Forest Service
U.S. DEPARTMENT OF AGRICULTURE

Alaska Region | Tongass National Forest | March 23, 2026

Land Management Plan: Preliminary Draft Plan Content

Southeast Alaska

Front cover image: Tongass National Forest a forest of trees, rocks, ice, rivers and mountains. Forest Service, U.S. Department of Agriculture photo by Adam DiPietro (2018).

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Introduction

About the Tongass National Forest

The Tongass National Forest is the largest national forest in the country at 16.7 million acres and includes approximately 80% of the Southeast Alaska panhandle as shown in Figure 1. Southeast Alaska is a remote archipelago with approximately 32 rural, semi-rural, and urban communities ranging in population from 18 to 31,000 residents. Nineteen federally recognized tribal governments are located within and utilize lands and waters of the Tongass as their traditional homelands. The landscape is complex, dominated by a largely intact temperate rainforest archipelago, encompassing waterways and over 1,000 islands, with most communities surrounded by the Tongass National Forest. Boat and air travel are key to transportation and economic prosperity. Cruise ships are the primary method of travel for most of the millions of tourists who visit the region annually.

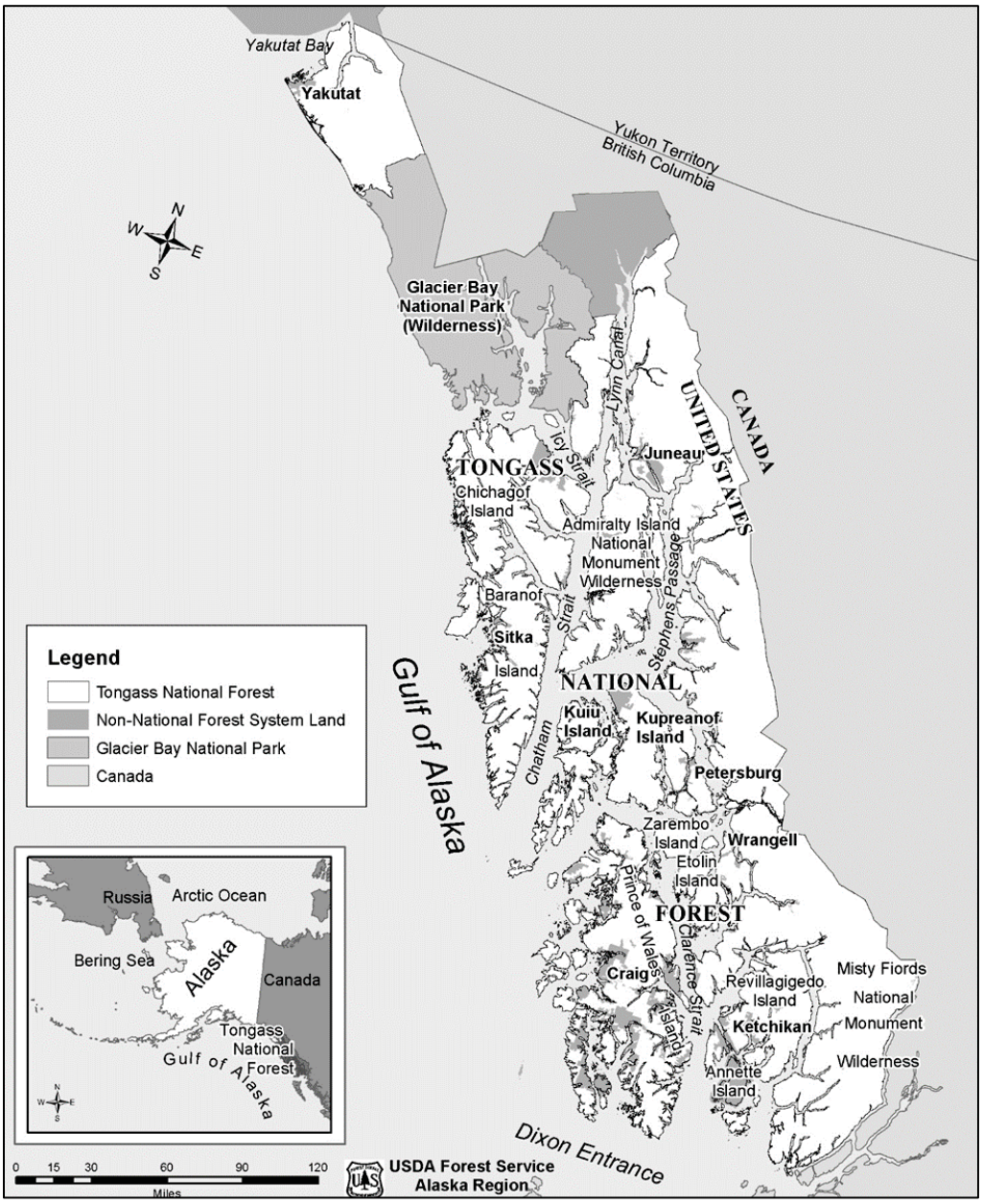
Management of the Tongass National Forest strongly influences the rural economy, and culture of Southeast Alaska. Recreation, tourism, fisheries, and timber are local and regional economic sectors that are heavily influenced by Tongass National Forest management. These commercial activities, combined with subsistence resources, are the core of Southeast Alaska's culture and economy and depend on the high productivity and careful stewardship of Tongass National Forest ecosystems. Tourism and recreation depend heavily on scenic value and healthy fish and wildlife populations. The Tongass National Forest also contains large old growth trees, which are highly valued for specialty wood products, and younger timber stands that together can support a sustainable timber sector that contributes to rural economies and culture. The high productivity of forest ecosystems also supports rural and indigenous communities with an abundance of natural resources.

Tourism and recreation depend heavily on scenic value and healthy fish and wildlife populations. The Tongass National Forest also contains large old growth trees, which are highly-valued for specialty wood products in addition to their social, ecological and spiritual values, and younger timber stands that together can support a sustainable timber sector that contributes to rural economies and culture. The high productivity of the forest ecosystems also supports rural and indigenous communities with an abundance of natural resources.

In working toward a revised forest plan for the Tongass National Forest, the revision team will ensure consistency with applicable laws, regulations and executive orders. Unique to the Tongass is the Tongass Timber Reform Act (TTRA) of 1990 which set requirements for riparian buffers from timber harvest, amended the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) to protect certain lands in the Tongass National Forest in perpetuity, and established a need to understand the demand for Tongass National Forest timber. Provisions of TTRA and ANILCA will be addressed during the revision process. A new long-term timber demand analysis is underway at the United States Department of Agriculture (USDA) Forest Service Pacific Northwest Research Station to inform the revised plan.

The Tongass National Forest includes many of the unique features of Southeast Alaska, and its distinct roles and contributions to communities and the rural economy frame the needs to change the current forest plan, which are described below.

Figure 1. Tongass National Forest and vicinity.



What is this Document?

The National Forest Management Act (NFMA) and its implementing regulations direct the Forest Service to revise land management plans at least every 15 years. A plan guides and constrains the actions of the Forest Service, not the actions of the public. In addition to land management plans, management of National Forest System lands is guided and constrained by laws, regulations, policies, executive orders, and procedures in the Forest Service directives system (manuals and handbooks). Direction in the plan generally does not repeat the direction from the aforementioned.

The U.S. Department of Agriculture, Forest Service is revising the land management plan for the Tongass National Forest. This document presents preliminary plan content and ideas being considered for the land management plan revision but is not a draft plan or proposed action.

Preliminary Direction Sections

This document provides some preliminary plan components which provide a strategic and practical framework for managing the plan area. Plan components guide future project and activity decision-making. The plan must indicate whether specific plan components apply to the entire Tongass National Forest, or to specific designated or management areas as identified in the plan (36 CFR 219.7(e)). Direction in this document is thus divided into forestwide preliminary direction and designated areas preliminary direction.

As required by the NFMA of 1976 and the National Forest System land management planning rule of 2012, all projects and activities authorized by the Forest Service after the approval of the plan must be consistent with the applicable plan components (16 U.S.C. 1604 (i)) as described at 36 CFR § 219.15 (c and d)). The Forest Service intends to move toward plan desired conditions over the next 15 years, although they may take many decades to achieve. A future project or activity authorized by the Forest Service must contribute to the maintenance or attainment of one or more desired conditions or not foreclose the opportunity to maintain or achieve any desired conditions over the long term.

This preliminary draft plan content does not include the full set of plan components but does include preliminary desired conditions and goals for all forestwide resources, designated areas and management areas. The following description of desired conditions and goals comes from the planning rule at 36 CFR 219.7(e):

- A **desired condition** is a description of specific social, economic, or ecological characteristics of the Tongass National Forest toward which management of the land and resources should be directed. Desired conditions must be described in terms that are specific enough to allow progress toward their achievement but not include completion dates.
- A **goal** is optional plan content and a broad statement of intent, usually related to process or interaction with the public. Goals are expressed in broad, general terms and do not include completion dates.

Potential Management Area and Activity Sections

The potential management area preliminary direction and the potential activity specific preliminary direction sections of this document describe initial ideas for plan content to address some of the assessment identified need to change. The potential management areas identified in the *Notice of initiation of the development of a proposed plan revision and notice of intent to prepare an environmental impact statement* (published in the Federal Register on February 18, 2026) are included in the *Potential Management Area Preliminary Direction* section with ideas for content to manage beyond the forestwide direction for these unique conditions and. The *Potential Activity Specific Preliminary Direction* section provides concepts for management of three specific activities, recreation and tourism, subsistence harvest and timber harvest. This preliminary content has not, at this time, been classified into a specific type of plan component, and is intended to generate dialogue about

how to address the potential impacts of these activities on other resources as well as how to manage these activities to support the socio-economic benefits they provide.

Future Documents and Next Steps

As the revision of the Tongass land management plan continues, additional content will be provided including a draft environmental impact statement with alternatives, proposed action and proposed draft plan containing:

- forestwide, designated area and management areas direction including desired conditions, objectives, standards, and guidelines
- the suitability of lands for timber production
- an estimate of the quantity of timber that can be removed annually in perpetuity on a sustained yield basis
- the identification of priority restoration watersheds
- proposed management actions and strategies that may occur on the plan area
- evaluation of areas proposed to be recommended to Congress for inclusion in the National Wilderness Preservation System
- evaluation of rivers identified as eligible for inclusion in the National Wild and Scenic Rivers System
- a plan monitoring program

Common Acronyms

Table 1. Common acronyms used in this document and for the Tongass plan.

Abbreviation	Resource Area Description
AIRFA	American Indian Religious Freedom Act of 1978
ADEC	Alaska Department of Environmental Conservation
ANC	Alaska Native Corporation
ANCSA	Alaska Native Claims Settlement Act of 1971
ANILCA	Alaska National Interest Lands Conservation Act of 1980
ARPA	Archeological Resources Protection Act of 1979
CFR	Code of Federal Regulations
DC	Desired condition
DOI	United States Department of Interior
EO	Executive order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act of 1973
FCRPA	Federal Cave Resources Protection Act of 1988
FSH	Forest Service Handbook

Abbreviation	Resource Area Description
FSM	Forest Service Manual
G	Goal
GL	Guideline
HUC	Hydrologic unit code
MGRA	Mendenhall Glacier Recreation Area
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NEPA	National Environmental Policy Act of 1970
NFMA	National Forest Management Act of 1976
NFS	National Forest System
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Initiation
NRHP	National Register of Historic Places
OB	Objective
PM	Presidential memorandum
PRPA	Paleontological Resources Preservation Act of 2009
SCC	Species of Conservation Concern
ST	Standard
SUIT	Suitability
TCP	Traditional cultural property
TTRA	Tongass Timber Reform Act of 1990
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

Need to Change

The 2012 Planning Rule requires that revision of land management plans be informed by an identified need to change that reflects feedback from the public, tribes and Alaska Native Corporations, and other governmental agencies. The need to change will continue to be refined and updated in the draft and final revised plans, as additional feedback and information is acquired. Preliminary need to change has been identified for specific resources and is embedded under each of those resource topics. Those resources where no preliminary need to change has been identified are identified as such. Additionally, the following overarching need to change has been identified:

- Update and modernize the plan consistent with the 2012 Planning Rule by simplifying, clarifying, reorganizing, and reducing the number of management areas for concise, easy to follow direction.
- Prioritize local and regional prosperity of Southeast Alaska by contributing to timber, minerals, tourism, recreation, and other important economic drivers.

- Incorporate strategies to address significant changes in recreation and tourism, including the increase in cruise ship visitation.
- Include plan content that encourages collaboration and shared stewardship with a variety of partners in pursuit of common objectives. These partners can include local, state, and tribal governments; Alaska Native Corporations; industry stakeholders; and other non-governmental organizations.
- Consider needs for subsistence uses such as hunting, fishing and gathering when developing the revised plan.
- Consider indigenous knowledge related to land stewardship, cultural issues, and culturally significant sites.

Plan component and Resource Coding

How to Identify Plan Components

Desired conditions, objectives, standards, guidelines, and suitability of lands, have been given alphanumeric identifiers for ease in referencing them. These identifiers are as follows:

- the level of direction (FW = forestwide, DA = designated area, MA = management area)
- the resource (for forestwide direction; for example, AIR = air quality) or specific area identified (for designated area, management area, or geographic area; for example, WILD = designated wilderness) and the type of direction (DC = desired condition, G = goal, O = objective, S = standard, GL = guideline, SUIT = suitability)
- unique number (in numerical order starting with 01)

The identifiers are included as part of the headings with the unique number preceding each plan component. For example, forestwide direction for a desired condition associated with air resources is identified as FW-AIR-DC-01.

How to Identify Resource Topics

The forest plan uses a coding system to identify and reference each resource topic with an acronym or word identifying succinctly the resource to which the plan component is applicable. Table 2 identifies the abbreviations and resource codes applicable to this forest plan.

Table 2. Tongass plan resource topic codes.

