Modified

Setting Indicators	Norm/Fully Compatible	Unacceptable
Visual Quality of Non-recreation Activities	Not to exceed a visual quality objective of Maximum Modification. Apply appropriate visual management techniques in the foreground of sensitive travel routes and recreation sites to soften effects of the maximum modification conditions.	Unacceptable Modification existing visual condition anywhere
Access	All forms of access and travel modes may occur within the designated ROS zone which are compatible with intended activities. ORV use on designated routes or areas is encouraged.	Dominating Traffic control facilities and signing.
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 is preferred.	Continuous high levels of people or human caused sounds
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.	Highly sophisticated visitor information facilities. Use of military-type control structures
On-site Recreation Development	Facilities and structures generally do not exceed Level II standards and are maintained at intended standards necessary to accommodate the types and levels of use anticipated for the site and area.	Sites which are allowed to deteriorate to unsafe or unsightly condition.
Social Encounters	User meets less than 10 other parties per day on trails and dispersed roaded areas. Few, if any, other parties are visible at dispersed campsites.	Developed site capabilities are exceeded more than half the use season
Visitor Impacts	Visitor caused impacts noticeable, but not degrading to basic resource elements. Site hardening may be dominate at campsites and parking areas, but is in harmony with, and appropriate for back-country roaded setting.	Not applicable

ROS Class
Semi-Primitive Motorized

Setting Indicators	Norm/Fully Compatible	Unacceptable
Visual Quality of Non-recreation Activities	Not to exceed a visual quality objective of Partial Retention. Existing visual conditions ranging from Preservation through Retention are fully compatible and encouraged.	Any visual condition which exceeds Partial Retention of the characteristic landscape
Access	Travel on motorized trails and TSL 4 roads. Less than 20% of the road mileage within the Management Area or designated ROS zone is TSL 3. Road density is less than one mile per square mile within the Area or zone. Off road snowmachine travel on snow may occur.	> 20% total area road mileage is TSL 3. > 1 mile/square mile road density
Remoteness	Nearby sights or sound of human activity is rare, but distant sights or sounds may occur. Setting is located more than 1/2 hour walk or paddle from TSL 3 roads or other high use travel routes. Perception of remoteness is moderate.	Continuous high levels of people or human caused sounds and travel
Visitor Management	On-site regimentation and controls are few. Control facilities are appropriate for the predominating natural appearing setting. Visitor information facilities may be used to interpret cultural and natural resource features, but are not elaborate and harmonize with the setting.	Obvious and inappropriate controls and regimentation Sophisticated information facilities
On-site Recreation Development	Facilities and structures generally do not exceed Level II standards and are maintained at intended standards necessary to accommodate the types and levels of use anticipated for the site and area.	Development Level IV or V sites and facilities
Social Encounters	User meets less than 6 - 10 parties per day on trails and roads. No other parties are within sight or sound of dispersed campsites. 1-3 other parties within sight or sound of campsites is acceptable only during peak season use.	Meet > 10 parties/day during trip. > 3 other parties at campsites
Visitor Impacts	Visitor caused impacts may be noticeable, but not degrading to basic resource elements. Limited site hardening may be used for resource protection, but is in harmony with, and appropriate for the natural appearing back-country setting.	Visitor caused impacts an/or site hardening which dominate the setting.

ROS Class
Semi-Primitive Non-Motorized

Setting Indicators	Norm/Fully Compatible	Unacceptable
Visual Quality of Non-recreation Activities	Not to exceed a visual quality objective of Retention. An existing visual of Preservation is fully compatible and encouraged.	Any visual condition which exceeds Retention of the characteristic landscape
Access	Cross-country travel and travel on non-motorized trails within the designated ROS zone. Use of airplanes, helicopters, motorboats and snowmachines for traditional activities, subsistence, emergency search and rescue, and other authorized resource management activities my occur unless specifically restricted for safety and/or resource protection purposes.	All other motorized travel within the ROS zone
Remoteness	Nearby sights or sound of human activity is 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).	Nearby sight or sound of human activity. No perception of remoteness
Visitor Management	On-site regimentation and controls are few. Control facilities are appropriate for the predominating natural appearing setting. Visitor information facilities may be used to interpret cultural and natural resource features, but are not elaborate and harmonize with the setting.	Obvious and inappropriate controls and regimentation Sophisticated information facilities
On-site Recreation Development	Facilities and structures generally do not exceed Level II standards and are maintained to accommodate the types and levels of use anticipated for the site. Recreation cabins are fully compatible.	Development Level IV or V sites and facilities
Social Encounters	User meets less than 6-10 parties per day on trails and roads. No other parties are within sight or sound of dispersed campsites. 1-3 other parties within sight or sound of campsites is acceptable only during peak season use.	Meet > 10 parties/day during trip. > 3 other parties at campsites
Visitor Impacts	User caused impacts to resources are moderate and usually not long-lasting. Site hardening is limited to boardwalk trails, boat tramways, moorings and docks and bearproof food cache facilities.	Long-lasting user impacts Dominate site hardening

ROS Class
Primitive

Setting Indicators	Norm/Fully Compatible	Unacceptable
Visual Quality of Non-recreation Activities	Not to exceed a visual quality objective Retention. An existing visual condition of Preservation is fully compatible and encouraged to be maintained.	Any visual condition that exceeds Retention of the characteristic landscape
Access	Cross-country travel and travel on non-motorized trails within the Management Area or designated ROS zone. 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.	All other motorized travel within the area or zone
Remoteness	No or infrequent sights and sounds of human activity is present. Setting is located more than 1.5 hours walking or paddling distance from any human developments other than marine travelways.	Frequent near or distant sight/sound of human activity. < 1.5 hour walking or paddling distance from developments. No perception of remoteness.
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.	Noticeable on-site regimentation and controls. Excessive on-site information and interpretation.
On-site Recreation Development [1/]	Structures do not exceed Level I standards except for recreation cabins, and are maintained for appropriate levels of use.	Any site or facility > Level I
Social Encounters	User meets less than 1-3 parties per day during trip. No other parties are within sight or sound of dispersed campsites or cabins.	Meet 4 or more parties per day. Other parties visible at campsites.
Visitor Impacts	User 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.	User impacts are noticeable or site hardening is inappropriate.

[1/] Authorized recreation cabins are considered compatible.

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 compliment 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 on the Forest 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.
   1. Use the following guidelines in the development and implementation of effective and cohesive interpretive programs:
      * *Level I: Orientation* - Provide readily available information regarding the visitors' physical comforts and needs. (e.g., Where is...the bathroom, water, coffee, food, etc.? How do I find my way to the next place? Where am I now?) Visitors usually are not interested in progressing further with interpretation until these needs are satisfied.
      * *Level II: Information* - Provide the visitors with the opportunity to become mentally involved with the features and points of interest of the specific location they are visiting. Visitors are usually receptive to new ideas and concepts at this point. This forms the basis for further interpretive levels.
      * *Level III: Appreciation* - As the interpretive stories are told and preliminary questions answered, visitors usually begin to gain an understanding of the subject and appreciation develops.
      * *Level IV: Commitment* - This is the level interpretive services strives to meet. The chief aim of interpretation is not instruction, but provocation. With physical needs met, questions answered, and feelings of appreciation aroused, forest visitors are given the opportunity for commitment and involvement in the natural and cultural resources. At this point visitors can be inspired to want to care for their forests.
B. Assist visitors and users of the Forest understanding 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.

D. Inform visitors of the various 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 mediums by which interpretive messages are made available to the visitor. Use a spectrum of mediums and presentation designs that are appealing, appropriate for the setting, easily understood by the intended audience, and reflects 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 to encourage continued interagency support and identification.
4. Continue to provide support 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.
5. Expand the use the Alaska Natural History Association (ANHA) as an interpretive partner to provide forest visitors with a broad range of interpretive mediums. 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.
8. Continue to support and provide leadership in the Marine Litter Education Program in local communities and throughout Southeast Alaska.

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.

Trail Activities: AT

I. *Opportunities*

A. Provide for a diversity of outdoor recreation trail and waterway opportunities, which are appropriate for the ROS class and management area. Include such activities as hiking, mountaineering, spelunking, cross-country skiing, snowmobiling, ATV use, motorized trail bike 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 Management Area.

D. Coordinate trail planning, location, design and operation with the recreation management goals and objectives of other National, State, and 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 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 reasonable cost distance from local communities and service centers.

Trail Administration: AT12

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 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 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 extend 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 management areas and recreation places 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 forest setting and not an intrusion upon it. (Consult FS Trails Management Handbook).

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. Location of trails parallel to fish bearing streams and crossing fish streams will be permitted only where other locations are not feasible and the management direction for 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 ground cover 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 below. Fill will be placed into 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.
6. Thoroughly analyze the effects of locating trails parallel to riparian areas or within riparian areas with known concentrations of wildlife such as brown bear or waterfowl high use areas.

VISUALS

Forest-wide Direction and Standards & Guidelines

Visual Resource Operations: AV1

I. *Visual Resource Management*

A. Adopted Visual Quality Objectives (VQO's) reflect the direction and objectives of each management area and provide guidance in managing forest lands.

B. Adopted Visual Quality Objectives will be met to the greatest extent practicable. When an Adopted Visual Quality Objective cannot be achieved at the project level, the effects of not meeting the VQO will be documented.

C. Detailed 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.

D. Consult National Forest Landscape Management Handbook, Volume 2, Chapter 1: The Visual Management System and R10 Forest Service Handbook 2309 for guidance.

E. Complete viewshed analyses in conjunction with project level planning. Priority for viewshed analysis is as follows: 1) Scenic Viewshed Management Areas, 2) other Sensitivity Level 1 areas or portions thereof, 3) other visually sensitive viewsheds identified in the planning period. The viewshed analysis will provide site-specific project guidance to achieve the desired long-term visual condition.

1. Consult National Forest Landscape Management Handbooks for guidance.
2. Involve needed resource disciplines in the analysis process.

Visual Resource Preparation: AV11

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).

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.*
   * Coloring of structures should closely correlate to natural conditions.
   * Clearing of vegetation adjacent to the site should be kept to a minimum.
   * Select materials that blend with the natural surroundings.
2. *Transportation.*
   * Rock Sources. Locate off mainline road system, provide spur access to rock source.
   * Corridor Treatment. Provide for roadside cleanup of ground disturbing activities. Cut stumps as low as possible to limit visibility from sensitive travel route.
   * Log Transfer Facilities (LTF's). Generally are not appropriate in this VQO setting.
3. If project monitoring indicates a need for visual rehabilitation measures, a rehabilitation plan will be developed in an interdisciplinary 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 plans 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. Landscape architect should be involved in all stages of LTF planning and design. Low profile designs should be considered so as 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. Utilize 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.

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. Refer to the following table for specific mitigation measures appropriate to timber management.

GUIDELINES FOR TIMBER HARVEST ACTIVITIES
SPECIFIC TO
VISUAL QUALITY OBJECTIVES AND VISUAL ABSORPTION CAPABILITY SETTINGS

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance*	Height to Adjacent Mature Stand	Logging Slash Life**
Retention - Low VAC	single tree or group selection	8%	50%	2 years
Retention - Intermediate VAC	single tree or group selection	10%	50%	no limit
Retention - High VAC	small clearcut (approx. 20 acres)	10%	30%	no limit
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	20%	20%	no limit
Modification - Low VAC	clearcut	15%	25%	no limit
Modification - Intermediate VAC	clearcut	20%	5 feet	no limit
Modification - High VAC	clearcut	25%	5 feet	no limit
Maximum Modification - All VAC settings	clearcut	same as the timber dispersion limit	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 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.

** 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.

Visual Resource Administration: AV12

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 include: seeding road cuts, removing road side slash and debris, re-shaping harvest unit boundaries, cutting road side stumps as low as possible, shaping/spreading excess overburden, etc.
   3. Benefits to other resources by accomplishing rehabilitation.

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.
   2. Refer to the visual resource chapter in the Forest Monitoring Plan.

II. *National Scenic Byways*

A. Manage Scenic Byways in keeping with national goals, which include 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 management area. A Scenic Byway may be comprised of management areas of differing emphasis.
   1. Show the forest user the concept of a "working forest" with a variety of visual conditions consistent with the designated management area.
   2. Utilize computer graphic capabilities to design land management activities to facilitate meeting the visual objectives of the management area as seen from the Scenic Byway.

FISH
Forest-wide Direction and Standards & Guidelines

Fish Habitat Inventory: CF111

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. Inventory Forest streams for fish enhancement opportunities. As part of this inventory document barriers to fish migration, including attributes of the barriers. The Forest-wide GIS data base should be used to keep records of the barriers.
   1. Implement the inventory according to the schedule in this Plan.

C. Verify and/or improve the MIS (Management Indicator Species) habitat capability models used as the basis for the Forest Plan Revision.
   1. Inventory habitat use patterns of MIS, utilizing the habitat components defined by channel types and/or riparian habitat units.
   2. Coordinate with appropriate State and Federal agencies, research institutions, etc.

D. Develop and implement a lake classification system in order to further understanding of the aquatic ecosystems on the Forest. This system should be designed to complement the channel type inventory.
   1. Complete the lake inventory prior to development of the next Forest Plan Revision.
   2. Include in the classification system biological and physical data relating to associated wetlands and both anadromous and resident fish production.

E. Collect information necessary to develop comprehensive habitat management direction and standards and guidelines for lakes and estuaries. Information needs include: coho and sockeye salmon, and cutthroat trout rearing capability, cumulative effects from upstream influences, nutrient cycling resulting from pink salmon spawning, etc.
   1. Develop direction and conduct investigations as shown in the resource activity schedule.

Fish Habitat Planning: CF112

I. *Channel classification and process groups*

A. Use the 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	Channel Types
Low gradient floodplains	B1,B8,C1,C3,C4,C6,D4,D5
Alluvial fans	A3,B5,D1,D6
Large low gradient contained	C2,C5
Moderate gradient contained	B4,B6
Mixed control moderate gradient	B2,B3,D3
High gradient contained	A1,A2,A4,A5,A6,A7,B7,D2,D7
Placid or glide streams	L1,L2
Lakes,ponds and floodplains	L,L3,L4,L5
Estuarine	E1,E2,E3,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 reaches for fish habitat.

B. Further develop the channel type system 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.
   1. Further develop the channel type based fish habitat data base.
   2. Coordinate with research to develop validation and refinement of the channel type system.
   3. Develop a channel type model to use as an indicator of stream enhancement potential, including type and location.

II. *Objectives for management affecting fish habitat*

A. Provide for short and long-term maintenance of fish habitat capability in all channel process groups.
   1. *Stream Class I*: Maintain or enhance aquatic biological productivity within each individual Class I stream system.
   2. *Stream Class II:* Maintain habitat capability for resident fish populations, to the extent practicable.
   3. *Stream Class III*: This stream class has no fish inhabitants but provides quality water for downstream Class I and II stream systems.

B. Maintain stream bank and stream channel stability.
   1. *Stream Class I:* Maintain or improve anadromous and adfluvial fish habitat 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 debris. Design management activities to maintain stream bank, channel and floodplain integrity.
   2. *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 debris. Design management activities to maintain stream bank, channel and floodplain integrity. Avoid sediment impacts into downstream Class I streams.
   3. *Stream Class III:* Design management activities to maintain stream bank, channel and floodplain integrity. Avoid sediment impacts into downstream Class I and II streams.

C. Maintain natural and beneficial quantities of large woody debris (LWD) over the short and long term.
   1. *Stream Class I:* Maintain anadromous and adfluvial fish habitat 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 energy and wood

to the stream ecosystem. Use channel type considerations to determine size classes and distribution.

2. *Stream Class II*: Maintain habitat capability for resident fish populations, to the extent practicable, by providing for existing levels of LWD, and by designing for future sources at volumes determined by channel type considerations.
3. *Stream Class III*: Maintain LWD in channels and banks to prevent changes in stream bank and stream channel stability.

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 and adfluvial fish habitat 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 (stabilization should always occur within one year). Minimize siltation to prevent downstream adverse impacts to fish habitat.
   2. Implement applicable Best Management Practices (consult the section on Soil and Water resources and the Soil Conservation Handbook.)

E. Maintain or improve water temperature at a level to optimize salmonid populations.
   1. *Stream Class I:* Maintain optimum salmonid summer stream temperatures at between 50 and 68 degrees F or at natural levels. Manage watersheds and riparian streamsides to attain optimum stream temperature regimes.
   2. *Stream Class II:* Maintain water temperatures below 68 degrees F, or at natural levels, to maintain habitat capability for resident fish populations, to the extent practicable.
   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*: Maintain natural or enhanced primary and secondary biological production in streams to provide for full biological potential of anadromous and adfluvial fish and high quality resident sport fisheries.
   2. *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:* Maintain or improve the opportunities for the migration of adult and juvenile anadromous and adfluvial sport fish. For resident fish, maintain or improve the opportunities for natural migration where economically feasible. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
   2. *Stream Class II:* Maintain or improve the opportunities for the natural migration of resident fish where economically feasible. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
   3. *Stream Class III:* No fish are found in this stream class.

III. *Management Indicator Species*

A. Use Management Indicator Species (MIS) to evaluate effects of management activities 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 of the species total statewide, Regional or National habitat of the species 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 the 10-year fisheries plan and budget projection which will address, at a minimum: inventory work and activities, monitoring, administration, habitat enhancement projects (including K-V funding for projects generated from timber sales), maintenance, coordination with other resources, and coordination with other agencies and groups.

B. During the design and implementation of management activities which are likely to affect fish habitat, favor the enhancement 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 biologists.
    3. Each Administrative Area shall 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.

B. Avoid attracting use to locations with limited distribution or numbers of individual species.

C. Use the authorities for cooperative work with the State provided under the Sikes Act.

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 ordered priorities:
        * same stream reach (same species)
        * same stream (same species)
        * same watershed (same species)
        * same anadromous fish harvest area (same species)
        * differing species, using above priority order

B. Enhance fish habitat to meet the objectives identified in this Plan. Opportunities include, but are not limited to: instream enhancement, lake fertilization, cooperative bio-enhancement (e.g. stocking), incubation boxes, fishway construction, etc.

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. Identify capabilities on streams and lakes identified for enhancement in the Cooperative Fisheries Planning process prior to construction.
3. Schedule enhancement opportunity investigations on a yearly basis to provide for on-going listing of additional projects, as other projects are constructed or eliminated from consideration.
4. Maintain a current ten-year fisheries enhancement plan.

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 project cost when appropriate. Cooperate/coordinate with fish agencies and aquaculture associations to facilitate bio-enhancement.
   1. Appropriateness of bio-enhancement will be established by the need to meet output objectives of the project as identified in project planning.

Monitoring: CF121

I. *Forest-wide monitoring*

A. Assess the implementation effects of Forest Plan direction and standards & guidelines on Management Indicator Species and their habitat.
   1. a) Conduct on-the-ground assessment of implementation of activities with potential effects on fish habitat to determine whether objectives have been met.
      b) If fish habitat objectives have not been met, determine and implement mitigation measures.
      c) Use results to direct future project design.
   2. Coordinate with 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.

II. *Project monitoring*

A. Assess fish habitat rehabilitation, mitigation, and enhancement projects to determine whether project objectives have been met.
   1. Develop cooperative agreements with fish/aquaculture agencies and other groups to assess the effectiveness of Forest Service habitat enhancement, such as by coded wire tagging of fish.
   2. Assess the effectiveness of "improved" habitat for projects. Intensity of monitoring shall be governed by the type of project, where high interest, high investment projects will be monitored more intensively.
   3. Include cost of monitoring as a required cost to the project. Track project monitoring plans and costs with fish action schedules.

Fish Habitat Improvement: CF22

I. *Planning*

A. Improve fish habitat to achieve the habitat and population objectives of this Plan.
B. Construct projects using the most cost-efficient methods, while achieving desired results consistent with the management prescription.

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: CF23

I. *Maintenance*

A. Provide for the maintenance of fish habitat improvements.
   1. Fund maintenance of existing projects prior to the construction of new projects.
   2. Include funding for maintenance in the planning and budgeting for all projects.
   3. Maintain improvements to assure objectives of the project 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 removal or reconstruction, as appropriate.

B. Develop a written agreement with project cooperators on maintenance responsibilities prior to project construction.

SUBSISTENCE

Forest-wide Direction and Standards & Guidelines

Subsistence: SUBS

I. *Subsistence*

A. Provide for the continuation of the opportunity for subsistence uses by rural Alaskan residents, including both Natives and non-Natives.

B. For the purposes of identifying fish and wildlife subsistence users, the Forest will use definitions for rural and non-rural areas established by the Alaska Boards of Fisheries and Game.

C. 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 Section 810 of ANILCA.

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 would 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 (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) 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.
5. Consult Section 810 of ANILCA and FSH Subsistence Management and Use Handbook.

D. Evaluate changes in subsistence use patterns and activities in cooperation with appropriate State and Federal agencies.

E. In cooperation with appropriate State and Federal agencies, maintain a subsistence research program and data base.

F. Maintain reasonable access to subsistence resources.
   1. Permit appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by rural Southeast Alaska residents, subject to reasonable regulations.

G. Allow for subsistence use of wood in traditional use areas, subject to management prescription objectives.

H. Consult Alaska Land Use Council Subsistence Guidelines.

I. Consider subsistence users needs in the scheduling, location and design of fish and wildlife habitat improvement projects.

J. In the development of access and facilities, seek opportunities to provide for subsistence users (e.g. anchorages and shelters). Such access and facility opportunities should be identified and planned with local subsistence users.

Threatened, Endangered and Sensitive Species: CT11

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 (which ever 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 affect on federally-listed threatened, endangered, proposed or candidate species population or critical habitat.
2. Maintain and/or enhance habitats for the recovery and conservation of federally-listed threatened or endangered species. Implement National and Regional Forest Service policy and direction for management of threatened, endangered, proposed and candidate species (Consult FSM 2670).
3. Support monitoring, research, and inventory work for threatened, endangered, and candidate species. Coordinate with appropriate Federal and State agencies; utilize "challenge cost share" agreements 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 maintaining existing habitat capabilities within known use areas. Where desirable, implement habitat enhancement projects to increase habitat capabilities and expand species distributions.
3. Prepare species management guidelines for Regional Sensitive Species. Such guidelines shall establish objectives and prescribe management direction, monitoring, and protection for a species based on the species needs over its entire range rather than on a local population or individual site.
4. 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.
5. In cooperation with other agencies, institutions, and private groups implement a Forest-wide inventory for sensitive plant species. Maintain accurate records on locations of sensitive plants on the Forest.
6. Identify research needs for sensitive plants and animals on the Forest.

III. *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 practical 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.

IV. *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.

V. *Peregrine Falcon Habitats*

A. Provide for the protection and maintenance of peregrine falcon habitat.
   1. Nest site location data will be maintained in cooperation with the U.S. Fish and Wildlife Service.
   2. Annually exchange records with appropriate State and Federal agencies on the status of populations and habitat.
   3. Plan project activities to avoid adverse impacts to the falcons and habitats. Evaluate proposed projects within 2 miles (3.2 km) of known falcon nests, for their effects considering such items as: a) 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; b) 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.

VI. *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.

VII. *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 run of northern pike.

VIII. *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 enhancement and maintenance to maintain the viability of this run of salmon, as necessary.

BIODIVERSITY

Forest-wide Direction and Standards & Guidelines

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 and/or enhance habitats for the recovery and conservation of federally listed threatened or endangered species. Refer to Forest-wide Direction and Standards and Guidelines for Threatened, Endangered and Sensitive Species.
2. Maintain and/or enhance habitats for the conservation of sensitive species. Sensitive species are designated by the Regional Forester. Refer to Forest-wide Direction and 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 current geographic range within the Tongass National Forest. Refer to Forest-wide Direction and Standards and Guidelines for Wildlife.
4. Complete establishment reports for recommended Research Natural Areas. Identify plant and animal communities and features still needing representation in Research Natural Areas; evaluate and recommend areas containing the communities and features for Research Natural Area designation.
5. Complete definitions and inventories for old-growth forests. Refer to Forest-wide Direction and Standards and Guidelines for Old-Growth Forests. Complete inventories of forested plant associations. Provide for representation of all forested plant associations in old-growth conditions.
6. For old-growth habitats, retain where possible contiguous stands, emphasize large old-growth blocks and emphasize corridors between old-growth blocks. Refer to Forest-wide Direction and Standards and Guidelines for Wildlife, Old-Growth Forests, and Standards and Guidelines in specific Management Prescriptions.
7. Use silvicultural techniques which establish and prolong understory forb and shrub production in second-growth timber stands, where these techniques have proven beneficial.
8. In timber harvest areas, emphasize leaving patches of undisturbed vegetation, snags, green trees which can become snags, and feathered edges to provide habitat heterogeneity within second-growth timber stands.
9. Utilize road management authorities and techniques to regulate human access when necessary to protect fish, wildlife and plant habitats and/or populations. Refer to Forest-wide Direction and Standards and Guidelines for Wildlife and Transportation, and specific direction in each Management Prescription.
10. Protect fish habitat so that no serious and adverse affects are induced. Refer to Riparian Management 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 Direction and Standards and Guidelines for Wildlife.
12. Incorporate appropriate elements of biodiversity during project analysis.

Wildlife Habitat Inventory: CW111

I. *Inventory*

A. Implement a Forest-wide habitat inventory program to accomplish the following objectives: 1) to obtain and establish "base-line" habitat conditions in important habitat areas; 2) to provide documentation of natural and/or human-caused habitat changes; 3) to identify opportunities for management actions which will help maintain or improve habitats.

1. Implement the inventory schedule for the following habitats:
   * important waterfowl habitats
   * 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
   * Moose habitats
2. Develop a standardized inventory methodology to assess important habitat variables. Where possible, coordinate with, utilize, and incorporate existing and/or on-going inventory work and techniques such as: plant association inventory and classification work; timber stand exams; U.S. Fish and Wildlife Service National Wetlands Inventories.
3. Develop and implement a prioritized inventory schedule for the above listed habitats using the standardized methodology.
4. When applicable, inventories should be correlated with the Alaska Department of Fish and Game "Wildlife Analysis Areas" (Wildlife Analysis Areas are the land areas by which ADF&G population and harvest data is collected and summarized).
5. Conduct inventories as needed to refine the MIS habitat capability models.

B. Coordinate the inventory work with other appropriate agencies and institutions.

1. Coordinate and cooperate with the Institute of Northern Forestry (Fairbanks), Anchorage Forest Inventory and Analysis, other forest resource specialists and State and Federal agencies.
2. Cooperate with the U.S.. Fish and Wildlife Service on annual bald eagle surveys/ inventories in compliance with the MOU.
3. Coordinate with State and other Federal agencies to develop inventory methods to obtain updated wildlife population data and trends.
4. Utilize "challenge cost share" agreements and other partnerships to help accomplish the work.

C. Cooperate with other agencies and institutions to inventory the geographic distribution of small mammals and birds throughout the Forest (specifically to obtain a better understanding of "island biogeography effects" in Southeast Alaska and obtain better taxonomic identification of the small mammals).

Wildlife Habitat Planning: CW112

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 and decision-making process.
   1. Each Administrative Area shall meet at least annually with State and Federal wildlife agencies to review resource activities, and schedule work needing coordination.

B. Coordinate activities that affect wildlife resources through the IDT process with State, other Federal, and local agencies and groups.
   1. Maintain memoranda of understanding with appropriate State, Federal and local agencies and associations.

C. Emphasize management for indigenous wildlife species and natural habitat over other wildlife management approaches, except in cases where the Forest Service and the Alaska Department of Fish and Game agree upon desirable alternatives. Special consideration will be given to the habitat of sensitive, threatened, and endangered species of plants, wildlife and fish.

D. 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 authorities for cooperative work with the State provided under the Sikes Act. Use "challenge cost share" agreements and other partnerships.

E. 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.

F. 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. For old-growth dependent animal species, see the following section (C).

C. Maintain old-growth forest habitat to provide for old-growth forest wildlife objectives (also see Old-Growth Forest Forest-wide management direction) and to provide for viable populations of old-growth dependent animal species, including desirable introduced species.
   1. As a minimum, old-growth forest will be maintained on 24 percent of the forested area of each Wildlife Analysis Area (WAA; as described by the Alaska Department of Fish and Game in 1989) to ensure that well distributed habitats for viable populations of old-growth dependent wildlife Management Indicator Species (MIS) and other resource values and uses will continue to be provided. Consider all land ownerships in each WAA in determining the acreage of forested land that needs to be maintained in an old-growth condition.
      * Old growth that is maintained will naturally include a variety of old-growth stand conditions and/or types and small openings due to the natural variability of the landscape. In providing old growth, include all old-growth types (productive, unproductive, Strata A through D, and tree species) which provide habitat for the MIS.
        a) At least 3/4 of the forested area to be maintained as old growth in each WAA will be in patches of 1000 acres or greater.
        b) At least one patch in each WAA will be 5000 acres in size or more.
        c) All timber inventory strata in each WAA will be represented in maintained old growth.

d) The least width dimension of maintained old growth will be 1/4 mile.
e) Patches of maintained old-growth forest that are connected by corridors of at least 500 feet wide may be considered as single blocks.

* Old-growth forest areas identified as needed to meet the Forest-wide direction and standards & guidelines in this section, will be designated during project planning and implementation. In the context of this section, the old-growth forest areas are called "designated old-growth forest."

2. Timber harvests will be designed to avoid designated old-growth forest. Where timber harvest is scheduled, ensure that wildlife can move and disperse throughout the WAA (and adjacent WAAs).
3. Timber harvesting, including salvage harvesting, will not be permitted in designated old-growth forest unless similar old-growth forest within the WAA is substituted.
4. Coordination of roads with old-growth management.
   * Locate roads outside of designated old-growth forest, except when no other routing alternatives are feasible.
   * If roads must be built through designated old-growth forest, keep clearing widths to a minimum and provide for seasonal or permanent road use closures, as determined through environmental analysis and project planning.

D. Cooperate with the State in regulating vehicle, boat, and other human use as necessary to achieve wildlife objectives, recognizing the access provisions of ANILCA. Emphasis for reducing human disturbance will be given to high value habitat areas and during critical periods of wildlife use.
E. Maintain the 10-year wildlife activity schedule and budget which will include as a minimum: inventory work and activities, monitoring, administration, habitat projects (including K-V funding for habitat projects), maintenance, coordination with other resources, coordination with State and Federal agencies.
F. Use 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:
      * First priority shall be for 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 MIS do not meet the needs for a particular project area:
        a) State listed threatened or endangered species.
        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 of the total statewide, Regional or National habitat of the species 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 hunted or trapped, or which have a high non-consumptive value (such as 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 appropriate silvicultural practices 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 management area. (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

2. Use the deer winter habitat capability model to evaluate project alternatives.
3. Implement second-growth management practices in important wintering areas when techniques have been shown to be effective at providing winter habitat components (i.e. prolonging or maintaining winter forage providing thermal and escape cover).

V. *Bald Eagle Habitat*

A. The Bald Eagle Protection Act dictates that Bald Eagle habitat will be given special protection. An Interagency Agreement established with U.S. Fish and Wildlife Service provides the following management standards and guidelines.

1. Establish and maintain a minimum 330-foot (100-meter) radius (horizontal distance) eagle nest zone around each eagle nest tree. Determine the exact boundary based on local topography, timber type, windfirmness, and other factors.
2. Within the eagle nest zones, prohibit all land use activity which would likely disturb the eagles. Infringement may be acceptable depending on the nature of the project and timing of the activity.
3. Maintain the eagle nest zone even though the nest or nest tree becomes inactive.
4. Retain trees suitable for use by eagles for nesting, feeding, roosting and perching. Consider the following:

* Trees that dominate or co-dominate a shoreline.
* Trees with large enough branches to support birds.
* Trees with open crowns for easy access and exit and good visibility.
* Selection criteria for perch and roost trees:
  a) Preferred: narrow fringe of mature trees immediately adjacent to the coastline, possibly as small as one tree in width.
  b) Spike-top trees or snags or other nonmerchantable trees.

5. Include special clauses and specifications in contracts, special use permits, fire wood permits, and sawtimber free use provisions that incorporate bald eagle habitat protection and management measures.
6. Maintain the MOU's 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 time tables for phase out and rehabilitation in cooperation with appropriate State agencies.
   2. Require incinerators and/or other bear proof garbage facilities at all camps, recreation sites, special use permits, etc.
   3. Locate logging camps and other developed sites away from areas of substantial bear density to reduce chances of bear-human confrontations.
   4. Maintain an aggressive public education program on bear behavior to reduce the number of human/bear incidents.
   5. 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.
   6. Manage roads where concentrations of brown bear occur to minimize human/bear interactions and to ensure the long term productivity of brown bears.

VII. *Marine Mammal Habitats*

A. Provide for the protection and maintenance of harbor seal, Steller sea lion and sea otter habitats.
   1. 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:
      * Facilities, camps, LTF's, campgrounds and other developments should be located 1 mile from known haul outs, and farther if the development is large.
      * For aircraft flights on Forest Service approved projects, when weather ceilings permit, maintain a constant flight direction and airspeed and a minimum flight elevation of 1000 feet (305 meters) within .5 miles (800 meters) of the haul outs.
      * For boat traffic on Forest Service approved projects, remain at least .5 miles (800 meters) away from hauled-out harbor seals during the pupping and rearing season (15 May - 1 July). Minimize disturbance of seals with pups in the water by remaining at least 330 feet (100 meters) away from parturient seals. (*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. These distances may be too liberal and may need to be enlarged in situations where access and hunting are not controlled and where seals would be expected to be more reactive to boat traffic.)

* Minimize disturbance effects of boat traffic: for molting harbor seals, remain .5 miles (800 meters) away from haul outs where seals are molting; for Stellar sea lions, remain at least .5 miles (800 meters) 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.
* Discourage hiking at haul outs and rookeries.

2. 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 approved projects, when weather ceilings permit, maintain a constant flight direction and airspeed and a minimum flight elevation of 1500 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 in special use permits the incineration, rapid burial, proper collection and proper storage of garbage.
   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 wetlands which receive high use by waterfowl in cooperation with the Alaska Department of Fish and Game and the U.S.. Fish and Wildlife Service during project environmental analysis.
   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 clearing forests within 410 feet (125 meters) of geese habitat when geese are present during nesting, brood rearing, molting and wintering periods.
   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-road-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: 1500 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 1000 feet (305 meters) above ground level for helicopters from molting

sea ducks; 1000 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 monitoring indicates human use adversely affects habitats or populations, regulate human use to eliminate or reduce the adverse effects.
7. Regulate off-road 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 (non-recreational), issue only permits 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 these 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.
14. In cooperation with State and Federal agencies, evaluate and monitor levels of lead in habitat areas, and evaluate effects on waterfowl populations.

X. *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

Species	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

* 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, consider requirements for maintaining or creating snags over the long term, and the resulting percent of maximum woodpecker populations which will be supported. Evaluations should be done on an entire 3rd order watershed basis.

To ensure viable populations are maintained, a minimum of 275 snags per 100 acres will be maintained, averaged over all management areas within 3rd order watersheds. Analyze red-breasted sapsucker and hairy woodpecker habitat capability using habitat capability models.

2. Retain snags within all management prescriptions 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 harvest, snags may be designated as wildlife trees and marked to make them illegal for cutting.
   * Consider retaining live trees for future snag recruitment

XI. *Moose Habitat*

A. Develop habitat management direction for moose habitats.
   1. Inventory vegetative conditions in moose habitat areas to help identify short and long-term changes in habitat conditions, and to assess the affects 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. Coordinate road access and management concerns.
   4. Coordinate planning with other appropriate agencies.

Wildlife Habitat Monitoring: CW121

I. *Monitoring*

A. Assess accomplishment of wildlife habitat and population goals and objectives with emphasis on Management Indicator Species (MIS) habitats and populations, and other selected species' habitats and populations.
   1. Consult the Plan monitoring schedule.
   2. Cooperation with the Alaska Department of Fish and Game and other appropriate State and Federal agencies to the extent practicable.
   3. Evaluate management activities and use the results of monitoring to validate or improve the MIS habitat capability models.
   4. Assessments should be prioritized as follows:
      * First priority will be to consider the Management Areas which emphasize wildlife habitat, to assess if the implementation activities are achieving the desired habitat conditions and population goals.
      * Second priority will be to consider the effectiveness of habitat protection and enhancement measures in Management Areas emphasizing other resources.
   5. In addition to assessing MIS and other selected species' habitats and populations, consider the following activities:
      * Annually compile a Forest-wide summary of all human-bear incidents by location and type of incident in cooperation with the Alaska Department of Fish and Game. Information recorded for each incident could include: human food available, garbage available, developed recreation site, dispersed recreation, hunter related, fisherman related, work related (by type of work), self defense, age and sex of bear if known, etc.

* Assess the amount and distribution of old-growth forest habitats by type of old-growth habitat to determine accomplishment of old-growth habitat goals and objectives, (see section on old-growth.)
* Develop a program to obtain information on snowpack 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; 2) to assess snow accumulation on winter ranges Forest-wide to obtain an index of winter conditions.
* Continue to assess the second-growth management program (thinning, corridors, gap management, etc.)
* Access trends/changes in moose habitats and populations.

Wildlife Habitat Improvement: CW22

I. *Improvement Projects*

A. Improve wildlife habitat to achieve the habitat and population objectives identified in the Forest Plan.
   1. Implement the wildlife habitat improvement project schedule.
   2. 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: CW23

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.

OLD-GROWTH FOREST
Forest-wide Direction and Standards & Guidelines

Old-Growth Forest: OLD

I. *Objectives*

A. The Forest Service recognizes old growth as a resource that provides many significant values associated with biological diversity, wildlife and fisheries habitat, recreation, aesthetics, soil productivity, water quality, and timber. Old-growth forest values shall be considered in designing the dispersion of old-growth and may range from a network of old-growth forest stands for wildlife habitat to old-growth areas for public recreation. (Note: Direction and standards & guidelines for the allocation and management of old-growth forests and habitats are included in: 1) this section, 2) the Old Growth Management Area Prescription (OG), and 3) in the Forest-wide direction and standards & guidelines for wildlife.)

II. *Definitions and Inventory*

A. Old-growth forests are ecosystems distinguished by old trees and related structural attributes. Old-growth forest encompass the latter stages of stand development that typically differ from earlier stages 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.

C. Develop a forest-wide vegetation inventory which allows for an accurate quantification and mapping of old-growth forest types based on the definitions developed above.

III. *Management*

A. Old-growth forest will be maintained to meet the management goals and objectives of the Forest Plan. These goals and objectives include:
   * Recovery of threatened and endangered species and to provide for sensitive species.
   * Maintenance of habitat for viable populations of native plants and animals species, including desirable introduced species.
   * Maintenance of biological diversity.
   * Subsistence needs.
   * Wildlife population objectives.
   * Fish habitat and water quality objectives.
   * Recreation and visual landscape objectives.
   * Timber management objectives.

B. Old-growth forest areas specifically identified as needed to meet the old-growth objectives in this section, will be designated during project planning and implementation. In the context of this section, the old-growth forest areas are called "designated old-growth forest."

IV. *Monitoring*

A. Monitor old-growth forest.
   1. Periodically assess the amount of acreage affected by blowdown, other natural events, and other activities occurring within designated old-growth forest. Enter the monitoring results into the GIS database for the purpose of compiling a Forest-wide composite that can be used to evaluate the need for Plan amendments.

TIMBER

Forest-wide Direction and Standards & Guidelines

Timber Resource Inventory: ET111

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 on forested lands.

1. Timber inventories shall be coordinated with other data collection efforts to minimize duplication and to maximize the utility of the resulting information. Multiple-resource or integrated individual-resource inventories will be emphasized.

Extensive Timber Inventory: ET111-1

I. *Stage I Extensive Inventory*

A. An extensive timber 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 revised Forest Plan. Consult the National Forest Inventory Handbook.

1. 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: ET111-2

I. *Stage II Intensive Inventory*

A. Silvicultural examination and silvicultural prescription is required for proposed resource management activities where vegetative manipulation of the forest is involved. Consult Region 10 Silvicultural Examination and Prescription Handbook.

B. Stand examination will be conducted as part of the Plan implementation. 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 during Plan implementation. 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 which silvicultural practices, cutting methods, or other management actions will be sequentially applied to achieve the desired stand condition. The prescriptions will be approved by a certified silviculturist.

Timber Resource Planning: ET112

I. *Information gathering and maintenance*

A. Provide timber resource information necessary to prepare projects. This includes maintenance of inventories, analysis of data, and input for interdisciplinary environmental analysis.

Timber Resource 10 Year Sale Schedule: ET112-3

I. *10-Year Timber Sale Action 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 Action 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: ET113

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 programs to provide input for proposed activities; the administration of on-going 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 area.

C. The project Sale Area Improvement/Knutson-Vandenburg (K-V) Assessment will include 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.

GUIDELINE FOR TIMBER HARVEST ACTIVITIES
SPECIFIC TO
VISUAL QUALITY OBJECTIVES AND VISUAL ABSORPTION CAPABILITY SETTINGS

VQO/VAC Setting	Silviculture Method	Cumulative Visual Disturbance*	Height to Adjacent Mature Stand	Logging Slash Life**
Retention - Low VAC	single tree or group selection	8%	50%	2 years
Retention - Intermediate VAC	single tree or group selection	10%	50%	no limit
Retention - High VAC	small clearcut (approx. 20 acres)	10%	30%	no limit
Partial Retention - Low VAC	group selection or small clearcut (approx. 20 acres)	8%	35%	5 years
Partial Retention - Intermediate VAC	clearcut	15%	25%	no limit
Partial Retention - High VAC	clearcut	20%	20%	no limit
Modification - Low VAC	clearcut	15%	25%	no limit
Modification - Intermediate VAC	clearcut	20%	5 feet	no limit
Modification - High VAC	clearcut	25%	5 feet	no limit
Maximum Modification - All VAC settings	clearcut	same as the timber dispersion limit	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 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.

** 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: ET114

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 Systems and uneven-aged 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. Management area prescriptions provide direction for applicability of even-aged harvest systems.
   1. Harvest methods designed to regenerate an even-aged stand of timber shall be used only where cutting units are located so timber stands can be logged without creating isolated stands of timber which could not 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 practice is determined to be optimum to meet the objectives and requirements of the Management Area.
   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 risk of windthrow is determined to be high.
   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 fuelwood cutting for noncommercial forest products.

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 is utilized to meet the objectives of the management area. Objectives often include the protection of visual resources, wildlife and fish; and for specialty products.
   2. If applied for harvesting noncommercial forest products (fuelwood), it must be done only where recurring salvage operations can be conducted.
   3. The shelterwood silvicultural method is generally limited to tractor or aerial harvest systems.

D. Seed tree is an even-aged harvest system. The seed tree harvest system may be used where natural regeneration is prescribed and there is not an adequate seed source in the surrounding stands.
   1. Seed tree harvest systems are generally limited to those employed for partial cuts unless the seed trees are not scheduled for harvest.

IV. *Uneven-aged Systems*

A. Management area prescriptions provide direction for applicability of uneven-aged harvest 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 management area including the protection of excessively steep or unstable soils; visual resources; wildlife and fish; recreation; and for utilization of noncommercial wood products (fuelwood).
2. Uneven-aged management systems are limited to areas that can employ yarding equipment suited to partial cuts.

B. Single-tree selection is an uneven-aged harvest 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 management area 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. Uneven-aged management systems are generally limited to tractor or aerial harvest systems suited to partial cuts.

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 even-aged groups. The desired regeneration grows in the spaces created by the groups of trees harvested.
1. Group selection is used to meet management area 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. Uneven-aged management systems are limited to areas that can employ yarding equipment suited to partial cuts.

V. *Intermediate Harvest Systems*

A. Management area prescriptions 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.

VI. *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 management prescription limitation. Salvage may include trees damaged by road construction.

B. Trees salvaged in a management area 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 will provide 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 are considered excess and may be exported.
3. Beach logs that are not merchantable will be utilized for personal use whenever possible.

D. Beach log salvage material is not included in the growth and yield projections for the Forest Plan and not chargeable to the annual allowable sale quantity.

VII. *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. Sale and utilization of dead, blow-down, and other deteriorating timber will receive highest priority.
4. Tongass National Forest Utilization Standards are:

Utilization Standards (All Forest Types)

Stand Size Class	*Min. DBH*	*Min. Length*	*Min. Top DIB*	*% Sound Volume*
Young Growth	7"	8'	5"	25%
Old Growth	9"	12'	6"	33 1/3%

VIII. *Competitive Bidding and Small Business*

A. Private enterprise shall be encouraged to utilize 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 operators. The Forest Service and the Small Business Association will consult annually on the amount of volume to be offered.

Timber Resource Monitoring: ET121

I. *Monitoring*

A. Timber resource monitoring will be in accordance with the guidelines in the Forest Monitoring Plan.

Reforestation Certification: ET121-1

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.

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: ET121-2

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: ET122

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 administration in non-timber emphasis management areas will work with the other specialist(s) to ensure that the project goals are obtained.

Timber Resource Improvement Preparation: ET214

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: ET24

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 1 and 3 growing season.
   * 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: ET25

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 trees. Spacing will be determined to meet management area 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.

AIR

Forest-wide Direction and Standards & Guidelines

Air Resource Inventory:FA111-2

I. *Baseline Quality and Values*

A. Determine current air quality conditions. Consult FSM 2580 and Air Resource Management Handbook (1987 Interim Directive No. 1.)

Air Resource Planning: FA112

I. *Prevention of Significant Deterioration Program*

A. Plan for maintaining the air quality of the Class II land use designation as directed under the Prevention of Significant Deterioration (SPD) Program. Consult the Alaska Administrative Code, Title 18, Chapter 50, Air Resource Management Handbook (1987 Interim Directive No. 1)

1. Manage Forest resource activities to assure that predicted emissions for all point sources, mobile sources, and fugitive dust do not exceed ambient air quality standards as specified under the Alaska Administrative Code, Title 18, Chapter 50.
   * Protect current condition of air quality.
   * Ensure that all Forest land and resource management activities comply with regulatory requirements and meet air quality standards.
   * Obtain a burning permit from the Alaska Department of Environmental Conservation for all prescribed fire projects.
2. Require permittees, contractors, mine owners, etc. to apply for applicable State permits and meet State air quality standards when conducting work on the Forest.
3. Comment on significant private emitting facilities that may effect the National Forest condition.

Air Coordination: FA113

I. *Coordination with State*

A. Coordinate directly with the Department of Environmental Conservation to protect resource values; participate with them in the assessment of air quality monitoring needs and in the development or revisions of air quality standards and regulations affecting forest resource.

Air Resource Monitoring: FA121

I. *Documentation of Air Pollution*

A. Assess and document the effects of air pollution on forest resources. Consult the Air Resource Management Handbook (1987 Interim Directive No. 1.)

RIPARIAN

Forest-wide Direction and Standards & Guidelines

Riparian Area: RIP

I. *Objectives*

A. Provide healthy riparian areas for fish habitat, 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 sections and the Stream and Lake Protection prescription. The following includes a partial listing of direction pertaining to riparian areas.

1. Manage for short and long-term productivity of riparian areas.
2. Maintain natural stream bank and stream channel processes.
3. Maintain natural and beneficial quantities of large woody debris over the short and long term.
4. Maintain water quality to meet State Water Quality Standards and to provide for beneficial uses of riparian areas.
5. Coordinate management activities between resources directly associated with the riparian area with other resources.
6. 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.)
7. 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 streamsides, lakes and floodplains, with distinctive resource values and characteristics. Included in the riparian area is the transition zone between the riparian 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, detailed inventory, normally with on the ground fieldwork, is required.

1. Consult the Forest-wide fisheries 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. *Forest-wide monitoring*

A. Assess Forest management activities to assess accomplishment of riparian management goals and objectives.

1. Coordinate with State and Federal agencies, and the Forestry Science Laboratory in maintaining a program for research, monitoring, and assessment of impacts of land-use activities on riparian areas.

WETLANDS

Forest-wide Direction and 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. Preserve and restore 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)].

D. Support the President's Domestic Council assignment to develop recommendations regarding attainment of the goal of no net loss of the nations wetlands considering the challenges posed in Alaska where a high proportion of the developable land is wetlands.

II. *Inventory and Evaluation*

A. Use the technical criteria for wetland identification from the Interagency federal manual for identifying and delineating wetlands. (see Federal Manual for Identifying and Delineating Jurisdictional Wetlands, January 1989)

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. Use of Best Management Practices (BMPs) allows the construction and maintenance of forest roads and temporary roads for moving mining equipment to be exempted from permitting requirements under section 404 of the Clean Water Act.

C. Consistent with the Clean Water Act, as amended, use BMPs in all management activities which would affect water quality within wetlands. BMPs are intended to assure that flow and circulation patterns, and chemical and biological characteristics of water are not impaired. (Consult Appendix I)

D. Before issuing permits, leases, easements, rights-of-way or disposal of wetlands reference 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 disposal.

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.

IV. *Monitoring*

A. Monitor and report cumulative changes in mapped wetlands, and in wetland values and functions as a result of permitted activities.

B. Insure that project plans contain adequate provisions for monitoring compliance with terms and conditions of the permit as well as the implementation and effectiveness of BMPs.

SOIL AND WATER

Forest-wide Direction and Standards & Guidelines

Soil Inventory: FW1111

I. *Inventory*

A. Conduct a Soil Resource Inventory (SRI) or Integrated Resource Inventory (IRI) and produce appropriate reports for proper management of the soil resource and the development and management of all resources and activities. 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 the level of Soil Resource Inventory (SRI) or Integrated Resource Inventory (IRI) to meet the needs of the planning level for proposed land management projects and use or produce for use the appropriate order or orders of SRI's or IRIs to meet those project planning levels and implementation needs.
2. Ensure that soil resource inventories and integrated resource inventories meet established standards.

Water Inventory: FW1112

I. *Inventory and Evaluation*

A. Inventory or evaluate the following appropriate elements of Water Resource Inventories (WRI) (as information sources in conducting water investigations) and produce appropriate reports for the proper management of the water resource and the development and management of all resources and activities.

* Climate
* Water Quality
* Water Quantity
* Channel Types
* Water Uses and Developments

Consult FSM 2530, Water Resource Inventory Handbook (5/83 R-10 SUPP 1) and Water Information Management System Handbook.

1. Determine the level of Water Resource Inventory (WRI) to meet the needs of the planning level for proposed land management meet those project planning levels and implementation needs.
2. Ensure that water resource inventories meet established standards.

Watershed Resource Planning: FW112

I. *Land Use Activities*

A. Plan and conduct land use activities to avoid irreversible or serious and adverse cumulative watershed effects on the soil and water resources, and to produce water of quality and quantity sufficient to maintain beneficial uses in compliance with State water quality standards.

1. Establish clear objectives to ensure that appropriate levels of soil and water resource data and interpretations required for land and related resource management are available to the land manager. Consult FSM 2530 and 2550.
2. Determine cumulative watershed effects for all projects resulting in soil and water impacts.

3. Select or modify established processes or methods for determination of cumulative watershed effects depending on the projects' geographic area and conditions.
4. Implement Process Best Management Practices (BMP's) or applicable Standard BMP's to projects, as a mechanism to provide non-point water quality protection to meet federal, state and local water quality requirements.
   * *Process BMP's* are where custom fit practices, measures or methods are developed for projects through inventory and analysis, and interdisciplinary involvement.
   * *Standard BMP's* are established "fixed" methods, measures or methods that are applied to projects.

   Consult Soil and Water Conservation Handbook (FSH 2509.22), Chapter 10, "Water Quality Management for National Forest System Lands in Alaska", FSM 2530 (9/86 R10 SUPP 15), Forest-wide Direction and Standards and Guidelines for Facilities and Transportation, U.S. Army Corps of Engineer Regulation (33 CFR 323.4), Clean Water Act of 1977 (PL 95-217).
5. Ensure Best Management Practices (BMP's) meet or exceed the policy and direction for the State of Alaska's Forest Resources and Practices Regulations. Consult the Statewide Water Quality Management Plan, Timber Harvesting Water Quality Study, FSM 2530 - Memorandum of Understanding between the Alaska Department of Environmental Conservation and U.S. Department of Agriculture Forest Service.
6. Project plans for all projects with soil disturbance will include erosion/stabilization measures.

B. Delineate on appropriate project area maps the location of soil and water protection areas to insure their recognition, proper consideration, and protection.
   1. Designate the following features on the project area maps.
      * Location of stream courses to be protected.
      * Wetlands and riparian areas.
      * Locations, units, or zones where BMP's, either Process or Standard, are to be applied with relation to road building and logging practices.
      * Structural improvements.
      * Any domestic or public water supply source.
      * Other features required by Division "C" or Long-term Sale Contracts.
      * Location of extreme hazard mass-wasting areas.

C. Apply multiple use management to non-designated domestic use watersheds while providing water suitable for human consumption within the realm of State water quality standards and water supply regulations. Consult State Water Quality Standards (18 AAC 70.020).
   1. Identify soil and water quality standards and constraints during the environmental analysis for project-level activities.

D. Avoid adverse soil and water resource impacts 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), and Appendix C NFMA Planning Regulations (36 CFR 219.27).
   1. Minimize implementation of land use disturbance activities on these areas consistent with the specific activities, so that such activities when applied do not create a threat or cause degradation to the values for which the wetland is managed.
   2. Conduct all activities on these areas in accordance with Best Management Practices (BMP), including applicable Standard BMP's described in the State's approved program and meet baseline BMP's provisions described in Federal Regulation 33 CFR 323.4.
   3. Refine wetland data and interpretation maps as needed on a case-by-case basis for project planning.

4. During analysis of projects proposing occupancy or modification of floodplains determine floodplain values and avoid, the long and short-term adverse impacts to soil and water resources.
5. Seek cooperation from 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, U.S. Fish and Wildlife Service, and execute plans and decisions in a manner consistent with the statutory responsibilities of these agencies.

E. Under applicable State and Federal Law reserve both ground and surface water rights needed to properly manage present and future resource needs on National Forest System Lands. Consult FSM 2540.
   1. Review projects and reserve water right or notify state of water uses for reservation management purposes when determined such uses are necessary for carrying out the purposes of the project. Be sure review of uses and needs include at least the following items.
      * In-stream flow needs.
      * Adequate flow for fish passes and habitat
      * Forest Service domestic use.
      * Developed special uses.

F. Work cooperatively with other Forest Resource Groups, State, Federal and local government agencies and Native American communities for the protection, mitigation, and/or enhancement of the water and soil resources.

G. Actively participate in planning by other Federal, State and local agencies where these plans could affect National Forest System Lands.

II. *Dispersion to Minimize Cumulative Watershed Effects*

A. Minimize Cumulative Watershed Effects (CWE) which cause adverse soil and water impacts resulting in changes in stream channel equilibrium, such as: 1) changes in sediment transport leading to stream aggradation, degradation and/or streambank erosion; and 2) silting in of pools and reduction in fish habitat capability.
   1. Unless a CWE analysis is performed to indicate otherwise, during project planning, limit even-age harvest practices and associated roading to no more than 35 percent of 3rd or 4th order watershed acres in less than a 15 year period.

Watershed Resources Monitoring: FW121

I. *Assessment of Management Activities*

A. Obtain soil and water base line data to assess land disturbing activities.

B. Assess land disturbing activities to determine effects of these activities on soils (e.g. productivity, erosion), and water quality and quantity. Monitor soil and water at three distinct monitoring levels consisting of (1) implementation monitoring (document whether plans, Best Management Practices (BMPs), etc. are implemented as designed); (2) effectiveness monitoring (to evaluate if plans, BMP's, etc. are effective in meeting management objectives); and (3) validation monitoring (validate the appropriateness of standards and model coefficients). Consult FSM 2520 and 2530, R-10 Water Quality Monitoring handbook, State Water Quality Standards, and the Monitoring Plan (Appendix H).
   1. At project planning and implementation levels ensure each specific monitoring level described in A above includes the following items.
      * The monitoring objective.
      * The rationale behind each of the parameters and evaluation criteria
      * Who is to be involved and their roles and responsibilities.
      * What parameters will be monitored and evaluated.

* When, where, and how often will monitoring occur.
* What methodologies will be used for monitoring evaluation and analysis.
* How will results be interpreted and reported.

2. Select projects to monitor and evaluate the results of BMP's on soil and water resources to prevent and reduce non-point source water pollution. Consult FSM 2520 and 2530, R-10 Water Quality Monitoring handbook, State Water Quality Standards, and FSM 2530 - Memorandum of Understanding between the Alaska Department of Environmental Conservation and U.S. Department of Agriculture Forest Service.
3. To evaluate the effectiveness of BMP's for non-point source pollution, describe in project monitoring plans a non-point source management procedure that tracks and records: (1) identification of the land-disturbing activities; (2) design of BMP's base on soil, water, plant association and channel type data; (3) application of BMP's; (4) monitoring; (5) effects reporting; (6) any correction actions required; and (7) feedback to BMP designs.
4. Apply standard sampling methods and techniques or develop new one when needed for measuring the effectiveness of soil and water management BMP's.
5. Cooperate and participate with the State of Alaska through the Memorandum of Understanding with the Department of Environmental Conservation to identify and monitor non-point source pollution, and implementation and effectiveness of BMP's.
6. Inspect all watershed improvement projects annually until the final evaluation indicates that maintenance is no longer needed.
7. Provide monitoring and evaluation within the framework of the monitoring plan and direction.

Watershed Resource Improvement: FW2

I. *Water Quality Protection and Improvement*

A. Protect or improve water quality and/or quantity (e.g., stream bank stabilization, stream channel realignment) and stabilize soil erosion sites or improve, as appropriate, soil productivity (e.g., soil stabilization).

1. Conduct Watershed Condition Surveys (WCS) to determine improvement needs as part of the development of watershed improvement plan. Consult FSM 2510 and 2520.
2. Complete a watershed improvement plan for all watershed improvement projects (regardless of funds used) prior to improvement 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, outyear 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 fish and water resources.
6. Whenever possible, use indigenous plants and materials.
7. When appropriate, use plants to benefit wildlife.
8. Utilize Sale Area Improvement Plans and K-V funds as appropriate.

MINERALS AND GEOLOGY
Forest-wide Direction and Standards & Guidelines

Minerals and Geology Resource Preparation: GM11

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 (Consult FSM 2800).

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)

B. Develop and maintain a Geologic Resource Inventory (Consult FSM 2880). Inventories may include mineral material sources (Consult FSM 2850), unique geology or paleontology sites, geologic hazards, caves, or groundwater resources.

1. Develop inventory to meet or exceed Order 3 inventory standards (1:63,300 map scale). (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: GM12

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 management area 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).
   2. Apply appropriate Transportation and Facilities Forest-wide Direction and Standards & Guidelines to the location and construction of mining roads and facilities.
   3. Reclaim disturbed areas in accordance with an approved plan of operations.

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 management area 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 owners to manage split estates in accordance with individual patents or deeds.

VII. *Monitoring*

A. Assess minerals exploration and development activity.
   1. Area and District mineral exploration and development activity reports will be updated yearly. Incorporate activity reports into the Minerals Resource Inventory every 3 to 5 years.
B. Complete compliance inspections on a frequency schedule commensurate with the complexity and sensitivity of the project.
   1. One compliance inspection per year is the minimum for an approved plan of operation.

LANDS

Forest-wide Direction and Standards & Guidelines

Lands Preparation: JL11

I. *Land Status*

A. Perform a thorough 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 on National Forest System land with adjacent State and private landowners including environmental analysis. 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): JL122

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 requests for compatibility with management area prescriptions, 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. Applications may be approved for uses that conform to the Forest Plan. Other uses may be authorized if they do not conflict with the Forest Plan and are compatible with other uses of National Forest System land. (Consult FSM 2700 and the Alaska Regional Guide)
3. In addition to the above criteria, special use applications may be denied if the authorized officer determines that: (a) the proposed use would not be in the public interest, (b) the applicant is not qualified, (c) the proposed use would otherwise be inconsistent with applicable Federal or State law, or (d) 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 or with the purposes for which the area was established.
6. On lands encumbered by State selections, obtain concurrence from Alaska Department of Natural Resources, prior to granting a Special Use Authorization, in accordance 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, Region 10, Forest Service, prior to granting a Special Use Authorization within a valid claim area, as authorization from the Regional Forester may also be required. (Consult FSM 5450)
9. Coordinate all special use permit 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 out of sight, and well 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 well 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 higher level 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)
   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 management area 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 permittee and require that one person be designated to represent all permit holders. The original permittee is the permit holder 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. (In Wilderness, consult FSM 2320)

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 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. (In 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 management area 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 uses 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 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 reasonable regulation to ensure compatibility, conditions of the Alaska National Interest Lands Conservation Act, Section 1316, Forest Service Manual direction, and consistency with management prescription 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. It does not include finfish and does not result in the release of a product to become 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 does not include finfish and at some point releases a product to become 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 Forest Service permits, carefully analyze the effects of aquatic farming activities on other resources and other conflicting activities, such as recreational uses and access to adjacent uplands. Oppose aquatic farm development adjacent to National Forest System Wilderness.
2. Coordinate responses to aquatic farming proposals with 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 permits 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 permit, 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 management area 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 setnet 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 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 land owners 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 necessary 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, 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, 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, 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.
   2. 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-road vehicles, other than snowmobiles.

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 needs. They 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 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 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 management area 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 management prescriptions 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. Due to special authorities provided in Title XI, ANILCA, there will be no exclusion areas on the Tongass National Forest.
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 management area 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 Interdepartmental Master Agreement.
3. When local supplemental agreements with Military Agenices 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 there will be no adverse impacts to other National Forest resources or land. Encourage the State of Alaska to select those areas suitable an 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: (a) remote lodges under special use authorization, (b) mining activities in remote Forest locations, (c) remote Forest Service administrative sites, (d) Forest Service contractors working in remote locations, (e) aquaculture sites in remote locations, (f) 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: JL123

I. *Land Selections*

A. When making 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 Management Areas 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 requests. Encourage other parties involved to assist in finalizing conveyance of full legal entitlement, in a timely manner.
   2. Avoid Forest Service investment projects 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 jurisdiction should logically preside.
2. Obtain concurrence from Alaska Department of Natural Resources prior to 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 Management Areas 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 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)

D. Apply the following standards and guidelines to Management Areas 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 valid existing rights. (Consult Section 8, Haida Land Exchange Act of 1986)

E. Apply the following standards and guidelines to Management Areas 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 Office before granting use authorizations within a valid claim area, as authorization from the Regional Forester may also 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: JL231, JL24

I. *Establishing Boundries*

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 BLM for original boundary line survey. Encourage cooperative work with BLM to mark and post original National Forest/State and National Forest/Native boundaries to Forest Service standards. The Forest Service will maintain these bound-

ary lines and corners after the original survey. These boundaries should not be surveyed, marked or posted, until after conveyance of the land.

2. Maintain an inventory of surveyed and unsurveyed boundary lines to establish survey priorities. Establish program priorities to coincide with Forest Service manual direction. These priorities are identified, by location, in the Forest Plan schedule and will be updated periodically. (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: JL25

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.
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 Natives, 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)

B. Acquire log transfer facility (LTF) authorizations on adjacent 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 (preferably at least 25 years) for permanent LTF sites.

Land Ownership Adjustments: JL26

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*," Draft dated September 1989, 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 scenic 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.

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 Scenic Area, generally retain National Forest System land, unless there are compelling reasons for disposal.

FACILITIES

Forest-wide Direction and Standards & Guidelines

Facilities Operations: LF1

I. *Administration and Maintenance*

A. Prepare, administer and manage facilities activities necessary for the management of the Tongass National Forest.

B. Provide maintenance and safety inspections on major structures on the Forest in compliance with FSM requirements.

Facilities Improvement Preparation: LF21

I. *Plan Development*

A. Complete site development plans for all facility needs identified in the Forest Plan implementation schedule.

Facility Construction: LF22

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 management area direction.
2. Comply with all applicable Federal, State, and local building codes, including:
   * Uniform Building Code
   * Uniform Plumbing Code
   * Uniform Mechanical Code
   * National Fire Protection Association Life Safety Code
   * National Electrical Code

Facility Maintenance: LF23

I. *Maintenance*

A. Maintain facilities to meet codes applicable at the time of construction, unless otherwise required by law.

1. Maintain all buildings and related facilities to:
   * promote human safety
   * preserve the design life
   * function efficiently
   * exhibit a pleasant appearance
   * promote a productive work atmosphere

TRANSPORTATION
Forest-wide Direction and Standards & Guidelines

Transportation System Inventory: LT111

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.

Transportation Monitoring: LT121

I. *Traffic Surveillance*

A. Collect data about traffic volume and types on Forest Development Roads as needed to determine investment sharing and commensurate maintenance responsibilities, recreational use. Use this information, as applicable, in the development of road management objectives.

II. *Accident and Hazards*

A. Implement requirements of the Forest Service Highway Safety Program (consult FSM 7730), which include recording the location of all known accidents and identifying locations and 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 levels permit.

III. *Log Transfer Facilities*

A. Comply with the environmental monitoring and reporting requirements of the Department of the Army and Environmental Protection Agency permit under which the facility is being operated.

Road and Bridge Administration: LT122

I. *Road Management*

A. Manage Forest Development Roads based on the criteria listed below:

1. Keep Forest Development Roads open to public motorized use unless:
   * Use conflicts with management area objectives,such as need to protect critical habitat or to retain a non-motorized recreation experience.
   * Financing is not available to maintain the facility 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 unrelated to weather conditions.
   * There is little or no public need for them.
2. Manage road use by seasonal closure if any of the following conditions are anticipated:
   * Seasonal conflicts with management area objectives, such as 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.
4. Allow administrative use of closed or restricted roads when needed for emergency use or otherwise deemed appropriate by the Forest Supervisor.

B. To the extent practicable, manage road use in cooperation with appropriate State and other Federal agencies to meet fish and wildlife population 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 appropriate investment sharing and maintenance requirements and rules of use as terms of the permit (see road order, 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.

Transportation Improvement Planning: LT212

I. *Planning*

A. Plan transportation facilities that will efficiently integrate and achieve Forest Plan direction. Take advantage of resource opportunities recognized during project scoping whenever appropriate, 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 appropriate 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. Assign road management objectives to all Forest Development Roads to direct future activities, based on Forest Plan direction and project interdisciplinary analysis (consult FSM 7710).

1. Include in road management objectives criteria for design (Road Preconstruction Handbook) and operation and maintenance (FSM 7730).

Preconstruction Engineering: LT214

I. *Road Standards*

A. Perform route or site selection, location, geotechnical investigations, survey, and design to a technical level sufficient for the intended use of the facility, the investment to be incurred. Ensure consistency with management area direction.

1. Consider each of the following factors equally when determining standards appropriate for the intended uses:

* cost of transportation (including operation and maintenance)
* safety
* impacts on land and resources.

B. Construct roads in the most cost effective manner consistent with management area direction. Use the Forest Highway Program (see FSM 7740) and joint financing of construction as methods to construct facilities 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 facility (considering cost of construction, maintenance and hauling) for the sale. Compare the standard required for the immediate harvest and removal of timber with that needed to meet other management objectives. When a higher standard facility is required to meet multiple use objectives or for future management, include supplemental funding 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 (see 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. Where those roads will provide potential access to private lands, recognition of the route as a potential State route should influence appropriate 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 minimize effects on wildlife and fish habitat and 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. (also see Appendix I)0

1. Incorporate erosion control and stabilization measures in project plans for stabilizing all human-caused soil disturbances.
2. Avoid construction on highly unstable uplifted marine sediment as identified in the soil resource inventory (SRI), unless it is approved by the appropriate line officer after on-site consideration and appropriate stability analysis.
3. Roading on slopes in excess of the soils internal angle of friction, as identified in SRI's, requires appropriate line officer approval after site-specific investigation has been conducted to determine degree of risk and the potential effects from mass wasting. Conduct appropriate 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 will prevent the waste material from entering streams. Stabilize and revegetate these materials in accordance with prescribed erosion control measures in the project plan.
4. Locate stream crossings 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. 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.
5. Location of roads parallel to fish bearing streams and crossing fish streams will be permitted only where 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. Side-casting and waste materials must not encroach upon the stream course and as much undisturbed ground cover as practicable shall be left between the road and the stream. Complete endhaul of waste material will be required where roads are located near fish streams when there is the probability of downhill movement of the material into the stream below. Fill will be placed 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 Direction and Standards and Guidelines for Fish Habitat Planning, CF112). 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.
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 may occur.
8. Slope drainage ditches along the road bed with reasonable consistency 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 prescribed erosion control and stabilization measures in the project plan. These roads will have vegetation established on the roadbed within 10 years following termination of use.

B. Design and construct roads to conform to the Adopted Visual Quality Objectives.
   1. Consult National Forest Landscape Management Handbook, Volume 2, Chapter 4: Roads, for guidance.
   2. All Sensitivity Level 1 and most Sensitivity Level 2 roads shall consider the following in the design phase:
      * Vegetation of slopes seen from the road
      * providing "planting pockets" or terraces on slopes, where needed
      * minimizing landform modifications thru road location and design
      * vegetative treatment of clearing edges shall consider feathering or free-flowing, undulating edge to break up the straight line effect of road
      * roadside clean-up on all roads receiving general public use or expected to have such future use

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, as identified during project interdisciplinary team analysis.
   1. Roads will not be constructed across alluvial floodplains, mass wastage areas, or braided stream bottomlands unless an interdisciplinary team investigation indicates that individual site-specific prescriptions (process best management practices in the case of water quality) can be applied to assure protection for the soils, water and associated resources.
   2. Where roads or other facilities are 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 that 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 reasons (e.g., recreation or visual concern) 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 and meet management area direction. During the design phase consider the potential for use of the pit to enhance fish habitat and dispersed recreation opportunities.

1. Rock quarries and borrow pits will be planned 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, or until determined that the soil ground water level does not constitute a high-risk situation. Where other sources are available, borrow pits will not be located on landslide prone areas. Where no other practicable alternative exists, quarries will be stripped of their overburden and the excavated material hauled 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. Quarry and borrow pits should be designed to minimize the possibility of sediment being carried into water courses by runoff. Borrow pits will be located away from water courses, 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 stream courses 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.
3. Blasting that adversely affects fish spawning beds will be limited 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 appropriate agencies such as:
   * Alaska Department of Fish and Game
   * National Marine Fisheries Service
   * U.S. Fish and Wildlife Service.
4. The use of intertidal gravel as a source of borrow shall not be allowed 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. Borrow pits and quarries no longer needed will be drained, unless developed for fish or waterfowl habitat, and mineral soil revegetated using the most appropriate means, as stipulated in the project plan.

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, the Forest Service will cooperate with appropriate State and Federal agencies per stipulations in Memorandums of Understanding or cooperative 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:* 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, is normally prohibited.
2. *Protected Locations:* Log transfer and log raft storage facilities should be sited 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:* Log transfer facilities generally should be sited 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 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, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% for specialized equipment.
5. *Bark Dispersal:* Log transfer facilities should be sited 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:* Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to effect) 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 tug boats with log rafts at most tides and on most winter days.
9. *Storage and Rafting:* Logs, log bundles or log rafts should be stored 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.
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 fishermen.
14. When an existing log transfer facility in a less than optimal location is considered for reconstruction, an interdisciplinary analysis will be performed 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 it's design life.

VI. *LTF Design and Construction*

A. Plan and construct log transfer facilities in accordance with management area 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) and
   * other potential uses of the site and facility.
2. *Fill Structures:* Fill structures shall be designed and constructed to prevent erosion, pollution and structural displacement.
3. *Timing of Inwater Construction:* Inwater construction, blasting and/or filling associated with LTF sites should be timed to limit adverse impacts to marine and estuarine fishery resources and avoid conflicts with other user groups.
4. *Bark Accumulation Management:* The siting, design and operation of the LTF and contiguous collateral upland facilities shall utilize best practicable procedures and methodologies to control intertidal and submarine accumulations of bark.
5. *Bundle Speed:* The speed of log bundles entering receiving waters should be non-violent and .he 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:* The design, construction and operation of LTF's contiguous sort yards and/or log storage yards shall utilize practicable procedures for control of surface water runoff from facilities.

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 (e.g., a low-angled slide would be more likely to be compatible with natural topography than a bulkhead design).

Road and Bridge Construction/Reconstruction: LT22

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 anticipated use.
   * Repair of surfacing, bridges, and LTF's where analysis clearly shows an economic advantage to protect the investment.

Road Maintenance: LT23

I. *Maintenance levels, conditions, and inspections*

A. Operate and maintain Forest Development Roads in a manner which provides cost effective support to management area direction and safe travel to users of the system while protecting the environment, adjacent resources, and the public investment (consult the Transportation System Maintenance and Region 10 BMP Handbooks).

1. Maintain Forest Development Roads accessible by Marine Highway to the following minimum maintenance levels:
   * *All arterial and open collectors:* Level 3
   * *All open local roads*: Level 2
   * *All roads closed or blocked:* Level 1
2. Maintain Forest Development Roads not accessible by Marine Highway to the following minimum maintenance levels:
   * *Arterials*: Level 3
   * *Collectors*: Level 3 during scheduled activities, Level 2 at all other times.
   * *Locals*: Level 3 during scheduled activities, Level 1 at all other times.
3. Consider protection needs of adjacent resources when planning and conducting road maintenance activities.
   * Road running surfaces and bridge decks should be maintained to minimize the amount of road surface sediment entering adjacent streams and lakes.
   * Ditches and culverts should be maintained to keep water effectively flowing, and minimize sediment entering waterways.
   * 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 management area 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).
4. 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.
5. Inspect bridges at frequency and standards specified in FSM 7730.
6. Use of traffic control devices will be in accordance with the guidelines contain in the Manual on Uniform Traffic Control Devices.

Geometronics Activities: LG

I. *Maps, aerial photo, and orthophoto production and updating*

A. Provide information and assistance as needed and requested to meet Regional geometronic objectives, such as: updating the primary base series maps; contracting for aerial photography; production of orthophotos; production of special maps; and preparation of map products for publication.

Fire Suppression: PF12

I. *Protection Options*

A. Due to weather conditions, fire suppression is not a common need on the Tongass National Forest. Under normal conditions the period of time for fire starts and spread is short. Fire suppression shall fall into one of four optional categories: "Critical" (control strategy), "Full" (control strategy), "Modified" (contain strategy), or "Limited" (confine strategy). These options and strategies are further defined and discussed in the interagency Southeast Alaska/Prince William Sound Fire Management Plan. All suppression actions that fail to confine, contain, or control the fire's spread following the first initial attack shift will result in the completion of an Escaped Fire Situation Analysis. (Consult FSM 5132)

1. *Critical Protection Option (control)*: This option is specifically created to differentiate the protection of human life and inhabited property and improvements from natural resource protection. The designation of a site or area with this option is the discretion of the land manager responsible for the fire protection. Unquestioned priority over all other fires will automatically be given to control fires on sites or areas identified in this option.
2. *Full Protection Option (control):* Areas assigned this designation will receive aggressive initial attack and aggressive suppression actions until the fire is declared out. This option was designed for the protection of high resource values, cultural sites, historical sites, and those resources which require wildland fire protection, but do not involve protection of human life and habitation.
3. *Modified Protection Option (contain):* This option is to provide managers with an alternative for those lands that require a relatively high level of protection during critical burning periods. Its intent is to reduce suppression costs and increase resource benefits where possible during the entire fire season. Some portions of the fire may require aggressive action and others may only require a containment action.
4. *Limited Protection Option (confine)*: This category recognizes areas where a natural fire program is desirable or the values at risk do not warrant the expenditures of suppression funds beyond initial attack. No suppression actions will be taken unless necessary to confine the fire within the limited area.