Abbreviation	Resource topic description
AIR	Air quality
ALP	Alpine ecosystem
AMHT	Alaksa Mental Health Trust Land Exchange Areas
CMTY	Community use management area
CRSS	Cultural resources and sacred sites
DA	Designated area preliminary direction

Abbreviation	Resource topic description
DSREC	Dispersed recreation
DVREC	Developed recreation
ECO	Aquatic and terrestrial ecosystem
ECON	Socio-economic management
ENGY	Renewable energy
FIRE	Fire and fuels
FISH	Key fisheries watersheds management area
FW	Forestwide preliminary direction
FWTLD	Forested and non-forested wetlands ecosystem
HCREC	High commercial recreation use management area
IFA	Infrastructure, facilities and access
INVS	Invasive species
IRA	Inventoried roadless areas
KARST	Karst, caves and geology
LAKE	Lakes and ponds ecosystems
LAND	Lands and land uses
LCREC	Low commercial recreation use management area
LUDII	Land use designation II areas
MA	Management area preliminary direction
MDW	Meadows ecosystem
MINE	Mineral resources
MWSP	Municipal watersheds and source water protection areas
NMT	National monuments
OGRW	Old-growth management area
OGF	Old-growth forests
PDF	Poorly drained forest ecosystem
PTSP	Partnerships and shared stewardship
REC	Recreation and tourism
RISK	At-risk species
RMZ	Riparian management zones
RNA	Research natural areas
RPF	Riparian forest ecosystem
RSUP	Recreation special use permits
RVRS	Rivers and streams ecosystem
SALP	Subalpine ecosystem
SBST	Subsistence
SCN	Scenery

Abbreviation	Resource topic description
SIA	Special interest areas
SOIL	Soils
SPDV	Species diversity
SPIN	Species of interest
SWSR	Suitable wild and scenic rivers
TBR	Timber and other forest products
TBRP	Timber production
TRIBE	Honoring tribal relationships
TRL	Trails
TWTLD	Tidal wetlands and estuarine ecosystem
WDF	Well drained forest ecosystem
WILD	Designated wilderness areas
WTR	Watersheds and water resources

Forestwide Preliminary Direction

Air Quality (AIR)

Air quality is one of the many ecosystems services the Forest Service monitors and protects on the Tongass National Forest. Air quality influences health and safety for communities, as well as other values and purposes essential to the overall experience of the Tongass. This is not only because clean air provides life to nearly all living organisms but also because it contributes to clean water and healthy fisheries, soils, and ecosystems. Clean air also helps boost economies through tourism and recreation by providing clear vistas and fresh air. Many sources of air emissions are the result of inherent landscape and geologic natural processes on the Tongass, such as glacial and volcanic dust. However, air pollution derived from human activity, such as fuel combustion exhaust and greenhouse gas emissions, has a minor, although increasing, influence on the Tongass and surrounding communities' air quality. Air pollutants can deposit onto landscapes or exist in the air at levels that adversely affect water quality and ecosystem function, including algal blooms, mercury buildup in fish tissues, elevated levels of ozone, and pollutant damage to plants, among other effects. Air quality plan components are built to support the laws, federal and state regulatory requirements for air quality to mitigate and manage these effects and pollutants.

The Clean Air Act of 1970 (42 U.S.C 7401), as amended in 1990, regulates air emissions from stationary and mobile sources and requires the Forest Service to comply with the National Ambient Air Quality Standards (NAAQS) for the following six air pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter of two different size fractions, and sulfur dioxide. The Clean Air Act requires an Alaska State Implementation Plan which also directs how the Tongass will comply with air quality standards. Additionally, air quality on the Tongass is regulated by the Alaska Air Quality Control Regulations, described in Alaska Statute 46.14 and Alaska Administrative Code Title 18 (18 AAC 50), administrated by the Alaska Department of Environmental Conservation (ADEC) Division of Air Quality. Finally, FSM 2580 provides further directions on air resource integration into land management planning and activities.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-AIR-DC)

01 Air quality contributes positively to human and ecosystem health, visibility, economic opportunities, recreation, and wilderness values.

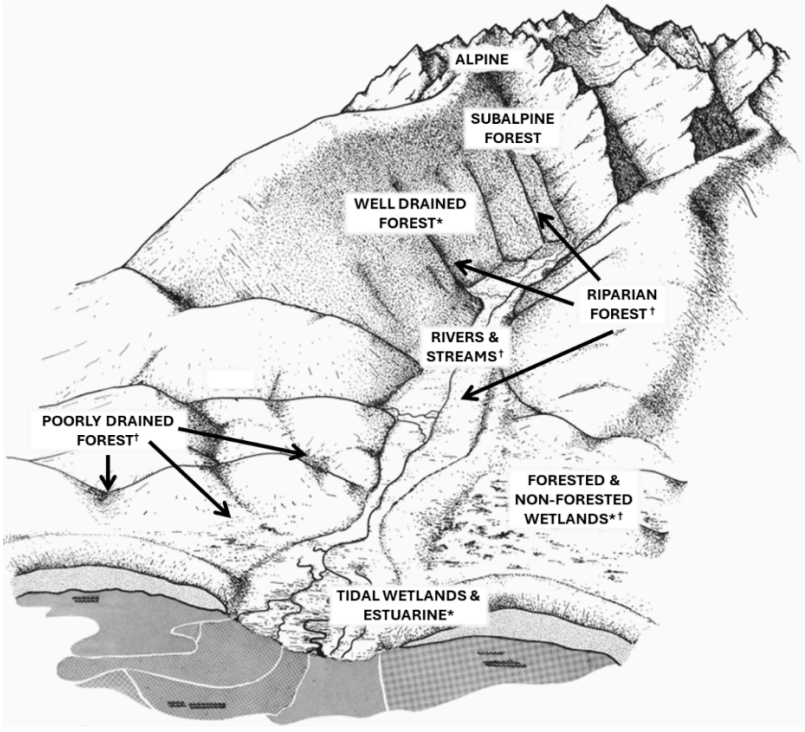
Goals (FW-AIR-G)

01 Cooperate and coordinate with federal, state, tribal and other partners to meet air quality standards, maintain the current air resource condition, and prevent adverse effects of air pollutants and atmospheric deposition to forest resources, when appropriate.

Aquatic and Terrestrial Ecosystems (ECO)

Description and Values

Ecosystems of the Tongass National Forest comprise a mosaic of compositions, structures, and ecological processes across the landscape, that are controlled by topography, geology, soils, aspect, precipitation, elevation, and other factors (Figure 2**Error! Reference source not found.**). The landscape consists of over 1,100 forested islands and a narrow strip of mountainous mainland that spans a wide latitudinal gradient. Some of the largest glaciers in North America descend from mountain peaks to the saltwater shoreline, creating many riparian areas, wetlands, rivers, and lakes. Climate variability contributes to an array of terrestrial microclimates. High annual precipitation and mild temperatures support the largest intact temperate rainforest in the world. At lower elevations forests are dominated by western hemlock and Sitka spruce, which maintain a productive mix of coniferous and deciduous trees and shrubs like oval-leaf blueberry. At mid-elevations in the subalpine forests, colder temperatures and later snowmelt result in shortened growing seasons and different plant species including mountain hemlock, crowberry, and bog blueberry. The highest elevations are treeless alpine areas, including meadows, muskegs, and rocky outcrops (Halofsky et al. 2025). These ecosystems are dynamic and are influenced by drivers and stressors such as climate, succession, landslides and avalanches, flooding and tidal action, insects, disease, invasive species, and human uses.



*Meadows co-occur in small patches with well drained forest, forested and non-forested wetlands, and tidal wetlands and estuarine. †Lakes and ponds co-occur with rivers and streams, riparian forests, forested and non-forested wetlands, and poorly drained forests.

Figure 2. Block diagram of ecosystems of the Tongass National Forest.

In the future, temperature is expected to increase both annually and seasonally with the greatest seasonal temperature increases projected for autumn. Mean annual precipitation is also expected to increase, shifting from snow-dominated to rain-dominated. As a result, winter runoff will likely increase while summer runoff decreases. In the alpine, glacial mass loss is projected to increase and in the lower elevations potential evapotranspiration is expected to increase leading to a water deficit during the growing season. Higher temperatures and shifts in streamflow will lead to increases in stream temperatures. Landscape hydrologic functions will potentially be disrupted as the storage and flow of soil water is altered. The frequency, intensity, and duration of atmospheric river events will increase into the future (Halofsky et al. 2025). These changes in precipitation and temperature regimes are projected to cause shifts in ecosystems across the landscape.

Plan components in this section are designed to maintain or restore ecological integrity and resilience to provide for ecological sustainability and contribute to socioeconomic sustainability. Ecological integrity is the quality or condition of an ecosystem when its key ecosystem characteristics: composition, structure, function, and connectivity, occur within a natural range of variation and can withstand natural, environmental or human activity influences and stresses on these characteristics. Desired conditions for ecosystems are the foundation for which this plan is based and provide the context for other resource plan content. They may be achieved through natural processes or active stewardship, taking into consideration future changes resulting from projected increases in temperature, soil moisture deficits, and disturbance regimes.

The direction in this section is written for two scales. The first provides direction that is common across the Tongass and therefore applies forestwide to all ecosystem types. The second provides direction specific to each of the ten ecosystems and applies at the landscape scale, the tens of thousands to hundreds of thousands of acres.

Need to Change

- Incorporate a holistic view of ecosystems and ecosystem services, integrating ecological, social, cultural and economic sustainability. Acknowledge tribal connection and stewardship of terrestrial, aquatic and marine cultural landscape and ancestral homelands.
- Update plan language to focus on specific metrics for composition, structure, function and connectivity of ecosystems to clearly define desired conditions.
- Write plan components to maintain and restore the diversity of ecosystems and habitat types.
- Incorporate system drivers and ecological processes, disturbance regimes and stressors and their impact of the ability of ecosystems to adapt to changes in these processes.

Desired Conditions (FW-ECO-DC)

01 Connectivity and redundancy exist across all ecosystems to facilitate nutrient flow and cycling, energy exchange, and species dispersal and migration.

02 Connectivity between ecosystems and human communities, including subsistence needs, supports environmental and social sustainability.

03 The abundance and distribution of invasive species do not result in the permanent loss of ecological function or connectivity, nor do they cause large-scale changes of composition.

04 Vegetation management activities do not result in the permanent loss of ecological function nor cause large-scale shifts in ecosystem structure and composition.

05 Ecosystems exhibit ecological integrity and resilience, forming a representative mosaic of habitats across spatial and temporal scales that support native species and their populations.

06 Ecosystem conditions, especially in riparian forests, support the growth of medicinal plants and other plant resources as well as provide and improve habitat for fish and animal species that are culturally significant to tribes.

Goals (FW-ECO-G)

01 Cooperate and collaborate with tribal, state, and local governments, non-governmental organizations, and other interested partners in promoting and maintaining the diversity, integrity, and resilience of ecosystems across the Tongass.

02 Partner with tribes to identify natural and cultural resources, such as plant communities, trees and stands, springs, rocks and minerals, and consider management strategies and Indigenous Knowledge to protect or improve these resource values.

Alpine (ALP)

Description and Values

The alpine ecosystem on the Tongass occupies the highest elevations, above tree line, typically above 2,500 to 3,000 feet, though this is variable and may be as low as 2,000 feet. It occurs in active glacier terrain icefields, angular mountain, and rounded mountain ecological subsection groups. There is variation across the ecological subsections, with this ecosystem occurring on sedimentary and carbonate geologic formations often having significant amounts of bare rock, where soils are too thin to support vegetation. On mafic and ultramafic geology, the alpine ecosystem occurs at lower elevations compared to other bedrock.

The alpine ecosystem is an important source of meltwater and sediment to lower elevation ecosystems as well as vital habitat for numerous wildlife species. It is also botanically significant; with some rare plant species reliant on well-developed karst habitat, which occurs in the alpine ecosystem. Foraging for berries, hunting deer and mountain goats, and high scenic values are also provided by the alpine ecosystem, which supports local communities, visitation and tourism.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-ALP-DC)

01 At the landscape scale the alpine ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Alpine heath (mat-forming, low-growing plants from the heath and rose families, dwarf shrubs, and dwarf willows) and herbaceous meadows form a landscape mosaic, with low shrub communities found at the transition to tree line. Cushion-forming vascular and non-vascular plants (e.g., clubmosses and lichens) occupy exposed rock outcrops, crevices, and talus slopes. Bare mineral rock and ice are intermixed. Species diversity can be two to three times higher in areas over karst substrates. Shrub encroachment may reduce the abundance and distribution of heath communities because of loss of snowpack, especially on the southern end of the forest.

Structure. Herb and dwarf shrubs are the predominant structural characteristics. Cover varies, ranging from 100% to as little as 10 to 25% in areas with harsh environmental conditions.

Function. Increases in temperature will lead to the loss of some permanent ice and snow, but snowpack that melts slowly continues to provide moisture throughout the year. Avalanches in steeper areas occur periodically along with freeze and thaw cycles and soil creep.

Connectivity. Alpine ecosystems are located directly upslope from Subalpine Forest ecosystems. They are hydrologically linked to the headwaters of rivers and streams ecosystems. Habitat connectivity within the ecosystem may experience reductions due to loss of snowpack.

Forested and Non-Forested Wetlands (FWTLD)

Description and Values

The forested and non-forested wetlands ecosystem is a palustrine wetland, palustrine stream process group, that includes emergent wetlands, scrub-shrub wetlands, forested wetlands, and other palustrine classes found from sea level to above tree line. This ecosystem is exclusively freshwater-influenced. It occurs in low-lying or gently sloping terrain that retains rainfall or captures groundwater flow, saturating the soils. This saturation gives rise to organic soils or mineral soils with deep organic accumulation. The groundwater within these wetlands is often highly acidic and nutrient poor, and their productivity is correspondingly low, although pH can be high when influenced by carbonate rocks.

Wetland ecosystems are a key component on carbon flux, serving as either a carbon sink or source depending on whether they stay wet or dry out. This ecosystem provides water storage during low flow and maintenance of stream baseflow. It also functions as snow storage as open wetlands accumulate more snow than forests and hold it into the spring. Wetlands serve as important wildlife

and fish habitat as well as support rare, unique, and diverse plant communities. Wetlands with an abundance of flowering plants can also serve as pollinator habitats. This ecosystem also supports human communities by providing foraging opportunities for edible berries. They also provide scenic and recreational value for their open structure in an otherwise densely vegetated landscape.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-FWTLD-DC)

01 At the landscape scale the forested and non-forested wetland ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. The variable hydrologic regime of this wetland ecosystem supports four distinct habitat types. Bogs and poor fens are dominated by sphagnum mats with other mosses, liverworts, and herbs present. Rich fens, calcareous fens, and wet meadows support high species diversity and include such dominant and characteristic species as dark-throat shooting star, fringed grass of parnassus, red cottongrass, marshbean, purple marshlocks, and a diverse array of sedges. Shrub swamps support characteristic species like Sitka alder, willows, sedges, and skunk cabbage. Forested peatlands support a limited overstory of mountain hemlock, Sitka spruce, Alaska yellow cedar, or shore pine and a diverse understory with species such as black crowberry, Labrador tea, and sphagnum moss. Several rare plants – e.g., mountain lady's slipper, Calder's lovage, Alaska rein orchard, and lesser round-leaved orchid – occur across the habitat features. Increasing air temperatures and shifting precipitation patterns from snow to rain may influence the extent of wetland habitat types (e.g. increasing rainfall can lead to an increase in hydrologic regimes that lead to transitions in composition and structure).