Fuels Improvements: PF2

I. *Prescribed Fire*

A. The use of Prescribed Fire as a tool for resource management is an ofttimes undependable one due to shortness of burning opportunities and weather limitations during the burning season. Use Prescribed Fire, as appropriate, for silvicultural site preparation, wildlife habitat improvement, slash hazard treatment, and prescribed natural fire in wilderness or limited suppression areas.

1. All prescribed fires must have an approved project plan signed by the appropriate line officer with a designated burn boss, contingency options, and a process for monitoring and evaluating results. All prescribed fires will have a qualified organizational structure, including personnel, to suit the complexity of burn. (Consult FSM 5140)

2. Silvicultural Site Preparation. The District Ranger will assure appropriate interdisciplinary specialist participation during planning, executing, monitoring, and evaluation phases of prescribed fire use. Consult FSM 5140, FSH 5709, FSM 6740.
3. Wildlife Habitat Improvement. The District Ranger will assure appropriate interdisciplinary specialist participation during planning, executing, monitoring, and evaluation phases of prescribed fire use. Consult FSM 5140, FSH 5709, FSM 6740.
4. Slash Hazard Treatment: The District Ranger will assure appropriate interdisciplinary specialist participation during planning, executing, monitoring, and evaluation phases of prescribed fire use. Consult FSM 5140, FSH 5709, FSM 6740.
5. Wilderness or Limited Action: The District Ranger will assure appropriate interdisciplinary specialist participation during planning, executing, monitoring, and evaluation phases of prescribed fire use. Consult FSM 5140, FSH 5709, FSM 6740.

Law Enforcement Activities: PL

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: (1) do not constitute a threat to public or employee safety, and (2) 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, 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 received.
3. Identify sites and situations which constitute a high risk to Forest Service employees. 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 which promotes a better understanding 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 or escape of a suspect, 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.

INSECT AND DISEASE
Forest-wide Direction and Standards & Guidelines

Forest Pest Management: QC

I. *Integrated Forest Pest Management*

A. Maintain the health of the forest by applying integrated forest pest management (IFPM) principles developed by the Cooperative Forest Pest Management Group during project design and implementation.

1. Create ecological conditions which improve the health of vegetation by incorporating integrated forest pest management principles into forest planning, decisionmaking, and implementation of project activities. The Cooperative Forest Pest Management (CFPM) group of State & Private Forestry will be responsible for providing the data necessary for project planning to maintain or improve the health of the forest.
2. Apply IFPM recommendations of the CFPM group to minimize impacts of pests to the extent necessary to achieve resource management objectives.

B. Evaluate pest damage to the resources.

1. Local pest conditions will be evaluated by the S&PF Forest Pest Management (CFPM) group through ground surveys to determine damage levels and their effect on resources.
2. Data from the evaluations will be used in developing project prescriptions.

C. The S&PF Forest Pest Management Group will provide training, technology transfer, and technical assistance to Forest and District personnel to assist in management of pest problems.

Forest Pest Inventory & Survey: QC122

I. *Forest and District Cooperation*

A. The S&PF Forest Pest Management Group will cooperate with Forest and District personnel in conducting an annual aerial pest survey.

1. Forest and District staff will notify CFPM of any pest problems noted during field activities on the forest.
2. Forest and District staff will determine those resource areas having highest priority for management of pest problems prior to the survey season and notify CFPM of their needs.
3. The Forest Pest Management Group will conduct surveys of a variety of forest cover types and management areas. Surveys will concentrate in those areas identified as having highest management priority by the Forests and Districts, and in adjacent outbreak areas.

APPENDIX H

APPENDIX H

MONITORING PLAN

TABLE OF CONTENTS

TONGASS LAND MANAGEMENT PLAN REVISION

MONITORING PLAN

INTRODUCTION

The purpose of a monitoring plan is to measure and evaluate how effective the Forest Plan has been in accomplishing Forest Plan objectives. Monitoring provides quantitative and qualitative information on progress and results. It determines how well assumptions used in developing the Forest Plan reflect the actual conditions, how well Forest Plan objectives are being met, and how appropriate management standards and guidelines are. Monitoring is intended to help keep the Forest Plan dynamic and responsive to changes. It may lead to changes in management practices, provide a basis for minor adjustments to the Forest Plan, or even lead to Forest Plan amendment or revision.

Monitoring consists of gathering data, observations, and information. Evaluation interprets and analyzes this information. Together, monitoring and evaluation provide information necessary to determine if planned conditions are being met and are within the intent of the plan, and if not, why not?

Collectively, monitoring and evaluation are intended to determine if Forest Plan:

a) goals, objectives, and assumptions (i.e., the estimated outputs, services and effects) are valid and being achieved.
b) management area prescriptions and their associated standards and guidelines are being implemented as directed.
c) management area prescriptions, when applied, address the management problems and stated public issues, management concerns, and resource opportunities.
d) implementation costs are as predicted.
e) demand projections are correct.
f) amendments or revisions are needed.

LEVELS OF MONITORING

There are three distinct levels of monitoring: implementation monitoring, effectiveness monitoring, and validation monitoring.

Implementation Monitoring

Implementation monitoring determines if plans, prescriptions, projects, and activities are implemented as designed and comply with Forest Plan objectives, requirements, and standards and guidelines. Implementation monitoring answers the questions:

Are the standards and guidelines being implemented as prescribed?
Are the resource objectives being accomplished at the level specified?

It is generally conducted by Ranger District and Forest personnel as an integral part of day-to-day activities and documented in project files as part of routine compliance procedures. Evaluation of implementation monitoring may result in adjusting prescriptions, fine-tuning targets or changes in plan or project administration.

Effectiveness Monitoring

Effectiveness monitoring can be conducted only after implementation monitoring has determined that Forest Plan direction has been implemented correctly. It determines how effective prescriptions, project plans, and activities have been in meeting Forest Plan objectives.

The question posed by effectiveness monitoring is:

Did the management area prescriptions and standards and guidelines result in the expected effect?

Effectiveness monitoring is conducted by resource and technical specialists. Because effectiveness monitoring may require a considerable amount of data, it is generally conducted on a limited basis dealing with sensitive areas and moderate to high risk resource activities, or in response to public issues.

Evaluation of the results of effectiveness monitoring generally results in adjustments to projects and targets, and changes in mitigation measures. It may also indicate the need for change to or amendment of the Forest Plan.

Validation Monitoring

Validation monitoring is used to determine whether the initial data, assumptions, and relationships used in revising the Forest Plan are correct, or if there is a better way to meeting forest plan regulations, policies, goals, and objectives.

The questions posed by validation monitoring are:

Are assumptions and resource relationships used in the Forest Plan valid?
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. It is generally conducted by technical and research specialists and by means of the establishment of permanent plots or studies and in close coordination with research.

COMMON MONITORING METHODS

Some of the methods commonly used for monitoring follow. These components may be used singly or integrated with each other.

-- The project level day-to-day management of projects and programs will generally identify deviations from the Forest Plan and resolve them on an on-going basis. At year-end, Forest Supervisors will submit a narrative report explaining where significant deviations in standards and guidelines and/or resource objectives have occurred so that these deviations may be taken into account for future project/program planning.

-- The Supervisor's Office personnel will conduct routine resource assistance trips for each Ranger District. The trips are informal visits to assist in reviewing project implementing direction, solving problems, exchanging information, transferring technology, and identifying areas needing higher-level reviews. Resource assistance trip findings will be documented and usually shared throughout the Administrative Area.

-- A General Management Review (GMR) will be conducted on each Ranger District at least once every five years to verify that the District is operating effectively and efficiently. The GMR focuses on the Forest Plan implementation and how that implementation is being monitored and evaluated. The GMR will be documented formally with a follow-up action plan.

-- Activity and Program Reviews will be scheduled and conducted on a recurring basis. These reviews, conducted by Forest and/or Regional Office Staff, use an interdisciplinary team approach and are designed to assure that programs and activities comply with Forest Plan management direction, objectives, and standards and guidelines. Activity and Program Review findings will be documented and communicated with the Forest Supervisor, and will be followed-up by an action plan.

-- Management Reviews are line level reviews which check for resource area compliance with many laws and regulations, with certain standards and guidelines.

MONITORING PLAN

The following tables display the monitoring questions and reflect public issues associated with Forest Plan implementation. The monitoring plan is not intended to represent all inventory and other on-going informational needs for project planning or implementation (For a more in-depth discussion of information needs, refer to Appendix Q).

The column headings in the tables are explained below.

Monitoring Question - Questions being asked with regard to the general monitoring question listed at the beginning of each resource.

Monitoring Type - Implementation, effectiveness or validation. In some cases there may be overlap between types.

Action/Effect to be Measured - A statement of what will be examined.

Methods/Location - How the item will be measured and which reporting system contains the data or information.

Units of Measure - Applicable unit of measure.

Expected Reliability - An indication of the accuracy of the information collected and how well it correlates to the monitoring question.

Frequency of Sampling - The schedule for collecting the data--how often the data is collected and to what magnitude or level of detail.

Reporting Period - The schedule on which the collected data is aggregated, evaluated and reported to determine if further action is necessary. Under some conditions the reporting period may be increased (less time between reports).

Management Responsibility - Responsibility for coordinating and evaluating the monitoring activity.

Variability Indicating Further Action - The amount of change that can occur before further action is taken. Examples of further action are:

-- Referring problems to the appropriate Line Officer for action.
-- Revising the land allocation as a nonsignificant amendment.
-- Revising the budget.
-- Initiating significant amendment of the Forest Plan.
-- Initiating revision of the Forest Plan.

Annual Cost - Approximate costs of the monitoring task. These costs may not be spent every year, but are the expected average annual cost over a ten-year period.

N/A = Not applicable

Wilderness

Are natural ecosystem processes functioning in designated Wilderness within acceptable limits of change? (Recreation management in Wilderness is included in Recreation Monitoring).

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are human activities and their effects, and mechanized use within the established Limits of Acceptable Change (LAC) for the biophysical elements of the Wilderness resource? (Note: LAC determination will likely be made in most Wildernesses before the Forest Plan is final)	implementation and Effectiveness	Determine the effect of implementing the Forest Plan inside and outside the Wilderness on LAC indicators.	Management Review	N/A	Medium	Three wilderness areas annually	5 Years	Forest Recreation staff	Any detectable or predicted change in indicators established in LAC process	$10,000
2. To what extent are Wilderness ecosystems and conditions being utilized to contribute to the Regional, National and world-wide scientific knowledge base?	N/A	Number of formal research projects utilizing components of the Wilderness ecosystems.	Listing of authorizations and/or agreements.	Number	High	Annual	Annually in the Wilderness Report	District Ranger	If none, make opportunities known to scientific community.	$ 1,000
3. Are the established LAC appropriate for the Forest's customers?	Effectiveness	Determine relative satisfaction level of Wilderness customers.	Establish baseline information and then do periodic surveys of customers on an established sample bases.	Levels of satisfaction	Medium	Annual	5 years	Forest Recreation Staff, Regional Recreation Staff and Forestry Sciences Lab.	Trends in satisfaction levels and/or valuation of Wilderness use opportunities indicate a degradation of quality as perceived by the customer.	$10,000

Research Natural Areas

Are natural ecosystem processes functioning, without man-caused vegetation manipulation, in designated Research Natural Areas? Are Research Natural Areas being used for research purposes?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are Research Natural Areas (RNA) direction and standards & guidelines being implemented as described in the Forest Plan?	Implementation	Implementation of RNA guidelines	Determine whether vegetative manipulation, or other human caused disturbances unrelated to research objectives, are occurring.	Acres	High	Annual on 10% of RNAs	5 years	Forestry Sciences Laboratory	Acres which do not meet the RNA management direction.	$ 3,000
2. To what extent are Research Natural Areas being utilized to contribute to the Regional, National and world-wide scientific knowledge base?	N/A	Number of formal research projects utilizing components of the Research Natural Areas ecosystems.	Listing of authorizations and/or agreements.	Number	High	Annual	5 years	Forestry Sciences Laboratory	Nonuse of Research Natural Areas for their intended purposes.	$ 3,000

Recreation

Are outdoor recreation settings, facilities, and services provided for in the Forest Plan satisfactory to the needs of the recreation customers? (Visual Quality of settings is also included in the Visual Resource Monitoring).

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are sites and facilities, including trails, being constructed and reconstructed in accordance with Forest Plan objectives?	Implementation	Location and quantity of constructed and reconstructed facilities	Document activities and resource assistance trips	Number of projects and miles of trail	High	Annual	5 years	Forest Recreation Staff	Evidence that plan objectives were not attained.	$3,000
2. Are inventoried recreation places and their facilities located, operated, and maintained in accordance with Forest Plan objectives?	Implementation	Changes in physical characteristics	Inspect recreation places	N/A	Medium	Annual on 10%; emphasize sites with high use.	Annual	District Ranger	Recreation places not meeting objectives.	$8,000
3. Are developed recreation facilities being effectively utilized?	Effectiveness	Occupancy rates for developed sites cost of operations.	Compare to average recreation use for project types. Utilize Recreation Information Management (RIM) System	Annual RVD's and annual PAOT capacity.	Medium	Annual	5 years	District Rangers and Forest Recreation Staff	Occupancy rates are below acceptable rates to justify cost of operation.	$ 3,000
4. Are customers satisfied with the recreation opportunities and settings the Forest provides?	Effectiveness	Satisfaction level of recreation customers.	Establish baseline information and then do periodic surveys.	Levels of satisfaction	Medium	5 year	5 year	Forest Recreation Staff; Regional Recreation Staff.	Reduction in satisfaction levels.	$30,000

5. Are Forest management activities resulting in changes in Recreation Opportunity Spectrum (ROS) settings that do not meet the experience levels expected in the plan?	Effectiveness	Changes in ROS	Resource assistance trips and management reviews.	N/A	Medium	5 years	5 years	Forest Recreation Staff	ROS changes not provided for in the plan.	$ 3,000

Visual Resources

Are visual resources managed in accordance with the objectives of the Forest Plan?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Do completed management activities meet the Visual Quality Objectives as prescribed in the Forest Plan?	Effectiveness	Implementation of visual guidelines	Select and review implemented projects focusing on areas of high visual sensitivity. (May be a compilation of project monitoring.)	Visual Quality Objective by Viewshed	Medium	Annual on 20% of projects in areas of high visual sensitivity	5 years	Forest Recreation Staff	Projects not meeting prescription objectives	$10,000
2. Is the Scenic Viewshed management area prescription effective in providing for a wide range of management activities, while meeting the Retention and Partial Retention Visual Quality Objectives?	Effectiveness	Effects of visual requirements.	Evaluate resource conditions, including Existing Visual Condition (EVC), timber harvested and recreation, wildlife and subsistence use through management reviews.	Projects meeting prescription objectives	High	Annually on one Administrative Area	3 years	Forest Recreation Staff	Inconsistency with established Visual Quality Objectives	$ 3,000

Timber

Is timber harvest being accomplished within the objectives of the management area prescriptions and expected Plan outputs? (Other items related to timber harvest are in the other resource sections of this monitoring plan.)

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are cutover lands restocked within 5 years of harvest?	Implementation	Acres certified as restocked.	Field review third year after harvest and fifth year after harvest by certified silviculturist. Record in TM stands data base.	Acres	High	Annual on 100% of applicable areas.	Annual	Forest Timber Staff	Acres not restocked. (Note: Sites with similar characteristics not certified restocked within 5 yrs of harvest; remove from the tentatively suitable)	$300.00 & $3.00/acre
2. Is sawlog volume offered, sold and harvested within decadal Allowable Sale Quantity (ASQ) harvest schedule?	Implementation	Sawlog volume offered, sold, and harvested.	Document In TM Stands database & GIS contracts layer. Periodic timber sale accomplishment (PSTAR).	Volume - MBF net sawlogs.	High	Annual	Annual	Forest Timber Staff	Predicted volume for 10-year period In excess of ASQ.	$1,000
3. What is the Forest-wide average unit size by management area prescription (per 36 CFR 219.12 (K)(5)(iii))?	Implementation	Unit size by management area	Document harvest units In GIS contracts layer and report out of TM stands data base.	Acres	High	Annual	Annual	Forest Timber Staff	Unit averages exceed prescription recommendations	$3,000

4. Are assumptions in the Plan upon which ASQ is based valid?	Validation	Changes in: (1) Productive forest landbase; (2) Timber utilization standards; (3) As result of new forest inventory; (4) Distribution of programmed harvest; (5) Tentatively suitable landbase. (6) Yield tables for management area prescriptions.	Review and analyze assumptions in the Plan.	N/A	Medium	As changes occur	5 years	Forest Timber Staff; Regional Office Timber Staff	Net sawlog harvest projections thru planning horizon exceed decadal ASQ.	$ 1,500
5. Is supply of timber proportional to industry demand?	Effectiveness	Supply & demand for the timber resource in SE Alaska	Periodic timber sale accomplishment report comparison of cut and sold volume, by Area, and by long and short-term timber sales.	Volume	High	Annual	Annual	Regional Office Timber Staff and Economist	3 year average sold within 20% of volume offered from periodic timber sale accomp reports (See item 2 for supply limit based on decadal average.)	$2,000
6. Are the effects of timber harvest on other resources as anticipated in the management area prescriptions?	Validation	Resource interactions	Management reviews and field assistance trips.	N/A	Medium	Annual	5 years	Forest Supervisor	Indication of evidence of unacceptable resource tradeoffs.	$5,000

Minerals

Are exploration and development of mineral resources accomplished according to Forest Plan standards & guidelines?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Does the Forest Plan and its emphasis in the Minerals management area prescription provide adequately for and encourage the orderly development of mineral resources especially critical and strategic minerals?	Effectiveness	Extent of orderly mineral development.	Determine location of mineral development and whether Notices of Intent (NOI) and Plans of Operation (POO's) are processed in a timely manner (as established in 36 CFR 228).	Number NOI or POO	High	Annual	5 year	Forest Minerals Staff	Evidence that mineral development is restricted by administrative delay	$1,000
2. Are mineral exploration, development, and reclamation activites adhering to standards and guidelines established in the Forest Plan?	Implementation	Determine compliance of activities with Forest Plan standards and guidelines and Plans of Operation.	Operation field review	N/A	High	Annual	Annual	District Ranger, Forest Minerals Staff	Evidence that activities vary from Plan objectives.	$10,000
3. Are operations conducted to minimize adverse environmental impacts on surface resources (36 CFR 228.8)?	Effectiveness	Effects of mineral activities and development on other resources.	Evaluate effects of activities on resources and objectives of the management area.	Appropriate unit for resource measured	Medium	Annual	5 year	District Ranger and Forest Minerals Staff.	Evidence that mineral activites are affecting other resource values at levels inconsistent with the objectives of the Forest Plan.	$50,000

Wildlife Habitat

Does the management of wildlife habitat reflect Forest Plan objectives?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are old-growth habitats changing as anticipated in the Forest Plan?	Implementation	Change in old-growth habitats including type, distribution, and patch size.	Compare and report old growth baseline data in conjunction with management activities. Monitor effects of blowdown.	Acres	High	Annual	5 years	Forest Wildlife and Timber Staff	Evidence that old growth acres are not retained as planned	$5,000
2. Are population trends of the Management Indicator Species (MIS) reflecting changes in habitat?	Validation	Population trends, habitat capability, habitat changes	Validate MIS models; monitor harvest of hunted and trapped MIS; cooperate in surveys.	N/A	Medium	Annual	5 Year	Regional Wildlife Habitat Relationships Coordinator, Research, Forest Wildlife Staff	Trends not in conformance with plan estimates	$200,000
3. Are standards and guidelines being implemented to reduce or eliminate adverse human effects on important habitats and their populations (such as marine mammal haulouts and marine bird rookeries)?	Implementation and Effectiveness	Determine effects of management activities on habitats and populations	Management reviews	N/A	Medium	Annual	5 Year	Forest Wildlife Staff	Evidence of adverse effects on habitats or populations due to harrassment	$3,000
4. How many structural and nonstructural wildlife habitat improvement projects have been completed?	Implementation	Determine the number of habitat improvement projects completed	Projects completed. (Record in MAR system).	Structures and Acres	High	Annual	Annual	Forest Wildlife Staff	25% deviation from Forest Plan objectives	$1,000
5. Are wildlife enhancement projects producing anticipated outputs?	Effectiveness	Determine the habitat capability or numbers of wildlife resulting from the project.	Measure habitat capability or numbers of wildlife.	Habitat Capability or Numbers of Wildlife	Medium	Annually on Selected Project Groups	5 years	Forest Wildlife Staff	25% deviation from projected outputs	$15,000

Fish Habitat

Are fish habitats maintained or enhanced, and are fish project objectives achieved? (Many of the questions which concern fish habitats are included in Watershed)

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are riparian direction and standards & guidelines being implemented as described in the Forest Plan?	Implementation	Implementation of riparian guidelines	Sample 5% of projects completed that involve riparian areas to determine if standards and guidelines have been implemented (may be a compilation of project monitoring)	Acres	High	Annual on 5% of projects	Annual	Forest Fish and Watershed Staff	Acres which do not meet the riparian management direction	$9,000
2. Are riparian direction and standards & guidelines effective in maintaining or enhancing fish habitat capability?	Effectiveness	Determine the effect of riparian direction and standards & guidelines on fish habitat capability	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 & Transportation Monitoring). Management Reviews.	Habitat Capability	Medium	Annually on 1-3 projects	5 Years	Forest Fish Staff and Research	Anticipated short- or long-term habitat capability reduction greater than 10% of natural following management activities	$40,000
3. How many structural and non-structural fish enhancement projects have been completed?	Implementation	Determine the number of habitat improvement projects completed	Projects completed. (Record in MAR system.)	Structures and Acres	High	Annual	Annual	Forest Fish Staff	25% deviation from plan objectives	$1,000
4. Are fish enhancement projects producing anticipated outputs?	Effectiveness	Determine the habitat capability or numbers of fish resulting from the project	Measure habitat capability or count numbers of fish	Habitat Capability or Numbers of Fish	Medium	Annually on Selected Project Groups	5 years	Forest Fish Staff	25% deviation from anticipated outputs	$15,000

5. Are fish habitat capability and effects models accurate in providing estimates of habitat and effects of management activities?	Validation	Validity of the models	Compilation of existing and on-going studies and appropriate new studies. Trends of harvest of management indicator species.	N/A	Medium	Annually	5 years	Regional Fish Habitat Relationships Coordinator and Research	25% deviation from projected model outputs. Trends not in conformance with plan estimates.	$15,000

Cultural/Historical Resource

Are cultural resource sites managed to protect their values?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. How many known or unknown cultural resource sites (prior to management activity) have been impacted by project activities or vandalism?	Implementation	Effect on cultural sites	Document 100 percent of the sites where damage has occurred as a result of management activity or vandalism	Number of sites	High	Annual	Annual	Forest Recreation Staff	Evidence of damage to known or unknown sites	$80,000

Subsistence

What effect does Forest Plan implementation have on subsistence opportunities on National Forest Lands?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are the anticipated long and short-term effects of management activities on subsistence valid? Have historical subsistence use patterns changed?	Effectiveness and Validation	Habitat capability in comparison with 3 yr average subsistence use of the resources.	(1) Habitat capability modeling for Management Indicator Species species. (2) Alaska Department of Fish and Game hunting/ fishing harvest records by Management Indicator Species by Wildlife Analysis Areas. (3) Important subsistence use areas developed from Tongass Resource Use Cooperative Study (TRUCS) data updates.	Numbers of animals and fish available for subsistence.	Medium	Annually	5 years	Forest Subsistence Staff	Inability to maintain subsistence opportunities due to habitat change.	$100,000

Wild and Scenic Rivers

Is the outstandingly remarkable character of the units of the Wild and Scenic River System being maintained? (Monitoring requirement applies to all eligible rivers recommended for designation for three full fiscal years following approval of the Forest Plan, and continues for all designated rivers).

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are the Wild, Scenic and Recreational River management area prescriptions being implemented as prescribed in the Plan for those rivers designated by Congress as components of the National Wild and Scenic Rivers System?	Implementation	Implementation of management area prescription direction and standards & guidelines.	Management Reviews	River values maintained or enhanced	High	10% of rivers per year	5 years	Forest Supervisors and District Rangers	Human-caused reduction of river values.	$6,000
2. Are the Wild, Scenic and Recreational River management area prescriptions being applied as interim management direction to those rivers determined to be suitable?	Implementation	Implementation of management area prescription direction and standards & guidelines.	Report status of suitable rivers and whether values are maintained or enhanced.	River values	Medium	Annual	Annual	Forest Recreation Staff	Any detectable or predicted decline in values identified for a specific river, or the potential change in classification	$6,000
3. Are the Wild, Scenic and Recreational River management area prescription standards and guidelines, and other applicable standards and guidelines, effective in maintaining and enhancing the values for which the river was designated?	Effectiveness	Determine whether management activities in and adjacent to the river corridor maintain or enhance the outstandingly remarkable values	Various depending on values and locations identified for specific river. Management Review	River values maintained or enhanced	Medium	In conjunction with implementation monitoring is #1.	According to reporting period for other resource monitoring in the monitoring plan	Forest Recreation Staff	Human-caused reduction of river values	Included in #1

Watershed

Are soil productivity, water quality, and riparian values being maintained? (Some of the questions which concern watershed are included in fish habitat).

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. How many watershed improvements have been completed?	Implementation	Determine the number of watershed improvements completed.	Projects completed. (Record in the MAR system).	Structures or acres	High	Annual	Annual	Forest Watershed Staff	25% deviation from Plan	$ 300
2. Are Best Management Practices (BMPs) being implemented as described in the Forest Plan and the Soil and Water Conservation Handbook?	Implementation	Determine if Best Management Practices are being implemented	Sample 10 percent of land disturbing projects (often this will be a compilation of project monitoring)	Various	High	Annual	Annual	District Ranger and Forest Watershed Staff	Evidence that BMPs are not being implemented	$ 3000
3. Are the Best Management Practices effective in protecting water quality and meeting State Water Quality Standards?	Effectiveness	Determine if Federal and State Water Quality Standards are being met.	Analyze data collected for physical, chemical, and biological water parameters in conjunction with projects and long-term water quality monitoring plans.	Various	Medium	Annual	Annual	Forest Watershed Staff and Regional Watershed Staff	Evidence that State Water Quality Standards are not attained.	$30,000
4. Are management activities affecting water quality to the point that the fisheries resource is being impacted?	Validation	Determine if water quality and quantity, as it relates to fisheries habitat, is being maintained or improved.	Establish water quality monitoring network to determine baseline and trend relationships	N/A	Medium	Annual	Five year	Forest and Regional Watershed Staff; Research	Evidence that fisheries habitat or water quality values are not attained.	$250,000
5. Are constraints for even-age harvest in 3rd or 4th order watersheds effective in minimizing Cumulative Watershed Effects (CWE)?	Effectiveness	Determine whether CWE cause adverse soil or water impacts resulting in changes in stream channel equilibrium.	Perform in conjunction with item number 4.	N/A	Medium	Annual	5 Year	Forest and Regional Watershed Staff; Research	Evidence that constraints are overly or insufficiently restrictive.	Included in No. 4.

6. Are soil disturbing activities likely to reduce productivity or cause erosion losses?	Effectiveness	Soil displacement, compaction, and puddling	Line transects	% area	Medium	Annual on 10% of ground-disturbing management activities including harvest units with greater than 60 percent slope.	5 years	Forest Watershed Staff	Activities not in compliance with standards in Forest Service Handbook 2509.18.	$20,000

Land Ownership

Are land ownership changes, such as exchanges and State and Native Corporation land selections, resulting in the need to modify Forest Plan objectives?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Is the National Forest landbase changing to a degree which requires modification of the Forest Plan objectives?	Effectiveness	Changes in landbase which effect Forest Plan objectives	Document changes in Forest landbase. For land lost, document acres by management area prescription; determine outputs anticipated for these lands in the Forest Plan. Evaluate opportunities on lands gained.	Various measures	High	Annual	Annual	Forest Lands and Planning Staffs	5% deviation in Forest Plan outputs, or significant opportunities on lands gained.	$6,000

Transportation

Does the transportation system efficiently support Forest Plan objectives?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are roads and Log Transfer Facilities (LTF's) sited, constructed, and managed to meet Best Management Practices and other Forest Plan direction?	Implementation	Prescription direction and standards & guidelines	Resource Assistance trips	Miles of road and number of LTF's not meeting direction.	Medium	10% sample annually	5 years	Forest Staffs	5% not meeting plan direction.	$5,000
2. Are road densities and management (amount of road per unit of area) meeting land management objectives?	Effectiveness	Densities, closures, service levels.	Management Reviews	N/A	Medium	5 years	5 years	Forest Engineer	Transportation systems not meeting land management objectives.	$1,500
3. Do construction techniques and the type of roads and LTF's constructed protect resource values?	Effectiveness	List passage requirements, LTF siting guidelines, BMP's, construction through management areas which preclude timber harvest and other applicable direction.	Compilation of project monitoring and management reviews.	N/A	Medium	Annually	5 years	Forest Supervisor	Construction techniques and road standards are not adequately meeting resource management objectives.	$3,000

Fire

Does the management of prescribed and wildfire reflect management area objectives?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Do Prescribed Fire Plans reflect resource management objectives?	Effectiveness	Degradation of resource values such as visual quality, or fish and wildlife habitat. Are expected results being attained on the acres treated?	Resource assistance trips	N/A	Medium	Annual/or each fire.	3 years	Forest Staff, as appropriate.	Degradation of associated resources.	$3,000
2. Is wildfire managed to reflect management area objectives?	Effectiveness	Degradation of resource values such as visual quality, or fish and wildlife habitat. Are expected results being attained on the acres treated?	Resource assistance trips	N/A	Medium	Annual/or each fire.	3 years	Forest Staff, as appropriate.	Degradation of associated resources.	$3,000

Forest Pest Management

Is the health of the Forest being maintained by applying Integrated Forest Pest Management principles?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are Integrated Forest Pest Management principles integrated into implementation and decision-making of project activities to ensure insect and disease organisms do not increase to potentially damaging levels?	Implementation and Effectiveness	Proejct plans and pest conditions	Insect and disease field review and management review	Pest conditions	Medium	Annual pest surveys	5 year management reviews	Forest Pest Management Staff and State and Private Forestry	Pest conditions not maintaining Forest health.	$100,000

Threatened, Endangered, & Sensitive Species

Are threatened, endangered, or sensitive (T,E,&S) species populations and their habitats being maintained?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Are the habitats of threatened, endangered, and sensitive species identified in the Forest Plan being adversely affected by management actions? Are populations showing a decline?	Implementation	Determine the effect of management activities on T,E, & S species	Various depending on status of species.	Acres/ numbers	Medium	Annual	5 years	Forest Fish and Wildlife Staff, Regional Wildlife Staff, Research	Declining populations or anticipated adverse effects on populations.	$10,000

Social and Economic Health

To what extent is the Forest providing opportunities for maintaining lifestyles and the local and regional economies of Southeast Alaska?

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. How does the Tongass NF contribute to the social and economic health of communities in SE Alaska?	Effectiveness	Determine the payments to the State (FS receipts), recreation visitor days, employment value of FS contracts, volume and value of timber offered, sold, and harvested, quantity and value of fish produced and quantity and value of minerals produced from the Tongass NF.	Report this information from standard Forest Service Reporting Systems.	N/A	Medium	5 years	5 years	Regional Planning Staff	Significant or predicted change in Southeast Alaska economy.	$2,000
2. How do Forest Service management activities provide opportunities for Southeast Alaska residents to pursue and maintain differing lifestyles?	Effectiveness	Determine satisfaction of Southeast Alaska's residents	Resident surveys	Level of satisfaction	Medium	5 years	5 years	Forest Information Staff	Evidence of sufficient reduction in opportunities for SE Alaska residents to pursue and maintain differing lifestyles.	$5,000

Are programs funded as anticipated in the Forest Plan? (Program monitoring details are provided in the other monitoring elements).

Monitoring Question	Monitoring Type	Action or Effect To Be Measured	Methods	Unit Of Measure	Expected Reliability	Frequency of Sampling	Reporting Period	Management Responsibility	Variability Indicating Action	Annual Cost
1. Is the Forest achieving Forest Plan estimated outputs?	Implementation	Determine Forest Plan outputs compared to achieved outputs	Report and analyze this information in the Management Attainment Reporting System (MAR).	Various	High	Annual	Annual	Forest Administrative Officer	Greater than 25% variance between Forest Plan and actual accomplishments as documented in the MAR system	$10,000
2. Are funding levels for capital investment adequate to achieve projected improvements?	Implementation	Determine funding levels for capital investments	Report necessary information from standard Forest Service reporting systems	Dollars and others as appropriate	Medium	Annual	Annual	Forest Administrative Officer	Evidence that projected improvements will not be obtainable	$1,000
3. Are the major variable costs used in the development of the Forest Plan consistent with actual implementation cost?	Validation	Determine the adequacy of unit costs used to develop the plan	Compare unit costs from TSPIRS and ARRS with unit costs in the Forest Plan	Dollars per unit	Medium	Annual	5 year	Regional Program, Planning, and Budgetting Staff.	Greater than 25% variance between Forest Plan estimates and actual costs	$5,000

APPENDIX I

APPENDIX I

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 FSH 2509.22, Soil and Water Conservation Handbook. The handbook describes the application, monitoring, evaluation, and possible 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	Determination of Cumulative Watershed Effects	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 effects of land management activities on soil productivity and beneficial water uses; to monitor baseline watershed conditions for comparison with State standards, Forest Plan standards and guidelines, and estimation of long-term trends; 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 to minimize adverse effects on riparian areas from logging and other land disturbing management activities, with the exception of locatable minerals that fall under the jurisdiction of the 1872 Mining Laws, or require a NPDES wastewater discharge permit.
12.7	Streambank Protection	To minimize sediment production from streambanks and structural abutments in natural waterways.
12.8	Oil Pollution Prevention	To protect surface and subsurface soil and water resources from nontransportation-related facilities.
12.9	Oil and Hazardous Substances Pollution Contingency Planning.	To minimize contamination of waters from accidental spills 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.

NUM-BER	PRACTICE	OBJECTIVE
12.11	Management by Closure to Use	To exclude activities that would result in serious and adverse damage to facilities or degradation of soil and water resources.
12.12	Water Well Construction and Management	To protect ground water resources from contamination transmitted from water well developments.
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 Linear Transmission Facilities (Powerlines and Pipelines)	To assure that construction and maintenance of powerlines and piplines are accomplished in a manner that minimize effects on water quality.
12.15	Sanitary Guidelines for Construction of Temporary Labor, Spike, Logging, Fire Camps and Other Temporary Installations	To eliminate water pollution and other potential environmental and health impacts from the disposal of human waste and wastewater from temporary camps of all types.
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	Use of Sale Area Maps for Designating Water Quality Protection Needs	To delineate the location of protection areas and available water sources 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 and loss of soil productivity by ensuring that the Purchaser conducts operations, including erosion control work, road maintenance, and so forth, in a timely manner, within the time period specified in the Timber Sale Contract.
13.5	Protection of Unstable Areas	To protect unstable (high and extreme mass failure hazard) areas and to avoid triggering mass movements of the soil mantle and resultant erosion and sedimentation.
13.6	Determining Tractor Loggable Ground	To protect water quality from degradation caused by tractor logging ground disturbance.

NUM-BER	PRACTICE	OBJECTIVE
13.7	Determining Shovel Loggable Ground	To prevent soil and water quality degradation by identifying those areas where shovel yarding techniques are appropriate, and by establishing guidelines for the yarding operation.
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.
13.10	Log Landing Location and Design	To locate landings in such a way as to minimize soil erosion and water quality degradation.
13.11	Log Landing Erosion Prevention and Control	To reduce the impacts of erosion and subsequent sedimentation from log landings through the use of mitigating measures.
13.12	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.
13.13	Revegetation of Areas Disturbed by Harvest Activities	To establish a vegetative cover on disturbed sites to prevent erosion and sedimentation.
13.14	Wetland Protection During Timber Harvesting	To avoid damage to the ground cover, soil, and water in wetlands.
13.15	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.
13.16	Erosion Control Structure Maintenance	To ensure that constructed erosion control structures are stabilized and working effectively.
13.17	Acceptance of Timber Sale Erosion Control Measures Before Sale Closure	To assure the adequacy of required erosion control work on timber sales.
13.18	Nonrecurring "C" Provisions For Soil and Water Quality Protection	To exercise the option of inserting 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.

NUM-BER	PRACTICE	OBJECTIVE
13.19	Modification of the Timber Sale Contract	To modify the Timber Sale Contract, if new circumstances or conditions indicate that the timber sale will cause significant damage to soil, water, or watershed values.
13.20	Reforestation Requirement	To promote prompt reforestation and to limit disturbance on areas with limited regeneration potential.
14.1	General Guidelines for Transportation Planning	To assure soil and water resource considerations in Transportation Planning activities.
14.2	General Guidelines for the Location of Transportation Facilities	To locate roads and trails with minimal soil and water resource impact.
14.3	General Guidelines for the Location and Design of Log Transfer Facilities (LTF's)	To locate and design LTF's with minimal soil, water and biological impact.
14.4	General Guidelines for the Design of Transportation Facilities	To design roads and trails with minimal soil and water resource impact.
14.5	Road and Trail Erosion Control Plan	To prevent, limit, and mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities through effective contract administration during construction and timely implementation of erosion control practices.
14.6	Timing of Construction Activities	To minimize erosion by conducting operations during low runoff periods.
14.7	Slope Stabilization and Prevention of Mass Failures	To reduce sedimentation by minimizing the chances for road-related mass failures, including landslides and embankment slumps.
14.8	Surface Erosion and Stabilization of Slopes.	To minimize soil erosion from road cutslopes, fillslopes, and travelway.
14.9	Control of Permanent 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.

NUMBER	PRACTICE	OBJECTIVE
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 Road Construction Excavation and Sidecast Material	To reduce sedimentation from unconsolidated excavated and sidecast material caused by road construction, reconstruction, or maintenance.
14.13	Servicing and Refueling of Equipment	To prevent contamination of waters from spills of fuels and lubricants.
14.14	Control of Construction in Riparian Areas	To minimize the adverse effects of road and trail construction on riparian areas.
14.15	Controlling In-Channel Operations	To minimize stream channel disturbances and related sediment production.
14.16	Diversion of Flows Around Construction Sites	To minimize downstream sedimentation.
14.17	Streamcrossings on Temporary Roads	To prevent temporary roads from damaging streamcourses, degrading water quality, or obstructing fish passage.
14.18	Bridge and Culvert Installation (Disposition of Surplus Material and Protection of Fisheries)	To minimize sedimentation and turbidity resulting from excavation for in-channel structures.
14.19	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.
14.20	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.
14.21	Maintenance of Roads	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.
14.22	Road Surface Treatment to Prevent Loss of Materials	To minimize the erosion of road surface materials and consequently reduce the likelihood of sediment production.
14.23	Access and Travel Management	To reduce the potential for road surface disturbance, erosion and runoff, such as during wet weather, and to reduce sedimentation probability.

NUM-BER	PRACTICE	OBJECTIVE
14.24	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.
14.25	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.
14.26	Surface Erosion Control at Facility Sites	To minimize the amount of erosion and sedimentation at developed sites.
14.27	Trail Maintenance and Rehabilitation	To minimize soil erosion and water quality problems originating from trails.
15.1	Revegetation of Surface Disturbed Areas	To protect water quality by minimizing soil erosion.
15.2	Pesticide Use Planning	To incorporate water quality and hydrologic considerations into the Pesticide Use Planning Process.
15.3	Apply Pesticides According to Label and EPA Registration Directions	To avoid water contamination by complying with all label instructions and restrictions.
15.4	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.
15.5	Pesticide Spill Contingency Planning	To reduce contamination of water from accidental pesticide spills.
15.6	Cleaning and Disposal of Pesticide Containers and Equipment	To prevent water contamination and risk to humans from cleaning and disposal of pesticide containers.
15.7	Protection of Water, Wetlands, and Riparian Areas During Pesticide Spraying	To minimize the risk of a pesticide entering surface or subsurface waters or affecting riparian areas, wetlands, and other non-target areas.
15.8	Controlling Pesticide Drift During Spray Application	To minimize the risk of pesticide contaminating non-target areas.
16.1	Recreation Facilities Planning	To introduce soil and water resource considerations into Recreation Facilities Planning.

NUM-BER	PRACTICE	OBJECTIVE
16.2	Providing Safe Drinking Water Supplies	To 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	Documentation of Potable Water Quality Data	To assure the availability of water quality data and related information when making analysis and interpretations with respect to potable water systems.
16.4	Management of Sanitation Facilities	To protect surface and subsurface soil and water resources from bacteria, nutrients, and chemical pollutants resulting from the collection, transmission, treatment, and disposal of sewage at Forest Service facilities.
16.5	Control of Solid Waste Disposal	To protect surface and subsurface soil and water resources from nutrients, bacteria, and chemicals associated with solid waste disposal.
16.6	Assuring Proper Sanitation and Water Supplies For Special Use Facilities	To protect the quality of water both consumed by and discharged from facilities under Special Use Permit.
16.7	Sanitation at Hydrants and Water Faucets Within Developed Recreation Sites	To maintain water quality standards around hydrants and faucets which provide water for consumptive use in developed recreation sites.
16.8	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.
16.9	Protection of Water Quality Within Developed Recreation Areas	To protect water quality by regulating the discharge and disposal of potential pollutants.
16.10	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	Administration of the General Mining Law (Act of May 10, 1872) for Mineral Exploration and Extraction on National Forest System Lands	To protect water quality from degradation by physical and chemical constituents which may result from mining and associated activities.
17.2	Mining Site Conditions, Planning, and Design	To incorporate soil and water resource considerations into the planning process for mining plans of operation

NUM-BER	PRACTICE	OBJECTIVE
17.3	Placer Mining - Onsite Water Use and Control	To incorporate soil and water resource considerations into the planning process for mining plans of operation
17.4	Site Closure and Rehabilitation	To incorporate soil and water resource considerations into the planning process for mining plans of operation
17.5	Administration of Bureau of Land Management Issued Permits, Licenses, or Leases for Mineral Exploration and Extraction on National Forest System Lands	To protect soil and water resource values during mineral exploration, extraction, processing and reclamation activities that are conducted on National Forest System lands under the terms of Bureau of Land Management prospecting permits, coal exploration licenses, and mineral leases.
17.6	Administration of Common Variety Mineral Operations	To assure protection of water quality and other resource values when common variety mineral materials are used by both the USFS and others.
17.7	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.
17.8	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	Regulation of Gravel Extraction or Ground Reshaping for Development of Groundwater-fed Spawning and Rearing Streams and Ponds	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.

NUM-BER	PRACTICE	OBJECTIVE
19.1	Fire and Fuel Management Activities	To reduce public and private losses, and/or subsequent flooding and erosion by reducing the frequency, intensity, and destructiveness of wildfire.
19.2	Formulation of Fire Prescriptions	To provide for soil, water and other resource protection while achieving the resource management objective through the use of prescribed fire.
19.3	Protection of Soil and Water from Prescribed Burning Effects	To maintain soil productivity, minimize erosion, and prevent ash, sediment, nutrients, and debris from entering surface water.
19.4	Minimizing Watershed Impacts from Fire Suppression Efforts	To avoid watershed impacts in excess of that which would be caused by the fire itself.
19.5	Stabilization of Fire Suppression Related Watershed Damage	To stabilize all areas that have had their erosion potential significantly increased, or their drainage pattern altered by suppression related activities.
19.6	Emergency Rehabilitation of Watersheds 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 J

APPENDIX J

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 J-2. For planning purposes, channel types are grouped into nine categories called "stream process groups" as shown in Table J-1.

TABLE J-1
STREAM CLASSIFICATION AND STREAM LENGTH BY PROCESS GROUP

Stream Process Groups	*Channel Type Classification*	*Miles*
Low Gradient Floodplain	B1, C1, C3, C4, C6, D4, 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, 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 J-3 is a discussion of each process group, including a listing of the channel types. An illustration of each group is included.

TABLE J-2
CHANNEL TYPE DESCRIPTIONS

Channel Type	*Description*
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 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
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

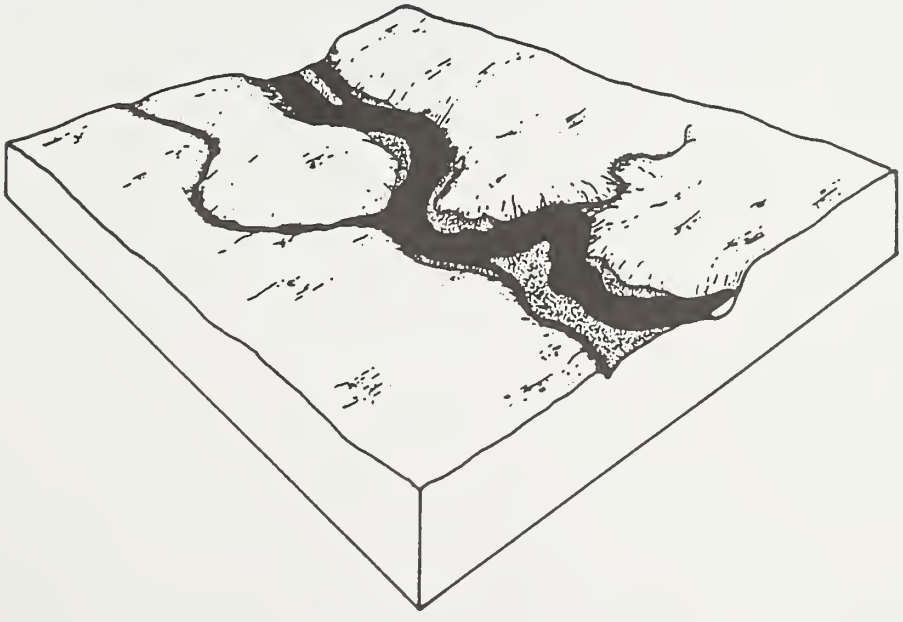
Stream channels in this process group include: B1, C1, C3, C4, C6, D4, D5 and D8 channels with less than 2 percent slope and active floodplain development. Channel materials are composed of fine sediments, small boulders and cobble which are deposited by the stream.

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.

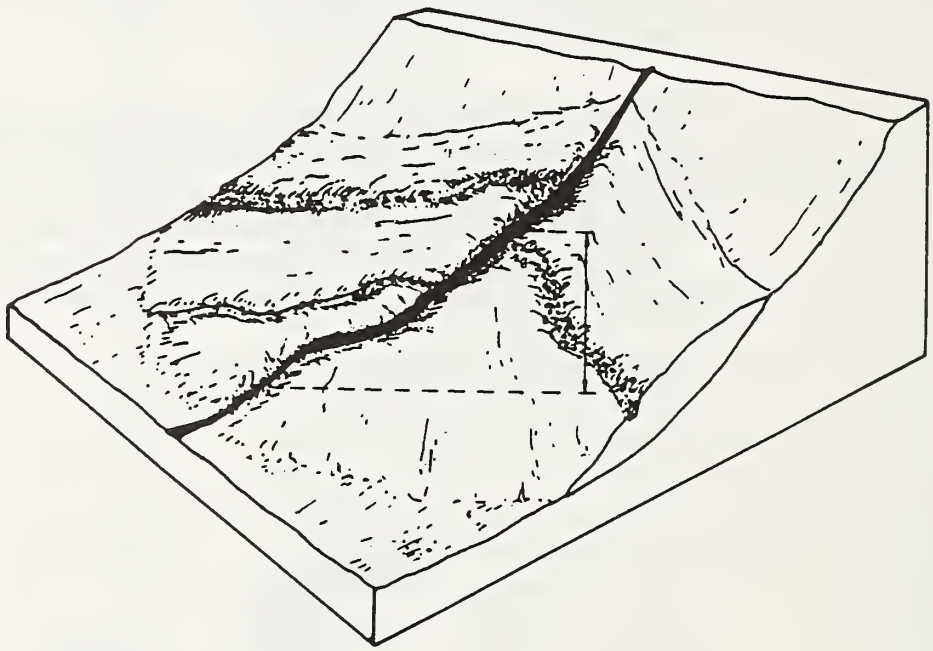
LOW GRADIENT FLOODPLAIN CHANNELS



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.

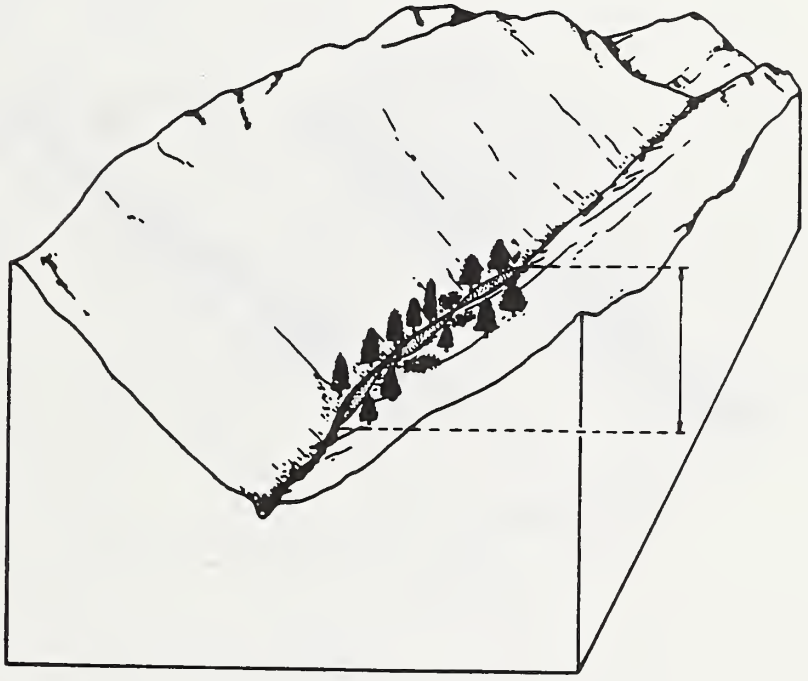
ALLUVIAL FAN CHANNELS



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) imput. LWD forms water energy dissipators such as log step pools and laterial scour pools. LWD strongly influences channel form, sediment transport and fish hibitat in these channels.

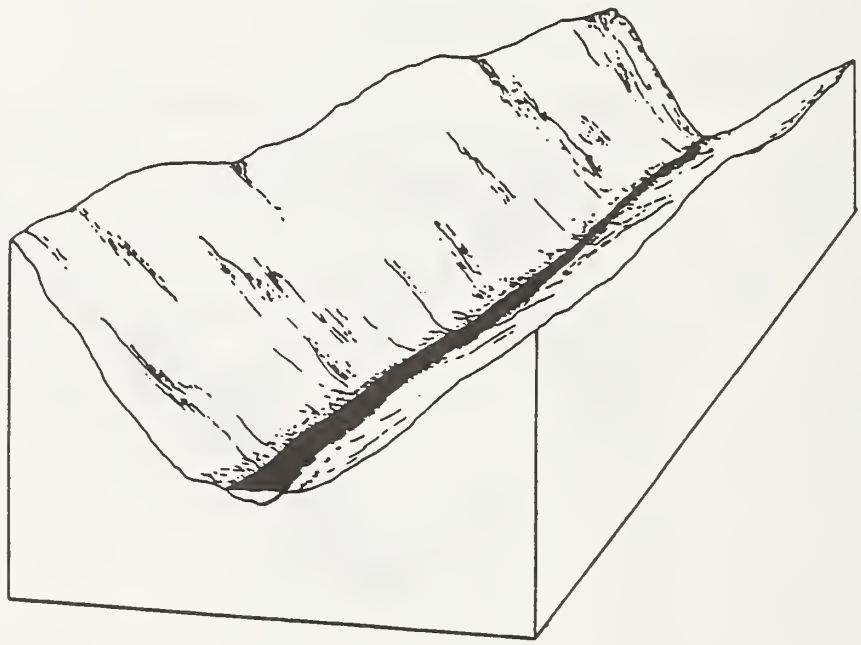
MIXED CONTROL, MODERATE GRADIENT CHANNELS



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

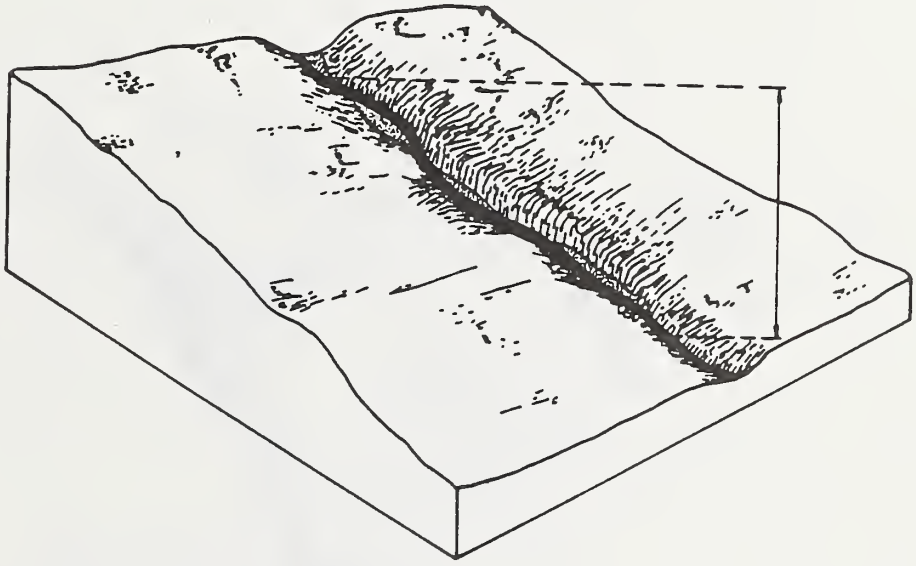


Moderate Gradient Contained

Stream channels in this process group include: B4, B6 and B7 channels and streamflows. They are completely contained by adjacent landforms.

Streamband 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 graident sideslopes, then larger areas influence stream conditions.

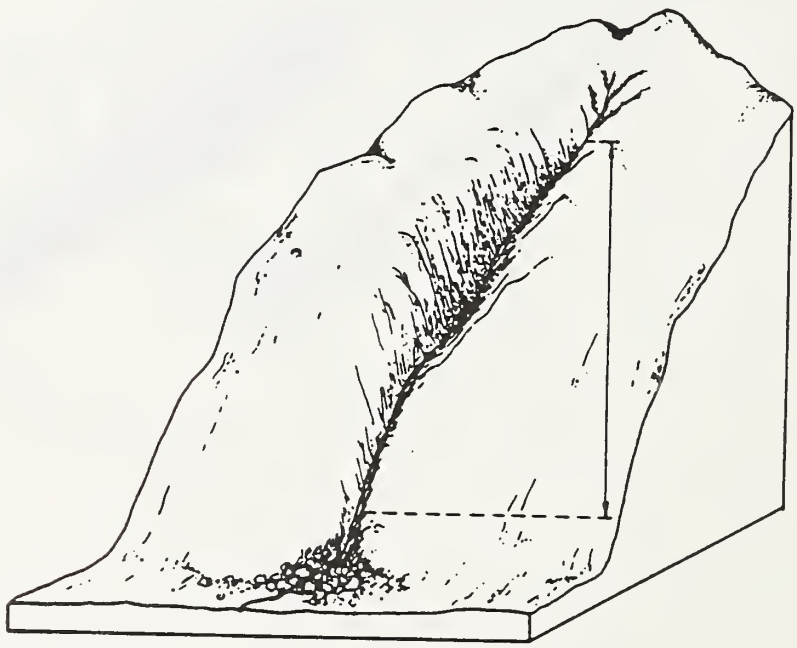
MODERATE GRADIENT, CONTAINED CHANNELS



High Gradient Contained

Channels in this process group (A1, A2, A3, 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.

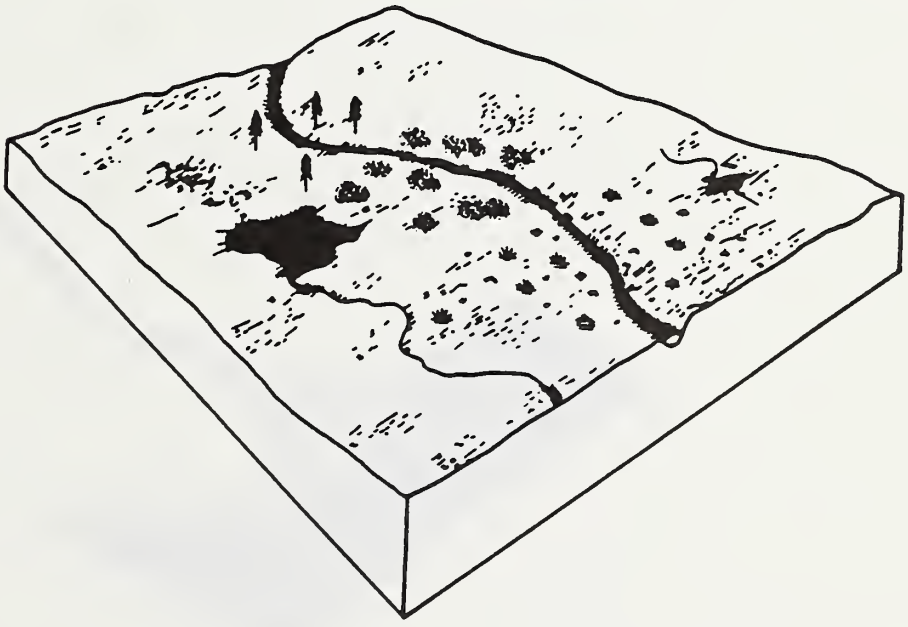
HIGH GRADIENT, CONTAINED CHANNELS



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 spahgnum 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 varaible, riparian areas associated with these streams may be located within very large wetlands areas.

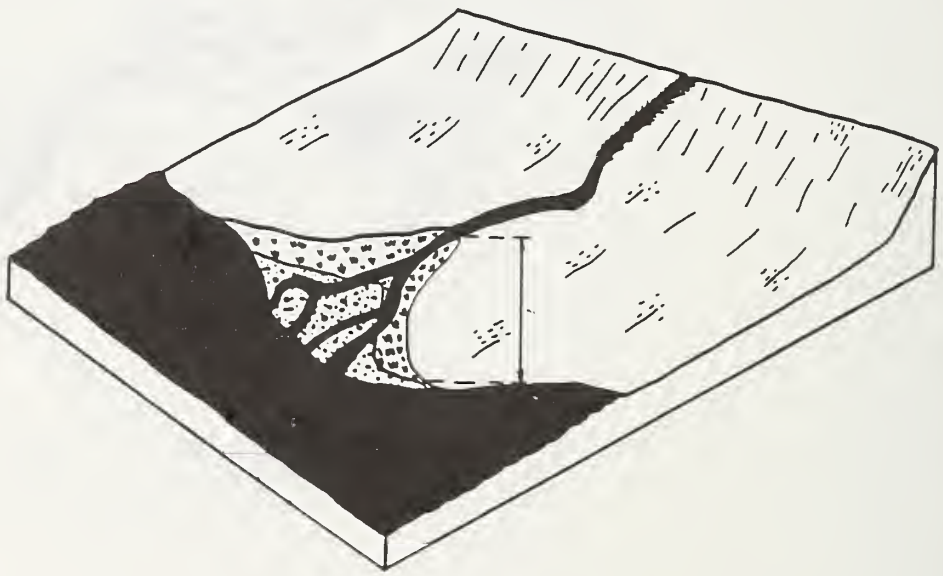
PLACID/GLIDE STREAMS



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



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.)

APPENDIX K

APPENDIX K

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 FOR IDENTIFICATION OF LANDS SUITABLE FOR TIMBER PRODUCTION

Is land forested?	NO ---------->	Unsuitable (nonforest)
YES		
Is land capable of producing crops of industrial wood?	NO ---------->	Unsuitable (nonindustrial wood)
YES		
Is irreversible damage likely to occur?	YES ---------->	Unsuitable (irreversible damage)
NO		
Can area be restocked within 5 years?	NO ---------->	Unsuitable (restocked)
YES		
Is adequate response information available?	NO ---------->	Unsuitable (no information)
YES		
Is land withdrawn from timber production?	YES ---------->	Unsuitable (withdrawn)
NO		
Then land is tentatively suitable for timber production -		
Is land selected in alternative for timber production?	NO ---------->	Not appropriate (unsuitable in preferred alternative and Forest Plan).
YES		
Then land is suitable for timber production -		

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.

Code	*Description*
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).

Code	*Descriptions*
F	Forested

c. Lands Inventory - National Forest lands currently developed for nonforest 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:

Code	*Description*
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:

Codes	*Description*
P	Black Cottonwood
L	Lodgepole Pine
A	Alder

NOTE: A review of the soils GIS inventory indicates that there are no SMUs which have occurances 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 occurance 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).

Code	*Description*
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:

Code	*Description*
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.

Code	*Description*
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, and Research Natural Areas. 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	Ketchikan
Dog Island	Petersburg
Limestone Inlet	Sitka
Old Tom Creek	
Pack Creek	
Red River	
Gambier Bay	
Experimental Forests	
Young Bay	
Maybeso	

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

		Not Suitable for Timber Production (acres)	*Totals (acres)*
I.	Total National Forest Area		16,955,945
II.	Non-Forested Area		7,331,085
	Fresh Water	267,649	
	Non-forest lands	6,958,823	
	Developed for purposes other than timber production	14,451	
III.	Forest Lands		9,624,860
	Not capable of growing industrial wood products		48,501
	Irreversible damage likely to occur		850,678
	Regeneration difficulty		97,016
	Inadequate response information		3,029,905
	Withdrawn forest lands		
	Existing Wilderness		2,212,658
	Existing Research Natural Areas		20,915
	Existing Experimental Forest		14,170
IV. Land	Tentatively Suitable Forest		3,065,976

APPENDIX L

APPENDIX L

EMPIRICAL TIMBER YIELD TABLES

INTRODUCTION

The following tables depict timber yield on the Tongass National Forest by administrative areas (Ketchikan, Stikine and Chatham) by low, medium and high site classifications for stands without and with precommercial thinning prescriptions. Culmination of mean annual increment (CMAI) is depicted by the last column in the tables whereby merchantable volume in cubic feet per ten year growth period begins to fall off with age. At this point in the life of the stand, the average annual growth in volume is equal to, or less than the average growth in volume over the life of the stand. This measurement represents the point at which the annual growth rate begins to slow as compared to the average rate of growth during all previous years. Optimum rotation age is at the point at which the CMAI is achieved. Site index values utilized for the development of the timber yield tables is based on the Farr site index variables.

Research in Southeast has determined that on most reestablished stands, 100% restocking is not feasible due to stockability limitations of the site. The empirical tables represent reduced stocking as well as defect and breakage considerations and are contained in this appendix.

STIKINE AREA
LOW SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	5685	11	0.3	0.0	0.0	0.0
20	5593	21	1.3	0.0	0.0	0.0
30	3753	31	2.6	0.1	0.0	0.3
40	2149	43	3.9	0.9	0.3	2.3
50	1449	52	5.0	2.3	0.6	4.6
60	1064	62	6.0	6.8	1.7	11.3
70	829	70	6.9	16.2	4.2	23.1
80	672	78	7.9	27.8	8.4	34.8
90	567	85	8.7	38.6	13.7	42.9
100	492	91	9.5	49.9	18.5	49.9
110	431	97	10.3	60.2	23.6	54.7
120	386	103	11.1	70.4	28.7	58.7
130	349	108	11.8	79.7	33.7	61.3
140	318	112	12.5	88.7	38.5	63.4
150	292	117	13.2	96.9	43.3	64.6
160	270	120	13.9	104.2	47.3	65.1
170	252	124	14.5	111.2	51.4	65.4

CHATHAM AREA
LOW SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	12618	10	0.4	0.0	0.0	0.0
20	10637	19	1.3	.6	0.8	8.0
30	4065	29	2.5	1.9	0.9	6.3
40	2067	38	3.9	3.0	1.1	7.5
50	1336	48	5.1	4.9	1.8	9.8
60	1028	58	6.0	8.7	3.0	14.5
70	823	66	6.9	16.3	4.4	23.3
80	678	74	7.9	27.9	8.5	34.9
90	573	82	8.7	36.5	13.4	40.6
100	491	88	9.6	50.1	18.4	50.1
110	425	96	10.4	61.7	24.3	56.1
120	380	102	11.2	71.3	30.1	59.4
130	340	108	11.9	81.0	35.0	62.3
140	309	113	12.8	89.6	39.7	64.0
150	316	119	13.6	98.2	44.7	65.5
160	261	122	14.2	107.0	49.2	66.9
170	243	127	14.9	113.8	53.6	76.9

KETCHIKAN AREA
LOW SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	4826	16	0.6	0.0	0.0	0.0
20	4812	26	1.4	0.1	0.0	0.5
30	3877	35	2.5	0.8	0.1	2.7
40	2685	46	3.7	2.7	0.6	6.8
50	1656	56	4.9	7.9	1.9	15.8
60	1130	66	6.1	17.5	4.8	29.2
70	816	73	7.4	27.6	9.0	39.4
80	618	82	8.5	39.2	14.1	49.0
90	495	90	9.7	51.7	19.6	57.4
100	409	96	10.8	63.7	25.5	63.7
110	352	102	11.8	74.4	31.3	67.6
120	308	107	12.8	85.1	37.1	70.9
130	275	109	13.8	94.8	42.6	72.9
140	247	117	14.8	103.7	47.7	74.1
150	226	120	15.6	111.4	52.3	74.3
160	208	122	16.4	118.4	56.8	74.0

STIKINE AREA
MEDIUM SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	5685	11	0.3	0.0	0.0	0.0
20	4836	23	1.9	0.0	0.0	0.0
30	2402	36	3.7	0.5	0.1	1.7
40	1386	49	5.1	1.4	0.4	3.5
50	973	61	6.3	5.8	1.2	11.6
60	742	72	7.4	16.7	4.4	27.8
70	598	82	8.4	30.7	10.0	43.9
80	501	90	9.4	45.4	16.6	56.8
90	430	98	10.4	59.5	23.1	66.1
100	377	104	11.2	72.3	29.6	72.3
110	335	111	12.1	84.4	36.4	76.7
120	300	116	13.0	95.0	42.5	79.2
130	272	121	13.8	104.8	48.2	80.6
140	249	126	14.6	113.7	53.5	81.2
150	229	130	15.4	121.8	58.4	81.2
160	213	134	16.1	129.0	63.0	80.6

CHATHAM AREA
MEDIUM SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	12618	10	0.4	0.0	0.0	0.0
20	6891	22	1.9	1.6	0.8	8.0
30	2333	33	3.7	2.7	1.0	9.0
40	1406	46	5.0	3.9	1.5	9.8
50	961	57	6.3	10.8	2.7	21.6
60	747	70	7.4	19.6	6.5	32.7
70	595	81	8.5	33.3	11.7	47.6
80	490	91	9.5	49.2	18.4	61.5
90	418	99	10.6	63.6	25.7	70.7
100	359	107	11.6	76.8	33.4	76.8
110	312	114	12.7	89.4	40.4	81.3
120	276	121	13.6	101.8	46.6	84.8
130	247	127	14.7	111.9	53.6	86.1
140	225	132	15.5	120.9	59.3	86.4
150	204	137	16.5	129.9	65.3	86.6
160	188	142	17.4	138.0	70.3	86.3

KETCHIKAN AREA
MEDIUM SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	4821	16	0.6	0.0	0.0	0.0
20	4483	28	1.8	0.4	0.0	2.0
30	2744	40	3.3	1.7	0.3	5.7
40	1569	53	4.9	5.5	1.2	13.8
50	1033	64	6.3	15.7	4.5	31.4
60	734	76	7.7	29.0	9.9	48.3
70	557	85	9.1	44.5	16.3	63.6
80	438	95	10.4	59.5	23.9	74.4
90	361	103	11.7	74.1	31.7	82.3
100	302	110	13.0	88.3	39.2	88.3
110	264	116	14.2	100.1	46.4	91.0
120	234	122	15.3	111.1	53.3	92.6
130	209	127	16.5	121.8	59.7	93.7
140	189	132	17.6	131.2	65.7	93.7
150	173	137	18.6	139.4	71.0	92.9
160	159	141	19.6	147.3	76.3	92.1

STIKINE AREA
HIGH SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	5685	11	0.3	0.0	0.0	0.0
20	3688	26	2.5	0.1	0.0	0.5
30	1588	41	4.7	0.7	0.2	2.3
40	992	57	6.2	3.5	0.7	8.8
50	719	71	7.5	14.1	3.8	28.2
60	562	83	8.8	33.0	10.9	55.0
70	460	94	9.9	52.5	19.5	75.0
80	391	103	11.0	70.3	28.4	87.9
90	336	111	12.1	85.7	36.8	95.2
100	298	118	13.1	99.3	44.8	99.3
110	265	125	14.0	110.7	52.0	100.6
120	239	130	15.0	121.0	58.4	100.8
130	217	136	15.9	130.5	64.3	100.4
140	198	140	16.8	138.3	69.6	98.8
150	183	144	17.7	145.6	74.5	97.1
160	170	148	18.5	152.3	79.0	95.2

CHATHAM AREA
HIGH SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	12618	10	0.4	0.0	0.0	0.0
20	4444	25	2.4	1.6	0.9	8.0
30	1592	39	4.7	3.0	1.2	10.0
40	1007	55	6.2	5.7	2.2	14.3
50	718	70	7.6	17.5	5.8	35.0
60	556	83	8.8	34.6	12.0	57.7
70	450	95	10.0	55.8	21.5	79.7
80	375	106	11.3	73.8	31.5	92.3
90	321	115	12.4	87.5	39.5	97.2
100	277	122	13.6	103.5	48.0	103.5
110	242	129	14.8	116.6	54.4	106.0
120	216	136	15.9	127.6	64.0	106.3
130	194	142	17.0	138.7	71.0	106.7
140	176	147	18.0	147.3	76.7	105.2
150	160	152	19.2	156.2	83.0	104.1
160	147	157	20.2	163.5	88.1	102.2

KETCHIKAN AREA
HIGH SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	4821	16	0.6	0.0	0.0	0.0
20	3887	31	2.3	0.5	0.1	2.5
30	1976	45	4.2	3.1	0.6	10.3
40	1149	60	5.8	9.9	2.6	24.8
50	755	74	7.5	25.2	8.2	50.4
60	548	87	9.0	43.5	16.4	72.5
70	423	99	10.6	62.3	25.6	89.0
80	343	108	12.1	79.5	35.0	99.4
90	287	116	13.6	96.1	44.4	106.8
100	244	124	15.0	110.8	53.5	110.8
110	214	131	16.3	123.8	61.7	112.5
120	190	136	17.6	135.2	69.4	112.7
130	169	142	18.9	146.2	76.5	112.5
140	153	147	20.2	156.0	83.2	111.4
150	140	151	21.3	164.4	89.0	109.6
160	129	155	22.5	172.5	94.6	107.8

STIKINE AREA
MEDIUM SITE
MANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	5685	11	0.3	0.0	0.0	0.0
20	318	20	2.6	0.0	0.0	0.0
30	318	32	4.8	0.0	0.0	0.0
40	317	47	6.9	1.5	0.3	3.8
50	316	61	8.6	13.7	2.9	27.4
60	301	73	9.9	29.0	9.0	48.3
70	279	84	11.1	44.4	15.8	63.4
80	261	94	12.1	58.5	23.0	73.1
90	245	102	13.0	71.6	30.2	79.6
100	231	109	13.9	84.6	37.2	84.6
110	221	115	14.8	96.1	44.2	87.4
120	210	121	15.6	107.6	50.9	89.7
130	199	126	16.3	117.6	56.6	90.5
140	190	131	17.0	126.3	61.9	90.2
150	180	135	17.7	133.9	66.7	89.3
160	170	138	18.4	140.9	71.2	88.1

CHATHAM AREA
MEDIUM SITE
MANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	12618	10	0.4	0.0	0.0	0.0
20	386	18	2.1	0.0	0.0	0.0
30	386	31	4.1	1.1	0.2	3.7
40	383	45	6.4	4.5	1.2	11.3
50	376	59	8.2	12.4	3.9	24.8
60	351	72	9.6	26.0	8.0	43.3
70	321	84	10.8	38.8	14.5	55.4
80	299	93	11.7	51.2	20.6	64.0
90	281	102	12.6	72.4	26.6	80.4
100	265	109	13.5	84.8	36.9	84.8
110	254	115	14.2	95.3	43.6	86.6
120	244	121	14.9	106.9	50.1	89.1
130	229	125	15.5	114.6	54.6	88.2
140	216	130	16.1	121.4	58.7	86.7
150	204	134	16.8	128.0	62.7	85.3
160	190	137	17.5	134.3	67.0	83.9

KETCHIKAN AREA
MEDIUM SITE
MANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	4821	16	0.6	0.0	0.0	0.0
20	319	29	3.5	0.4	0.0	2.0
30	318	41	5.9	2.1	0.4	7.0
40	316	55	8.1	10.9	2.1	27.3
50	302	66	9.8	25.8	7.4	51.6
60	279	78	11.2	42.4	15.2	70.7
70	255	89	12.5	57.1	22.4	81.6
80	238	98	13.6	71.7	29.8	89.6
90	223	106	14.6	86.6	38.1	96.2
100	209	114	15.7	100.4	46.1	100.4
110	196	120	16.7	113.6	54.1	103.3
120	182	126	17.8	125.0	61.4	104.2
130	169	131	18.7	134.3	67.1	103.3
140	158	136	19.7	142.9	72.7	102.1
150	148	140	20.4	149.6	77.4	99.7
160	139	144	21.3	156.1	81.9	97.6

STIKINE AREA
HIGH SITE
MANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	5685	11	0.3	0.0	0.0	0.0
20	385	23	3.1	0.0	0.0	0.0
30	385	38	5.8	0.3	0.0	1.0
40	381	56	7.9	8.4	1.7	21.0
50	346	72	9.6	29.2	8.2	58.4
60	316	86	10.9	50.7	18.8	84.5
70	291	96	12.1	68.6	28.1	98.0
80	271	106	13.2	85.8	37.5	107.3
90	252	114	14.1	100.5	46.0	111.7
100	234	122	15.1	112.9	53.5	112.9
110	216	128	16.0	123.3	60.4	112.1
120	200	133	16.8	132.6	65.3	110.5
130	186	138	17.6	141.4	71.9	108.8
140	172	142	18.5	148.7	76.9	106.2
150	160	146	19.3	155.7	81.7	103.8
160	151	150	20.2	162.0	86.1	101.3

CHATHAM AREA
HIGH SITE
MANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	12618	10	0.4	0.0	0.0	0.0
20	386	21	2.7	0.1	0.0	0.5
30	386	37	5.3	2.2	0.1	7.3
40	379	55	7.7	8.1	2.6	20.3
50	355	72	9.5	22.9	7.5	45.8
60	315	86	11.0	42.9	15.9	71.5
70	287	98	12.3	65.7	27.4	93.9
80	269	107	13.2	83.0	36.7	103.8
90	253	116	14.2	98.5	45.5	109.4
100	238	123	15.1	113.0	53.8	113.0
110	221	129	16.0	121.8	59.5	110.7
120	202	134	16.8	130.2	64.9	108.5
130	190	139	17.5	138.7	70.4	106.7
140	179	143	18.2	145.6	75.4	104.0
150	167	147	18.9	147.8	79.7	98.5
160	157	151	19.7	157.8	83.7	98.6

KETCHIKAN HIGH
HIGH SITE
MANAGED EMPIRICAL YIELD TABLE

Age	*Trees Per Acre*	*Dominate Tree Height (feet)*	*Quadratic Mean Diameter (inches)*	*Merchantable C.F. Volume (100)*	*Merchantable B.F. Volume (1000)*	*Mean Annual Increment (net c.f.)*
10	4821	16	0.6	0.0	0.0	0.0
20	319	31	4.0	0.5	0.1	2.5
30	318	47	6.7	4.4	0.8	14.7
40	309	63	9.1	18.3	5.0	45.8
50	284	77	11.0	39.4	13.9	78.8
60	254	90	12.6	59.5	23.7	99.2
70	231	102	14.0	78.0	33.5	111.4
80	215	111	15.2	94.6	43.4	118.3
90	198	119	16.4	111.0	53.2	123.3
100	184	127	17.5	126.0	62.4	126.0
110	168	133	18.8	138.2	70.6	125.6
120	153	139	20.1	149.0	78.0	124.2
130	142	144	21.1	158.4	84.2	121.8
140	130	149	22.2	166.8	90.1	119.1
150	122	153	23.2	174.1	95.3	116.1
160	114	157	24.1	181.2	100.3	113.3

APPENDIX M

APPENDIX M

Appendix M displays the effects of alternative implementation for each of the 52 mineral activity tracts on the Tongass National Forest. A loction map of all 52 mineral activity tracts is provided followed by the Appendix M pie charts.