Structure. The ecosystem structure is a continuum of mosses or herbs grading to shrubs grading to stunted, predominantly sapling sized, and dying trees, between ten to thirty percent cover, over peat, floating organic mats, or mineral soils.

Function. The palustrine system is maintained by permanently saturated soil due to slow-moving water tables. The hydrologic regime is determined by precipitation, surface water, groundwater, or both, which supports a diversity of habitat types. The groundwater within these wetlands is often highly acidic and nutrient poor, resulting in low productivity. Some wetlands, however, have mineral-bearing groundwater which is influenced by karst substrates and produces a high pH.

Connectivity. This transitional wetland ecosystem occurs adjacent to poorly drained forest ecosystems. It is hydrologically connected to the riparian forests, rivers and streams, and lakes and ponds ecosystems. At finer-scales within the ecosystem, roads may exhibit localized impacts to connectivity.

Lakes and Ponds (LAKE)

Description and Values

Lakes and ponds ecosystems are widely dispersed across Tongass lands and elevations, from alpine environments to sea level. They form in a variety of ways including glacial advance and retreat, floodplain development, and from cave collapse in karst environments. These origins result in a wide array of lake and pond sizes and shapes across the landscape.

Lakes play important physical and biological roles within the watershed. Lakes act to buffer both high and low streamflow and insulate downstream reaches from upstream disturbance effects. Lakes are important for surface-groundwater exchange and moderating water temperatures. Low elevation lakes provide essential freshwater habitat for spawning, overwintering and rearing of salmonid species, which support subsistence and commercial fishing. They also are important habitats for both resident and migratory waterfowl. Additionally, most of the hydroelectric projects in Southeast Alaska are sourced from lakes.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-LAKE-DC)

01 At the landscape scale the lakes and ponds ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Lakes and ponds are located from near sea level to the alpine and include high elevation lakes that are often frozen much of the year, high-quality fish rearing low elevation lakes, and small beaver ponds. Within the water, vegetation consists of emergent and submerged aquatic plants including cattails, sedges, water horsetail, and water lilies. Adjacent lakeshore vegetation can include shore pine, alder, or cottonwoods.

Structure. The physical structure of lakes and ponds is shaped by glacial influences, terrain, and underlying bedrock geology and is therefore highly variable across the landscape. The wide range of lake sizes across the landscape provides a variety of aquatic habitats, from shallow waters to deep waters. Lakeshore vegetation can range from herbaceous plants to shrubs to forests, with old-growth structure providing important lake coverage for regulating water temperatures and serving as a source for aquatic habitat and nutrient input.

Function. This ecosystem is situated in topographic depressions that are permanently flooded or can be created through beaver activity. It includes both lacustrine and palustrine wetland systems. The ponding action of this ecosystem mitigates downstream flooding during large precipitation events and provides surface-groundwater exchange and water temperature moderation. Large low-elevation lakes are highly productive freshwater salmon habitat. Increases in water temperatures may increase the risk of hypoxia that negatively affects fish communities.

Connectivity. Lakes and ponds ecosystems are hydrologically connected with poorly drained forest, riparian forest, forested and non-forested wetland, and rivers and streams ecosystems. Lakes and ponds ecosystems are functionally connected to well drained forest and riparian forest ecosystems as they receive water and sediment from these upslope sites. Dams used for water supply or hydropower create localized aquatic habitat discontinuity except in lakes that are essential fish habitat.

Meadows (MDW)

Description and Values

Two general types of meadows, well drained and beach, compose this ecosystem. Well drained meadows are relatively rare on the Tongass and usually occur as small inclusions at the edges of or within larger forested or wetland ecosystems. They are widely distributed on a variety of landforms and at varying elevations from near sea level to the subalpine zone. The main site characteristic is accumulation of deep, well drained, nutrient-rich soils through colluvial accumulation on slopes and sediment deposition on floodplains and stream levees. They commonly occur on frequently disturbed snow avalanche chutes or toe slopes of landslides. Other meadows are located on well drained soils on inactive glacial outwash plains, low-gradient stream levees and loess deposits in estuaries and alluvial floodplains of large rivers, or subalpine sites that tend to retain snow and have a relatively short growing season. Beach meadows are located on coastal beaches, dunes, sand spits, and the outer edge of river deltas. Vegetation types within this ecosystem are related to exposure to saltwater inundation and spray, and by disturbance frequency. Soils associated with beach meadows are usually well-drained sand deposits, although shallow depressions may be poorly drained due to the deposition of fine-grained material during overflow events. These sandy soils may be periodically exposed to overwash from storm surges and exceptionally high tides, but they drain quickly, and precipitation rapidly leaches salt from the soil.

Meadows provide habitat for rare or disjunct plant species and are important for wildlife habitat, including grazing by herbivores and nesting for migratory birds. They also provide human foraging opportunities.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-MDW-DC)

01 At the landscape scale the meadows ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Well Drained Meadow habitats are dominated by bluejoint and fireweed as well as other characteristic species to include kneeling angelica, common ladyfern, false hellebore, and cow parsnip. Beach Meadow habitats are inhabited by such herbaceous species as beach rye, Bering's tufted hairgrass, cow parsnip, marsh grass-of-parnassus, boreal yarrow, beach

strawberry, bluejoint, and fireweed. Species compositions may shift because of increasing evapotranspiration rates due to rising average air temperatures.

Structure. The ecosystem structure is predominantly herbaceous vegetation over coarse-textured, rich soils (i.e., sandy, cobbly, gravelly) with a thick litter layer. Well drained meadows occupy a variety of landforms from near sea level to the subalpine zone: colluvial accumulations on mountain slopes, avalanche chutes, toeslopes of landslides, inactive glacial outwash plains, and floodplains and stream levees. Beach meadows occupy coastal beaches, dunes, sand spits, and the outer edge of river deltas. Sandy dunes provide important habitat for rare species.

Function. Well-drained, nutrient rich soil coupled with frequent disturbances that preclude tree and shrub establishment are the primary drivers. Disturbances include avalanches, deposition from landslides, streams or both, persistent snowfields, and in the case of beach meadows habitats, exposure to saltwater spray or periodic inundation from tidal action.

Connectivity. This small-patch ecosystem occurs scattered across the landscape in areas directly adjacent to the well drained forests, forested and non-forested wetlands, or tidal wetlands and estuarine ecosystems. Habitat connectivity within the beach meadows habitats may experience reductions due to coastal erosion resulting from increasing storm intensity and frequency.

Poorly Drained Forest (PDF)

Description and Values

The poorly drained forest ecosystem is composed of low to moderately productive forests that grow on hydric soils and are associated with wet, poorly and somewhat poorly drained landtypes. These ecosystems are generally located on the edges of muskegs, broken mountain slopes and on plateaus. This ecosystem often occurs as a transition zone between the very poorly drained wetlands of the lowlands to the well-drained forests located on the hills and mountain slopes and are often on benches between slope breaks or at footslopes.

Poorly drained forests retain and slow down high-water flows and provide a source of groundwater during dry periods. They provide important habitat for both plants and animals. For wildlife in particular, this ecosystem provides spring and autumn foraging habitat. Culturally, western redcedar and Alaska yellow cedar are collected from this ecosystem for use in weaving baskets, blankets, mats, hats, and clothing, while roots and branches are used for basket weaving and cordage production. Large western redcedars are prized for characteristics that make them valuable for construction of totem poles and dugout canoes. Understory plants in this ecosystem are important food and medicinal sources for communities. This ecosystem also supports subsistence harvest opportunities. Old-growth is economically valuable for producing specialty products, while young growth forests are becoming increasingly important for forest products such as dimensional lumber and log cabin kits.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-PDF-DC)

01 At the landscape scale the poorly drained forest ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Overstory composition is comprised of a relatively high component of Alaska yellow cedar, western redcedar, or both, with a mixture of other conifers including western hemlock, Sitka spruce, shore pine, mountain hemlock, and the uncommon pacific yew. Blueberries dominate the understory. Salal, skunk cabbage, western lady fern, marsh marigold, and deer cabbage are characteristic species of the understory. Depending on topographic position, canopy cover, local site drainage, and elevation, copperbush can be a common occurrence.

Structure. Vegetation structure encompasses multiple canopy layers. The overstory is a broken canopy (typically <45% canopy cover) of generally sapling to pole-sized trees, often showing signs of stress (e.g., spike-top or chlorotic foliage). Conversely, microsites are highly interspersed, supporting closed-canopies of medium to large trees. Due to the lack of regular disturbances, trees are typically older in this ecosystem compared to other forest ecosystems. Standing dead trees are common. Cultural trees are abundant across the landscape. Shrub and herbaceous canopy cover are well-represented.

Function. Poor soil drainage maintains the structure and composition of the ecosystem, resulting in low to moderately productive forests. This ecosystem serves as a landscape *sponge*, retaining high water flows and providing a source of groundwater during dry periods. Disturbance regimes are not primary drivers, and the system is therefore relatively stable. However, warming temperatures may lead to a decrease in snowpack persistence and a decrease in soil moisture, which may further contribute to Alaska yellow cedar decline.

Connectivity. Poorly drained forest ecosystems are the intergrade from better-drained well drained forest to saturated forests and non-forested wetland ecosystems. At finer-scales within the ecosystem, roads may exhibit localized impacts to connectivity.

Riparian Forest (RPF)

Description and Values

The riparian forest ecosystem is a complex, three-dimensional transition zone between terrestrial and aquatic ecosystems. The riparian forest ecosystem experiences constant change with highly variable vegetation communities. Riparian forests and associated vegetation are shaped by stream processes, the productivity of the site, disturbances, microclimates, and landforms and are often associated with stream terraces and alluvial fans. Riparian forests are highly sensitive to the hydrologic regime and ecological function of the corresponding aquatic resource.

The riparian forest ecosystem reduces soil erosion, maintains streambank stability, and filters sediments and contaminants from slope runoff and stream flooding. It provides important elevational connectivity for both terrestrial and aquatic wildlife. Large woody debris from riparian forests helps improve cover to pool ratio, pool riffles, and other habitat features and helps to maintain stream bank, channel, and floodplain integrity. It also serves to maintain and restore optimum water temperatures for aquatic species. Riparian forest ecosystems often are comprised of large and mature trees and have a high component of organic material on the forest floor, providing carbon storage. Socially, economically, and culturally, riparian forests provide opportunities for fishing and hunting as well as support the spiritual values and scenic values of many local community members as well as visitors and tourists.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-RPF-DC)

01 At the landscape scale the riparian forest ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Composition is strongly driven by elevation and relation to the stream. Above tree line, the ecosystem is dominated by species such as dwarf fireweed, fireweed, feltleaf willow, Sitka alder, and sprouting leaf willow. Below tree line, the overstory canopy is comprised of Sitka spruce and western hemlock with black cottonwood trees occurring primarily near the mainland. Areas of recent disturbance are populated by red alder. Salmonberry and devil's club are characteristic understory species and leaf litter is abundant on the forest floor. Nurse logs provide important habitat for young and growing conifers. While this ecosystem is naturally suited to high levels of disturbance, an increase in streamflow and flood disturbance from shifting precipitation regimes may result in shifts in composition.

Structure. Above tree line the ecosystem is predominantly a complex of unvegetated gravel bars, herbaceous vegetation, and dwarf, low, or tall shrubs. Below tree line, late development, vertically-diverse, closed (61-100% canopy cover) forests are the dominant structural condition throughout the ecosystem (Table 3). Trees are very large (up to 160 feet, 20-40" DBH) and old. Due to the dynamic nature of disturbance regimes, the system regularly undergoes resets that create gaps and other variable-scale openings dominated by herbs, shrubs, and regenerating trees.

Table 3. Desired structural parameters for riparian forest succession classes.

Structural parameters	Early 1	Early 2	Mid	Late–open	Late–closed
Upper canopy lifeform(s)	Herbs, tree seedlings	Shrub, tree seedlings	Tree, conifer	Tree, broadleaf or mixed	Tree, conifer, broadleaf, or mixed
Size class	<5" DBH	<5" DBH	9-20" DBH	11-20" DBH or 9-20" DBH	20-40" DBH

Structural parameters	Early 1	Early 2	Mid	Late–open	Late–closed
Tree canopy cover	Up to 20%	Up to 20%	Up to 60%	Up to 60%	61-100%
Average structural age distribution	0-5 years	6-30 years	31-110 years	31-110 years	111+ years
Proportion of ecosystem	6%	17%	9%	20%	48%

Function. This ecosystem is the interface between terrestrial and aquatic ecosystems. Regular, overbank flooding from adjacent aquatic systems regularly occurs, creating areas of soil disturbance that result in a dynamic landscape. In turn, this ecosystem serves as the source for in-stream large woody debris, streambank stabilization, and shading that provides water temperature regulation for the adjacent aquatic systems.

Connectivity. Riparian forest ecosystems are hydrologically linked with rivers and streams (particularly on the northern portions and mainland where soils are younger and shallower) and lakes and ponds ecosystems. They are physically connected to anadromous aquatic streams by salmon-derived nutrients. They are located downslope from well drained forest and poorly drained forest ecosystems and may contain riparian-adjacent forested and non-forested wetlands.

Rivers and Streams (RVRS)

Description and Values

The rivers and streams ecosystem comprises channels from the mountaintops to the valley bottoms and eventually out to the estuaries and ocean. It encompasses four ecosystem channel groups: valley bottom channels, toeslope channels, hillslope channels, and glacial outwash channels.