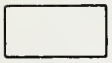
Alternatives A through G are listed at the top of each page. The mineral activity tracts are listed on the left margin of each page starting with Tract 1 and ending with Tract 52. Acres of individual mineral activity tracts are listed in the minerals section of Chapter 3. Each pie chart represents the acres for that tract or 100 percent.

A pie chart ledgend is displayed along the bottom margin of each page. The pie chart shading and symbols correspond to the following:

EW **Existing Withdrawal**
Lands already withdrawn from mineral entry. Valid existing rights will be determined and recognized. Managenent prescriptions which are withdrawn from mineral entry are Wilderness, Wilderness National Monument, Non-Wilderness National Monument, Research Natural Areas, and Enacted Municipal Watersheds. As of 1988 there are no lands withdrawn for Wild River segments.

RW **Recommended Withdrawal**
Lands proposed for withdrawl from mineral entry. Valid existing rights will be determined and recognized. Managenent prescriptions which will be withdrawn from mineral entry are Wilderness, Research Natural Areas, and Wild River Segments. Additions to Wilderness National Monument and Non-Wilderness National Monument, and Enacted Municipal Watersheds are not recommended under any alternative.

OH **Open: High Operating Costs**
Lands are open to mineral entry, however periods of operation may be restricted, special stipulations and mitigation measures will be applied, and some areas will be recommended for withdrawal from mineral entry to protect surface resources for which the management area was established. Operating costs will generally be greater than areas allocated to prescriptions with average operating costs. Management prescriptions with high operating costs are Beach Fringe and Esturary, Primitive Recreation, Old-Growth Habitat, Semi-primitive Recreation, Experimental Forests, Stream and Lake Protection, Special Areas, and Scenic Rivers.



OA **Open: Average Operating Costs**
Lands are open to mineral entry. Mitigation measures and stipulations may be applied. Operating costs will average less than areas allocated to prescriptions with high operating costs. Management prescriptions with average operating costs are Scenic Viewshed, Visual-Timber, Roaded Natural/Rural Recreation, Recreation Rivers, Minerals and Timber Production.

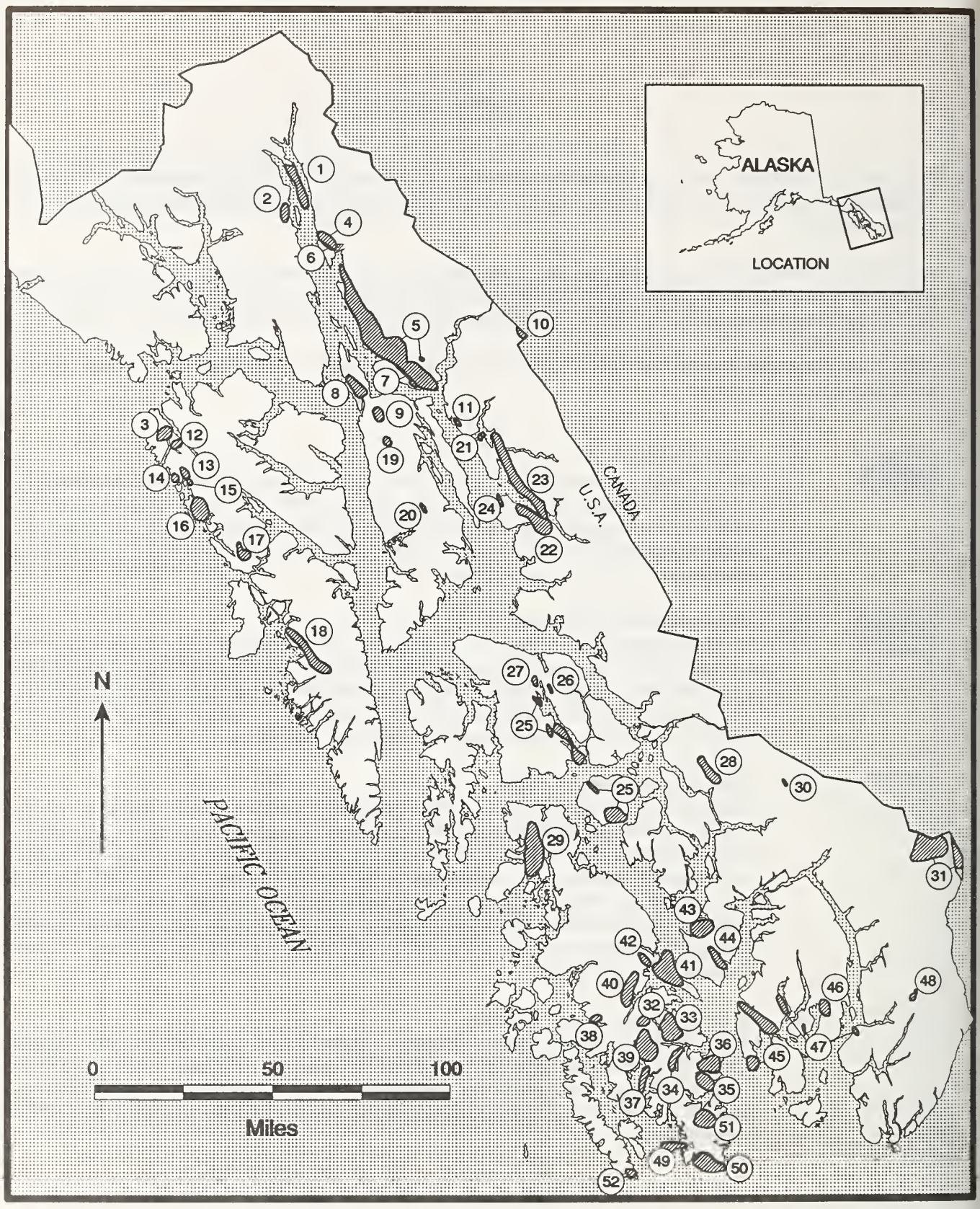
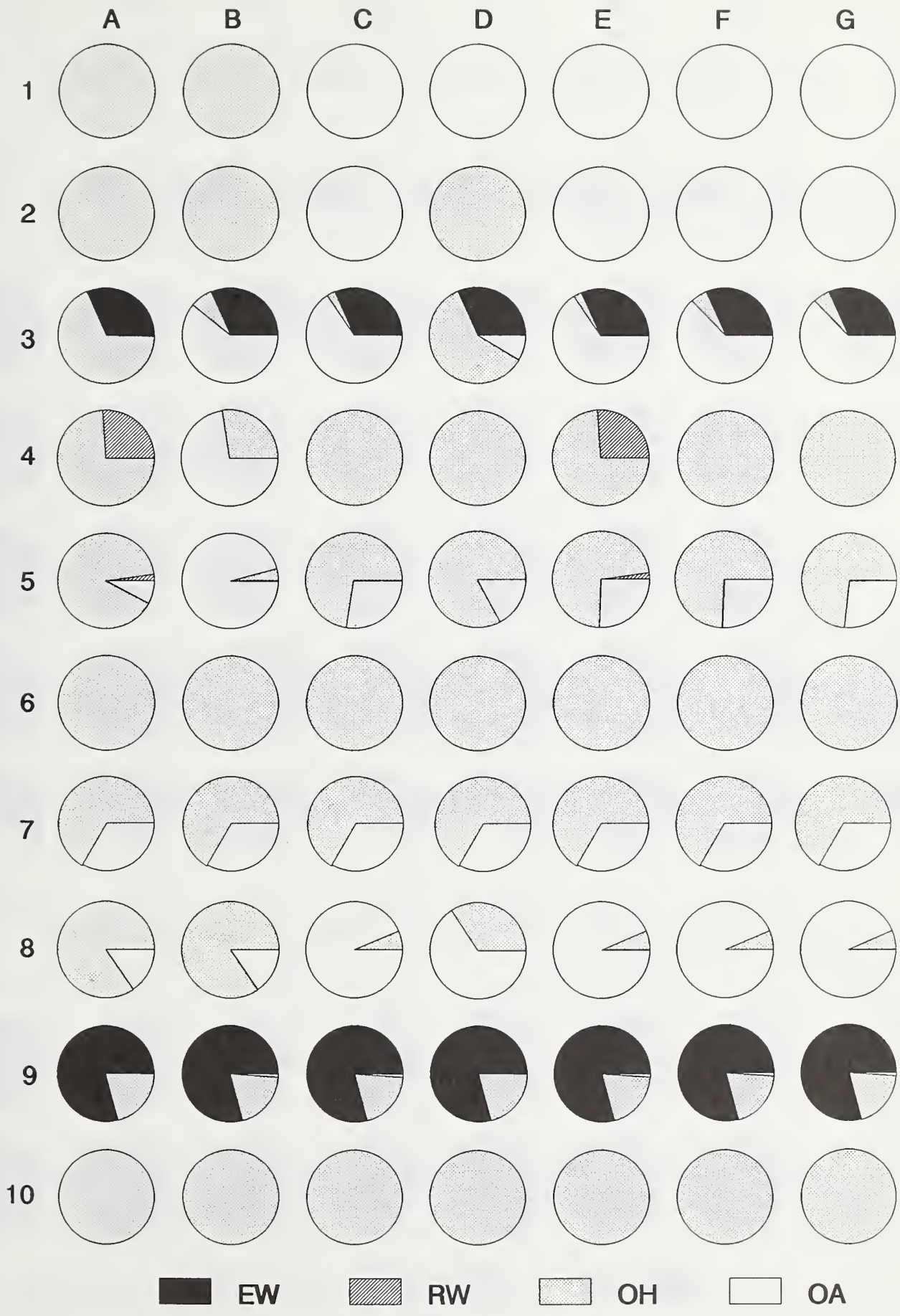


FIGURE 3.
LOCATION OF 52 MINERAL ACTIVITY TRACTS WITH HIGH DEVELOPMENT POTENTIAL ON THE TONGASS NATIONAL FOREST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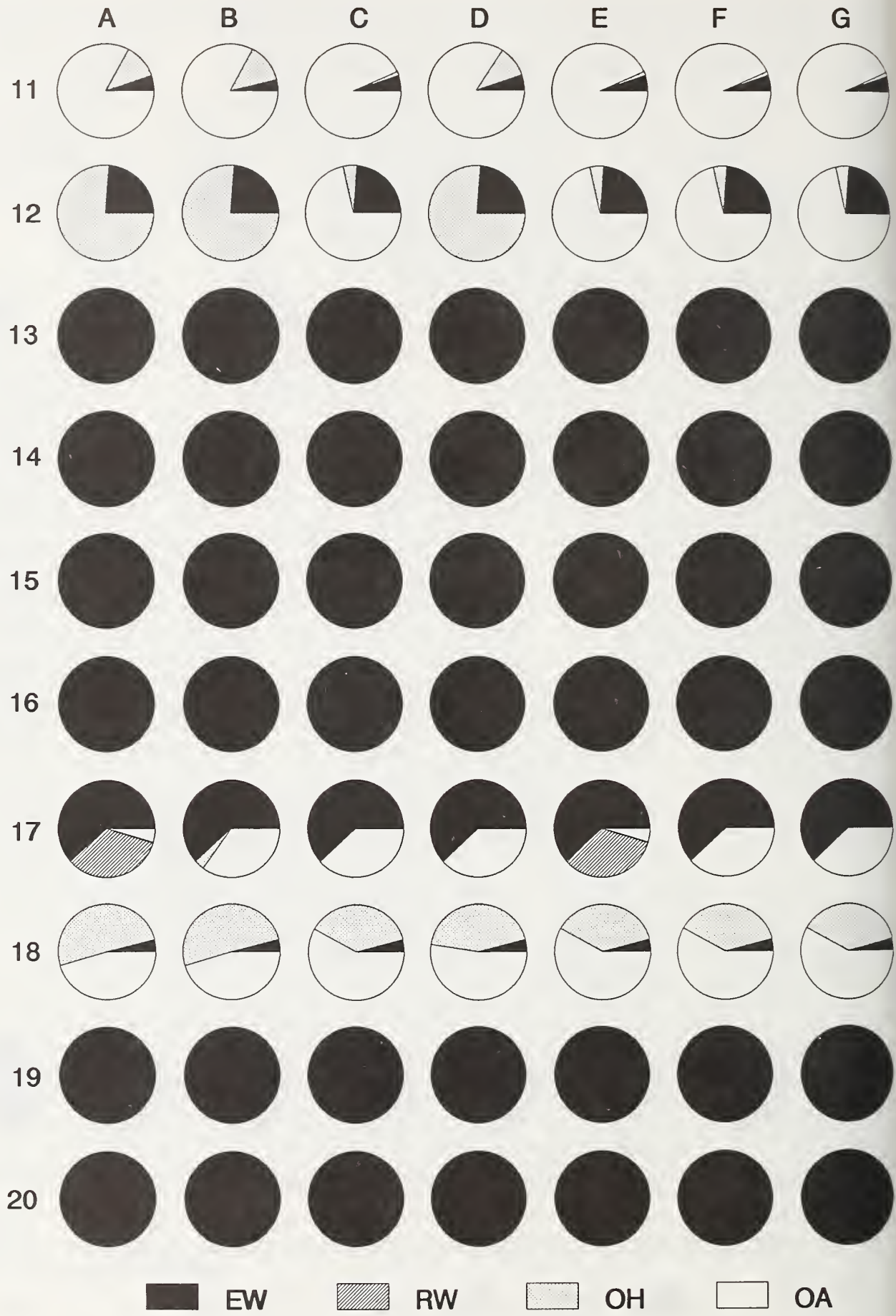
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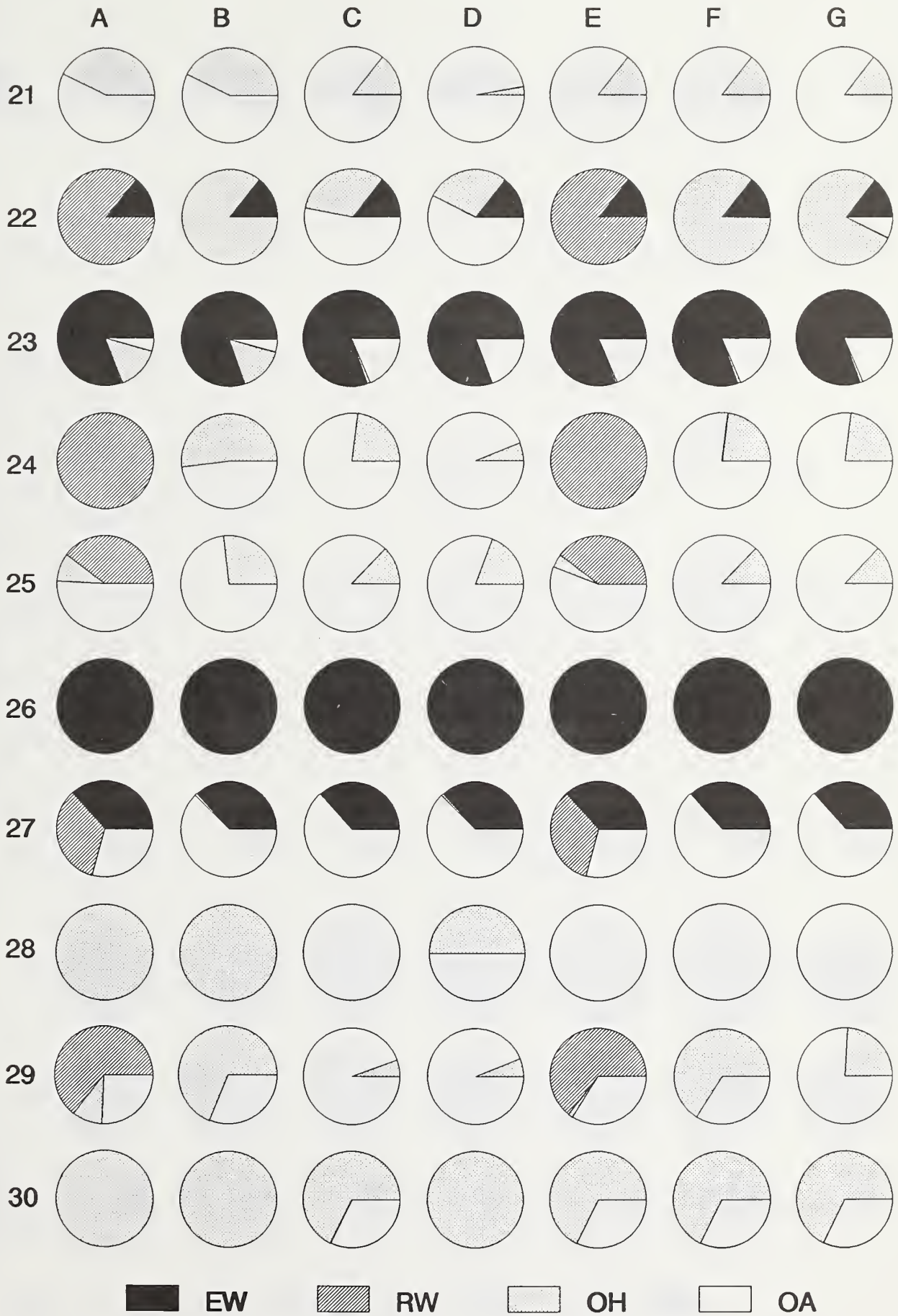
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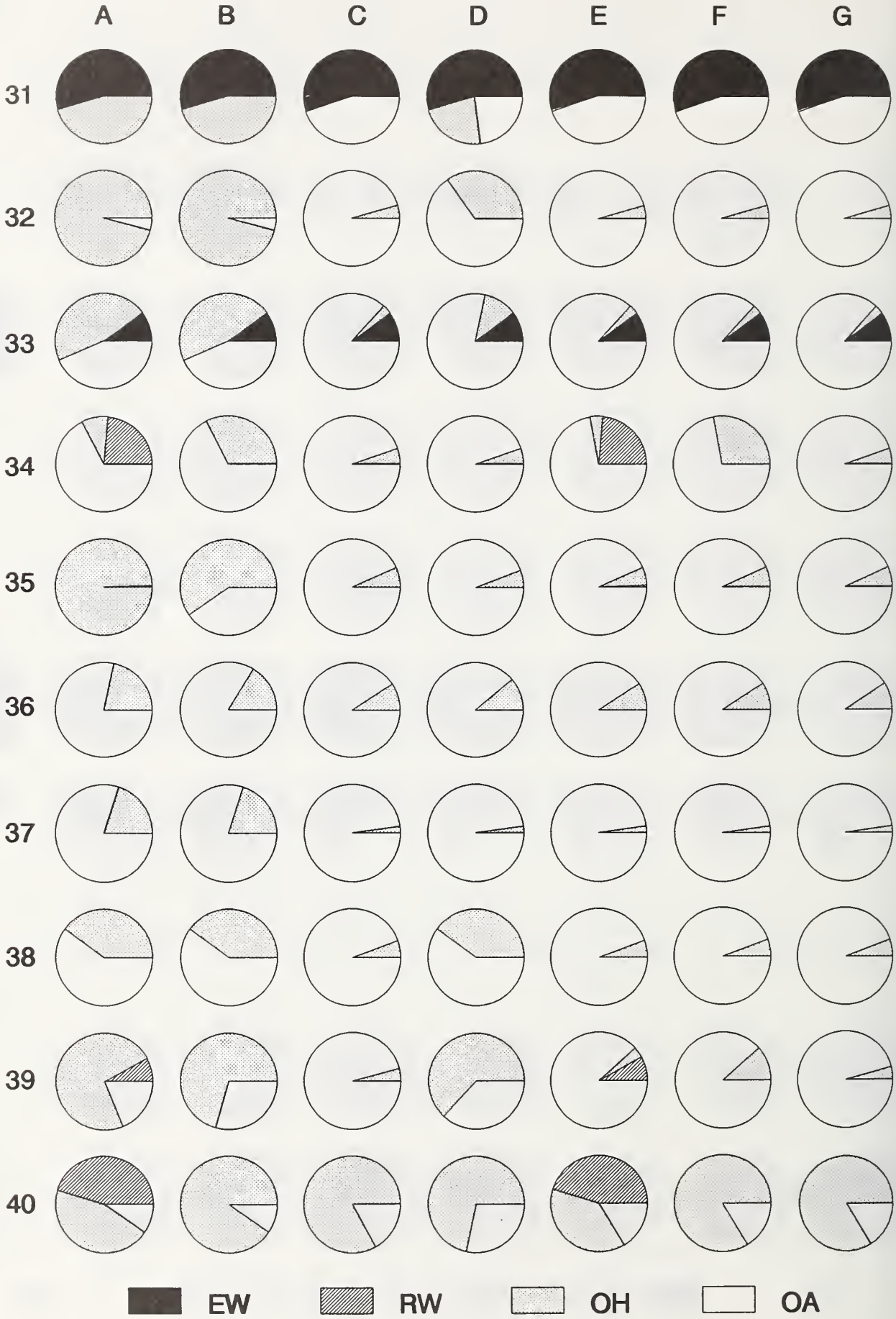
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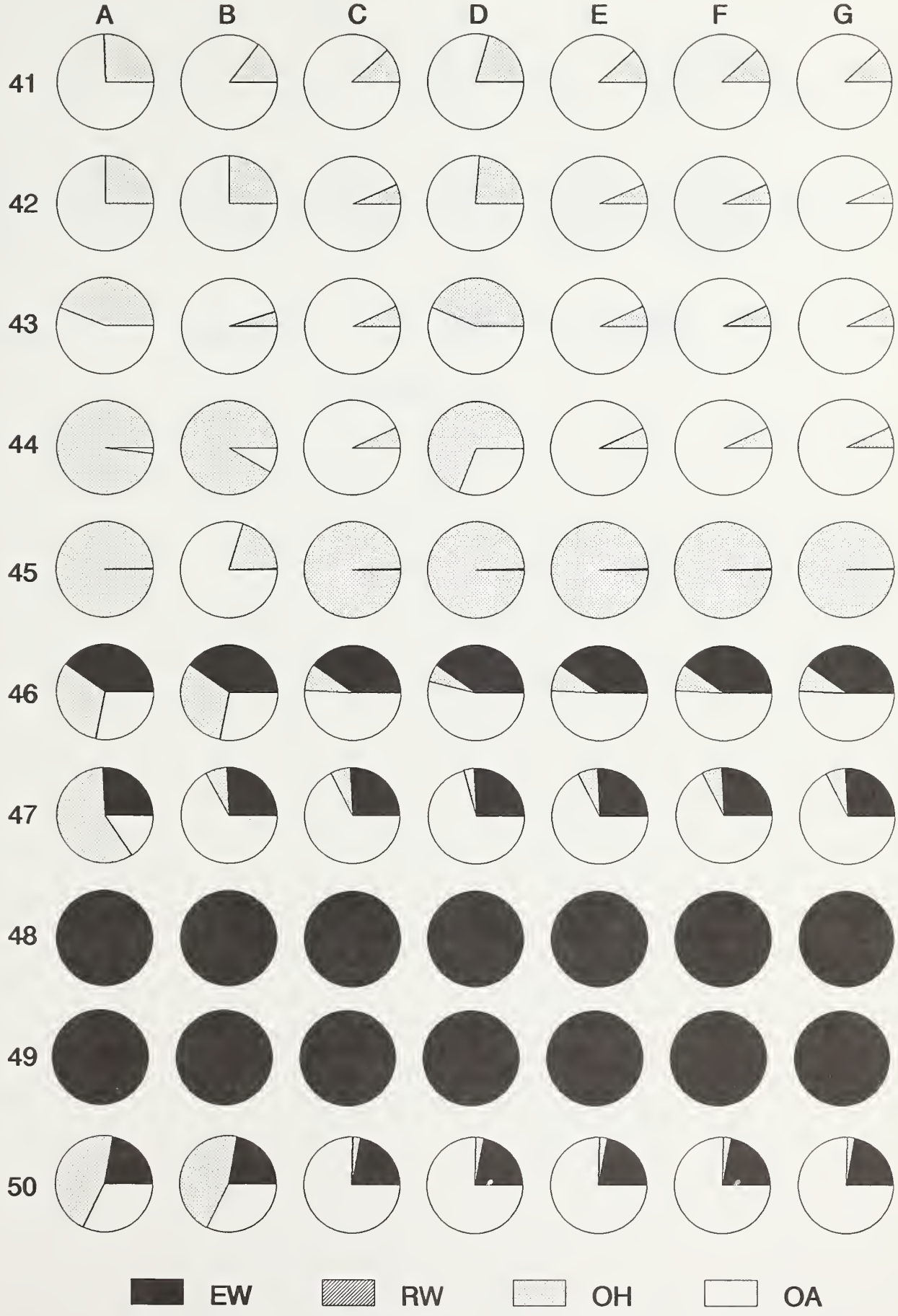
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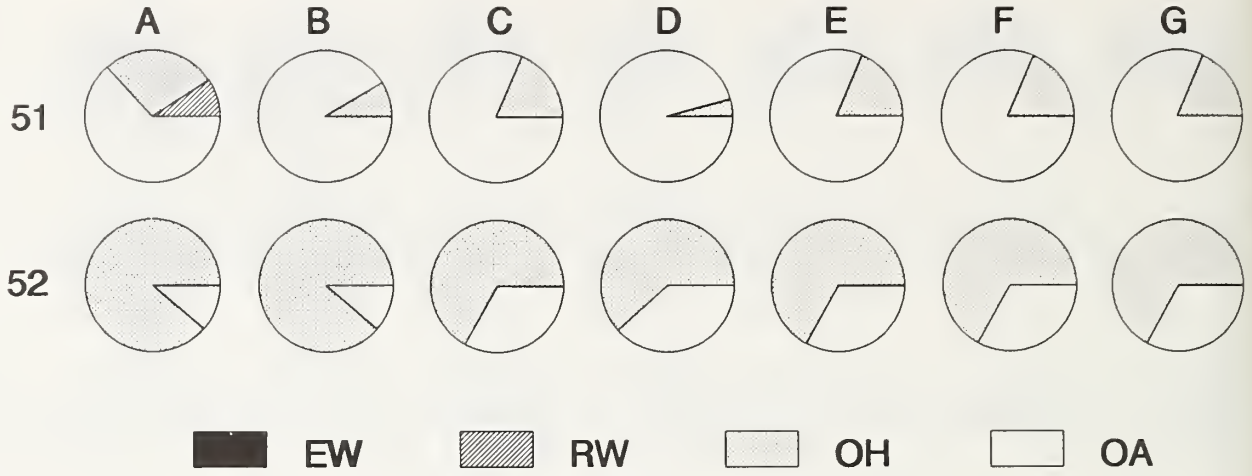
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APPENDIX N

APPENDIX N

SUBSISTENCE USE AREAS

INTRODUCTION

This appendix displays areas of the Tongass National Forest where subsistence use activities by rural communities have been identified to occur, based on "Most Reliable Deer Hunting Areas", "Most Frequented Deer Hunting Areas", "Upland Salmon Harvest Areas", and moose hunting areas. Appendix N is comprised of three parts: 1) Communitiy use by Geozone, 2) Community use by watershed (VCU) and 3) mapped individual community use areas. The principle source of this material is the Tongass Resource Cooperative Study (TRUCS, 2/89), with additional information on location of use being derived from Alaska Department of Fish and Game (ADF&G) Technical Reports prepared by the State's Division of Subsistence.

USE BY GEOZONE

Two geographic areas are displayed, geographic zones (geozones) and watersheds (using Value Comparison Units). (Geozones are explained in the introduction to Chapter 3 and in Appendix B.) The first table shows the number of Value Comparison Units (VCUs) used by a community within each geozone. If a watershed VCU is divided between two or more geozones, the geozone containing the largest percentage of the VCU is given the count for that watershed. A zero (0) indicates that no use was identified for the individual community listed as per the TRUCS survey or ADF&G Technical Papers.

Of the 33 communities of Southeast Alaska, 31 are designated as "rural," with Juneau and Ketchikan being the only urban areas. Rural community codes are listed across the top of each page following the geozone heading. The codes (in both tables) refer to communities as follows:

Code/Community	*Code/Community*
AN = Angoon	KL = Klukwan
CP = Cape Pole	ME = Metlakatla
CC = Coffman Cove	MC = Meyers Chuck
CR = Craig	WP = North Whale Pass
EB = Edna Bay	PE = Pelican
EC = Elfin Cove	PG = Petersburg
GU = Gustavus	PB = Point Baker
HA = Haines	PP = Port Protection
HO = Hollis	PA = Port Alexander
HN = Hoonah	SX = Saxman
HB = Hydaburg	SI = Sitka
HY = Hyder	SK = Skagway
KK = Kake	TS = Tenakee Springs
KA = Kasaan	TB = Thorne Bay
KC = Klawock	WR = Wrangell
	YA = Yakutat

GEO-	RURAL COMMUNITY																														
ZONE	AN	CC	CP	CR	EB	EC	GU	HA	HB	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PB	PE	PP	SX	SI	SK	TB	TS	WR	YA
C01	0	0	0	0	0	6	2	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	16	2	0	16	0	0	0	1	0
C02	8	0	0	0	0	2	13	12	0	27	0	0	0	0	0	0	0	0	0	0	1	3	11	0	0	15	20	0	22	21	0
C03	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0
C04	1	0	0	0	0	0	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	2	0	5	2	0
C05	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	6	0	8	0	0	4	6	0
C06	12	0	0	0	0	0	0	10	0	15	0	0	2	0	0	6	1	0	0	0	0	15	1	3	0	24	5	0	20	15	0
C07	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0
C09	12	0	0	0	0	0	0	0	0	0	0	0	6	0	0	5	1	0	0	14	0	14	2	7	0	16	0	0	15	13	0
C10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	5	3	1	0	29	0	0	5	11	0
C11	0	0	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	10	2	1	0	8	0	10	0	0	8	9	0
C12	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	3	16	0	0	17	0	0	0	10	0
C13	0	0	0	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	7	1	0	0	3	0	10	0	0	7	6	0
C14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
C15	32	0	0	0	0	0	0	15	0	14	0	0	24	0	0	9	0	0	0	1	14	37	0	14	0	35	5	0	20	28	0
C16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
C18	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0
C20	1	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	2	2	0
C21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	3	1	0
C22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
C23	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	1	0	1	0	0	0	2	0
C24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
C25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
K01	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0
K04	0	0	0	0	0	0	0	0	4	0	0	5	0	0	3	0	0	17	0	0	0	0	0	0	33	0	0	7	0	10	0
K05	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	9	3	0	0	0	0	0	9	10	0	0	10	0	15	0
K06	0	28	0	46	17	0	0	0	11	0	20	6	0	22	9	3	27	12	29	5	15	40	0	23	42	0	0	50	0	44	0
K07	0	0	0	0	0	0	0	0	2	0	0	18	0	0	9	0	8	12	0	0	0	0	0	8	5	0	0	0	0	8	0
K08	0	0	0	12	5	0	0	0	18	0	13	1	0	10	11	0	5	9	2	0	0	8	0	10	11	0	0	10	0	7	0
K09	0	0	0	6	4	0	0	0	36	0	0	0	0	0	2	0	0	0	0	0	0	1	0	10	4	0	0	0	0	5	0
K10	0	0	0	6	7	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	2	1	0	1	3	0	0	0	0	7	0
K11	0	2	5	16	25	0	0	0	0	0	5	0	0	9	0	0	1	1	9	5	22	7	0	21	12	0	0	12	0	25	0
K12	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K13	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	46	0	0	0	0	0	0	9	0	0	0	0	15	0
K14	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
K15	0	0	1	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	0
S01	0	0	2	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	5	2	0	6	0	8	0	0	0	10	0
S02	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4	2	0	8	0	6	0	0	0	8	0
S03	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	10	0	3	0	0	0	0	0	9	0
S04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	2	0	0	0	0	0	5	0
S05	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	3	0	0	0	0	0	4	0
S06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	5	2	0	1	0	0	0	1	0	14	0
S07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7	0
S08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	1	0	0	0	0	0	9	0
S09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	0	0	1	0	0	0	1	0	18	0
S10	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	5	9	0	7	0	0	0	0	0	8	0
S11	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	2	0	3	0	3	0	0	0	3	0
S12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	0	0	0	0	5	0
S13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	2	0
S14	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

USE BY WATERSHED

The second set of tables displays Value Comparison Units (VCU's) for all of the Tongass National Forest where subsistence use activities have been identified to occur (as discussed above). A "1" indicates reported use for the community listed in the specific watershed identified. A "0" indicates that no use was shown to exist in the VCU, based on the TRUCS survey or ADF&G Technical Papers. The listing of VCUs is ranked by the number of communities using the watershed for subsistence purposes. At the end of the table, "community totals" shows the total number of VCU's used by each community Forest-wide. The last column to the right of each VCU totals the number of communities using that specific watershed. The maximum number of communities in any one watershed is 13, with the minimum being zero.

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
5320	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	0	1	1	0	0	1	0	1	0	13
5720	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	1	1	1	0	0	1	0	1	1	0	0	1	0	1	0	13
5270	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	1	0	12
5290	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	1	0	12
5371	0	1	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	12
5542	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	1	0	1	1	0	0	1	0	1	0	12
5710	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0	1	0	1	0	12
5730	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	1	1	1	0	0	1	0	0	1	0	0	1	0	1	0	12
6090	0	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	1	1	1	0	0	1	0	0	1	0	0	1	0	1	0	12
6230	0	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	1	1	1	0	0	1	0	0	1	0	0	1	0	1	0	12
297	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	1	1	1	0	1	0	0	1	1	0	11
5300	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	1	0	11
5380	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	11
5492	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	11
5740	0	1	0	1	0	0	0	0	1	0	1	1	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	1	0	1	0	11
5770	0	1	0	1	0	0	0	0	1	0	1	1	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0	1	0	0	0	11
5810	0	1	0	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0	11
315	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	1	1	0	1	0	0	1	1	0	10
5280	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	0	1	0	10
5311	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	1	0	10
5360	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	10
5372	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	10
5570	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	1	0	10
5871	0	1	0	1	1	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	1	0	10
5880	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	1	0	10
5890	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	1	0	10

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
5900	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	1	0	10
5950	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1	0	0	1	0	1	0	10
5960	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	1	1	1	0	0	0	0	0	1	0	0	1	0	1	0	10
6220	0	0	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	1	0	1	0	10
160	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	9
214	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	1	0	9
237	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	9
296	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	1	0	1	0	0	1	1	0	9
5312	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1	0	0	0	1	0	1	0	9
5330	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	9
5342	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	9
5350	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	9
5390	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	0	9
5500	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	1	0	1	0	9
6240	0	0	0	1	1	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	9
161	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	8
164	1	0	0	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	8
179	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	1	1	0	8
180	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	1	0	8
181	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	1	0	8
182	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	1	0	8
195	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	8
197	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	8
212	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	8
215	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	8
236	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	1	0	8

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
245	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	8
316	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	8
5400	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	1	0	1	0	8
5610	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0	1	0	8
5620	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0	1	0	8
5800	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0	8
5840	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0	8
5850	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	1	0	0	1	0	1	0	8
5910	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	1	0	8
6320	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	8
147	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	7
150	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	7
165	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	7
170	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	0	7
171	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	7
174	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	7
196	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	7
198	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	7
199	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	7
218	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	7
219	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	7
230	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	7
234	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	7
235	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	7
238	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	7
239	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	7

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
289	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1	1	0	7
290	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1	1	0	7
291	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1	1	0	7
293	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1	1	0	7
317	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	7
339	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1	1	0	7
428	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	1	0	7
5341	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	1	0	7
5410	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	1	0	7
5420	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	7
5430	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	1	0	7
5590	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	7
5630	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	7
5670	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	0	7
5760	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	1	0	0	1	0	0	0	7
5820	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	1	0	7
5830	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	1	0	7
5860	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	7
5872	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	7
5920	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	7
5972	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	7
6100	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	7
148	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	6
149	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	6
159	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	6
172	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	6

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
173	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	6
175	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
176	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
177	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
178	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
185	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	6
186	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	6
194	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	6
202	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	6
204	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	6
211	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	6
213	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	6
217	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	6
231	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
232	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
241	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
242	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	6
279	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	6
292	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1	0	0	6
294	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	6
326	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	6
330	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	6
332	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	6
335	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	6
336	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	6
337	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	6

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
338	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	6
340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	1	0	6
342	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	1	0	6
404	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1	0	6
406	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1	0	6
413	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	1	0	6
460	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	6
473	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	1	0	6
5450	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	6
5460	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	6
5491	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	6
5580	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	6
5600	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	6
5700	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	6
5750	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	6
5790	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0	6
5971	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	1	0	6
6070	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	6
6080	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	6
6200	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	6
6210	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	6
6250	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	6
6260	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	6
6350	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	6
7130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0	6
7610	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	6

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
138	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	5
141	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	5
146	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	5
158	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	5
163	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	5
183	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	5
190	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
191	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
192	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
205	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	5
206	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	5
210	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	5
221	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	5
240	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	5
244	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	5
246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	5
264	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	0	5
282	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	5
295	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	5
302	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	1	0	5
304	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	5
327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	1	0	5
329	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	5
333	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	5
334	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	5
345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	1	0	5

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
402	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	5
403	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	5
405	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	5
407	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	5
408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1	0	5
411	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1	0	5
412	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	1	0	5
414	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	5
415	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	5
430	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	5
431	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	5
457	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	5
5440	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	5
5480	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	5
5510	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	5
5541	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	5
5550	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	5
5560	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	5
5680	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
5780	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	5
5940	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	5
5980	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	5
6030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	5
6040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	5
6110	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	5
6170	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	5

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
6190	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	5
6270	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	5
6300	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	5
6330	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
6340	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
6360	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5
6810	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	5
7150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	1	0	5
7620	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	5
7650	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	5
128	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4
132	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
139	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	4
140	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	4
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	1	0	4
143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	4
151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	4
152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	4
187	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
188	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
189	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
200	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	4
207	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	4
208	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	4
209	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	4
220	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	4

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
222	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	4
223	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	4
228	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	4
229	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	4
233	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	4
247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	4
253	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
254	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
269	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	4
270	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	4
271	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	0	4
281	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	4
285	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	4
286	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	4
287	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	4
288	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	4
298	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	4
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	4
328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	4
331	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	4
343	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	4
348	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	4
399	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	4
410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	4
416	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	4
417	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	4

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
418	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	4
419	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	4
420	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	4
432	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	4
433	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	4
456	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	4
472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	4
5470	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	4
5520	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	4
5530	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	4
5640	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
5650	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
5690	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
5930	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
6010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	4
6020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4
6060	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4
6140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	4
6150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	4
6160	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	4
6180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	4
6280	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
6290	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
6310	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
6370	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	4
6380	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
6760	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	4
7080	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	4
7090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	4
7100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	4
7110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	4
7120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	4
7160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	1	0	4
7200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	4
7480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	4
7600	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	4
7630	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	4
7640	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	4
8600	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	4
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	3
94	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
117	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3
126	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3
127	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
131	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	3
144	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	3
168	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3
169	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3
184	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3
193	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
201	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3
203	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3
216	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3
226	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
227	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3
243	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3
249	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	3
250	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
251	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
252	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
255	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
256	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
257	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
258	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
259	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
260	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
262	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	3
265	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
266	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
267	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
268	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
272	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	3
273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3
274	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3
275	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3
277	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3
303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	3
309	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	3
314	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	3
349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	3
398	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
400	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	3
401	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3
409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	3
421	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3
422	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3
424	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3
427	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3
434	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
445	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
446	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
453	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
454	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
468	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
474	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
489	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3
526	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3
5660	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
5990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3
6050	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
6130	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
6410	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
6740	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
6750	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
6790	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3
6800	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6820	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6930	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6950	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3
6990	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
7020	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
7140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	3
7210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3
7220	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	3
7520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7560	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7590	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	3
7690	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3
7700	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3
7710	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	3

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
8320	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
93	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
119	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
120	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
157	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
166	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
225	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
276	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
284	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
310	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
311	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
312	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
318	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
344	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
346	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
347	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
437	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
438	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
439	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
440	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
441	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
444	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
458	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
467	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
477	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
479	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
484	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
485	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
486	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
487	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
493	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
497	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
498	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
510	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
511	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
512	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
518	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
519	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
521	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
522	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
523	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
525	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
6000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
6120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6390	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6400	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6420	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
6430	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6440	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6450	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6460	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6700	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
6720	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
6730	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
6731	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
6732	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6770	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6780	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
6830	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6840	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
6850	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6860	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6920	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6940	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6960	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6970	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7010	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7190	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
7230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
7350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
7360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
7390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
7430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
7450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7460	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7542	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7552	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7570	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7680	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7720	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7740	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
7750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
8110	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8120	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8130	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8140	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8310	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
8430	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8440	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8590	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8610	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8641	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
115	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
118	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
162	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
167	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
299	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
306	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
307	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
323	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
324	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
325	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
356	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
364	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
373	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
378	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
383	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
384	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
386	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
388	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
389	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
394	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
395	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
423	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
425	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
426	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
429	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
436	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
447	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
449	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
463	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
464	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
466	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
469	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
471	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
475	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
478	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
488	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
495	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
502	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
503	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
504	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
508	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
514	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
517	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
524	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
4271	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4711	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
6470	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6480	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6490	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6500	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6510	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6520	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6530	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6540	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6550	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6560	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6570	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6590	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6600	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6610	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6620	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6630	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6640	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6650	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6660	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
6670	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6680	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6690	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6710	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6870	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6880	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6890	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6900	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6910	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7070	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7240	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7250	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7440	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7510	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7660	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7670	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
7930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8060	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8070	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8080	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8090	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8189	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8239	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8269	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8419	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8460	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
8500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8510	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8540	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8550	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8570	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8620	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8630	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8642	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8650	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8660	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
385	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
392	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
397	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
448	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
481	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
494	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
499	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
506	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
507	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
516	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
721	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
722	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
727	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
735	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
778	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
783	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
838	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
842	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5310	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5870	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
7300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7310	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7770	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7780	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7790	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7820	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7840	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7860	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7870	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7880	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7890	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7910	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7940	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7960	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
7980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8190	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8429	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8560	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

IMPORTANT SUBSISTENCE WATERSHEDS FOR RURAL COMMUNITIES

VCU	AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA	TOTAL
8640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8670	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	==	==	==	==	==	==	==	==	==	==	==	==	==	==	==	==	==	===	==	==	==	===	==	===	===	===	==	==	===	===	==	=====
COMMUNITY TOTALS																																
AN	CP	CC	CR	EB	EC	GU	HA	HG	HN	HO	HY	KK	KC	KA	KL	MC	ME	WP	PA	PB	PG	PE	PP	SX	SI	SK	TB	TS	WR	YA		
70	31	11	87	75	9	16	44	81	93	38	55	56	45	35	25	68	109	41	69	85	198	57	170	129	206	37	91	115	379	38		

MAPPED USE BY WATERSHED BY COMMUNITY

The following maps, the last section of Appendix N, contain information by rural community on the location of important subsistence use areas as depicted in the Tongass Resource Use Cooperative Survey (TRUCS), February, 1990. The maps are based on "Most Reliable", "Most Frequented" and "Upland Salmon Harvest" areas located by surveyed individuals from the thirty-one rural communities of Southeast Alaska. Information from these maps was the basis of the Southeast composite which is displayed in the Chapter 3, Subsistence Section of the Revision DEIS. From this map, the Southeast composite, effects on subsistence uses by other management activities is derived.

The rural community maps were developed from the digitized polygon information created during the TRUCS survey. Maps displayed in this Appendix identify watersheds (VCU's-Value Comparison Units) where polygon information was mapped. If a watershed contained use in any amount, the entire watershed was shaded. Displaying the entire watershed as being utilized when only portions of the drainage were mapped may overestimate the area used for subsistence purposes. It is important to note that a sample of individuals from rural communities were surveyed during the TRUCS data collection. If all Southeast residents in rural communities were surveyed a larger area of use may be depicted than identified on the maps. The communities reviews allowed everyone in the rural communities to view the TRUCS mapping effort and correct any deficiencies.

Community reviews of the TRUCS maps were completed in April, 1990 by Forest Service and Alaska Department of Fish and Game members. Information from these reviews is not contained in the maps displayed due to the new information not available prior to printing of the Revision DEIS. Information gathered during the community reviews will be incorporated in the Revision FEIS.

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

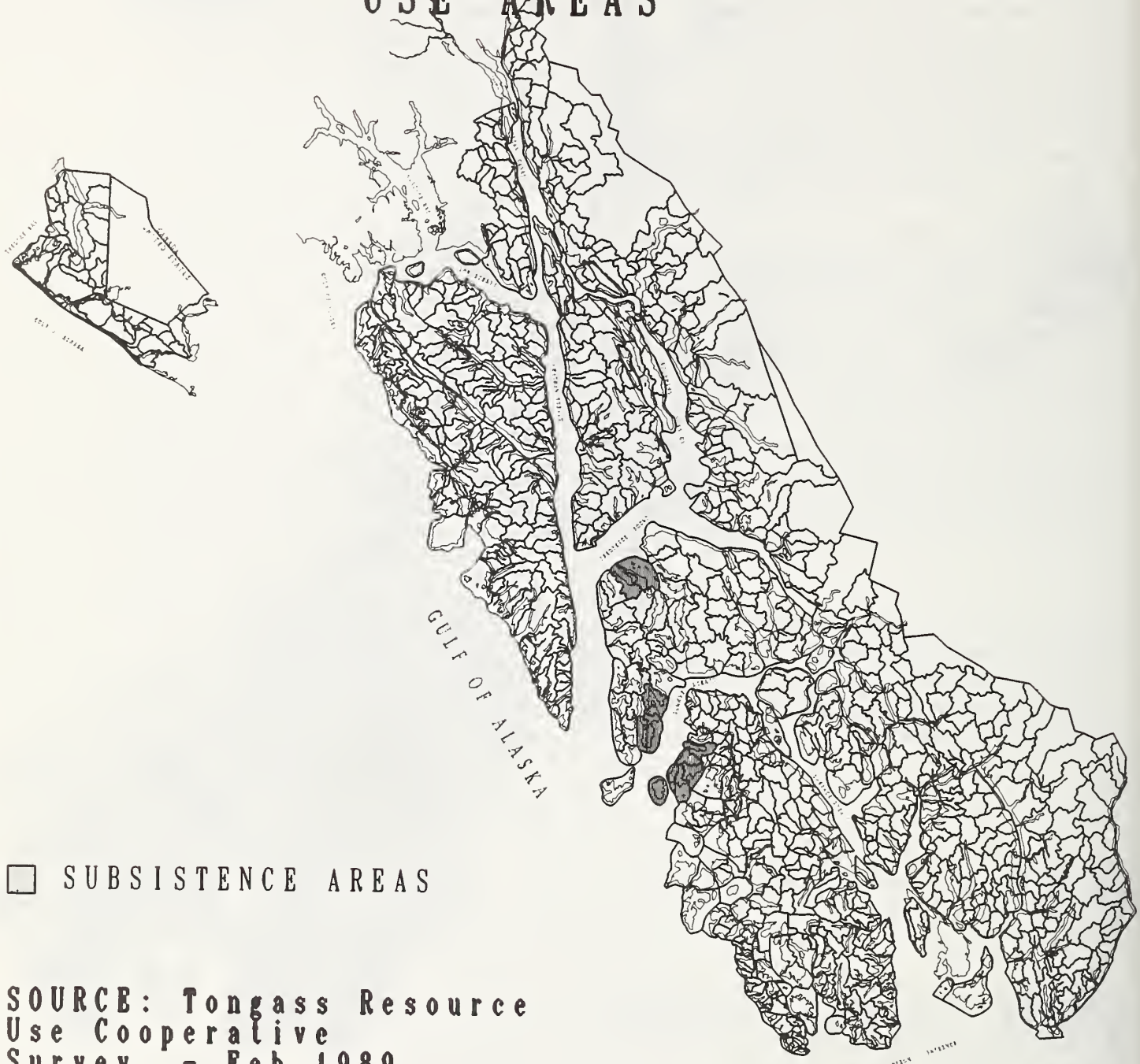
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

ANGOON

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



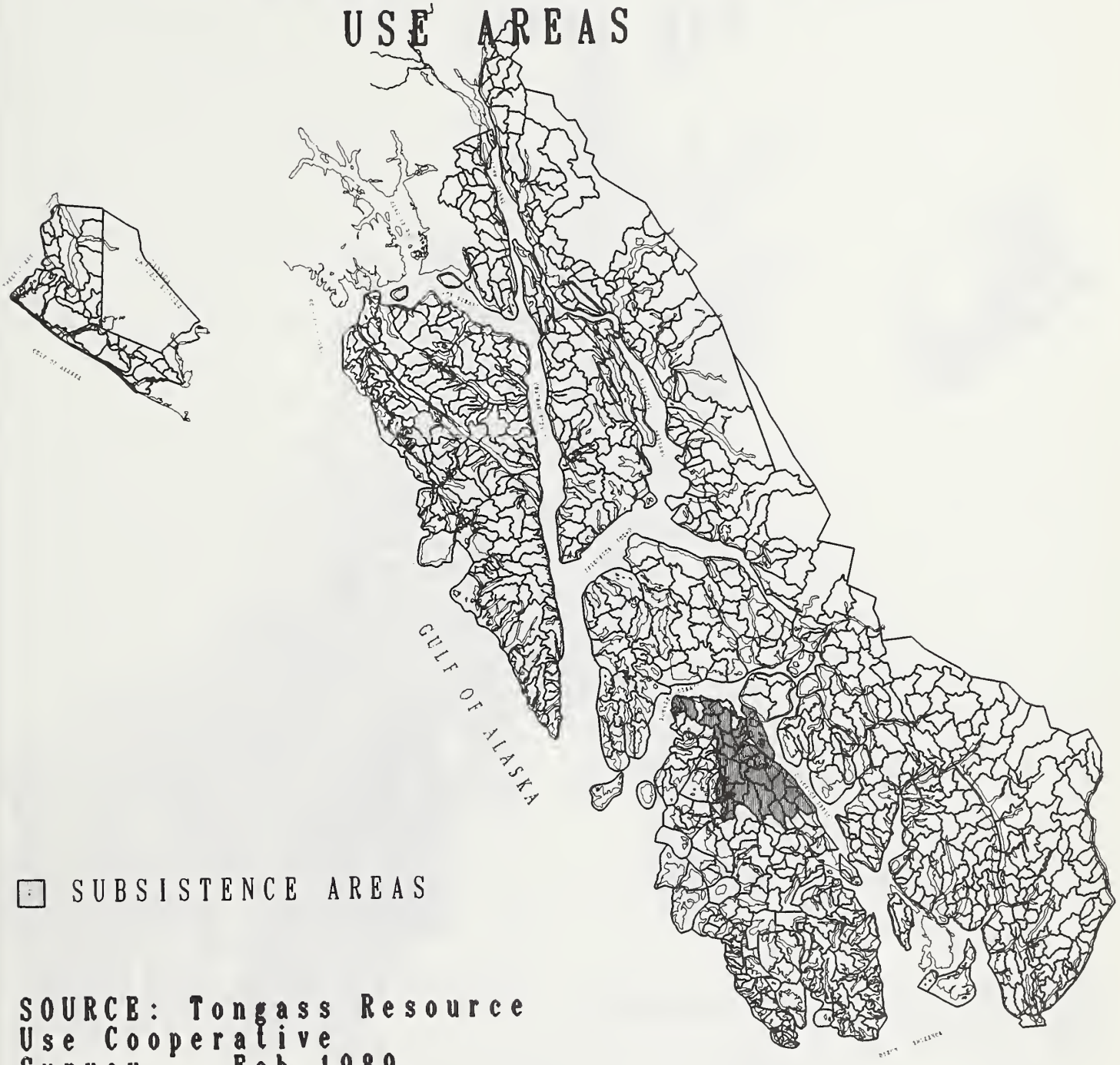
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

CAPE POLE

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

COFFMAN COVE

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

CRAIG

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

EDNA BAY

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

ELFIN COVE

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

GUSTAVUS

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

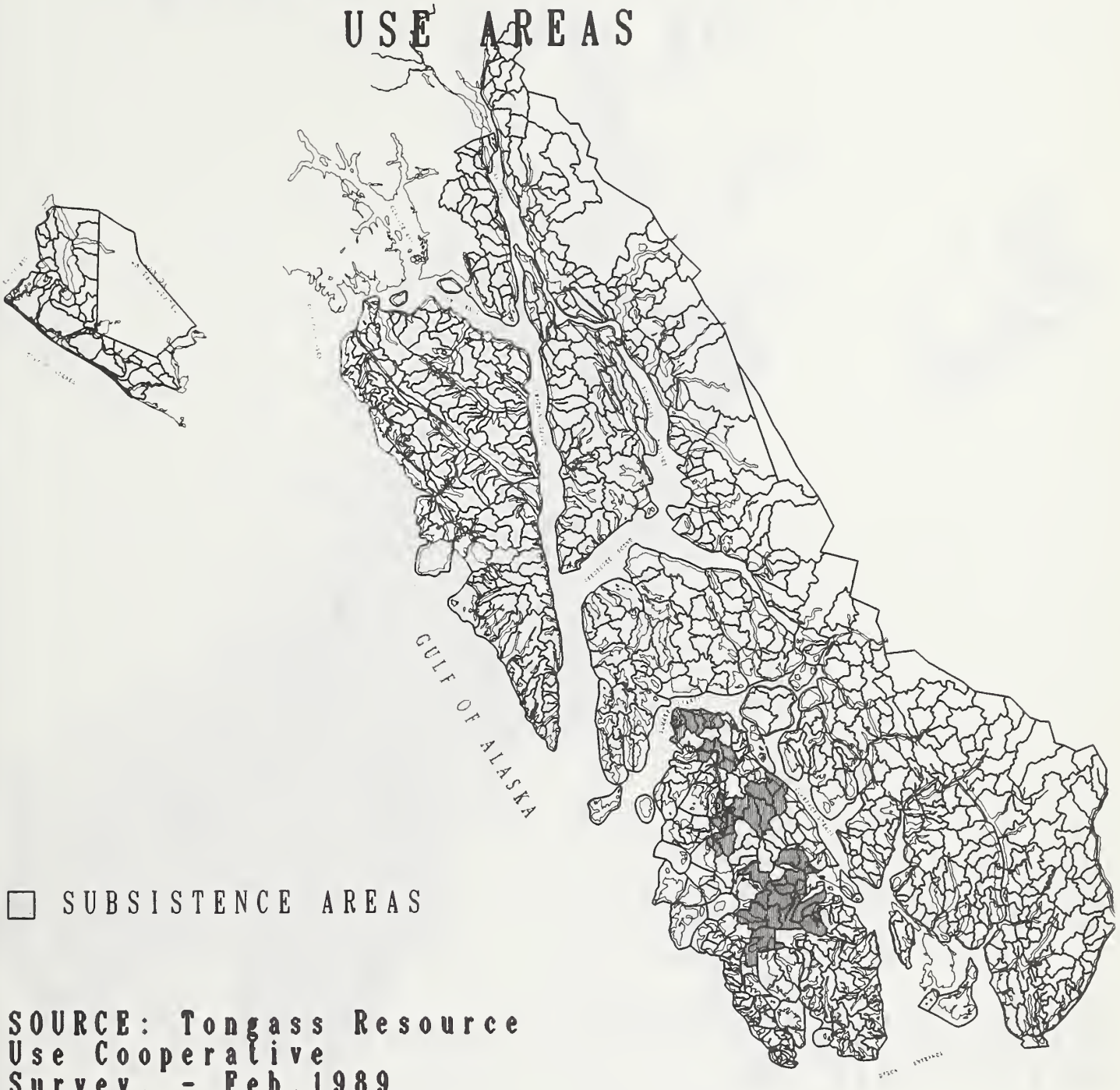
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

HAINES

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

HOLLIS

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

HOONAH

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

HYDABURG

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

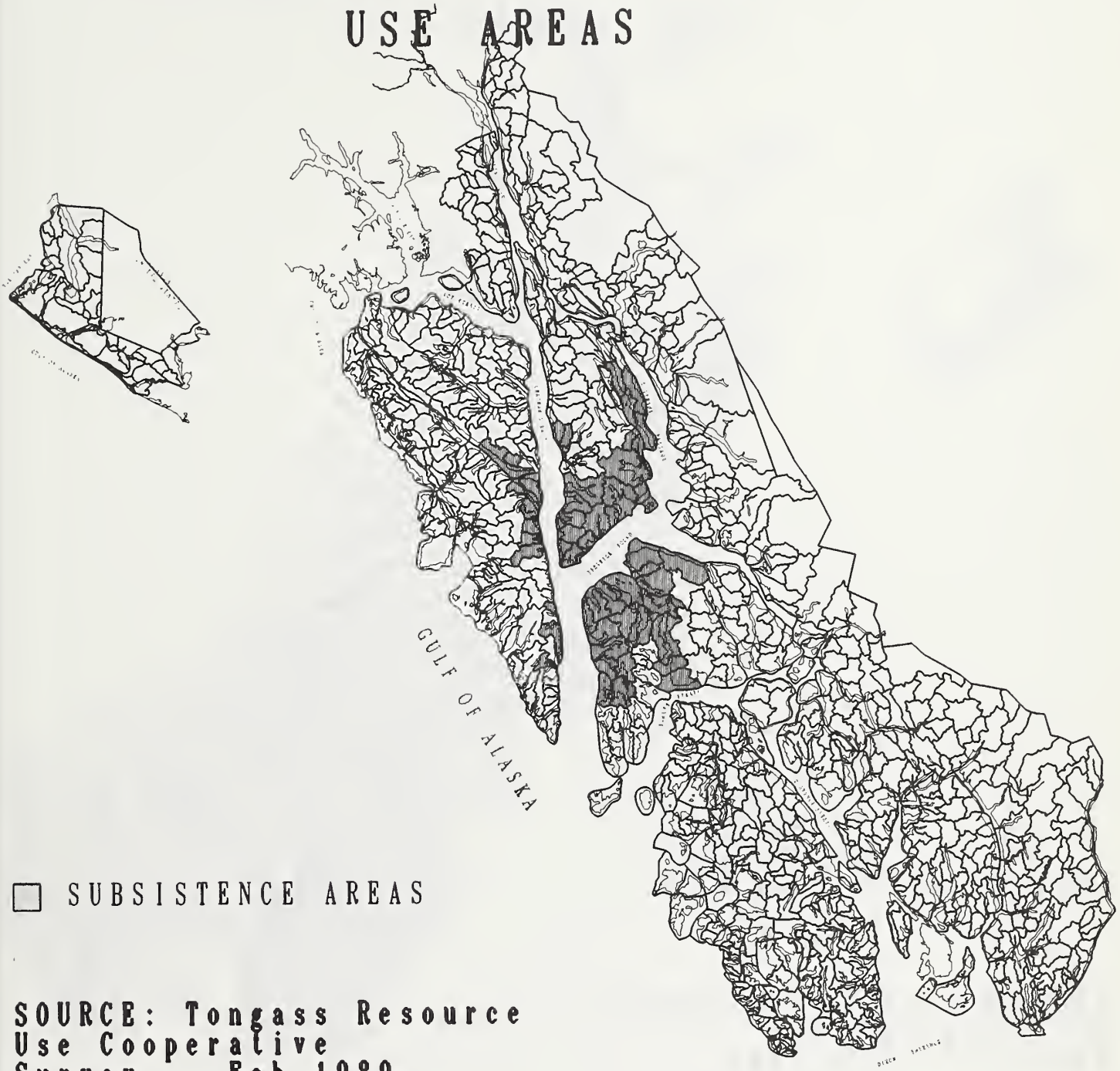
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

HYDER

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



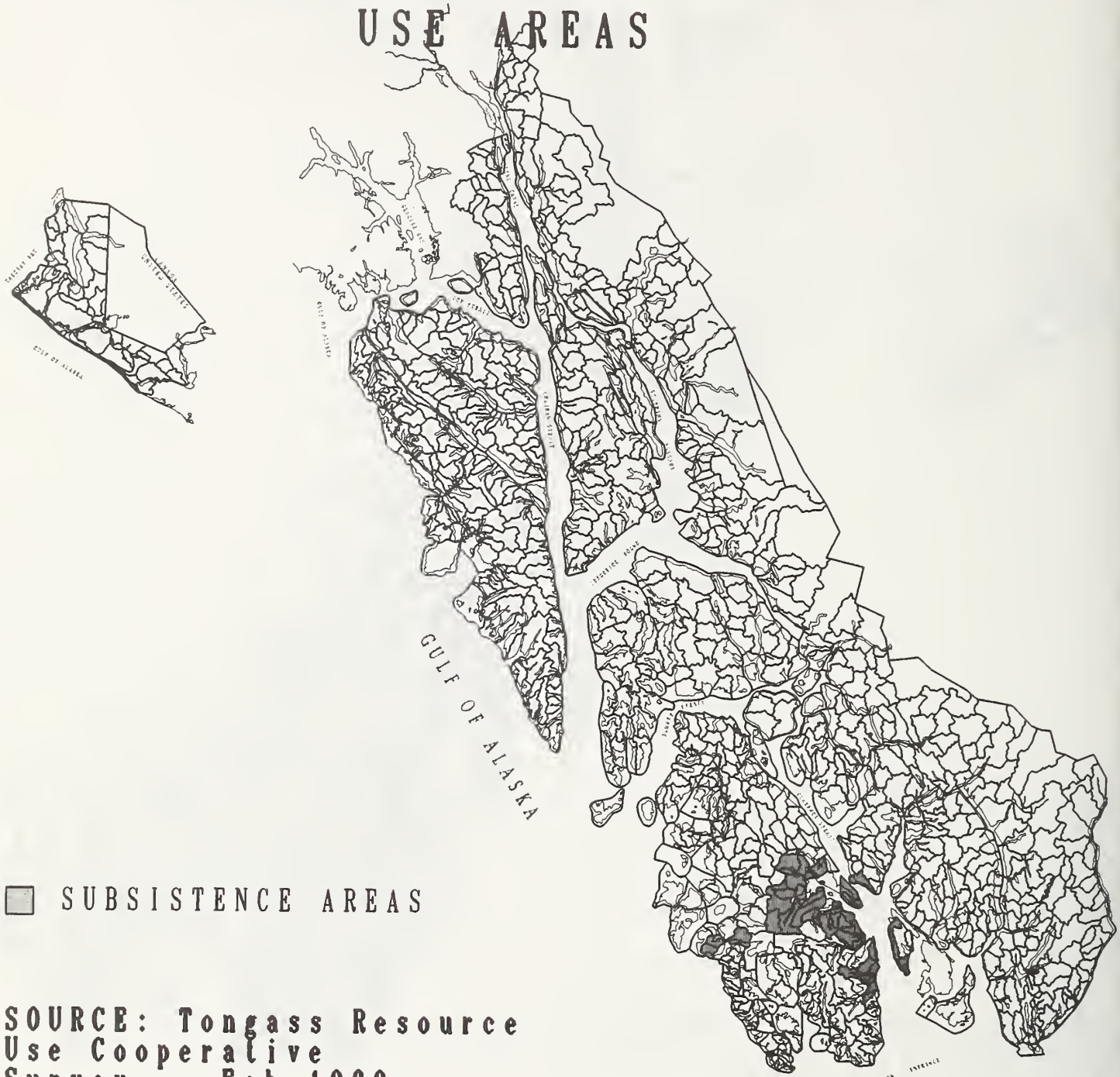
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

KAKE

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



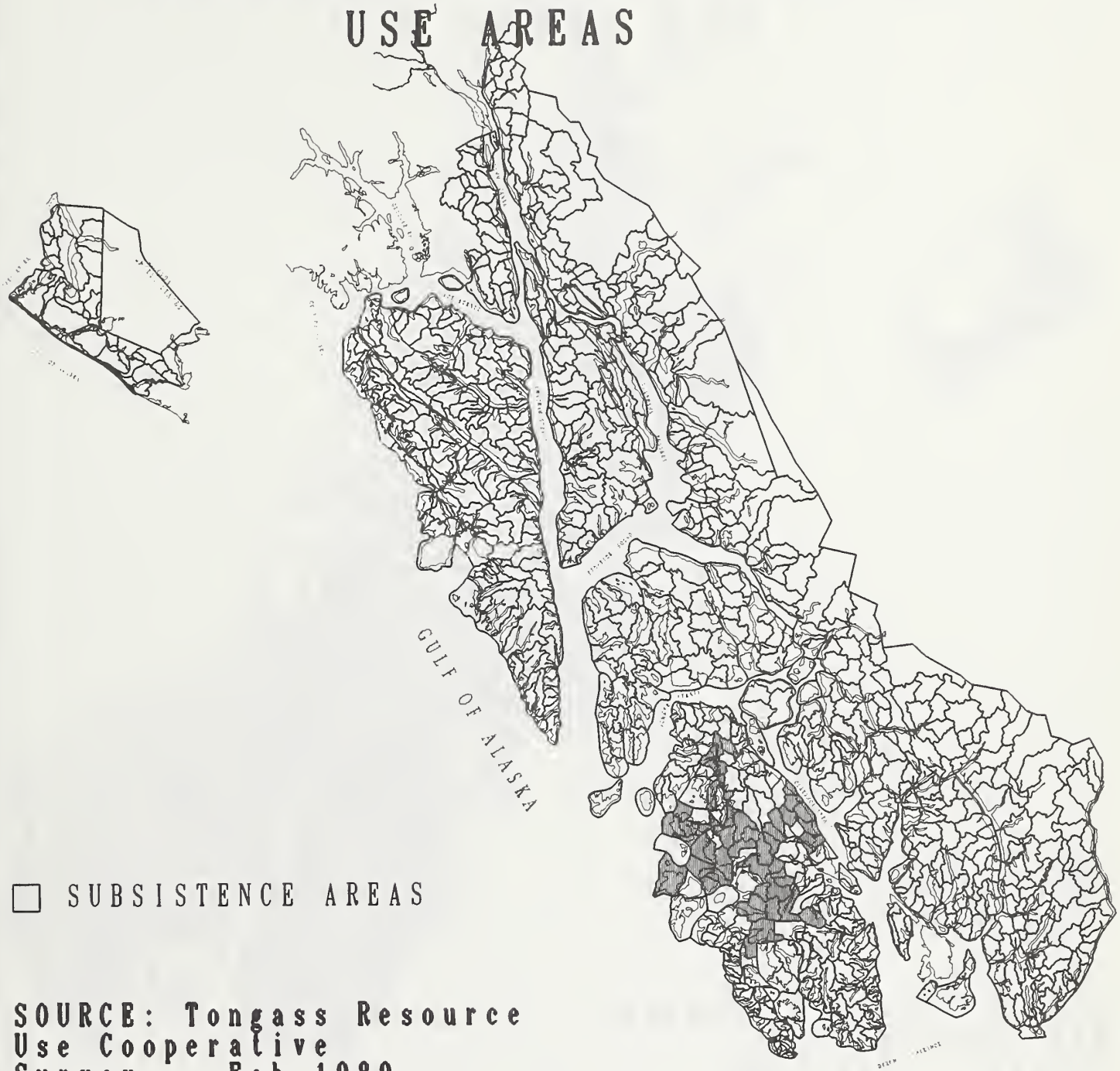
SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

KASAAN

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

KLAWOCK

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

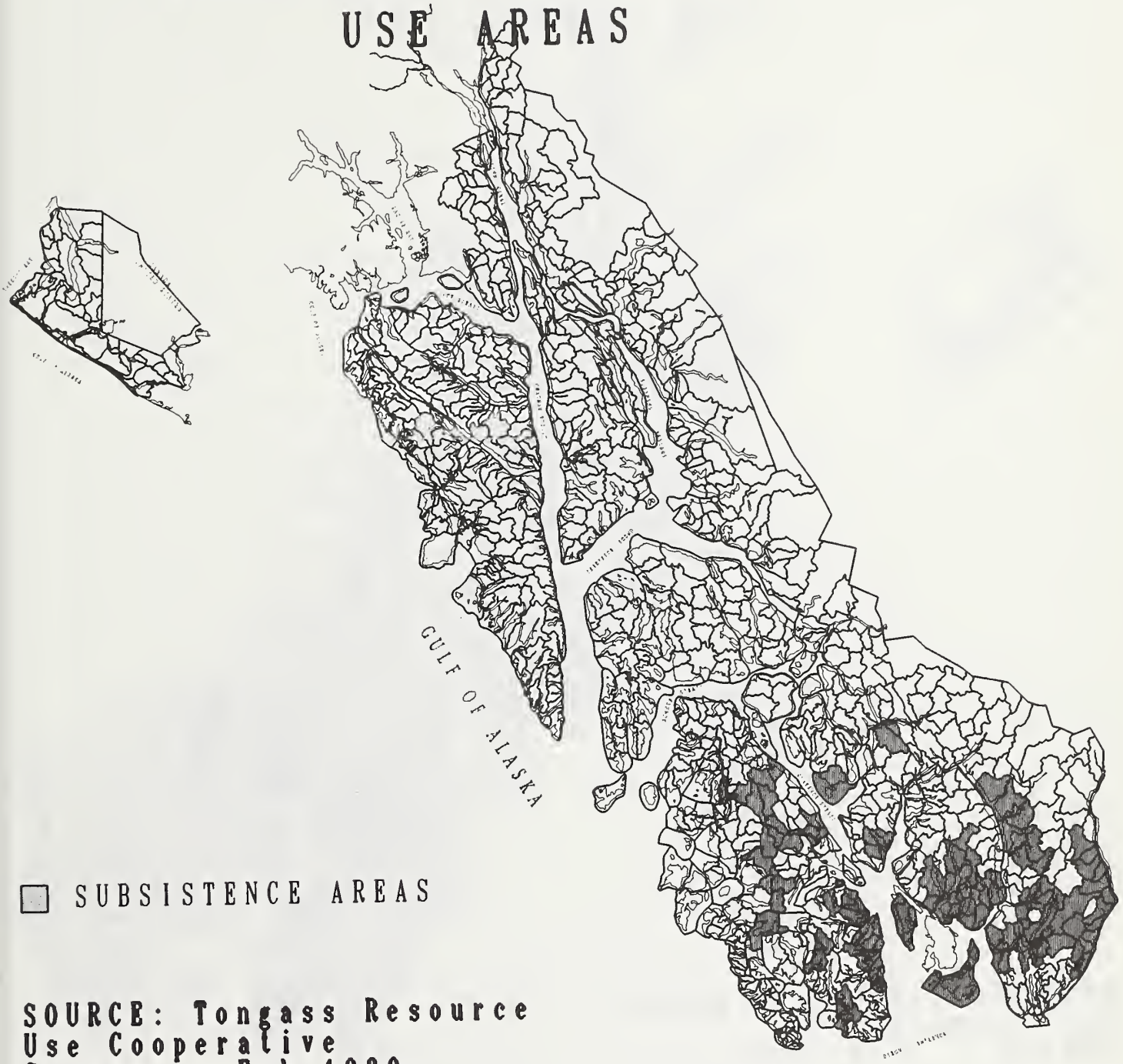
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

KLUKWAN

April 19, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS



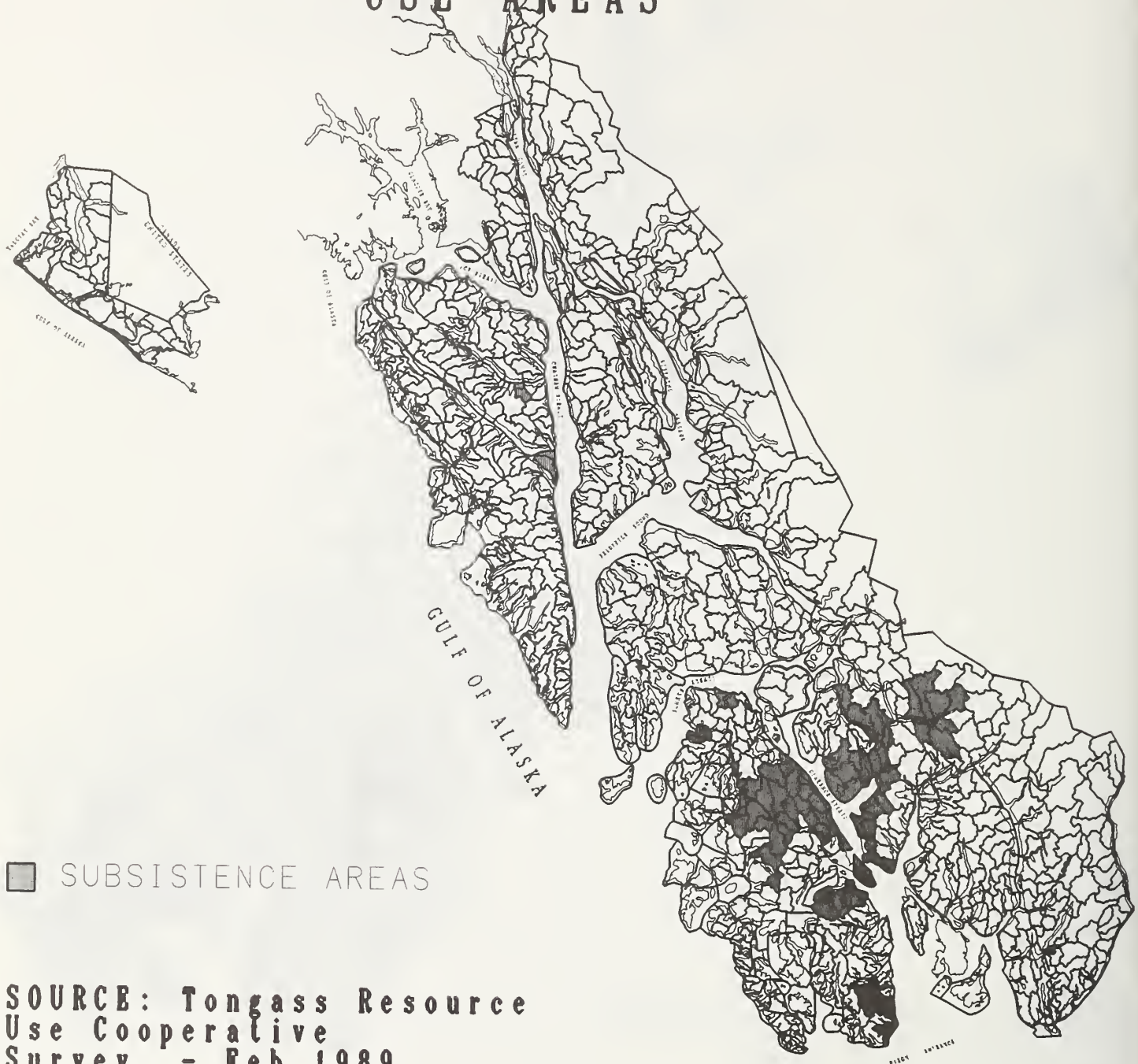
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