The Tongass river and streams ecosystem is one of the world's most valuable freshwater ecosystems that support salmon and other aquatic species. Glacier-fed rivers and streams have stable base flows and temperatures that keep water cooler during the summer, supporting conditions needed for healthy salmon runs. Melt water from glaciers and snowfields provides downstream environments with a fresh supply of sediments, minerals and nutrients. Large wood instream and on floodplains acts to mitigate flood flows and provides critical components to aquatic ecosystems by diversifying sediments, forming pools and rifles, and capturing food for aquatic species. Shallow aquifers store and slowly release groundwater during periods of low flow. Stream ecosystems provide recreation, food resources, and both cultural and social values to people and communities that have access to them.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-RVRS-DC)

01 At the landscape scale the rivers and streams ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. The four ecosystem channel groups have unique compositional characteristics that shift from downstream to upstream. The lowest reaches are comprised of substrates that support highly-productive resident and anadromous fish habitat. Upstream, the deeply-incised, steep channels collect significant amounts of forest litter and sediment behind large woody debris jams and bedrock that are periodically transported downstream during heavy flow events. Likewise, the adjacent riparian vegetation varies based on the landscape structure of the channel group.

Structure. Rivers and streams within a watershed differ in their drainage area, slope, confinement and streambed material, as well as the surrounding geology, soil, and vegetation. In the lowest reaches, overall slopes are low and channels are typically dynamic and unconfined with well-established alluvial floodplains and riparian forests. Streambeds are comprised of gravel-sized substrate, and roughness elements include sinuosity, bars, pools, grains, banks, and large wood. Moving upstream, they grade into steep, confined mountain slopes with limited or no floodplains. Roughness elements include grains and banks, and streambed materials are mostly boulders or bedrock.

Function. These riverine systems are contained within channels fed by either a glacial or a non-glacial source. This flow of water results in erosion at the tops of watersheds and transitions to depositional action downstream. The complex and depositional nature of large, low-gradient channels creates highly productive salmon spawning and rearing habitat. The timing of peak flows varies from summer glacial melt driven peaks to fall (rain-dominated) or variously bimodal (spring snowmelt and fall floods). Changes in precipitation and temperature are predicted to increase the rate of glacial melt, reducing hydrologic regime diversity, shifting watersheds toward fall, rain-dominated regimes. As glaciers shrink, stream water temperatures are predicted to increase, which can increase the risk of hypoxia that negatively affects fish communities. Table 4 lists key ecosystem characteristics associated with each ecosystem channel group.

Table 4. Key ecosystem characteristics of rivers and stream ecosystems.

Key Ecosystem Characteristics	Valley Bottom Channels	Toeslope Channels	Hillslope Channels	Glacial Outwash Channels
Function	Depositional; spring, fall, or both peak flows	Transitional from sediment transport to depositional	Erosion and sediment transport	Depositional; turbid, cold water with summer peak flows
Structure	Confined to unconfined lowlands, valley bottoms, floodplains, and peatland-bog wetlands; gradient 0-2%	Confined to unconfined depositional footslopes, lowlands, and valley bottoms; gradient 2-6%	Confined, steep mountain slope; gradient >6%. Sediment from eroding sideslopes trapped by wood.	Unconfined, braided glacial valleys with dynamic or unstable floodplains; gradient is variable
Composition: Fish habitat	Fine organic matter to coarse alluvium sorted by large wood complexes provides productive resident and anadromous	Cobble-boulder-bedrock substrate provides resident and anadromous fish habitat with	Boulder-bedrock substrate in-step pool morphology supports small resident populations	Fine sediments, cobbles, and few boulders provide fish habitat concentrated

Key Ecosystem Characteristics	Valley Bottom Channels	Toeslope Channels	Hillslope Channels	Glacial Outwash Channels
	fish habitat, including spawning and rearing	variable productivity		in channel margins and side channels
Composition: Riparian vegetation	Well- drained conifer (riparian forest), shore pine, shrub swamps, fens, and bogs (forested and non-forested wetland)	Mixed hardwood-Sitka Spruce with devils club/salmonberry understory (riparian forest)	Spruce, hemlock, alder, salmonberry, devil's club, currant/shrub (well drained forest, poorly drained forest)	Black cottonwood-Sitka spruce with willow shrubs (riparian forest)
Stream Process Group(s)	Low gradient contained, flood plain, palustrine	Alluvial fan, moderate gradient/mixed control, moderate gradient contained	High gradient contained	Glacial outwash

Connectivity. Rivers and streams are hydrologically connected with adjacent alpine, subalpine forest, riparian forest, and forested and non-forested wetland ecosystems. For transboundary rivers, habitat connectivity extends to and includes international borders. Within the ecosystem, waterfall and cascade habitat features at bedrock knickpoints present barriers to upstream anadromous fish migration. Occasional dams create localized aquatic habitat discontinuity.

Subalpine Forest (SALP)

Description and Values

The subalpine forest ecosystem occupies the area between the low-elevation forests and the non-forested alpine areas. It generally ranges from 1,500 ft to 3,000 ft in elevation. The subalpine forest ecosystem is found in ecological subsections consisting mainly of angular mountains and rounded mountains with infrequent occurrences on hills. The location of the subalpine climatic zone depends strongly upon latitude and topography. It tends to occur at lower elevations in more northern portions of Southeast Alaska, on more north-facing slopes, and in the interior portion of islands in the region. The climatic zone of this ecosystem has both later snowmelt and shorter growing seasons than lower elevations due to colder average temperatures resulting in both lower canopy cover and productivity than low-elevation forests.

The subalpine forests provide important daily and seasonal habitat for various wildlife species, including mountain goat, Sitka deer, brown bears, marten, and endemic small mammals. They also provide habitats for rare, such as Eschscholtz's little nightmare, Calder's lovage, and culturally and commercially significant, Alaska yellow cedar plants.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-SALP-DC)

01 At the landscape scale the subalpine forest ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Mountain hemlock is the dominant overstory species, with Sitka spruce or western hemlock co-dominant. Alaska yellow cedar is also present. The abundance and distribution of mountain hemlock may be altered due to decreases in snowpack. Common shrubs within the forests include oval-leaf blueberry, salmonberry, and devil's club, while brush fields are dominated by Sitka alder. Understory species include bunchberry dogwood, spreading woodfern, and trailing raspberry.

Structure. An uneven-aged, open canopy forest matrix (average 55% tree canopy cover) of stunted trees is interspersed with occasional tall shrublands and meadows, particularly near the upper elevational limit of this ecosystem. Where colluvial action is more prevalent in the northern latitudes and on the mainland, brush fields connected to alpine areas form a landscape that alternates between forests and shrubs. The abundance of brush fields may increase due to increases in natural disturbances (e.g., landslides, avalanches) and increasing temperature regimes.

Function. Wind, snowpack, landslides, and avalanches are the primary drivers of this ecosystem. As latitude increases across the forest, the landscape shifts from being primarily depositional in nature to primarily glacially scour-dominated.

Connectivity. Subalpine forest ecosystems occur between the alpine ecosystems and the well drained forest and poorly drained forest ecosystems. They are hydrologically linked with headwaters of the rivers and streams ecosystem, particularly in the northern portions of the forest and on the mainland where soils are younger and shallower.

Tidal Wetlands and Estuarine (TWTLD)

Description and Values

Tidal wetlands are found at sea level and include both marine and estuarine environments. Marine influences include daily tidal fluctuations, maritime storms, wave splash, periodic saltwater inundation, and wave or surf carving. Freshwater influences include flow and sediment deposition. In many cases, the formation of these coastal landforms is modified by geological processes and longshore transport. Estuarine channels, the estuarine stream process group, occur at the mouths of watersheds with estuarine landforms located along inlets and deltas at the heads of bays. Water level fluctuations, channel morphology, sediment transport, and water chemistry are influenced to some degree by saltwater inundation in these channels. Tidal wetlands consist of saltwater marshes,

meadows, mudflats, and gravel deltas that are depositional environments. Channel substrate is fine textured alluvium that is easily eroded by currents and wave action.

The tidal wetlands and estuarine ecosystem serves as a critical interface with the nearshore marine environment. The spring and autumn freshwater runoff from the glaciers and ice fields in the interior Coast Mountain range enter the inner coastal waters through the tidal wetlands and estuarine ecosystem. This freshwater influx fuels coastal circulation in the marine communities of the inner Gulf of Alaska. Tidal wetland areas serve as a buffer against storm surges, providing shoreline protection. They trap sediment from entering saltwater as well as capture carbon and nutrient flux from uplands. They provide a variety of important foraging, rearing, and staging area habitats for numerous wildlife. Large tidal wetland complexes, such as the Stikine River Delta, are critical stopovers for migratory birds. Tidal wetlands also provide fishing, hunting, foraging, and wildlife-viewing opportunities to local communities and visitors. Estuarine areas provide highly productive aquatic species spawning and rearing area habitat and refugia. Foraging activities for marine and freshwater fish and recreational access for fishing and boating are also valuable uses of estuarine areas.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-TWTLD-DC)

01 At the landscape scale the tidal wetlands and estuarine ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Estuarine channel types vary in size and drainage that affect the composition of the various habitats. Sedge and grass communities dominate the riparian vegetation. Characteristic species include Lyngbyei sedge, spike rush, and alkali grass interspersed with intertidal mud and areas inundated by water.

Structure. This system occurs where alluvial deltas meet the ocean. The structure is a collection of herbaceous wetland ecotones – intertidal marshes to herbaceous and barren mudflats – and single to multiple thread estuarine channels that are shallowly entrenched and poorly constrained. Stream substrate is fine textured alluvium that is easily eroded by currents and wave action.

Function. The transition from marine to aquatic to terrestrial ecosystems drives this ecosystem. The primary disturbance that maintains this ecosystem is the gradation of salinity from the interactions among tides, freshwater flow, and seawater density in relation to the surrounding physical features of the landscape. The consistent, daily changes in water level from ocean tides supports the circulation of nutrients and sediments that promote ecosystem productivity.

Connectivity. Tidal wetlands and estuarine ecosystems form a chrono sequence with beach meadow, forested and non-forested wetland, and well drained forest ecosystems. Habitat

connectivity within the ecosystem may experience reductions due to coastal erosion resulting from increasing storm intensity and frequency.

Well Drained Forest (WDF)

Description and Values

The well drained forest ecosystem is the backbone of the temperate coastal rain forests of Southeast Alaska and forms the dominant ecosystem across the Tongass. Well drained forests primarily occupy the hillslopes between the riparian valley bottoms and the subalpine forests. These forests are productive and do not contain hydric soil. Well drained forest stands have high live crown ratios, low average height to diameter ratios that lead to windfirmness, and few dead stems which support high understory abundance and retention of forage.

The well drained forest ecosystem supports a multitude of ecological, cultural, social, and economic values. Ecologically they provide habitat and structure necessary for various wildlife species and rare plants, particularly snag-dependent species such as martens and woodpeckers. Diverse structure and composition provide nesting and foraging microhabitat for avian and mammalian wildlife. On south and west-facing slopes below 1,000 feet, winter denning habitat is provided for large wildlife. From a cultural perspective, they support western redcedar and Alaska yellow cedar tree species which are used for cultural items such as dugout canoes and totem poles. They also support local community social, economic and cultural needs, by providing important subsistence foods, sources of traditional medicine, fuelwood, non-timber forest products, habitat for desired hunting and fishing species, and supporting aesthetic and spiritual values of communities and visitors. Well drained forests are considered highly scenic, supporting tourism and recreation in Southeast Alaska. Western redcedar and Sitka spruce trees are important timber species for both economically valuable old-growth and increasingly young growth products such as dimensional lumber and log cabin kits.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-WDF-DC)

01 At the landscape scale the well drained forest ecosystem is resilient, maintaining key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Overstory is comprised of western hemlock, Sitka spruce, western redcedar and, although present but less common, Alaska yellow cedar. In beach and estuary fringe habitats, a hardwood component may co-dominate with large Sitka spruce trees with moss-covered branches. Oval-leaf blueberry and rusty menziesia are common shrubs. Understory is well-developed and includes such species as trailing raspberry, twisted stalk, bunchberry dogwood, fern-leaved goldthread, and western oakfern. Species composition may shift due to prolonged soil moisture deficits during the growing season.

Structure. The ecosystem is predominantly a closed canopied (at least 60% canopy cover), structurally complex forest matrix interspersed with areas of recent openings and young re-growth shown in Table 5. Trees are uneven-aged, irregularly spaced, and large (up to 160 feet tall, 18-20 inch-DBH), with karst substrates supporting higher amounts of large trees than non-karst substrates. Trees in areas of young re-growth are spaced to provide resilience to windthrow and other stressors. A diverse understory of forbs, ferns, and shrubs is present. Snags and downed wood are abundant and can serve as important nurse logs for regenerating spruce and hemlock. Cultural trees are abundant across the landscape. An increase in the frequency and intensity of windstorms may increase the amount of open and regenerating areas across the forest, benefiting species that readily colonize areas with mineral soils and highlight availability.

Table 5. Desired structural parameters for well drained forest succession classes.

Structural parameters	Early	Mid	Late 1	Late 2
Upper canopy lifeform(s)	Herbs, shrubs, tree	Tree	Tree	Tree
Tree size class at DBH	(<5” DBH)	9-20”	21-40”	+40”
Average structural age distribution	0-29 years	30-119 years	120-249 years	250+ years
Proportion of ecosystem	4%	13%	18%	65%

Function. Efficient surface and subsurface drainage drive the structure and composition of the ecosystem, resulting in moderately high to highly productive forests. Wind disturbance regimes are a fundamental driver of ecosystem structure. Wind-protected landscapes generally result in small-scale, canopy gaps, while wind-exposed landscapes allow for recurrent wind events that generate larger areas of blowdown. Blowdowns range in size from 1 to 1,000 acres and disproportionately occur as smaller, scattered patches of less than 50 acres. The frequency and intensity of wind events may increase as temperature and precipitation regimes shift. Other important disturbances include avalanches, landslides, and tectonic movement. Insect and disease outbreaks are rare but may occasionally result in large areas of defoliation.

Connectivity. Well drained forest ecosystems occur on slopes below subalpine forest ecosystems and grade into poorly drained forest ecosystems as soil drainage decreases. They are also upslope from riparian forest. At finer-scales within the ecosystem, roads may exhibit localized impacts to connectivity.

02 At the landscape scale within the well drained forest ecosystem, the beach and estuary fringe habitat is resilient, maintaining and recovering key ecosystem characteristics naturally or through accommodating change following disturbance and under changing future conditions:

Composition. Overstory is dominated by Sitka spruce, with western hemlock becoming codominant in older stages. A hardwood component may be present in late-seral transitional communities. Oval-leaf blueberry, salmonberry, and various willows are common shrubs. Understory is well-developed and includes such species as trailing raspberry, twisted stalk, spreading woodfern, and common lady fern. Species composition may shift due to prolonged soil moisture deficits during the growing season.