METLAKATLA

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

MEYERS CHUCK

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

N. WHALE PASS

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

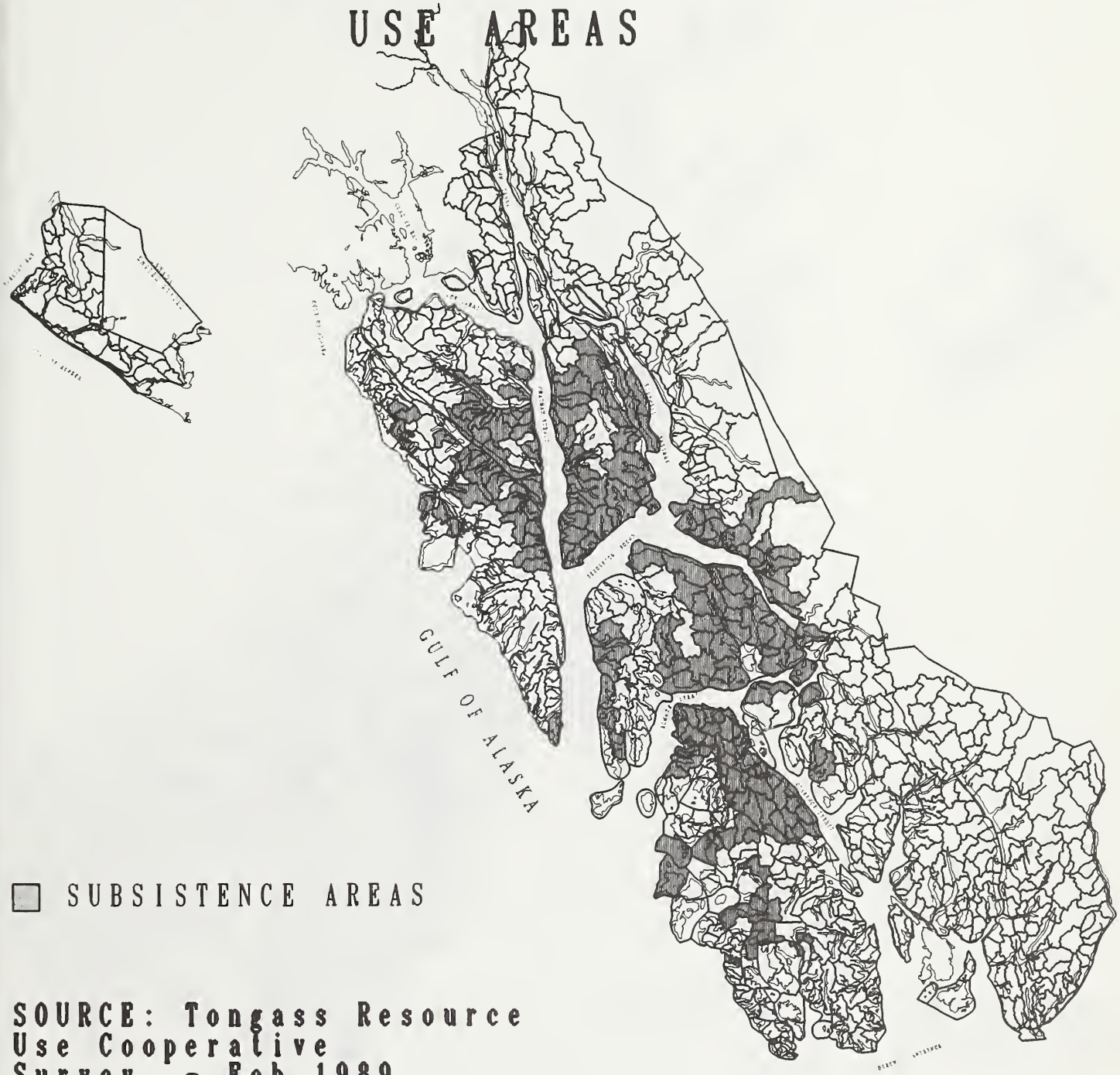
SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

PELICAN

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS



☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

PETERSBURG

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

PT. BAKER

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

PORT ALEXANDER

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

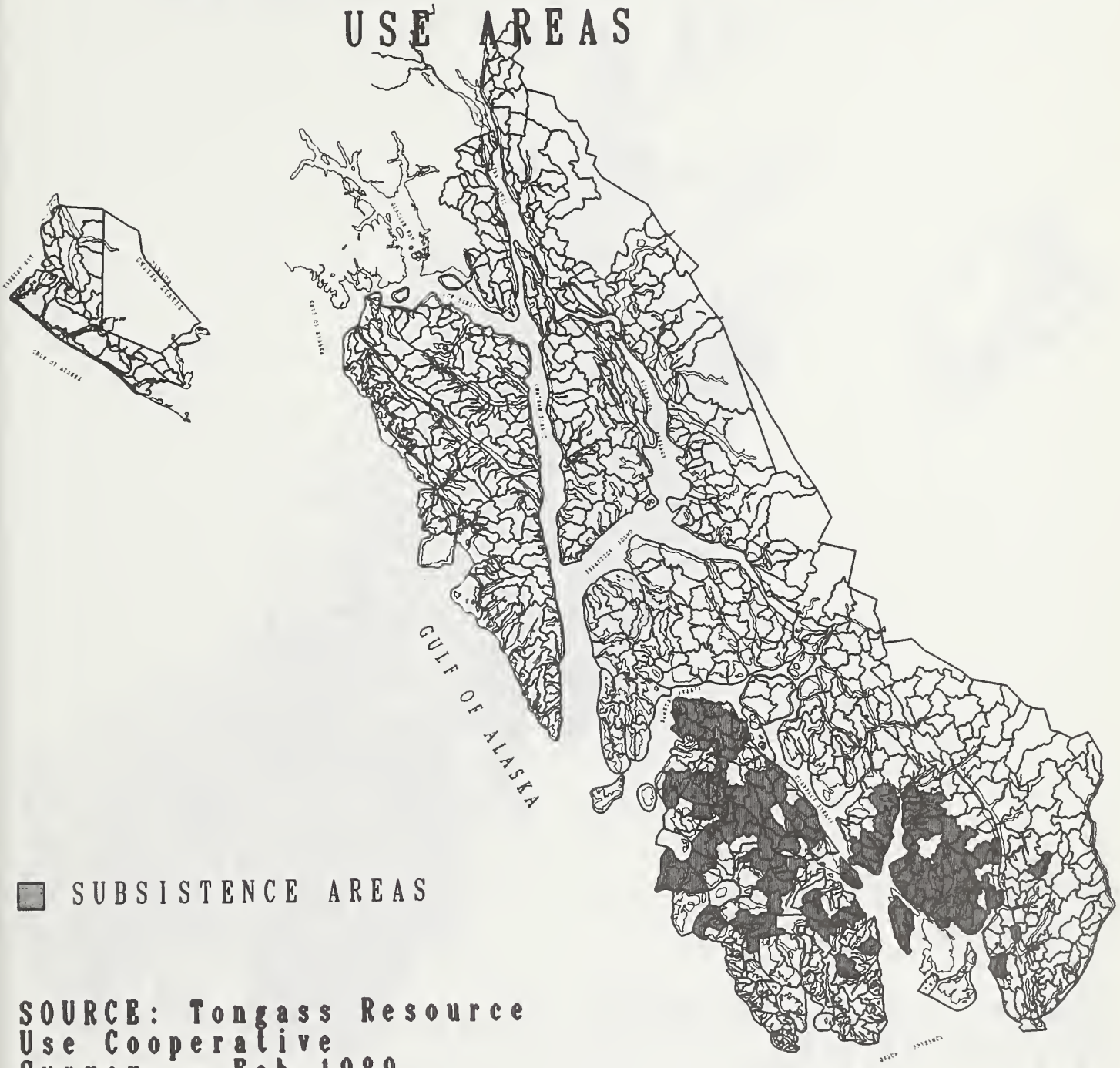
☐ SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

PORT PROTECTION

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS



SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

SAXMAN

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE
USE AREAS

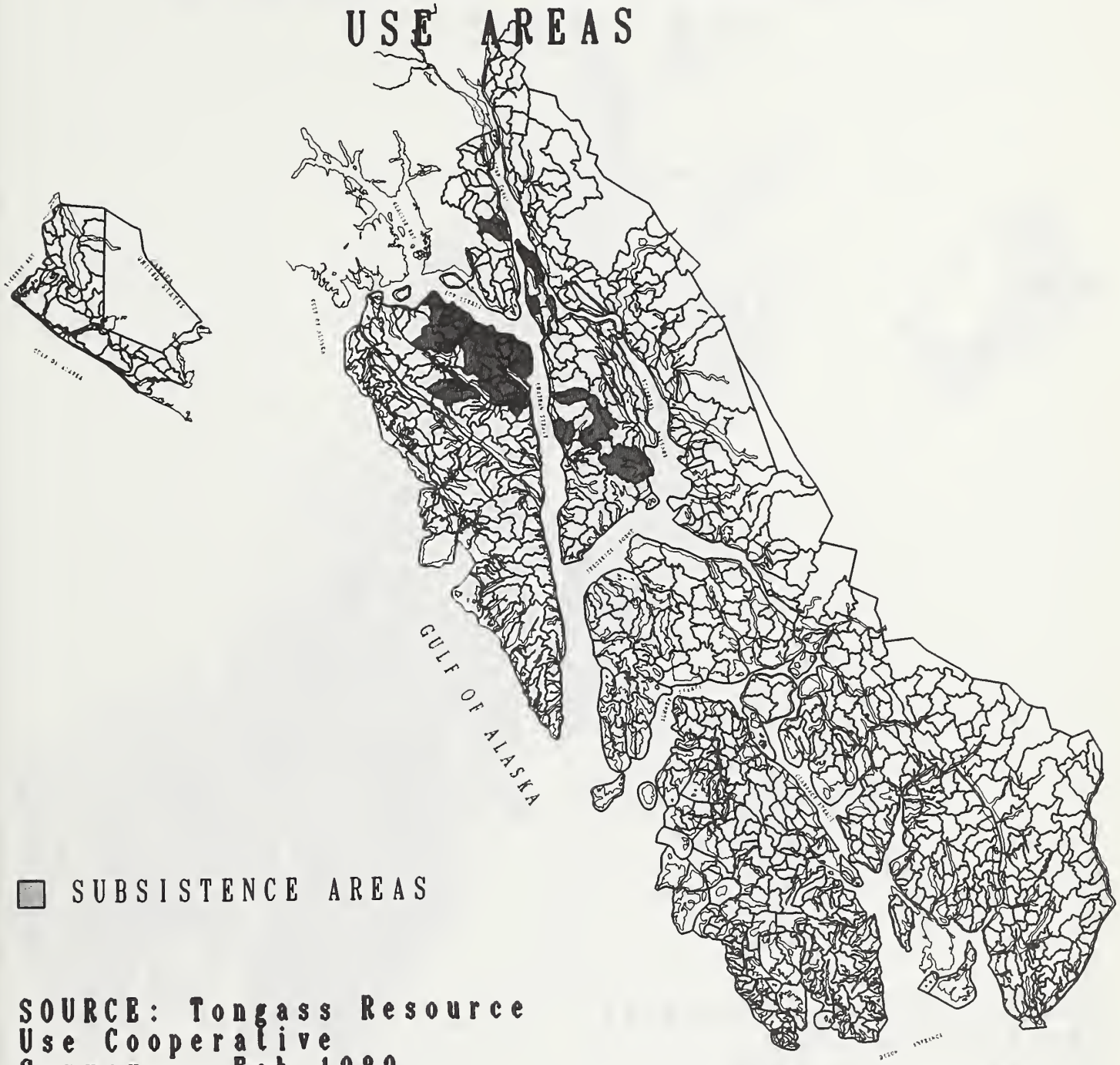
SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

SITKA

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS



SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

SKAGWAY

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

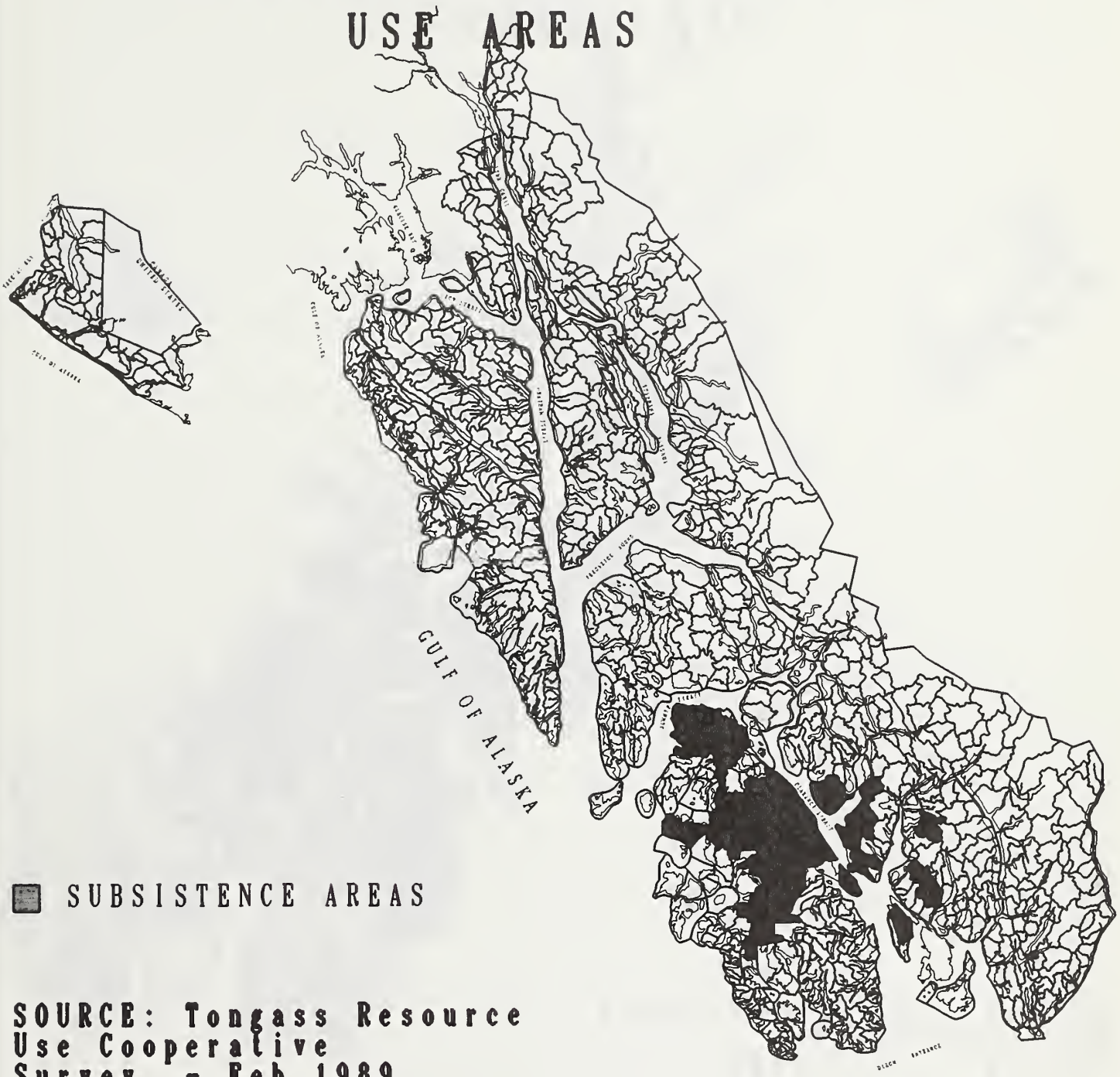
SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

TENAKEE SPRINGS

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS



SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

THORNE BAY

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

WRANGELL

April 20, 1990

TONGASS NATIONAL FOREST
IMPORTANT SUBSISTENCE USE AREAS

SUBSISTENCE AREAS

SOURCE: Tongass Resource Use Cooperative Survey. - Feb.1989

YAKUTAT

April 20, 1990

APPENDIX O

APPENDIX O

COMPARISON OF STREAM AND LAKE PROTECTION AND NATIONAL MARINE FISHERIES SERVICE RIPARIAN PRESCRIPTIONS

INTRODUCTION

The National Marine Fisheries Service (1988) issued the following policy statement for riparian habitat protection in Alaska:

> "In order to maintain optimum production of anadromous salmonids the NMFS policy is to advocate the protection of riparian habitat through the retention of buffer zones along all anadromous fish streams and their tributaries in Alaska. NMFS will seek to ensure that a minimum buffer zone width of 30 meters (100 feet) be maintained on each side of the stream, and should consist of the natural/existing undisturbed forest. This policy addresses only the minimum buffer zone width. In some cases a wider zone is necessary to protect fisheries resources. Additional research is needed from which more site-specific prescriptions can be developed."

The National Marine Fisheries Service (NMFS) was consulted, and with them a riparian management area prescription representing the NMFS policy was developed for ascertaining more precisely the effects of implementing their policy. The NMFS prescription (see page O-6) was developed in the same format as the riparian management prescriptions shown in Appendix F; the content of the NMFS prescription was not changed. Riparian management prescriptions in Appendix F are:

> Management Area WQ: Fish Habitat and Water Quality Requirements
> Management Area SL: Stream and Lake Protection

The objective of the Fish Habitat and Water Quality Requirements (WQ) management area prescription is to comply with the National Forest Management Act Regulations of no serious and adverse effects to water quality and fish habitat. The objective of the Stream and Lake Protection (SL) management area prescription is to maintain or enhance aquatic biological productivity, which is similar to current management direction.

All alternatives, A through G, include only the SL prescription for implementation. The rationale for this is that the SL prescription best meets current direction and public issues (see DEIS, chapter 3, Fish section).

The purpose of this appendix is to compare the NMFS prescription with the proposed Forest Service Stream and Lake Protection management area prescription in regards to the fisheries resource only. The effects on all other resources are similar and do not require a detailed comparison.

STREAM & LAKE PROTECTION PRESCRIPTION

The effect on coho salmon and Dolly Varden char habitat capability following timber harvest is shown for sample channel types in Figures O-1 through O-3 for the SL prescription. Capability changes for Dolly Varden are shown for both Class I and Class II streams, since they would be managed differently. (see the DEIS, Glossary, for definitions of Class I, II, III streams) (Coho are only found in Class I streams.)

If the SL prescription were implemented, it is predicted that Forest-wide habitat capability for coho salmon would be reduced by a maximum of .5 percent during the next 150 years, and for Dolly Varden char, habitat capability Forest-wide would be reduced by less than 3 percent during the next 150 years if all forested (tentatively suitable) riparian areas, outside of Wilderness, were harvested according to the SL prescription direction, and standards and guidelines. This is actually an overestimation of the amount of reduced capability since all riparian acres are not allocated to the SL prescription or any other prescription allowing scheduled timber harvest. Therefore, reduction in habitat capability ranges from 0 to .5 percent for coho, and from 0 to 3 percent for Dolly Varden.

NMFS PRESCRIPTION

If the NMFS prescription were implemented, coho salmon and Dolly Varden char habitat capability following timber harvest would not be changed because it does not allow harvest within 100 feet of all Class I and Class II fish streams. The coho and Dolly Varden models predict that all large woody debris in streams which form pools comes from within 100 feet of the streams, therefore these large woody debris sources would be maintained.

In addition to the guidelines along Class I and II streams, the prescription provides for no timber harvest on Class III streams unless the stream is ephemeral or intermittent (flows only part of the year), has a gradient greater than 8 percent or is not a tributary to a Class I or II stream. This guideline for Class III streams does not affect the anticipated habitat capability of fish streams, but could reduce the risk of impacts to downstream fish habitat (see DEIS, Chapter 3, Fish section for the risk of effects to the fish resource from management activities.

COMPARISON

Both the NMFS and the SL management area prescriptions recognize that the area immediately adjacent to the stream is the most critical for maintaining or enhancing fish habitat populations. Both prescriptions also acknowledge that timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives. The NMFS prescription includes an

objective to maintain 100 percent of sources of large woody debris to streams in Class I and II streams, and in many Class III streams. The SL prescription includes the objective to maintain or enhance aquatic biological productivity.

The two prescriptions differ mostly in relation to the 100 percent objective of sources of large woody debris to the stream. The following are the requirements of the NMFS prescription which are not included in the SL prescription:

1. Objective: NMFS prescription has an added objective for maintaining 100 percent of sources of large woody debris to streams.

2. Harvest controls: The NMFS prescription always allows no programmed harvest within 100 wind resistant feet of Class I and II streams and Class III streams unless the stream is ephemeral or intermittent, has a gradient greater than 8 percent or is not a tributary to a Class I or II stream.

   In the NMFS prescription, trees yarded across buffered streams must attain full suspension over all trees within 100 feet of streams in buffered areas.

3. Roading: In most process groups, the statement "roads shall not parallel streams within no harvest areas" has been added to the NMFS prescription.

   For streams on which no programmed harvest is to be maintained, disturbance within 100 feet of streams for roads should be limited to an average of 3 acres per one mile of stream in the NMFS prescription.

In most other ways the prescriptions are similar. Both require the use of Best Management Practices. When the Stream and Lake Protection prescription limits harvest beyond 100 feet, the NMFS precription does this also.

FIGURE O-1
ESTIMATION OF EFFECTS OF PRESCRIPTION 'SL' ON COHO SALMON

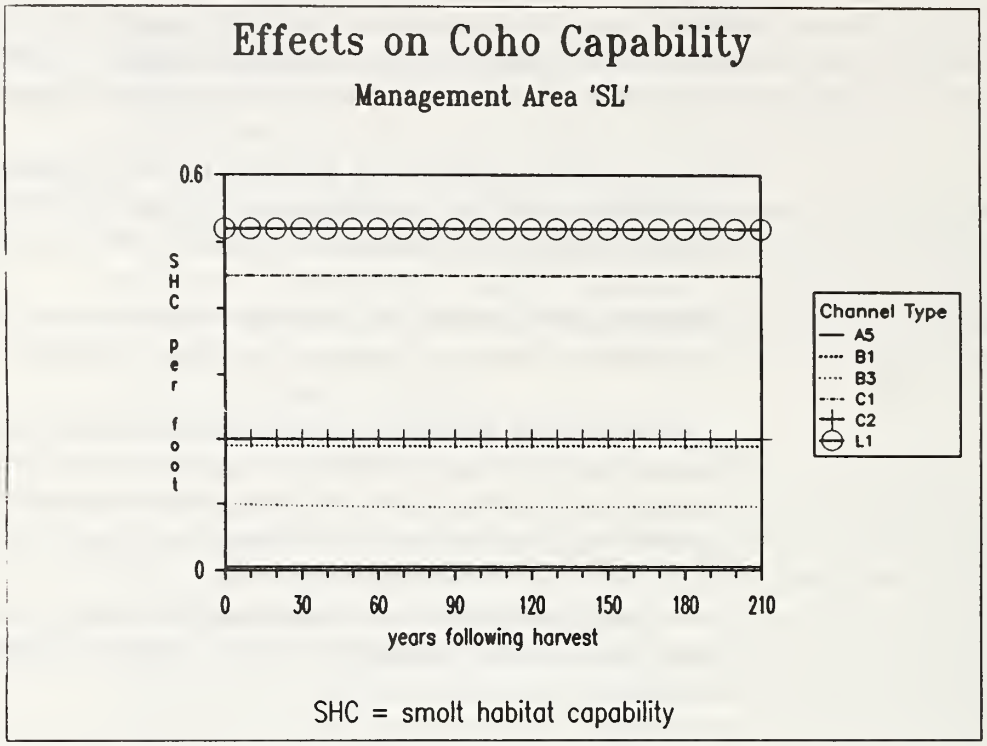


FIGURE O-2
ESTIMATION OF EFFECTS OF PRESCRIPTION 'SL' ON DOLLY VARDEN CHAR - CLASS 1

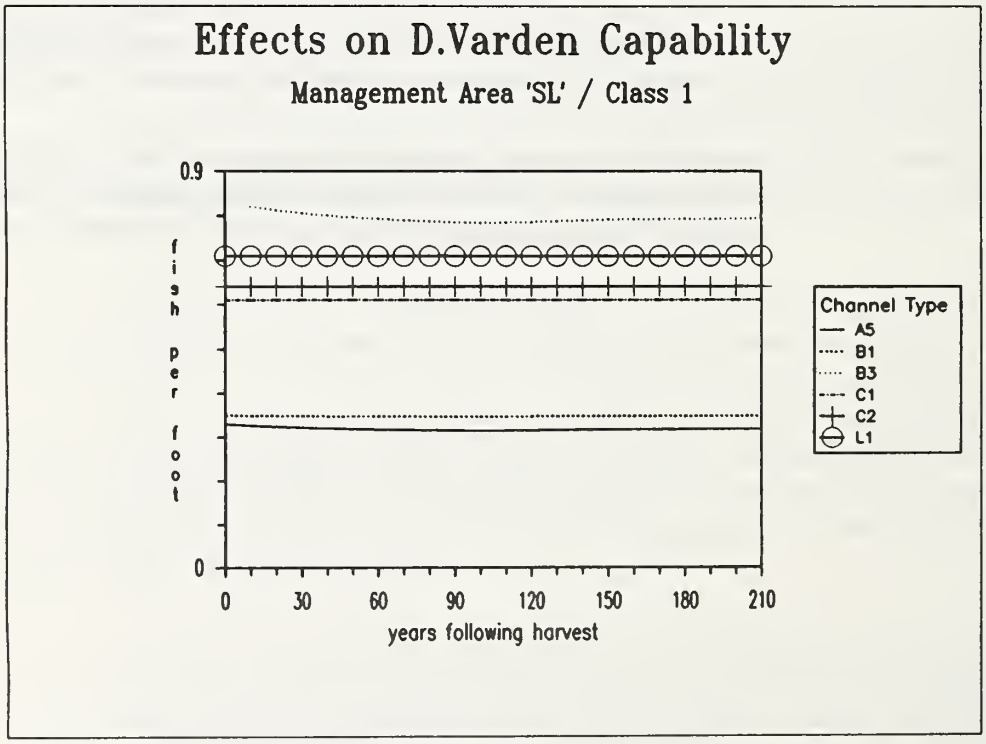
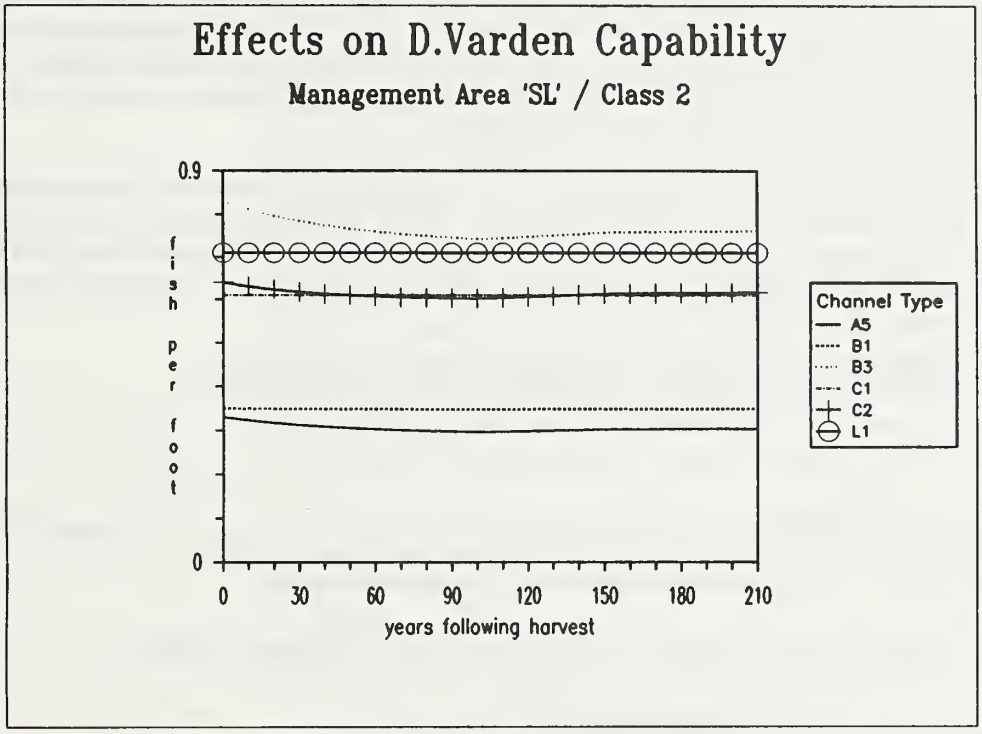


FIGURE O-3
ESTIMATION OF EFFECTS OF PRESCRIPTION 'SL' ON DOLLY VARDEN CHAR - CLASS 2



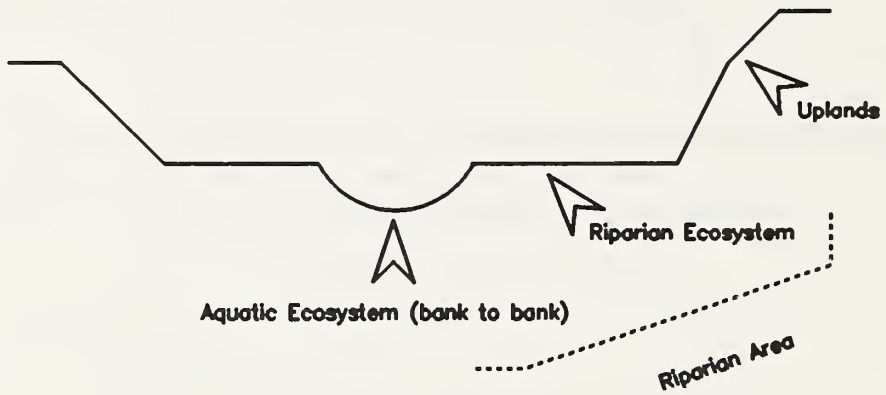
NMFS RIPARIAN POLICY

Management Area NMFS

The emphasis of this management area is to maintain optimum riparian habitat for fish and other riparian dependent resources. This prescription applies to areas comprised of aquatic and riparian ecosystems, including riparian streamsides, lakes and floodplains, with distinctive resource values and characteristics. This area 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 to be settled in favor of the riparian dependent species.

At a minimum, this Area includes the riparian area required to meet the National Forest Management Act's implementing regulations for fish habitat and water quality (see description of the Stream and Lake Protection Management Area) and includes 100 feet from all fish streams and their tributaries which significantly affect water quality. This prescription has been developed to portray the National Marine Fisheries Service Policy of 1988.

Riparian related definitions relating to this management area are as follows:



At-a-Glance . . .

Cultural resources	Interpretation of cultural resources and the natural environment may be provided to enhance the visitors experience. Cultural sites adjacent to activities will be protected following applicable Federal and State Regulations.
Recreation	Recreation use will be managed to preserve the natural attributes of the riparian area. Activities are managed to harmonize with the adopted ROS setting and purpose of adjacent areas. Recreation developments should generally be located in other management areas, unless the use is compatible or cannot practicably be located outside of riparian areas.
Visual	Visual quality may vary, based on the adopted Visual Quality Objectives for the surrounding area.

Fish	Fish habitat, including its protection, rehabilitation, and enhancement is emphasized. Other resource activities should maintain or enhance stream habitat conditions. Included will be the protection and 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 considerations.
Subsistence	Subsistence use occurs in accordance with applicable Federal and State regulations. Opportunities for harvesting riparian related resources, including both fish and wildlife species, will be maintained or enhanced.
Wildlife	A wide variety of vegetative conditions and types will be present, often benefiting a variety of riparian dependent wildlife species. Often, the area will provide snags for dependent wildlife species, maintain a vegetative component of large trees for brown bear bedding areas and other riparian dependent species, and provide for wildlife travel corridors.
Timber	Timber harvest and other silvicultural treatments will be allowed where not in conflict with the protection and enhancement of riparian dependent resources. Generally, only limited treatment is suitable within a variable distance of stream courses, with uneven-aged management being the predominant harvest method. No programmed timber harvest is allowed within 100 feet of fish streams and their tributaries which significantly affect water quality. Timber harvest for roads crossing riparian areas is allowed.
Soil and water	Soil and water protective measures are applied to a greater degree than in most other areas due to the proximity to, and density of, water courses. Emphasis is for no impacts to water conditions or fish habitat.
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 activities are designed to be compatible to the extent practicable with the management emphasis, and will often include special mitigating measures to protect water conditions and fish habitat.
Facilities	Generally, facilities will not be present within this management area, unless the use is compatible or cannot be located outside of the riparian area.
Transportation	Transportation developments should be located outside of the area, to the extent practicable. Road crossings of fish streams are allowed, and are to be designed for fish migration.
Fire	Appropriate suppression measures will be used to maintain water quality and fish habitat.
Insect and Disease	Integrated pest management principles are applied to maintain water quality and fish habitat.

Apply the following Forest-wide Direction and Standards & Guidelines:

RESOURCE	SECTION	SUB-SECTIONS
CULTURAL	AC	All
RECREATION	AN, AT	All
VISUALS	AV1 AV11,AV12	I(A,B,C,D) All
FISH	CF	All
SUBSISTENCE	SUBS	All
THREATENED,ENDANGERED,SENSITIVE	CT11	All
BIODIVERSITY	BIO	All
WILDLIFE	CW	All
TIMBER	ET	All
AIR	FA	All
SOIL AND WATER	FW	All
MINERALS AND GEOLOGY	GM11 GM12	All II-VII
LANDS	JL	All
FACILITIES	LF	None
TRANSPORTATION	LT	All
FIRE	PF12 PF2	I(A:2,3) I(A:1-4)
LAW ENFORCEMENT	PL	All
INSECT AND DISEASE	QC	All

Apply the following Management Area Direction and Standards & Guidelines:

CULTURAL

Cultural Resource Activities: AC

Evaluation

A. Develop priorities and schedule management activities to implement cultural resource inventory, evaluation, protection, interpretation, and allocation within a management area.
   1. Identify areas requiring intensive inventory/survey, including non-project areas.
   2. Identify cultural properties to be nominated to the National Register of Historic Places.
   3. Identify, classify, and evaluate known cultural resources.
   4. Identify cultural properties that require stabilization or other protective measures.
   5. Identify opportunities for interpretation of cultural resources for public education and enjoyment.

RECREATION

Recreation Use Administration: AN122

General Recreation and Management Operations

A. Regulate recreation use based on monitoring studies reflecting the effect of recreation activities on wildlife and fish resources and habitat.
B. Provide for inventoried ROS opportunities and appropriate activities throughout the Management Area, unless specifically closed to public use. Where the ROS setting is changed by project implementation manage the recreation resource in accordance with created ROS conditions.
   1. Locate, design and operate only those recreation facilities 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). Locate parking, sanitation, and other recreation facilities outside the management area where practical. Design all facilities within the management area to avoid adverse effects on riparian areas, shorelines, and water quality.
   1. For streams on which a "no programmed timber harvest" buffer is to be maintained, disturbance within 100 feet should be limited to an average of 3 acres per one mile of stream.

TRAIL ADMINISTRATION

Trail Administration: AT12

A. Locate trails outside the Management Areas unless the attraction of the trail is found within the riparian area. Where trails are located within the Management Area, locate crossings at right angles to the stream and at suitable bridge locations. Design and maintain trail treads to protect riparian values and minimize soil erosion (Consult FS Trails Management Handbook).
   1. Develop and incorporate in project plans an erosion control and stabilization plan for stabilizing all human-caused soil disturbances.

2. Locate stream crossings only in stable reaches. Design crossings of V-notched drainages to prevent debris jamming. Culvert gradient should follow natural gradient non-fish streams where needed to prevent downstream erosion. Require bridge brow logs for dirt and rock surfaced log stringer bridges to contain materials and prevent entry of sediment into stream. For further location and design guidance consult the Trails Handbook and Drainage Structures Handbook.
3. Location of trails parallel to fish bearing streams and crossing fish streams should be avoided, except that trails may be routed to retain short and long term sources of woody debris and to minimize the introduction of sediment during clearing, construction, and use. Sidecasting and waste materials must not encroach upon the streamcourse and as much undisturbed ground cover 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 material into the stream below. Fill will be placed into fish streams only when considered through the IDT process to be the best alternative.
4. 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 Games as determined by interdisciplinary analysis and appropriate line officer approval.
5. Thoroughly analyze the effects of locating trails parallel to riparian areas or within riparian areas with known concentrations of wildlife such as brown bear or waterfowl high use areas.