Structure. The ecosystem is predominantly a closed canopied, structurally complex forest matrix interspersed with areas of recent openings and young re-growth as described in Table 6 and Table 7. Trees are uneven-aged, irregularly spaced, and large (up to 160 feet tall, 9-40+ inch-DBH). Trees in areas of young re-growth are spaced to provide resilience to windthrow and other stressors. A diverse understory of forbs, ferns, and shrubs is present. An increase in the frequency and intensity of windstorms may increase the amount of open and regenerating areas across the forest, benefiting species that readily colonize areas with mineral soils and high amounts of light availability.

Table 6. Desired structural parameters for beach and estuary fringe habitat succession classes on Yakutat Ranger District.

Structural Parameter	Early	Mid	Late
Upper canopy lifeform(s)	Herbs, shrubs, trees	Tree	Tree
Tree size class in DBH	9-20”	20-40”	+40”
Average structural age distribution	0-129 years	130-299 years	300+ years
Proportion of ecosystem	30%	30%	40%

Table 7. Desired structural parameters for beach and estuary fringe habitat succession classes on all other Ranger Districts.

Structural Parameter	Early	Mid	Late 1	Late 2
Upper canopy lifeform(s)	Herb, shrub, tree	Shrub, tree	Tree	Tree
Tree size class in DBH	<5” DBH	9-20”	21-40”	+40”
Average structural age distribution	0-19 years	20-49 years	50-149 years	150+ years
Proportion of ecosystem	3%	10%	21%	66%

Function. The primary disturbances of this habitat include wind, avalanches, rockslides, and glacial advance and outwash. The frequency and intensity of wind events may increase as temperature and precipitation regimes shift. Insect and disease outbreaks are rare but may occasionally result in transitions to hemlock-spruce forests.

Connectivity. This habitat is directly upslope from meadows (beach meadow habitats) and tidal wetlands and estuarine ecosystems.

Cultural Resources and Sacred Sites (CRSS)

Description and Values

Cultural resources, sacred sites, cultural landscapes, and traditional cultural places have religious, cultural, and traditional importance to Alaska Native Tribes, Alaska Native corporations, and local communities. We recognize that there are known impacts and stressors to sacred sites and cultural resources, as well as impacts yet to be learned through continued and ongoing shared conversations.

Cultural Resources

Cultural resources, as defined in FSM 2360 and Forest Service Handbook 2309 represent the shared cultural heritage of the communities in and around the Tongass and are often the only tangible representations of the human populations not typically characterized in written history. They provide important opportunities for Alaska Natives to remain connected to their cultural identity and cultural diversity, as well as for public education. Cultural resources also hold cultural value to other groups, including but not limited to World War II veterans, miners, trappers, loggers, fishermen, and local community members. The generally finite and non-renewable nature of cultural resources makes them highly susceptible to loss if disturbed, the loss of which is both scientific and cultural in nature. Their integrity is wholly dependent on the contextual relationship between artifacts, architecture, and the environment in which they are found, something that cannot be recreated or restored once disturbed.

The Tongass has a rich and varied history, supported by physical cultural resources, as well as oral histories and ethnographies that provide evidence of continuous occupation and traditional cultural use beginning with Alaska Native migration into the area thousands of years ago. In addition to the well-documented and publicized Ground Hog Bay, Hidden Falls and Shuká Káa Cave archaeological sites, there are pictographs and petroglyph sites, culturally modified trees, seasonal hunting and fishing locations, transportation and trade routes, and battle sites. Early contact with Europeans and the subsequent exploitation and colonization of Southeast Alaska has resulted in cultural resources representing early Russian occupation, fur farming, gold mining, large scale fishing and canning operations, and the timber industry found across the Tongass.

While numerous federal laws and executive orders (EO) are in place that address historic preservation on federal lands, the National Historic Preservation Act (NHPA) of 1966, as amended, sets the legal framework for cultural resource management on federal system lands. NHPA Section 106 directs all federal agencies to consider the effects of their undertakings (actions, financial support, and authorizations) on historic properties and traditional cultural places as defined in 36 CFR 800. In accordance with 36 CFR 800.14(b)(2), federal agencies have the option to pursue *Program Programmatic Agreements*, which allow the agency to create a NHPA Section 106 process that differs from the standard review process and that will apply to all undertakings under a particular program. The Forest utilizes the Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Heritage Program Management on National Forests in the State of Alaska, signed July 10, 2017, and amended on December 8, 2017, July 7, 2022, and August 11, 2023. NHPA Section 110 requires federal agencies to identify, evaluate, nominate to the NRHP, and protect historic properties as well as manage Priority Heritage Assets (PHA).

To date, less than one percent of the Forest has been inventoried to current standards and approximately 6000 cultural resources have been identified. They range in age from ca. 14,000 years before present (BP) to the mid-20th century. Pre-contact sites make up approximately 39%, 46% date to the historic/post-contact period, and the remaining contain both pre-contact and historic components. Approximately 22% have been evaluated against National Register of Historic Places (NRHP) criteria (36 CFR 60.4); 17% are eligible to or listed on the NRHP, including one TCP, and 5% do not meet eligibility criteria. The remaining 78% have not been evaluated and per FSM 2363.22 they are managed as eligible (historic properties).

The Tongass typically conducts the following types of Section 110 activities: public outreach, assistance with tribal culture camps, archaeological inventory, development of interpretive products, site condition assessments, creation of Tlingit potato garden programs, NRHP evaluations, offering guided talks, and preservation projects.

Other laws under which cultural resource management must comply include the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, the Archeological Resources Protection Act (ARPA) of 1979, the American Indian Religious Freedom Act (AIRFA) of 1978, National Environmental Policy Act (NEPA) of 1970, and National Forest Management Act (NFMA) of 1976. Forest Service policy and several laws protect the nature and location of cultural resources, including FSM 2368.1, FSH 2309.12 Chapter 14, NHPA Section 304, ARPA Section 470hh, 2008 Farm Bill Section 8106, and Freedom of Information Act (FOIA) of 1966 Section 552(b)(3). Additional law, regulation, and policy pertaining to cultural resources includes Alaska Native Claims Settlement Act (ANCSA) of 1971-Section 14(h)(1) Conveyance of Alaska Native Cemetery Sites and Historical Places, Native American Technical Corrections Act of 2004, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, 36 CFR 79 Curation of Federally Owned or Administered Archaeological Collections (1990) implementing Section 110 of the NHPA, Antiquities Act of 1906, and Organic Act of 1916.

Sacred Sites

Sacred sites are managed to support and provide access to tribally valued, sacred and religious locations on federal lands as described in FSM 1563 and FSH 1509. Sacred sites can only be determined by tribes and conversations with tribes need to happen to determine what activities are acceptable in those areas. Sacred sites may include but are not limited to geological features, bodies of water, archaeological sites, ceremonial sites, places of origin, birthing grounds, burial locations, stone and earth structures, among other features and combinations of features.

Sacred sites that meet National Register of Historic Place criteria, are treated and managed per NHPA Section 106 reviews, like other cultural resources as well as through protections and considerations afforded by Executive Order 13007 and other relevant law and policy such as the National Historic Preservation Act (NHPA), Native American Graves Protection and Repatriation Act (NAGPRA), Archeological Resources Protection Act (ARPA), and American Indian Religious Freedom Act (AIRFA), Cultural Heritage and Cooperation Authority 25 USC Chapter 32A (2015), and Chapter 3 of the Tribal Cultural and Heritage Cooperation Authority Technical Guide *A Companion to the Forest Service Directives for implementing the Cultural and Heritage Cooperation Authority 25 U.S. Code Chapter 32A.*

Need to Change

- Provide a holistic view of both Alaska Native traditional cultural properties and sacred sites, and non-Alaska Native traditional cultural properties, while preserving anonymity of such properties where appropriate. Consider how to manage the Tongass' cultural resources to provide visitors with educational opportunities and share stewardship of sacred sites with tribes. Consider how to better align heritage resources management objectives (the active management of historic properties, cultural landscapes, and sacred sites) with other resource management objectives (i.e., ecosystem restoration, timber harvest, recreation).

Desired Conditions (FW-CRSS-DC)

01 Cultural resources and sacred sites are identified and managed in a manner that does not adversely affect their integrity and preserves their condition and value to tribes, local communities and visitors.

02 The physical integrity, authenticity, and the cultural and historical significance cultural resources hold for the communities who created them are preserved and protected, ensuring that significant resources remain accessible for future generations.

03 All NAGPRA items are repatriated and all NAGPRA cases are resolved.

04 NAGPRA comprehensive agreements with each tribe are executed detailing how known sites with burials will be treated, protected, and excluded from project activities.

05 The Tongass co-stewards sacred sites and cultural resources with tribes and Alaska Native Corporations to maximize traditional and customary practices.

06 Stipulations identified in NHPA agreements are fulfilled prior to expiration.

07 Sacred site locations remain confidential and all reasonable measures to protect this information from disclosure are taken.

08 Cultural resources are available for recreational, scenic, scientific, educational, and conservation purposes such as providing interpretive information in the form of exhibits and publications or scientific studies when appropriate.

09 Historic properties to be nominated to the NRHP are identified and nominated as applicable.

Goals (FW-CRSS-G)

01 Consult with tribes, local communities, and the State Historic Preservation Office on the management and protection of cultural resources and sacred sites.

02 Collaborate with tribes and local communities on design and implementation of cultural resource interpretive and educational materials and programming.

03 Co-develop information sharing policies and protocols with tribes and Alaska Native Corporations to ensure the protection of culturally sensitive information.

04 Maintain a statewide National Historic Preservation Act programmatic agreement to streamline the Section 106 review process.

Fire and Fuels (FIRE)

Fire is not a frequent disturbance agent on the Tongass, due to very high precipitation year-round, despite abundant fuels. Most Tongass fires are less than one acre, with few fires historically recorded over 100 acres. Human ignitions are more common than natural ignitions and generally occur in open areas with fine fuels. Exceptions to this are fires ignited for cultural and traditional burning practices, such as those performed by the Yakutat Tlingit Tribe for subsistence egg collection.

The low incidence of wildfire on the Tongass means that fire suppression is not a common occurrence but is certainly a critical management activity when fires do ignite. The Alaska Interagency Wildland Fire Management Plan and Forest Service Manual 5132 provide strategies and guidance for fire suppression actions. While climate models suggest that Southeast Alaska will have more rain, on average, in coming decades, there is the possibility of more frequent or more severe droughts. Thus, the effects of future climatic conditions on fire behavior are uncertain.

The use of prescribed fire as a tool for resource management is rare due to shortness of burning opportunities and weather limitations during the burning season. In some limited circumstances, prescribed fire may be appropriate to support other resource needs such as silvicultural site preparation, wildlife habitat improvement, invasive plant control, or slash treatment.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-FIRE-DC)

01 Fire continues to play little to no role in natural disturbance across the Tongass.

02 Prevention, education, and partnership efforts reduce the likelihood of unplanned human-caused wildfire.

03 Planned and unplanned fire management activities recognize the need to employ management actions that minimize the adverse effects to soil, water quality, and riparian resources and limit the potential for spread of invasive species.

04 There are minimal detrimental impacts to values at risk from wildland fire.

Goals (FW-FIRE-G)

01 Coordinate fire management actions with tribal, state, and local partners. Opportunities to manage fire and fuels are expanded across the planning area through coordination and collaboration.

Honoring Tribal Relationships (TRIBE)

Southeast Alaska is home to the Tlingit, Haida, and Tsimshian cultures and communities, who have used and continue to use indigenous knowledge to steward traditional homelands in what is now the Tongass National Forest. Underlying that knowledge are values that include respecting the natural world, a world humans are a part of, not separate or distinct from. Natural resources are considered cultural resources by many Tribes. The health of native people is inextricably linked to the health of the land and resources upon which people depend. Thus, the ecological health of the Tongass is critical to the health of the native people who use the Tongass. According to Tribes, disconnecting them from the land and economies based on access and use of the land is a disconnection to cultural heritage, values, and ways of life. Healthy ecosystems provide food sources such as deer, moose, salmon, other fish, plants and berries, as well as sources of other traditional cultural practices, such as totem pole harvesting, medicinal plant gathering, and weaving material gathering. In addition to the content found here in this resource section, content to support the values and management needs of tribes is included in other plan resource sections in recognition of this interconnectedness.

Socio-economic sustainability is also important to tribes and is an outcome of and tie to passed down cultural and spiritual lifeways and relationships with the natural world and land. Part of the intent of this land management plan is to continue developing relationships and partnerships with tribes and Alaska Native Corporations to support socio-economic sustainability. These relationships and *co-stewardship* intentions can be as formal as agreements created with formal consultation, or as informal as tribal staff collaboration and coordination in project planning. Management guidance to remove and reduce barriers to effective Tongass and tribal working relationships, including access to resources to support programming and work across land designations, adequate time and resources dedicated to meeting trust responsibility, and balancing tribal rights and state rights also support co-stewardship.

This plan section speaks to the relationship between tribes and the Tongass ecologically, socially, and economically, recognizing historic and current tribal stewardship of the Tongass with an emphasis on ensuring continued future tribal stewardship of the Tongass. The cultural values that tribes and all people bring to understanding our human place in the natural world needs to be consistently touched upon to ensure common understanding throughout management of the Tongass.

Need to Change

- Incorporate consideration of Indigenous Knowledge in the revised plan as well as indigenous perspectives of biological and cultural health. Increase recognition of and as consideration in determining best available scientific information. Include indigenous perspective of biological and cultural health. Increase recognition of Alaska Native cultural, spiritual, and traditional needs.
- Prioritize incorporation of place names and Indigenous languages on interpretive infrastructure, maps; support official renaming of derogatory place names.
- Consider management direction to protect and restore traditional, subsistence and customary use areas and characteristics, including infrastructure, habitat and ecological conditions.

Desired Conditions (FW-TRIBE-DC)

01 The Tongass actively engages with tribes and Alaska Native Corporations to foster a lasting and respectful federal-tribal culture of working together that withstands staff turnover and shifts in priorities through consultation, coordination, and collaboration. Robust coordination and collaboration occur at the interdisciplinary resource specialist staff-level between Tongass resource specialists and their Tribal staff counterparts in addition to government-to-government consultation.

02 Indigenous knowledge is considered in Tongass management projects and activities including project planning, alternatives development, and environmental analysis.

03 The Tongass provides for the traditional character of lands to support tribes conducting cultural practices such as ceremonies and harvest.

Goals (FW-TRIBE-G)

01 Partner with tribes and Alaska Native Corporations to identify and consider co-stewardship of lands where traditional and customary uses, occur and to design measures to support those uses.

02 Collaborate with tribes to create opportunities to educate forest employees and leadership about cultural sensitivity protocols, culturally important resources and activities, and the spiritual qualities associated with the land, wildlife, and other natural resources.

03 Partner with tribes to identify resource-management projects or settings that could provide educational opportunities for tribal youth.

04 Coordinate with tribes and Alaska Native Corporations to assess and strategize ways to support traditional tribal harvest activities including but not limited to plant collecting, hunting, trapping, and fishing.

Infrastructure, Facilities and Access (IFA)

Infrastructure refers to the systems, facilities, and services that support the administration and public use of forests. This includes the roads and bridges that comprise the transportation system, communication sites, administrative facilities, and marine access facilities. Infrastructure is critical to providing safe access, delivering recreational and economic opportunities, and for providing

emergency services to the public. The extent of federal land, development and maintenance of transportation and utility systems, and the availability of natural resources is vital to shaping and sustaining local economies, cultural integrity and the quality of life for residents of Southeast Alaska. Infrastructure provides access for people to walk, bike, and drive to their destinations, facilitate public use of resources, and traditional gathering and harvesting of forest products. Management of access routes and infrastructure is an important role of the Forest Service, especially as many communities are wholly surrounded by federally managed lands. Plan components in this section are designed to manage the network of sustainable infrastructure that supports administrative uses, health and human safety, provides for access and use of the Forest by the public, and minimizes impacts to ecosystem integrity and species diversity.

The Tongass maintains or shares maintenance agreements on about 1700 miles of roads open to public use, 491 road bridges, 123 administrative facilities, and numerous marine access and log transfer facilities. The Tongass also manages an array of recreation facilities, such as campgrounds, cabins, trails, picnic areas, roadside interpretive sites, and visitor centers.

The development, maintenance, and administration of infrastructure is guided by existing law, regulation, and Forest Service directives. This includes ANILCA; the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, Public Law 109-59); the Travel Management Rule (36 CFR 212); and the following FSMs: 2350 – Trail, River, and Similar Recreation Opportunities; 2700 – Special Uses Management; 7300 – Buildings and Other Structures; and 7700 – Transportation System. Implementation of the Alaska Federal Lands Long Range Transportation Plan (LRTP) as identified through the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the State of Alaska's Southeast Transportation Plan also guide management of the Tongass transportation system.

Need to Change

- Include direction to address the need for transportation and communication projects in Southeast Alaskan communities.

Desired Conditions (FW-IFA-DC)

01 The Tongass maintains and develops a safe and adequately maintained transportation system that provides access points and access for Tongass users and supports Southeast Alaska communities.

02 Infrastructure, including transportation systems, administrative facilities, and communication sites, supports community resilience, resource management, emergency response, and provides for current and future land management needs, subject to applicable laws. Infrastructure development avoids, minimizes, or mitigates adverse effects on natural and cultural resources.

03 Develop and manage transportation systems corridors to support resource management activities and to provide access to forest resources and opportunities, recognizing the potential for future development of additional transportation systems.

04 The minimum land area, consistent with an efficient, safe facility, is used for transportation system corridor development.

05 Transportation routes with regional importance offer new or improved developed recreation opportunities as appropriate.

06 Undisturbed soils within the transportation system corridors are managed to maintain soil productivity. Under the road prism soils are compacted and are not maintained for soil productivity but support a stable road base. In ditches, cut slopes, and other disturbed areas outside the road prism, soils support desired plant communities, typically native, non-invasive plants. Vegetative cover is maintained in these areas unless soil is absent. Soil erosion and sediment transport are minimized.

07 Transportation infrastructure, including road ditches, does not act as extensions of stream networks and does not preclude water from following its natural flow path.

08 Transportation infrastructure including road design, location and maintenance supports the properly functioning condition of watersheds to tolerate and reduce the potential impacts from natural catastrophic events.

09 Manage and maintain roads to provide access for forest management, subsistence uses, and recreation, as well as public access to traditional use areas while protecting water, soil, fish, and wildlife resources.

Goals (FW-IFA-G)

01 Design transportation systems to attain the highest possible quality of landscape aesthetics and scenery commensurate with other public uses, costs, and benefits.

02 Coordinate transportation corridor development, and in particular design, maintenance and management of road connections between communities, with the applicable Canadian, federal, state and local government agencies, tribes and Alaska Native Corporations, and private landowners.

03 Cooperate with the Alaska Department of Transportation and Public Facilities and the Federal Highway Administration in the administration of the Federal Highway Programs.

Invasive Species (INVS)

Description and Values

Invasive species are non-native plants, animals, fungi, or pathogens that establish, spread, and cause harm to ecological systems, economies, and cultural resources. On the Tongass National Forest, invasive species threaten the integrity of one of the most intact coastal temperate rainforests in the world. They compete with native species for light, nutrients, and space, alter soil chemistry, disrupt hydrologic processes, and degrade habitat quality for fish and wildlife. Aquatic invasive species can impair water quality, block fish passage, and reduce spawning success, while terrestrial invasives displace native understory plants and compromise forest regeneration.

The ecological values associated with invasive species are negative. Their presence reduces biodiversity, fragments habitats, and undermines ecosystem resilience. Invasive species can accelerate

nutrient cycling in ways that favor their dominance, diminish carbon storage, and increase vulnerability to pests and disease. Culturally, invasive species threaten subsistence resources such as berries, medicinal plants, and fish populations central to Indigenous lifeways and local traditions. Socially, they diminish the scenic and recreational quality of the forest, affecting opportunities for wildlife viewing, fishing, and gathering. Economically, invasive species increase management costs, impair fisheries, and reduce the productivity of forest resources, creating long-term financial burdens for communities and agencies.

Preventing the introduction and spread of invasive species is critical to sustaining the ecological integrity, cultural heritage, and economic stability of the Tongass. Management strategies emphasize early detection, rapid response, and coordinated eradication efforts to protect native biodiversity and maintain the Tongass as a globally significant temperate rainforest.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-INVS-DC)

01 The Tongass National Forest ecological conditions favor the persistence of native botanical and animal communities. Prevention measures effectively minimize introductions of invasive species, contain and eradicate existing infestations, and restore affected habitats to conditions that support native species and ecosystem integrity.

02 Habitats exhibit natural composition and function without significant alteration from invasive species, supporting biodiversity, ecosystem resilience, and cultural uses. Aquatic systems remain free of invasive organisms that impair fish passage or water quality, and terrestrial landscapes sustain native understory and regeneration processes.

Karst, Caves and Geology (KARST)

Description and Values

The Tongass National Forest has a variety of geologic resources and hazards. Geologic hazards include landslides, rockfall, flooding, debris flows, earthquakes, and sinkholes. Geologic resources include many types and ages of fossils, karst and cave resources, and areas with scenic or scientifically important rock layers or features. Significant fossils, caves, and related resources are protected by Federal laws and regulations. Fossil and cave resources are both fragile and nonrenewable, and special considerations are required to provide for resource protection, recreation, and scientific opportunities. Locations and details of significant fossil sites and caves are considered sensitive information and should be protected from inappropriate public disclosure. The Tongass National Forest is required to strategize and maintain natural karst processes and protect geologic and paleontological resource values as outlined in the Federal Cave Resources Protection Act (FCRPA), Paleontological Resources Preservation Act of 2009 (PRPA), FSM 2882.03, FSM 2882.3, and the Karst Management Strategy. This includes identification of high vulnerability karst terrain, unique geological features, and significant cave designations.

The Tongass National Forest contains numerous significant caves and karst resources. The Federal Cave Resource Protection Act (FCRPA) of 1988 (16 U.S.C. 4301-4309; 102 Stat. 4546) defines a significant cave as a cave located on National Forest System lands that has been evaluated and shown to possess features, characteristics, values, or opportunities in one or more of the following resource areas: biologic, cultural, geologic-mineralogic-palaeontologic, hydrologic, recreational, or educational-scientific and which has been designated *significant* by the Forest Supervisor. Caves determined to be significant are managed under provisions of the FCRPA to secure, protect, and preserve significant caves for the perpetual use, enjoyment, and benefit of all people, and to foster increased cooperation and exchange of information with those who utilize caves for scientific, educational, or recreational purposes.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-KARST-DC)

01 The cultural, archaeological, geological, hydrological, paleontological, biological, and aesthetic resources associated with cave and karst features are protected and maintained.

02 Karst landscapes and cave formations maintain natural development and erosion processes, while providing for multiple land uses.

03 Geologic hazards, such as sinkholes, flooding, acidic rock, and associated risks to public health and safety, facilities, and infrastructure are recognized, and when and where feasible, adverse impacts from these hazards are avoided, minimized, or mitigated.

04 Geologic resources provide ecological, scientific, educational, interpretative, scenic, recreational, and paleontological benefits to the public and researchers.

05 Geological and biological features, such as talus slopes and rocky outcrops, of cliffs and rocky features provide wildlife and plant habitat, as well as scenic diversity.

06 The status of features, characteristics, values, or opportunities for which caves have been designated or nominated as *significant* are maintained. Cave resources and significant features of caves designated under the Federal Cave Resources Protection Act are maintained or enhanced.

Goals (FW-KARST-G)

01 Identify public educational and interpretation opportunities for cave, karst, and geologic features fostering an appreciation for ecosystem functions, ethics, and safety.

02 Seek, coordinate, and foster partnerships with individual, tribal, organizational, and scientific interests in karst and cave resource management.

03 Coordinate with state and federal agencies to update geological maps and inventories. Geologic inventories include bedrock geology, surficial geology, stratigraphy, hydrogeology, geomorphic features, geological hazards, karst features, caves, and paleontology, including potential for geologic formations to yield fossil resources of scientific and other values.

04 Consider the function and biological significance of the entire karst landscape and underground drainage systems when integrating and coordinating cave and karst management with the management of other national forest resources and activities.

Lands and Land Uses (LAND)

The concept of *lands* refers to the basic pattern of public and private ownership of surface and subsurface estates, and is characterized by ownership and status, use, and access patterns. Land status is defined as the ownership record of title to lands, including withdrawals, rights, and privileges affecting or influencing use and management of the land, while land use describes the types of activities that occur on the land. Landownership status on National Forest System lands can be changed through land adjustments, where the Forest Service acquires and consolidates key tracts of non-Federal land, typically by exchange, purchase, acquiring easements, disposal, donation, or congressional mandate, as regulated under 36 CFR 254. This is done to conserve valuable natural habitat, reduce the risk of development in sensitive areas, increase access for public use, and enhance public recreation opportunities. Land adjustments also provide the Forest Service an opportunity to secure permanent road and trail right-of-way easements that ensure protection, administration, access, and use of National Forest System lands and resources. Management direction regarding lands and land uses are set by law, regulation, and Forest Service policy, which supersedes the direction in this land management plan.

The Forest Service special uses program (36 CFR 251 Subpart B) authorizes the occupancy and use of National Forest System lands by individuals, organizations, companies, governmental entities, educational institutions, etc., for a wide variety of uses, such as roads, water systems, communication sites, and other private or commercial uses.

This section focuses on the land itself, including adjustments, rights-of-way and easements, and land special uses authorizations. Though intrinsically related to land use, information regarding infrastructure, transportations systems and public access, facilities, communication sites, and more can be found in the Infrastructure, Facilities, and Access (IFA) section. For information regarding trails, and trail access, and recreation facilities refer to the Recreation and Tourism section.

Need to Change

- Incorporate direction for land exchanges, transfers, selections, leases or other instruments that benefit local communities as well as national forest management.

Desired Conditions (FW-LAND-DC)

01 Engage in collaborative discussions with interested parties to resolve land-related issues and build partnerships. Data collection, monitoring, and other plan implementation work is coordinated with the State of Alaska, other federal agencies and organizations.

02 As land entitlements are fulfilled, lands within and adjacent to the national forest boundary are adjusted to consolidate ownership interests and support the resource management objectives of all landowners.

03 Land entitlements are finalized and excess selections are relinquished, allowing removal of title encumbrances and associated Forest Service management restrictions.

04 Land ownership adjustments are used to consolidate lands, produce management efficiency, support resource management objectives, and support long-term management goals.

05 Road and trail easements provide adequate administrative access and reasonable public access to National Forest System lands. Interests in lands are acquired or modified as needed, in consultation with federally recognized Alaska Native Corporations and Alaska Native Tribes and in cooperation with the State of Alaska, to ensure public access to National Forest System lands.

06 Opportunities are available for a variety of land special uses that include energy transmission, communication uses, research activities, and other public services.

07 Facility ownership and land access management support authorized activities and uses on National Forest System lands.

08 Unauthorized occupancy and use do not occur on the Tongass and are resolved using appropriate actions.

Goals (FW-LAND-G)

01 Coordinate with and consider the needs, uses, and economic impacts to adjacent state, tribal, Alaska Native Corporation and private landowners when undertaking land use management activities that may affect them, such as but not exclusively easement management, rights-of-way, lands special use permitting.

02 Cooperate with the State of Alaska and local communities in their land and resource planning efforts.

03 Coordinate activities on encumbered lands with interest holders, as appropriate.

04 Assist the state, tribes, Alaska Native Corporations, and other federal agencies to process legitimate claims or applications, including conveyance of full legal entitlements.

Mineral Resources (MINE)

Southeast Alaska has a long history of mineral prospecting and mining. The Tongass aims to manage the exploration and development of the mineral resources in an environmentally sensitive and ecologically sound manner while supporting the socio-economic needs of Southeast Alaska communities and the nation. Mineral resources are a significant sector of the economic support the Tongass provides, with approximately 1100 jobs providing over $141 million dollars in total wages, and over $585 million dollars of ore production annually. Mineral resources occurring within the boundaries of the Tongass include gold, silver, molybdenum, and lead, and nationally designated strategic and critical minerals such as, zinc, copper, vanadium, uranium, tungsten, rare earth, and platinum group metals.

Mineral resources are legally divided into three groups: locatable, leasable, and salable minerals. Nonrenewable energy resources, such as oil and gas, as well as geothermal energy resources are

managed as leasable minerals. The authority of the Forest Service to influence and regulate the various phases of mineral development vary with each group.