B. If need is determined during project interdisiciplinary team review, trails may be closed seasonally, to minimize adverse effects on fish and wildlife. To the extent practicable, manage trail use in cooperation with State and other Federal agencies to meet fish and wildlife habitat and population management objectives.

VISUALS

Visual Resource Operations: AV1

A. A variety of visual conditions may exist within this management area.
1. Adopt the Visual Quality Objective of the adjacent management area.
2. Visual Quality Objectives may range from Retention to Maximum Modification.

FISH

Fish Habitat Planning: CF112

General Direction

A. Emphasize the maintenance and enhancement of fish habitat and populations by integrating the management of the aquatic and terrestrial ecosystems. The objectives for management in this Area are activities that do not result in any decrease in anadromous and adfluvial fish habitat, or high value resident sport fish habitat capability. Removal of sources of large woody debris to streams within 100 feet of fish streams and certain tributaries is not allowed, except for specifically approved

purposes such as some recreation facilities and roads. Tributaries include perennial water courses, tributary to fish streams, less than 8 percent gradient.

B. Provide for short and long term maintenance of fish habitat capability in all channel process groups.
   1. *Stream Class I.* Maintain or enhance aquatic biological productivity within each individual Class I stream system.
   2. *Stream Class II.* Maintain habitat capability for resident fish populations, to the extent practicable.
   3. *Stream Class III.* This stream class has no fish inhabitants but provides quality water for downstream Class I and II stream systems.

C. Maintain stream bank and stream channel stability.
   1. *Stream Class I.* Maintain or improve anadromous and adfluvial fish habitat 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 debris. Design management activities to maintain streambank channel and floodplain integrity.
   2. *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 debris. Design management activities to maintain stream bank, channel and floodplain integrity. Avoid sediment impacts into downstream Class I streams.
   3. *Stream Class III.* Design management activities to maintain stream bank, channel, and floodplain integrity. Avoid sediment impacts into downstream Class I and II streams.

D. Maintain natural and beneficial quantities of large woody debris (LWD) over the short and long term.
   1. *Stream Class I.* Maintain anadromous and adfluvial fish habitat and high value resident sport fish habitat capability by providing for natural and beneficial volumes of large woody debris for rearing and spawning, stream energy dissipation, and sources of energy and wood to the stream ecosystem. Use channel type considerations to determine size classes and distribution.
   2. *Stream Class II.* Maintain habitat capability for resident fish populations, to the extent practicable, by providing for existing levels of large woody debris, and by designing for future sources at volumes determined by channel type considerations.
   3. *Stream Class III.* Maintain large woody debris in channels and banks to prevent changes in stream bank and stream channel stability.

E. Maintain water quality to provide for fish production.
   1. *Classes I, II, and III*: Prevent adverse effects to rearing and spawning habitat, when present. Maintain anadromous and adfluvial fish habitat 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 (stabilization should always occur within one year). Minimize siltation to prevent downstream adverse impacts to fish habitat.

2. Implement applicable Best Management Practices (see section on soil and water resources).

F. Maintain or improve water temperature at a level to optimize salmonid populations.
   1. *Stream Class I.* Maintain optimum salmonid summer stream temperatures at between 50 and 68 degrees F or at natural levels. Manage watersheds and riparian streamsides to attain optimum stream temperature regimes.
   2. *Stream Class II.* Maintain water temperatures below 68 degree F, or at natural levels to maintain habitat capability for resident fish populations, to the extent practicable.
   3. *Stream Class III.* Manage watersheds and riparian streamsides to maintain water temperature standards and guidelines for downstream Class I and II streams.

G. Maintain or improve primary or secondary stream biological production in second-growth forests.
   1. *Stream Class I.* Maintain natural or enhanced primary and secondary biological potential for anadromous and adfluvial fish habitat and high quality resident and sport fisheries.
   2. *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 of downstream waters.

H. Maintain fish passage through stream crossing structures.
   1. *Stream Class I.* Maintain or improve the opportunities for the migration of adult and juvenile anadromous and adfluvial sport fish. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
   2. *Stream Class II.* Maintain or improve the opportunities for the natural migration of resident fish where economically feasible. For resident fish, maintain or improve the opportunities for natural migration where economically feasible. Consult the Aquatic Habitat Management Handbook, FSH 2609.24.
   3. *Stream Class III.* No fish are found in this stream class.

Enhancement

A. Enhancement of fish resources is emphasized in the Management Area. (See Plan Schedule for details).

Monitoring: CF121

A. Monitor all applicable Best Management Practices designed to protect fish habitat and water quality.
B. Monitor the effects of management activities on fish habitat and populations, as compared to activities affecting habitat and populations in prescriptions with other varying intensities of riparian management activities (such as in Wilderness). The purpose of this monitoring is to identify differences in effects related to management intensity level.
   1. Implement aspects of monitoring plan which compare management effects between the appropriate Management Activities.

WILDLIFE

Wildlife Habitat Inventory: CW111

A. Establish a baseline inventory of riparian wildlife habitats to obtain information on habitat conditions and wildlife use prior to planned management activities.
   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. Conduct base line inventories on highest priority areas to precede or coincide with proposed management activities.

Wildlife Habitat Planning: CW112

A. Coordinate management activities with the needs of wildlife.
   1. Use the habitat needs of MIS to help identify important coordination considerations.
   2. Allow for the migration and movement of wildlife along riparian areas.
   3. Utilize silvicultural techniques which prolong understory forb and shrub production when practical.
   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 the 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 harvest, snags may be designated as wildlife trees and marked to make them illegal for cutting.
      * Consider retaining live trees for future snag recruitment.
   5. Manage for old growth characteristics in those stream process groups which are designated for uneven-aged management (single tree selection or group selection). Old growth characteristics are described in Forest-wide Standards and Guidelines CW112, IV.

B. Coordinate road management to emphasize the needs of wildlife.
   1. Utilize road management including yearlong or seasonal closures to reduce human disturbance on wildlife. Particular emphasis needs to be given to road management in important brown bear riparian habitats.
   2. Locate and design roads in riparian areas to minimize human disturbance to wildlife, with particular emphasis given to brown bear habitat.

Wildlife Habitat Monitoring: CW121

A. Monitor trends/changes in habitat variables and MIS abundance in this management area to help assess achievement of wildlife objectives and to help identify management opportunities to maintain and/or improve habitat conditions and wildlife use (consult the Forest Plan monitoring schedule).

TIMBER

Timber Resource Planning: ET112

A. Suitable forested land is available for harvest and is included in the allowable sale quantity calculation. Some lands are designated unsuitable for programmed harvest, as identified in ET 114, part I.E.

Timber Resource Coordination: ET113

A. Project design, analysis, and development of NEPA documents for timber activities will emphasize riparian-dependent resource objectives.

B. The Sale Area Improvement Plan will prioritize K-V funds. Reforestation will have highest priority for funds; other management area objectives will have next priorities.

Timber Sale Preparation: ET114

A. Location and design of timber harvest activities require special consideration and mitigation to ensure that riparian area characteristics for fish and wildlife, water quality, and other riparian-dependent resources be protected. This may be accomplished with both even-aged and uneven-aged silvicultural systems.

B. To provide protection to fish and wildlife during critical periods of their life cycle, seasonal restrictions on harvest activities may be required.

C. Tailhold and yarding corridors may not cross "no harvest riparian buffers" within 100 feet of streams. Exceptions are allowed when corridors do not require removal of trees.

D. Timber harvest settings that cross or include streamcourses or V-notches or other streams should be planned to minimize adverse impaction on soil and water resources. Unless stated otherwise in process group direction, the following apply management area wide.

1. Trees or products yarded across buffered streams must attain full suspension over all trees within 100 feet of streams. Trees or products yarded across or down non-buffered streamcourses shall be fully suspended when yarding across the streamcourse or yarding the full length of the stream or drainage, unless alternatives are developed in the Operating Plan which meet the objectives of the management area.
2. Use streams in non-buffered streamcourses as split lines whenever possible (i.e., logs should be yarded away from the stream in both directions rather than across the channel).
3. Interdisciplinary review of sale unit layout during planning should evaluate potential consequences of alternatives for cutting or leaning trees in V-notches. Among factors which should be considered are soil, watershed, and other resource information; blowdown potential; and yarding capability.
4. Allow salvage if objectives of management area can be met.

E. The following tables provide the Standards and Guidelines for timber harvest activities. Distances are in horizontal feet. Distances shown are for leave strips which should be windfirm; greater distance may be required to achieve reasonable assurance that significant windthrow will not occur within the windfirm distance as a result of adjacent harvest activity. The objective of the buffer strip is to maintain future sources of large woody debris. To ensure that leave strips are windfirm, consider conditions such as soils, local wind patterns, 3-tree height general rule, and other site-specific factors. Forest-wide and Manage-

ment Area-wide direction and standards and guidelines apply for each Channel Process Group.

Management Area NMFS

Low Gradient Floodplain Process Group

(Channel types B1, B8, C1, C3, C4, C6, D4, D5)

Stream Class

	I
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Restore stream and/or watershed condition. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams. - Allow no activities causing floodplain destabilization.
Harvest Control	- Allow no programmed harvest within 0 to 100 wind resistant feet of B1 or B8 channel types not associated with other channel types. - Allow single tree selection harvest method within 100 to 200 wind resistant feet of B1 or B8 channel types not associated with other channel types. - Allow no programmed harvest within 0 to 200 feet for remainder of channel types. - Consider all harvest methods, on a case-by-case basis, if riparian is greater than 200 feet.
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16" + dbh within the no programmed harvest area.
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams. - Allow salvage in the no programmed harvest area while meeting objectives.
Roading	- Locate roads in this area only when other reasonably feasible routes do not exist. - Roads shall not parallel streams within no harvest areas.

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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 of the Alluvial Fan Process Group.

Alluvial Fan Process Group
(Channel types A3, B5, D1, D6)

	Stream Class I	II	III
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Restore stream and/or watershed condition. - Allow no activities causing floodplain destabilization. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species - Maintain 100 percent of sources of large woody debris to streams.	- Allow no activities causing floodplain destabilization. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams.	- Allow no activities causing floodplain destabilization. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams, except on those streams which are ephemeral or intermittent, have a gradient > 8 percent, or are not tributary to Class I or II streams.
Harvest Control	- Allow no programmed harvest within active portion of fan or 100 wind resistant feet of streambank, whichever is greater. - All harvest methods are available on remaining inactive portion of fan while meeting objectives.	- Allow no programmed harvest within active portion of fan or 100 wind resistant feet of streambank, whichever is greater. - All harvest methods are available on remaining inactive portion of fan while meeting objectives.	- Allow no programmed harvest within 100 feet of streams unless the stream is ephemeral or intermittent, has a gradient > 8 percent, or is not tributary to a Class I or II stream. - Allow no programmed harvest within active portion of fan or 25 wind resistant feet of streambank, whichever is greater. - All harvest methods are available on remaining inactive portion of fan while meeting objectives.
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16"+ dbh within the no programmed harvest area.	- Harvest is not to exceed 50% of the forest land of an individual fan. Remaining forest land is not to be harvested until created openings contain 50 foot conifer trees (approximately 30 yrs).	
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams. - Allow salvage in the no programmed harvest areas while meeting objectives.		- Allow salvage in all areas while meeting objectives.
Roading	-Special road construction techniques may be required to ensure fish passage. - Roads shall not parallel streams within no harvest areas.		- Roads shall not parallel streams within no harvest areas.

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Management Area NMFS

Mixed Controlled Moderate Gradient Process Group

(Channel types B2, B3, D3)

Stream Class

	I	II	III
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Maintain streambank and channel integrity. - Maintain 100 percent of sources of large woody debris to streams. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species.	- Maintain streambank and channel integrity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams.	- Maintain streambank and channel integrity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams, except on those streams which are ephemeral or intermittent, have a gradient > 8 percent, or are not tributary to Class I or II streams.
Harvest Control	- Allow no programmed harvest within 100 wind resistant feet of streams. - Allow single tree selection on remainder of area.	- Allow no programmed harvest within 100 wind resistant feet of streams. - All harvest methods are available on remaining area.	- Allow no programmed harvest within 100 feet of streams unless the stream is ephemeral or intermittent, has a gradient > 8 percent, or is not tributary to a Class I or II stream. - All harvest methods are available on remaining area while meeting objectives.
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams. - Allow salvage in the no programmed harvest areas while meeting the objectives.		- Allow salvage in all areas while meeting objectives.
Roading	- Special road construction techniques may be required to ensure fish passage. - Roads shall not parallel streams within no harvest areas.		- Roads shall not parallel streams within no harvest areas.

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Management Area NFMS-H

Large Low Gradient Contained Process Group

(Channel types C2, C5)

Stream Class

	I	II
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain streambank and channel integrity. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species. - Maintain 100 percent of sources of large woody debris to streams.	- Maintain habitat capability for resident fish to the extent practicable. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain streambank and channel integrity. - Maintain 100 percent of sources of large woody debris to streams.
Harvest Control	- Allow no programmed harvest.	- Allow no programmed harvest within 100 wind resistant feet of streams. - Minimize soil disturbance associated with yarding within inner gorge.
Harvest Rate	- Allow no programmed harvest.	- Management Area Wide Direction and Standards and Guidelines apply.
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams.	
Roading	- 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. - Roads shall not parallel streams within no harvest areas.	

NOTES:

- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

Management Area NMFS

Moderate Gradient Contained Process Group

(Channel types B4, B6)

Stream Class

	I	II	III
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Maintain 100 percent of sources of large woody debris to streams. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species. - Maintain streambank and channel integrity.	- Maintain streambank and channel integrity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams.	- Maintain streambank and channel integrity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams, except on those streams which are ephemeral or intermittent, have a gradient > 8 percent, or are not tributary to Class I or II streams.
Harvest Control	- Allow no programmed harvest within 100 feet of streams. - Minimize soil disturbance associated with yarding within inner gorge. - Selectively leave trees with crowns that do not extend above slope break. - Maintain near natural snag component of stand.	- Allow no programmed harvest within 100 feet of streams. - Minimize soil disturbance associated with yarding within inner gorge. - Selectively leave trees with crowns that do not extend above slope break.	- Allow no programmed harvest within 100 feet of streams unless the stream is ephemeral or intermittent, has a gradient > 8 percent, or is not tributary to a Class I or II stream. - All harvest methods apply on remaining area outside 100 feet, while meeting objectives.
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams.		
Roading	- 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. - Roads shall not parallel streams within no harvest areas.		

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Management Area NMFS

High Gradient Contained Process Group

(Channel types A1, A2, A4, A5, A6, A7, B7, D2, D7)

Stream Class

	III
Objectives	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain streambank and channel integrity. - Maintain 100 percent of sources of large woody debris to streams, except on those streams which are ephemeral, intermittent, have a gradient > 8 percent, or are not tributaries to Class I or II streams.
Harvest Control	- Allow harvest to streambank while meeting objectives. - Full suspension required to cross stream channel. - Only allow programmed harvest within 100 feet of streams which are ephemeral, intermittent, have a gradient > 8 percent, or are not tributaries to Class I or II streams.
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply. - Harvest rate not to exceed 25% every 20 years of a 3rd order or larger watershed.
Salvage	- Allow salvage while meeting objectives.

NOTES: - 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.

Management Area NMFS

Placid or Glide Streams Process Group

(Channel types L1, L2)

Stream Class

	I	II
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain streambank and channel integrity. - Maintain 100 percent of sources of large woody debris to streams. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species.	- Maintain 100 percent of sources of large woody debris to streams. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain streambank and channel integrity.
Harvest Control	- Allow no programmed harvest. - Allow incidental tree selection (e.g. bridge stringers).	
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply.	
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams. - Non-ground disturbing salvage is permitted while meeting objectives (e.g. helicopter).	
Roading	- Roading is generally not appropriate in this process group. - Roads shall not parallel streams within no harvest areas.	

NOTES:

- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

Management Area NMFS

Lakes and Ponds Process Group

(Channel types L, L3, L4, L5)

Stream Class

	I	II	III
Objectives	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Maintain or enhance aquatic biological productivity. - Maintain 100 percent of sources of large woody debris to streams. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species.	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams.	- Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain 100 percent of sources of large woody debris to streams, except on those streams which are ephemeral or intermittent, have a gradient > 8 percent, or are not tributary to Class I or II streams.
Harvest Control	-Allow no programmed harvest within 100 feet of a lake or L channel. - Allow unevenage management within 100-500 feet of lake or L channel, or the extent of the management area, whichever is less. - Any harvest method applies for remainder of area while meeting objectives.	-Allow no programmed harvest within 100 feet of a lake or L channel. - Allow unevenage management within 100-500 feet of lake or L channel, or the extent of the management area, whichever is less. - Any harvest methods apply for the remainder of the area while meeting objectives. - Treat as adjacent Management Area if lake or pond is less than 5 acres in size.	- Maintain a minimum 50% of shading vegetation for temperature sensitive lakes or channels. - Allow no programmed harvest within 100 feet of channel or lake unless the stream is ephemeral or intermittent or is not tributary to Class I or II streams. - Any harvest methods apply for the remainder of the area while meeting objectives. - Treat as the adjacent Management Area if lake or pond is less than 5 acres in size.
Harvest Rate	- Management Area Wide Direction and Standards and Guidelines apply		
Salvage	- Generally, do not salvage windthrown trees suspended over or in lakes, ponds, or sloughs. - Allow salvage in all other areas while meeting objectives.		- Allow salvage in all areas while meeting objectives.
Roading	- Roads may be allowed if other practical alternatives are not available or if needed to access the water body for recreation or other needs. - Roads shall not parallel streams within no harvest areas.		

NOTES: - Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.

Management Area NMFS
Estuarine Process Group
(Channel types E1, E2, E3, E5)

Stream Class

	I
Objectives	- Maintain or enhance aquatic biological productivity. - Allow no measurable reduction in smolt habitat capability except when natural processes result in greater change. - Maintain 100 percent of sources of large woody debris to streams. - Maintain/manage old growth characteristic habitat for riparian dependant wildlife species. - Allow no soil disturbing activities that will still produce excessive sediment one year after disturbance. - Maintain streambank and channel integrity.
Harvest Control	- Allow no programmed harvest within 500 wind resistant feet of E1 and E5 estuarine channels, or extent of management area, whichever is less. - Allow no programmed harvest within 200 wind resistant feet of E2 and E3 estuarine channels, or extent of management area, whichever is less. - Allow unevenage management for remainder of area.
Harvest Rate	- Strive to maintain 90% of the optimum basal area with trees 16"+ dbh within the no programmed harvest area.
Salvage	- Generally, do not salvage windthrown trees suspended over or in streams. - Allow salvage in all other areas while meeting objectives.
Roading	- No roading should occur in estuarine wetland areas.

NOTES:
- Timber harvest guidelines may vary, based on site specific analysis, in order to meet process group objectives.
- Incidental cutting of trees may be allowed in areas not programmed for harvest on a case-by-case basis (ex. bridge stringers). Trees harvested should not jeopardize the future supply of large woody debris to streams.
- 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.

SOIL AND WATER

Soil Inventory: FW1111

A. Verify and define riparian areas on the ground during project-level planning.

Watershed Resource Planning: FW112

A. Manage activities to protect water quality from degradation and to protect the aquatic and terrestrial riparian habitats, channel and streambanks, and promote floodplain stability.
   1. Identify soil and water quality requirements for the area during the environmental analysis for project-level activities.
   2. Apply Process BMP's to minimize effects from nearby logging and related land disturbance activities.
   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.

MINERALS AND GEOLOGY

Minerals and Geology Resource Preparation: GM11

Resource Preparation

A. During project design, analysis, and development of NEPA documents for minerals activities, include watershed and fisheries coordination.

Minerals and Geology Administration: GM12

Forest Lands Open to Mineral Entry

A. Forest lands within this management area 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 management area objectives. Include mitigation measures that are compatible with the scale of proposed development and commensurate with potential resource impacts.
B. Apply appropriate Transportation and Facilities Forest-wide Direction and 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 management area. 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 food fish habitat to the maximum extent feasible (consult ANILCA, Section 505 (a)).
   2. Apply timing restrictions to instream construction as needed to protect fisheries habitat and mitigate adverse disturbance of stream sediments.
   3. Use sedimentation traps as needed to mitigate adverse stream sedimentation and meet State and Federal Water Quality regulations.

4. Locate material sites and marine transfer facilities outside this management area 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.
8. Vegetation should be left undisturbed within 100 feet of all Class I and II streams and in perennial Class III streams tributary to fish streams which are less than 8 percent gradient (see Timber direction).

LANDS

Special Use Administration (Non-Recreation): JL122

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 enhance dependent fish or wildlife habitat, and (2) protect water quality.
   1. Analyze each new proposal on a case-by-case basis, using an interdisciplinary process, to determine probable effects.
   2. Apply standrds and guidelines for transportation operations, when granting new rights-of-way.

FACILITIES

Facilities Improvements: LF2

A. Permit only those facilities which do not significantly reduce the capability of the area to maintain fish or wildlife habitat or water quality.

TRANSPORTATION

Transportation Operations: LT1

A. Locate, design, and construct roads in a manner which will minimize effects on wildlife and fish habitat and populations. Conduct development activities on wetlands and floodplains in compliance with Executive Orders 11988 and 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 in project plans an erosion control and stabilization plan for stabilizing all human-caused soil disturbances.
   2. For streams on which no programmed harvest is to be maintained (consult timber direction), disturbance within 100 feet of streams should be limited to an average of 3 acres per one mile of stream.
   3. 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. When embankment material is used for decking on native log bridges, install side logs, wood chinking, and a woven or polypropyline fabric blanket prior to embankment placement to contain surfacing materials and prevent entry of sediment into the stream.

4. Location of roads parallel to fish bearing streams and crossing fish streams will be permitted only where other locations are not feasible and the management direction for fish habitat can be met. Roads, including the cleared area, shall not be constructed within 100 feet *parallel* to perennial Class I or II streams, and perennial Class III streams tributary to Class I or II streams and less than 8 percent gradient. 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 stream course and as much undisturbed ground cover as possible shall be left between the road and the stream. Complete endhaul of waste material will be required where roads are located near fish streams when there is the probability of downhill movement of the material into the stream below. Fill will be placed into fish streams only when considered through the IDT process to be the best alternative.
5. Meet fish passage direction at all locations where roads cross fish streams (consult Forest-wide Direction and Standards & Guidelines for fish habitat planning, CF112). 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 interdiciplinary analysis and appropriate line officer approval.
6. Slope drainage ditches along road-bed with reasonable consistency to the nearest relief culvert and avoid leading directly into stream channels.
7. Design bridge abutments to minimize disturbances to streambanks.
8. Avoid location of roads parallel to riparian areas or with riparian areas with known concentrations of wildlife such as brown bear or waterfowl high use areas.

B. If the need to reconstruct access is identified during project interdisciplinary team review, roads will be closed either seasonally or yearlong, to minimize adverse effects on fish and wildlife. To the extent practicable, management road use in cooperation with appropriate State and other Federal agencies to meet fish and wildlife population objectives.

FIRE

Fire Management Activities - PF

A. Conduct fire management activities described in Forest-wide direction.

INSECT AND DISEASE

Forest Pest Management - QC

A. Assist Forests and Districts in conducting forest pest management programs.

APPENDIX P

APPENDIX P

EXISTING AND APPROVED ELECTRONIC SITES

INTRODUCTION

The table below provides a listing of both existing, and unconstructed but previously approved, 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).

This list 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, changes incorporated, and new sites added which were existing but omitted from the earlier listing or have been previously analyzed and approved in a separate site-specific analysis. The list in Table __ designates these sites for future additional joint use and occupancy as per Forest Service Manual 2720. Site modifications require prior approval of the site plan by the Forest Supervisor or Regional Forester (FSM 2720).

EXISTING AND APPROVED ELECTRONIC SITES

Area and District	*Site Name*	*Site Location*	*Site Size*	*Permittee or Owner*	*Elevation (in feet)*
STIKINE AREA:					
Petersburg R.D.	Lindenberg	NE4, Sec. 23, T59S, R78E, CRM	1 ac.	Forest Service	3,249
Petersburg R.D.	Farrigut	NE4, Sec. 8, T55S, R78E, CRM	1 ac.	Forest Service	3,810
Petersburg R.D.	Fanshaw	SE4, Sec. 10, T54S, R75E, CRM	2 ac.	Coast Guard, FAA	2,100
Petersburg R.D.	Kake	NW4, Sec. 33, T56S, R74E, CRM	.01 ac.	Forest Service	600
Petersburg R.D.	Level	Section 28, T62S, R79E, CRM	120 ac.	FAA	25
Petersburg R.D.	Kuiu	Section 5, T61S, R73E, CRM	2 ac.	FAA, Icicle Seafoods	3,325
Petersburg R.D.	Duncan	Section 17, T59S, R78E, CRM	2 ac.	Alascom, Coast Guard	2,606
Petersburg R.D.	Petersburg	SW4, Sec. 21, T58S, R79E, CRM	1 ac.	Alascom	1,600
Petersburg R.D.	Kuiu	NW4, Sec. 9, T61S, R73E, CRM	1 ac.	Forest Service	3,355
Petersburg R.D.	Horn	NW4, Sec. 14, T58S, R80E, CRM	1 ac.	Alascom	2,880
Wrangell R.D.	Elbow	NW4, Sec. 3, T60S, R86E, CRM	1 ac.	Forest Service	4,246
Wrangell R.D.	Etolin	SW4, Sec. 17, T66S, R83E, CRM	1 ac.	Forest Service	3,051
Wrangell R.D.	Fools	SW4, Sec. 21, T65S, R87E, CRM	1 ac.	Forest Service	3,143
Wrangell R.D.	Zarembo	SW4, Sec. 1, T64S, R80E, CRM	2 ac.	Forest Service, Coast Guard	2,444
Wrangell R.D.	Kashevarof	NW4, Sec. 13, T65S, R80E, CRM	1 ac.	Alascom	500
Wrangell R.D.	Navy Peak	SW4, Sec. 11, T67S, R84E, CRM	2 ac.	Alaska Power Authority	3,665
CHATHAM AREA:					
Juneau R.D.	Bessie Mt.	SW4, Sec. 16, T38S, R64E, CRM	1 ac.	Alascom	2,850
Juneau R.D.	Auke Mt. #1	NW4NE4, Sec. 20, T40S, R65E, CRM	1 ac.	Forest Service	1,870
Juneau R.D.	Beezer Mt.	SE4, Sec. 13, T49S, R74E, CRM	1 ac.	Forest Service	4,100
Juneau R.D.	William Henry Peak	SE4SW4, Sec. 17, T36S, R61E, CRM	1 ac.	Forest Service	3,458
Juneau R.D.	Point Howard	E2, Sec. 3, T41S, R63E, CRM	1 ac.	Alascom	1,800
Juneau R.D.	Mt. Robert Barron	SE4, Sec. 18, T42S, R65E, CRM	1 ac.	Forest Service, Coast Guard, FAA, Alaska State Troopers	3,475

Juneau R.D.	Heintzleman Ridge	SW4, Sec. 29, T40S, R66E, CRM	1 ac.	KJUD, KSUP	1,400
Yakutat R.D.	Russell Fiord	NW4NE4, Sec. 3, T24S, R34E, CRM	1 ac.	Park Service	3,950
Yakutat R.D.	Russell Fiord	Section 7, T26S, R35E, CRM	1 ac.	Forest Service	2,505
Yakutat R.D.	Akwe River	SW4SW4, Sec. 9, T30S, R39E, CRM	5 ac.	FAA, Forest Service	1,200
Admiralty N.M.	Randolph Peak	NE4SW4, Sec. 14, T46S, R70E, CRM	1 ac.	Snettisham	3,000
Admiralty N.M.	Wheeler Creek	NW4, Sec. 28, T44S, R65E, CRM	1 ac.	Alascom	25
Admiralty N.M.	Windfall Harbor	SW4NW4, Sec. 34, T47S, R69E, CRM	1 ac.	Forest Service	2,900
Admiralty N.M.	Angoon Admin. Site	SW4, Sec. 31, T50S, R68E, CRM	1 ac.	Alascom	100
Hoonah R.D.	Pelican	SE4SE4, Sec. 26, T44S, R55E, CRM	1 ac.	Alascom	2,171
Hoonah R.D.	Mt. Adolphus	SW4NW4, Sec. 32, T41S, R59E, CRM	1 ac.	Alascom	1,670
Hoonah R.D.	Neka Mt.	SW4NW4NW4, Sec. 33, T43S, R59E, CRM	1 ac.	Forest Service	3,139
Hoonah R.D.	Seal Mt.	NE4, Sec. 11, T45S, R63E, CRM	5 ac	Forest Service	3,250
Hoonah R.D.	Sisters Island	E2NW4, Sec. 3, T43S, R62E, CRM	42 ac.	FAA	30
Sitka R.D.	Moore Mt.	NW4NE4, Sec. 31, T49S, R64E, CRM	1 ac.	Alaska Pulp Corporation	3,075
Sitka R.D.	Steelhead	NW4SE4, Sec. 13, T47S, R59E, CRM	1 ac.	Forest Service	2,339
Sitka R.D.	South Passage	57° 44' 48"N, 134° 58' 4"W	5 ac.	Alascom	2,031
Sitka R.D.	Rodman Bay	57° 22' 55"N, 135° 18' 45"W	2 ac.	Alascom	3,000
Sitka R.D.	Upper Kruzof	SE4NW4, Sec. 18, T53S, R61E, CRM	1 ac.	Forest Service	2,300
Sitka R.D.	Mud Bay	SE4SW4, Sec. 25, T54S, R61E, CRM	1 ac.	Alascom, Forest Service	1,055
Sitka R.D.	Manley Mt.	57° 06' 55"N, 134° 18' 30"W	5 ac.	Alascom	2,215
Sitka R.D.	Mt. Furuheim Area	SW4SW4, Sec. 18, T56S, R66E, CRM	1 ac.	Forest Service	5,280
Sitka R.D.	Biorka Island	57° 51'N, 135° 33'W	151 ac.	FAA	100
Sitka R.D.	Sukoi	SW4, Sec. 9, T53S, R61E, CRM	1 ac.	FAA	1,900
KETCHIKAN AREA:					
Thorne Bay R.D.	Cape Pole	NE4SE4NW4, Sec. 22, T68S, R75E, CRM	.04 ac.	Alascom	10
Thorne Bay R.D.	Ratz Mt.	SE4, Sec. 26, T69S, R82E, CRM	.01 ac.	Alascom	1,955
Thorne Bay R.D.	Ratz Mt.	SW4SE4, Sec. 26, T69S, R82E, CRM	.005 ac.	South Coast	3,161

Thorne Bay R.D.	Coffman	SE4, Sec. 35, T67S, R81E, CRM	.156 ac.	Alascom	30
Thorne Bay R.D.	Coffman	SE4, Sec. 25, T67S, R81E, CRM	.156 ac.	Sitka Telephone	30
Thorne Bay R.D.	Ratz Mt.	SE4, Sec. 26, T69S, R82E, CRM	1 ac.	Alaska Aviation, Alaska Loggers	3,156
Thorne Bay R.D.	Thorne Bay	NW4NW4, Sec. 27, T71S, R84E, CRM	.45 ac.	Alascom	87
Thorne Bay R.D.	Tolstoi II	Section 16, T72S, R85E, CRM	1 ac.	Alascom	2,210
Craig R.D.	1/2 Mile	SW4NW4, Sec. 6, T73S, R82E, CRM	1 ac.	Alascom	2,166
Craig R.D.	Hill 1400	Section 31, T75S, R82E, CRM	1.25 ac.	Alascom	1,398.5
Ketchikan R.D.	Bell Island	SE4, Sec. 11, T68S, R98E, CRM	.5 ac.	Rediscovery Lodge	2,000
Ketchikan R.D.	Black Mt.	NW4, Sec. 14, T75S, R92E, CRM	.25 ac.	Rainbird Broadcasting	2,058
Ketchikan R.D.	Betton Head	SE4, Sec. 25, T73S, R89E, CRM	.46 ac.	Rainbird Broadcasting	1,138
Ketchikan R.D.	High Mt. (Gravina)	SW4, Sec. 18, T75S, R90E, CRM	.01 ac.	Rainbird Broadcasting, Alaska Aviation, KPU Pond Reef Fire Dept.	2,500
Ketchikan R.D.	Mt. Dolly	NE4, Sec. 18, T68S, R100E, CRM	.5 ac.	Scotties Gold Mine	5,475
Misty Fiords N.M.	Quartz Hill	SE4, Sec. 3, T75S, R98E, CRM	.1 ac.	U.S. Borax	3,800
Misty Fiords N.M.	High Mt.	NE4, Sec. 20, T80S, R97E, CRM	100 ft. x 200 ft.	Alascom	1,976

Source: Tongass Land Management Plan, Amended winter 1985-86, Appendix E. Updated by Administrative Areas and Districts (1989).

APPENDIX Q

APPENDIX Q

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 Appendix H and with the management area and Forest-wide direction in Appendixes F or G. Funding for some items are included in the Forest budgets. Additional funding will be by resource and will vary depending on the resource emphasis in any given year.

CULTURAL RESOURCES	1.	Identify areas requiring intensive site inventory, including non-project areas of the Forest
	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.	Conduct an inventory of potential Special Areas
WILDERNESS	1.	Establish Limits of Acceptable Change (LAC) for designated Wilderness Areas. Evaluate on an on-going basis whether these LAC are appropriate.
RECREATION	1.	Develop and apply methods for determining the kinds and amounts of recreation use occuring within the Forest.
	2.	Periodically update the Southeast Alaska Pleasure Visitor Research Program
	3.	Update the Alaska Public Survey to determine benefits realized by recreationists
	4.	Access recreation customer satisfaction, and the demand for recreation opportunities.

FISH	1.	Maintain and update channel and stream class inventories
	2.	Inventory aquatic habitats for fish enhancement opportunities
	3.	Validate Management Indicator Species (MIS) habitat capability models
	4.	Determine success, in terms of habitat capability and numbers of fish, of fish enhancement projects
	5.	Develop a lake classification system
SUBSISTENCE	1.	Evaluate changes in subsistence use patterns and activities in cooperation with appropriate state and federal agencies
	2.	Periodically update of the Tongass Resource Use Cooperative Survey (TRUCS)
THREATENED, ENDANGERED AND SENSITIVE SPECIES	1.	Review status of sensitive species every 5 years and document any significant declines in population of habitat of other species
	2.	Evaluate levels of lead in habitat areas, and effects on trumpeter swan populations
	3.	Inventory osprey populations and nests
	4.	Maintain nest site location data for Peregrine Falcon in cooperation with the US Fish and Wildlife Service
	5.	For Island King Salmon, Northern Pike, and Chum Salmon in Fish Creek, - 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
WILDLIFE	1.	Assess trends/changes in moose populations and habitats
	2.	Provide a Forest-wide habitat inventory program to:
		a. Obtain and establish "baseline" habitat conditions in important habitat areas b. Document natural and/or human-caused habitat changes c. Identify opportunities for management actions which will help maintain or improve habitats for:

Important waterfowl habitat
Marine mammal haulouts
Old-growth conifer habitats
Regional sensitive habitats
Marine bird rookeries and colonies
Important seasonal habitats and concentration of areas for Management Indicator Species
Moose Habitats

d. Validate Management Indicator Species (MIS) habitat capability models
e. Maintain surveys/inventories on bald eagles according to Memorandums of Understanding
f. Cooperate with other agencies and institutions to inventory geographic distribution of small mammals and birds throughout the Forest
g. Evaluate effect of human use and lead on waterfowl habitats and populations
h. Inventory vegetative conditions in moose habitat areas to help identify short and long-term changes in habitat conditions, and assess the effects of various management activities
i. Maintain a Forest-wide summary of all human-bear incidents by location and type
j. Assess the amount and distribution of wildlife associated old-growth
k. Obtain information on snow-pack conditions Forest-wide within second-growth and old-growth timber stands.
l. Continue to assess the second-growth management program and methods to enhance second-growth habitat conditions

3. Determine effectiveness of wildlife enhancement projects, in terms of habitat capability and populations

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 patches.

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. Validate yield predictions for visual quality objectives, riparian areas, and recreation places

	3.	Conduct stand examination as part of Plan implementation
	4.	Maintain existing inventories
	5.	Assess areas that have been planted or seeded to determine whether management objectives have been met
	6.	Assess areas that have received pre-commercial thinning or release and weeding treatments to insure management objectives have been met
	7.	Conduct stocking surveys within the 5-year regeneration period.
	8.	Design and evaluate methods to provide for windfirm timber harvest areas, especially in the vicinity of riparian areas
AIR	1.	Determine baseline air quality conditions.
	2.	Assess and document the effects of air pollution on forest resources.
	3.	Assess use of lichens as indicators of forest health, air, and climate conditions.
RIPARIAN	1.	Obtain an on-the-ground inventory of riparian areas
	2.	Determine methods to maintain or enhance riparian associated resources, including in intensively developed areas
	3.	Develop site-specific methods to predict windthrow hazards in Southeast Alaska.
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) and water quality and quantity
	3.	Conduct Watershed Condition Surveys to determine improvement needs as part of the development of the watershed improvement plan
	4.	Evaluate whether the Best Management Practices included in the Plan are the most effective methods to meet water resource objectives
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
	2.	Update transportation maps annually
INSECT & DISEASE	1.	Evaluate local pest conditions with on-the-ground surveys to determine damage levels and their effect on resources
SOCIAL & 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