Existing Federal and local laws, regulations, directives, and legal decisions are the predominant guiding force for mineral and management actions. These include ANILCA, 36 CFR 228, FSM 2800, 2011 Forest Service Strategic Energy Framework, General Mining Law of 1872, Mineral Leasing Act of 1920, Mineral Leasing Act for Acquired Lands of 1947, and Oil and Gas Leasing Reform Act of 1987. This plan section includes plan components that guide the Tongass' management of mineral resource exploration and development within the plan area without reiterating these overarching laws, regulations, and policies.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-MINE-DC)

01 Mining activities are localized and limited to the area necessary for their efficient, economic, and orderly development.

02 Mining activities are carried out so that any effects to and from other resources are minimized to the extent feasible.

03 Provide for environmentally sound mineral exploration, development, and reclamation in areas open to mineral entry and in areas with valid existing rights that are otherwise closed to mineral entry.

04 Ensure minerals are developed in an environmentally sensitive manner and other high-valued resources are considered when minerals developments occur.

Old-Growth Forests (OGF)

Description and Values

Old-growth forests on the Tongass National Forest represent the mature, structurally complex condition that develops over centuries in Southeast Alaska's coastal temperate rainforest. These forests occur across multiple ecosystem types, including subalpine forests, well drained forests, poorly drained forests, riparian forests, and forested wetlands, yet they share defining characteristics that warrant forest-wide recognition. Old-growth stands are marked by towering trees of exceptional age and size, multi-layered canopies, and irregular spacing that create canopy gaps and diverse light conditions. Large-diameter live trees, abundant snags, and massive downed logs provide structural complexity unmatched by younger forests. The understory is rich with mosses, ferns, shrubs, and lichens, while epiphytes drape branches and trunks, adding to the layered architecture. These forests develop under a disturbance regime dominated by small-scale events such as windthrow and root-rot pockets rather than stand-replacing fire, resulting in patchy, heterogeneous landscapes that support a wide range of microhabitats. In riparian management zones, old-growth spruce and hemlock stands are hydrologically connected to streams, contributing large wood that stabilizes banks and creates

habitat complexity for fish. In subalpine areas, old-growth mountain hemlock groves persist in snow-influenced environments, while in poorly drained settings, ancient cedar and hemlock occupy mounds within peatland mosaics. Across all settings, the defining feature of old-growth is its structural diversity, which drives ecological resilience and long-term ecosystem function.

The ecological values of old-growth forests are profound. These forests provide essential habitat for a wide array of native species, including those dependent on large snags and cavities such as Pacific marten, woodpeckers, and bats. Massive limbs in the canopy offer nesting platforms for marbled murrelets, while the forest floor and understory support forage and cover for Sitka black-tailed deer, particularly in winter when canopy interception reduces snow depth. Old-growth riparian forests regulate stream flows, filter sediments, and maintain cool water temperatures critical for salmon and trout, while fallen trees create pools and complexity that sustain fish productivity. These forests are among the most carbon-dense ecosystems on earth, storing vast amounts of carbon in living trees, soils, and woody debris, and their structural complexity enhances resilience to wind, pests, and climate variability. Nutrient cycling is facilitated by nurse logs and decaying wood, which foster seedling establishment and maintain soil fertility. In wetland-adjacent old-growth, slow decomposition sustains peatland processes and hydrologic function.

Culturally, old-growth forests are integral to the lives and traditions of Alaska Native Tribes. Species such as Sitka spruce, western redcedar, and Alaska yellow-cedar provide materials for dugout canoes, totem poles, house posts, and bentwood boxes, while understory plants offer traditional foods and medicines. These forests encompass places of spiritual significance, berry grounds, and historic travel corridors, and they preserve cultural landscapes that remain central to Tlingit, Haida, and Tsimshian identity and practice. Their continuity through time safeguards archaeological sites and supports intergenerational knowledge transfer.

Social values are equally significant. Old-growth forests are integral to the visual composition of Southeast Alaska, with towering trees, moss-draped understories, and salmon streams forming the iconic imagery of the Tongass. They provide opportunities for recreation, including hiking, wildlife viewing, hunting, fishing, and photography, and they offer settings for solitude, education, and spiritual renewal. Communities depend on these forests for subsistence resources such as firewood, berries, and non-timber forest products, and for access to hunting and fishing areas buffered by intact forest cover.

Economically, old-growth forests underpin nature-based tourism and recreation, which are vital to Southeast Alaska's economy. Visitors are drawn to the grandeur of and wildlife that occupy these forests, supporting local outfitters, guides, and businesses. Select old-growth trees supply specialty wood for musical instruments, carving, and artisan crafts, while ecosystem services such as carbon storage, flood regulation, and fish habitat sustain fisheries and infrastructure and hold potential for climate-related economic opportunities. Old-growth stands also serve as genetic reservoirs and structural templates for managing and restoring adjacent young-growth forests, ensuring long-term sustainability of forest products.

The shared structural composition and conditions of old-growth forests, regardless of which ecosystem type they occur in, as well as the outsized ecological and cultural benefits old-growth forests provide, these forests require forest-wide direction as a sub-ecosystem. This approach ensures

consistent recognition of their habitat function, hydrologic role, carbon significance, and cultural importance while accommodating site-specific variation. Managing old-growth at this scale allows the Tongass to maintain and restore these characteristics across landscapes, support subsistence and community values, while balancing recreation and economic opportunities with long-term ecological integrity. The direction in this section is applicable at the small-scale hundreds of acres to thousands of acres.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-OGF-DC)

01 At the small scale, old-growth forest is resilient, maintaining and recovering its defining structural complexity and ecological functions naturally or through adaptive processes following disturbance and under changing future conditions. These forests also continue to support cultural practices, subsistence uses, and recreation opportunities that connect communities to the land. Key characteristics include:

Composition. Old-growth forests are dominated by long-lived conifers such as western hemlock, Sitka spruce, Alaska yellow-cedar, and western redcedar, with mountain hemlock and subalpine fir present in higher elevation settings. Hardwood species, including red alder and black cottonwood, may occur in riparian old-growth stands, contributing to structural diversity. The understory is well-developed and includes a rich assemblage of shade-tolerant shrubs, ferns, mosses, and lichens, along with epiphytic communities that thrive in humid conditions. Species composition reflects site-specific conditions such as soil drainage, elevation, and proximity to wetlands or streams, and may shift gradually in response to climate-driven changes in temperature and moisture regimes.

Structure. Old-growth forests exhibit multi-layered canopies with irregular spacing and canopy gaps created by small-scale disturbances. Trees are uneven-aged and include large-diameter individuals, often exceeding 40 inches diameter at breast height and reaching heights of 150 feet or more. Snags and downed logs are abundant and vary in size and decay class, providing critical habitat and contributing to nutrient cycling. Coarse woody debris and nurse logs are common, supporting regeneration of spruce and hemlock. Structural complexity includes large limbs suitable for marbled murrelet nesting, cavity-bearing snags for woodpeckers and bats, and dense understory patches interspersed with open microsites. Across the landscape, old-growth stands occur in a mosaic with younger successional stages, maintaining habitat diversity and resilience to windthrow, disease, and other stressors.

Table 8. Desired structural parameters for poorly drained old-growth forests.

Structural parameters	Western hemlock	Western hemlock and red cedar	Western hemlock and Alaska cedar[1]	Mixed conifer
Main canopy	17 large and 6 decadent trees per acre, min 15” DBH, 180	15 large and 7 decadent trees per acre, min 19” DBH,	28 large and 7 decadent trees per acre, min 15” DBH,	12 large and 7 decadent trees per acre, min 11” DBH,

Structural parameters	Western hemlock	Western hemlock and red cedar	Western hemlock and Alaska cedar[1]	Mixed conifer
	years min age for large trees	150 years min age for large trees	150 years min age for large trees	170 years min age for large trees
Canopy layers	2 tree canopy layers	3 tree canopy layers	3 tree canopy layers	3 tree canopy layers
Stand structure	4 diameter classes	6 diameter classes	4 diameter classes	3 diameter classes
Standing snags	3 per acre, min 15" DBH	3 per acre, min 19" DBH	3 per acre, min 15" DBH	4 per acre, min 11" DBH
Down material	6 per acre, min 15" DBH	6 per acre, min 19" DBH	8 per acre, min 15" DBH	4 per acre, min 11" DBH
Forb canopy cover	5%	3%	10%	Not applicable

[1] Alaska cedar is also known as yellow cedar.

Forest type names follow the ecological definitions for old-growth forest types in Southeast Alaska (USFS 1992).

Table 9. Desired structural parameters for riparian old-growth forests.

Structural parameters	Sitka spruce alluvial
Main canopy	6 large and 4 decadent trees per acre, min 27" DBH, 260 years min age for large trees
Canopy layers	2 tree canopy layers
Stand structure	2 diameter classes
Standing snags	2 per acre, min 27" DBH
Down material	2 per acre, min 27" DBH
Forb canopy cover	5%

Forest type names follow the ecological definitions for old-growth forest types in Southeast Alaska (USFS 1992).

Table 10. Desired structural parameters for subalpine old-growth forests.

Structural parameters	Mountain hemlock
Main canopy	12 large and 5 decadent trees per acre, min 13" DBH, 160 years min age for large trees
Canopy layers	3 tree canopy layers
Stand structure	3 diameter classes
Standing snags	2 per acre, min 13" DBH
Down material	4 per acre, min 13" DBH
Forb canopy cover	5%

Forest type names follow the ecological definitions for old-growth forest types in Southeast Alaska (USFS 1992).

Table 11. Desired structural parameters for well drained old-growth forests.

Structural parameters	Sitka spruce and other	Western hemlock	Western hemlock and red cedar
Main canopy	7 large and 2 decadent trees per acre, min 23" DBH, 160 years min age for large trees	21 large and 7 decadent trees per acre, min 19" DBH, 150 years min age for large trees	16 large and 6 decadent trees per acre, min 21" DBH, 170 years min age for large trees

Structural parameters	Sitka spruce and other	Western hemlock	Western hemlock and red cedar
Canopy layers	2 tree canopy layers	3 tree canopy layers	3 tree canopy layers
Stand structure	3 diameter classes	4 diameter classes	6 diameter classes
Standing snags	1 per acre, min 23” DBH	2 per acre, min 19” DBH	5 per acre, min 21” DBH
Down material	4 per acre, min 23” DBH	6 per acre, min 19” DBH	6 per acre, min 21” DBH
Forb canopy cover	5%	5%	5%

Forest type names follow the ecological definitions for old-growth forest types in Southeast Alaska (USFS 1992).

Table 12. Desired structural parameters for wetland old-growth forests.

Structural parameters	Shorepine
Main canopy	18 large and 8 decadent trees per acre, min 9” DBH, 170 years min age for large trees
Canopy layers	2 tree canopy layers
Stand structure	2 diameter classes
Standing snags	2 per acre, min 9” DBH
Down material	2 per acre, min 9” DBH
Forb canopy cover	Not applicable

Forest type names follow the ecological definitions for old-growth forest types in Southeast Alaska (USFS 1992).

Function. Old-growth forests sustain key ecological processes that support biodiversity, hydrologic stability, and carbon storage. They regulate stream flows, stabilize soils, and provide large wood inputs to aquatic systems, creating habitat complexity for salmon. These forests store exceptional amounts of carbon in live biomass, soils, and woody debris, contributing to climate regulation. Nutrient cycling is maintained through slow decomposition and mycorrhizal networks, while canopy interception moderates snowpack and influences winter habitat for deer. Disturbance regimes are characterized by gap-phase dynamics, windthrow, and localized events such as landslides and avalanches, which maintain structural heterogeneity without compromising overall ecosystem integrity. These functions also support cultural and subsistence uses by sustaining berry-producing understories, medicinal plants, and wildlife habitat.

Connectivity. Old-growth forests occur across multiple ecosystem types and form critical linkages between subalpine zones, riparian corridors, and wetland complexes. They provide continuous habitat for wide-ranging species and maintain hydrologic and nutrient connections between terrestrial and aquatic systems. At finer scales, connectivity within old-growth landscapes supports the movement of native species, genetic exchange, and ecological processes, while minimizing fragmentation from roads and development. Maintaining these connections ensures the persistence of old-growth characteristics across the Tongass and supports landscape-level resilience under changing environmental conditions. Connectivity also facilitates cultural access and subsistence opportunities for local communities.

Goals (FW-OGF-G)

01 Old-growth red and yellow cedars of cultural wood quality are maintained and available in a sustainable quantity that supports tribal cultural and heritage uses.

02 Old-growth spruce trees are maintained and available in quantities that support specialty forest projects such as instrument soundboards.

Partnerships and Shared Stewardship (PTSP)

Description and Values

Building and maintaining local partnerships is mutually beneficial for the Tongass and Southeast Alaska communities. Partnering with local organizations increases the Tongass' capacity to complete projects efficiently and provide high quality programming, while communities benefit from increased agency in Tongass management, access to federal funding, and expanded opportunities for residents. Majority rural Southeast Alaskan communities have a unique relationship with the Tongass National Forest and partnerships can support the vitality of these communities through increased employment, involvement, and agency in Forest activities. The Tongass National Forest has many existing partnerships related to monitoring, community and Tongass staff education, job development, restoration planning and implementation, recreation management and interpretive sites, and many other purposes. Measuring the success of shared stewardship programs can differ depending on the participating parties, partnership goals, and availability of resources. Therefore, it is important to allow each entity the opportunity to determine what constitutes shared stewardship based on their unique context.

Taking an all-lands approach to Tongass plan area management ensures that ecological, social, and economic sustainability are considered in the context of the larger landscape. This involves managing the plan area in partnership with the public, private landowners, tribes and Alaska Native Corporations, non-governmental organizations, and local and state governments to ensure management efforts are coordinated whenever possible. This section discusses plan components that may facilitate community partnerships, and coordination for Tongass land management activities.

Need to Change

- Incorporate opportunities for shared stewardship, partnerships, and cooperative planning. Consider rural prosperity, economic development priorities, development of workforce capacity, and alignment with the region's Comprehensive Economic Development Strategy.

Desired Conditions (FW-PTSP-DC)

01 Partnerships on the Tongass support natural resource protection and restoration, economic development aligned with the region's comprehensive economic development strategy, and employment and training opportunities within local communities.

02 The Tongass provides opportunities for educators in local communities to learn about local natural resource issues and to develop partnerships to deliver place-based outdoor learning opportunities.

Goals (FW-PTSP-G)

01 Partnerships and collaborative processes with local communities foster relationships that help accomplish communities' and forest shared interests, including implementing programs, conserving the natural environment, and encouraging enjoyment of the social, economic, and ecological benefits that the forest provides.

02 Expand and maintain a sustainable network of partners and volunteers who provide additional capacity to deliver services to the public, support interpretive and educational efforts, and youth engagement and employment opportunities, resulting in long-lasting community partnerships that strengthen regional identity, capacity for shared stewardship, and connect Southeast Alaskans to the forest.

03 Tongass personnel work with local communities to identify rural community assistance opportunities and provide technical assistance in their implementation.

04 Partner with tribes, Alaska Native Corporations, affected agencies, and local communities to collaboratively identify needs, restore and maintain valuable resources, and create economic opportunities and to improve community capacity through workforce development, community involvement and land stewardship.

05 Maintain and expand contracting and partnering opportunities with local governments, businesses, and organizations. Develop partnerships that leverage different sources of funding to support opportunities to contribute to the economic and social sustainability of local communities.

06 Engage and consult with communities to identify areas of common workforce needs, prioritize training, and promote workforce development.

Recreation and Tourism (REC)

The Tongass National Forest is recognized globally for its recreation and tourism opportunities, receiving over two million recreational annually and valued by over seventy thousand Southeast Alaska residents who live near to and have a close association with the Tongass. Recreation is recognized as a critical resource to the Tongass due to its contributions to local economies, its influence in connecting people to the land, each other, themselves, the history and culture of Southeast Alaska and lifeways and traditions of the region, as well as its impact on public understanding of natural and cultural resources, and its role as a catalyst for public stewardship. As such, recreation is identified as a key ecosystem service of the Tongass National Forest. Sustainable recreation and tourism are defined as the set of recreation settings and opportunities on the Tongass that are ecologically, economically, and socially sustainable and responsive for present and future generations.

In addition to the importance of recreation to visitors to the Tongass and to those who live in and around the forest, recreation and tourism are primary economic contributors to the region and to the entire state of Alaska (Southeast Conference 2023; ADNR 2023; Alaska Outdoor Alliance 2019; US Department of Commerce 2023). Outdoor recreation demand, already robust on the Tongass, is projected to increase in Alaska and nationally (ADNR 2023; Alaska Outdoor Alliance 2019). As recreation and tourism continue to grow in Southeast Alaska, the types of recreation activities are also growing and evolving in response to shifts in social recreation desires and technological evolutions in the recreation industry. Thus, the forest plan direction must be flexible, adaptable, and responsive to growth and social changes, while recognizing the value and importance of the Tongass to residents. Recreation and tourism on the Tongass, must consider, balance, and adapt to the economic, social, cultural needs, as well as to manage for sustainable recreation infrastructure that cherishes the undeveloped, wild character that makes the Tongass so unique.

While economic activity generated by recreation and tourism is a crucial driver for Southeast Alaska economies, there is a pronounced seasonality to the economics, with busy summers, expanding shoulder seasons, and quieter winters. Climate and weather seasonality also influences the types of recreation and tourism available on the Tongass, due to challenges maintaining facilities and access during the wet season with its heavy periods of rainfall. The Tongass seeks to provide recreation settings, opportunities, and benefits that are sustainable, responsive and adaptive to seasonal and demand fluctuations and stresses and are managed considering non-tourism recreational uses of the forest and tribal, subsistence, and community needs.

Existing recreation sites on the Tongass include campgrounds, cabins, picnic sites, day use areas, trailheads, recreation areas, visitor centers, and other areas where facilities are important to the recreational experience. These facilities are often the first encounter visitors have with national forests and can serve as a portal for further exploration and connection with the outdoors. The Mendenhall Glacier Recreation Area (MGRA) is the most highly developed recreation site on the Tongass. The MGRA encompasses roughly 5,800 acres approximately 12 miles north of downtown Juneau and includes a visitor center, trails, and a campground. The MGRA is also the most frequently visited site on the Tongass, one of the top three visitor destinations in Alaska, and receives more than 700,000 visitors a year.

Need to Change

- Develop sustainable management direction for current and future recreation uses, including:
    - The underlying management framework should support changes to shifting recreation values, use patterns and technology
    - Consider emerging uses/technologies (e.g. e-bikes, drones, geocaching, heliski)
    - Consider cruise ship industry expansion demand/ impacts on infrastructure
    - Improving the ability to be responsive to changes in recreation use in recreation special uses. There is an opportunity with the revised plan to review special uses considerations specific to the Tongass.
- Greater integration of recreation and access to recreation (roads) into other management activities, decisions
- More emphasis is needed on local community use of the forest,
- Design a plan that considers support of local economies through recreation location and type.
- Recreation Opportunity Spectrum will be updated, and its application clarified.
- Consider diverse user groups and their needs when developing the revised plan.
- Emphasize collaboration with non-USFS entities in recreation management
- Consider winter recreation use in recreation direction
- Consider ways to minimize tourism impacts on subsistence use

Desired Conditions (FW-REC-DC)

01 Recreation opportunities, infrastructure, developments, and visitor services are sustainable and consistent with desired recreation opportunity settings. Recreation access and opportunities contribute to the cultural values and economy of Southeast Alaska. Recreation settings, opportunities, and developments are managed to balance the needs of residents, subsistence uses, and tourism.

02 Residents and visitors to the Tongass have access to outstanding recreation settings and opportunities. Recreation, such as developed sites, infrastructure, cabins, and trails is sustainable, and managed to minimize overcrowding and conflicts between individuals and groups.

03 Unauthorized recreation developments, including unauthorized trails, are not present on the Tongass.

04 A variety of resources are available to assist with finding and navigating to recreation sites and opportunities on the Tongass.

05 Consistent with the recreation opportunity settings, opportunities to use new recreational technologies exist, where sustainable, and contribute to visitor enjoyment and experiences.

06 Wildlife, ecosystems, watersheds, and cultural sites contribute to recreation opportunity settings and effects to forest resources are minimized by recreation opportunities, access, and developments.

07 Winter recreation opportunities and developments are consistent with the desired winter recreation opportunity setting.

Goals (FW-REC-G)

01 Ensure recreation contributes to the preservation of the Tongass ecosystem and cultural character for future generations.

02 Continue existing partnerships and identify opportunities for additional ones that strengthen local communities, respect cultural heritage and traditional knowledge, educate and support responsible recreation practices, and accommodate visitors in ways that sustain cultural and economic vitality.

03 Collaborate with tribes, local governments, non-governmental organizations, and other partners to co-develop recreation-oriented stewardship messaging, programming, educational materials and interpretive messages.

Developed Recreation (DVREC)

Description and Values

145 public use cabins make up the bulk of developed recreation sites on the Tongass and are a unique and beloved feature of the recreation opportunities the Tongass provides. Cabin usage across the forest is uneven, with some cabins occupied over 75% of the time (Dan Moller, John Muir, and Windfall Lake cabins near Juneau) and some remote cabins receiving one or two visits per year (USDA 2024f). Additional developed recreation facilities include campgrounds and picnic areas.

Desired Conditions (FW-DVREC-DC)

01 Developed recreation site updates and developments meet current, emerging, and anticipated recreation uses. Universal designs are incorporated into developed recreation sites. Developed recreation sites and amenities consider current and changing uses, technology, climate, and disturbances. Durable and maintainable materials are selected for developed recreation sites to complement and protect the forest, natural resources, cultural resources, and are consistent with the recreation opportunity setting.

02 Developed trailheads and water access sites are available, are consistent with the recreation opportunity setting, include infrastructure necessary for the planned recreational use, integrate universal design, protect forest resources, and are resilient to changing uses.

03 Recreation cabins are located and constructed to be consistent with the recreation opportunity setting, use sustainable and durable materials, and include necessary amenities to prevent impacts to the surrounding environment. Cabins provide for public health and safety and serve as shelter in emergency situations. Annual occupancy rates inform sustainable maintenance and upkeep for each cabin. Cabins with consistently low utilization are phased out, allowing resources to be allocated where they are most needed.

04 Developed recreation sites, infrastructure, and cabins are managed to retain standing and fallen trees and preserve the natural and scenic character. A variety of on and off-site signs and educational materials contribute to the protection and conservation of trees.

05 Recreation wildlife viewing areas and associated developments are consistent with the recreation opportunity setting, protect wildlife, contribute to local economies, enhance visitor enjoyment and experiences, and protect other forest and cultural resources.

Dispersed Recreation (DSREC)

Dispersed activities generally occur outside of facilities provided by the Tongass. Dispersed recreation provides opportunities for self-directed exploration.

Desired Conditions (FW-DSREC-DC)

01 Dispersed recreation opportunities are available on the Tongass and are consistent with the recreation opportunity setting.

02 Dispersed recreation sites and areas minimize effects to forest resources.

03 Recreation user conflicts are minimized in dispersed recreation sites and areas.

Recreation Special Uses (RSUP)

Recreation special use permits provide for commercial and non-commercial occupancy and use of national forests. Permitted recreation uses provide recreation opportunities to the public and economic benefits to rural communities. Recreation special use permits include authorization for commercial uses such as ski resorts, outfitter and guiding services, lodging resorts, recreation events and organizational camps. Noncommercial group use permits are issued to groups of 75 or more, for uses such as weddings, religious services, and endurance rides. Most of the recreation special uses on the Tongass National Forest are related to outfitting and guiding.

Desired Conditions (FW-RSUP-DC)

01 Recreation special use authorizations are issued and administered to be consistent with the recreation opportunity setting, in a manner to protect the ecology, hydrology, wildlife, and other forest resources of the Tongass.

02 Recreation special uses provide opportunities, services, and experiences for the recreating public on the Tongass. Outfitter and guide services provide specific recreation opportunities while minimizing impacts on natural resources and other visitors.

03 Recreation special uses provide sustainable recreation opportunities and contribute to the local economy throughout the forest while remaining compatible with ecological and social capacity thresholds. Recreation special use authorizations are administered in a manner ensuring other public and subsistence are not displaced.

04 Special use authorizations resulting from cruise ships, yacht tours, and other large groups are administered to be consistent with the recreation opportunity settings, contribute to local economies, provide sustainable recreation opportunities, minimize displacement of public and subsistence uses, and protect forest resources.

05 Helicopter, fixed-wing, and uncrewed aircraft system services are authorized in a manner to protect wildlife. Lake landings are consistent with the recreation opportunity setting, consider subsistence uses and public use and enjoyment.

06 Developed recreation sites and areas of established recreation use are the preferred location for non-commercial group authorizations.

Goals (FW-RSUP-G)

01 Provide clear, efficient permitting processes and timelines to administer and ensure access to commercial services that deliver quality visitor experiences, contribute to local economic sustainability, and protect natural and cultural resources.

Trails (TRL)

Desired Conditions (FW-TRL-DC)

01 A sustainable motorized and non-motorized trail system showcases and connects visitors to desirable settings on the Tongass.

02 Trails provide a variety of motorized, mechanized, and non-motorized opportunities that include universal designs. Trails contribute to the social and economic vitality of communities within the Tongass landscape.

03 Trails are resilient to current, changing, emerging uses, new technologies, weather, and disturbances. Trails are designed to work with topography, slope, aspect, and geography.

04 New trails developments support access from local communities to the Tongass and between population centers, developed recreation sites, recreation cabins, and water access sites.

05 Loop trails, looping systems, and connections between trail systems are available and designed to reduce and manage overcrowding and resource impacts.

06 Winter trails for motorized and non-motorized winter recreation are consistent with the desired winter recreation opportunity setting.

07 Winter trails and trailheads are sustainable and resilient to emerging uses, new technologies, and climate change.

08 Trails, trail maintenance, reroutes, and new construction should support and enhance community-to-forest access.

Renewable Energy (ENGY)

Renewable energy resources are those that are naturally replenishing. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action. Renewable energy sites also include all related facilities, such as access roads, utility lines for the transmission and distribution of electric energy, ancillary equipment sites and areas required for construction and maintenance. Renewable energy resources help Southeast Alaska communities reduce fossil fuel dependence, contribute to the economic well-being of Southeast Alaska communities, and lower carbon emissions by providing low-carbon energy alternatives and displacing the use of fossil fuels. Access to affordable, reliable renewable energy resources enhances quality of life, providing communities with stable electricity and supports public health by reducing air pollution and fosters resilience against energy price volatility. Local sources of renewable energy provide a degree of energy independence as well, which is important for small, remote communities in Southeast Alaska that may not have reliable access to a larger power grid.

Renewable energy management on the Tongass is guided by existing Federal and local laws, regulations, directives, and legal decisions, including the ANILCA, the Federal Power Act, 2011 Forest Service Strategic Energy Framework, and Forest Service Manual 2700 Chapter 2770. This plan section includes plan components that guide the Tongass' contribution to sustainable renewable energy systems and supplies within the plan area without reiterating these overarching laws, regulations, and policies.

Need to Change

- Include direction to address the need for energy, transportation and communication projects in Southeast Alaskan communities.

Desired Conditions (FW-ENGY-DC)

01 Renewable energy resources are developed in a manner that would maintain and protect Tongass lands and resources.

02 Renewable energy resources, subject to applicable law, contribute to the economic well-being of Southeast Alaska communities.

03 The Tongass proactively contributes to sustainable production of renewable energy as well as energy transmission and distribution across the Forest, after consideration of other resources and community benefits.

Scenery (SCN)

Description and Values

Scenery is the general appearance of a place, landscape, or features of a landscape. The scenery of the Tongass Forest is especially enjoyed and valued as seen from the Alaska Marine Highway, tour ship and small boat routes, state highways, major Forest roads, and popular recreation settings. The

magnificent mountain vistas, meandering rivers, and forested settings of the Tongass attract visitors from around the world and contribute to the identity and character of nearby communities supporting tourism and local economies alike. Tongass scenery is thus a key ecosystem service, a benefit the Tongass Forest provides to people.

Scenic character is the look and feel of a place shaped by a combination of the natural elements both physical and biological, as well as the cultural images that give an area its scenic identity and contribute to its sense of place. This appearance is created both by retention of these elements, as well as by an expectation that landscapes and the scenic character of them evolve over time. Scenic integrity objectives along with scenic character descriptions, are developed following the Scenery Management System handbook direction. Scenic integrity objectives are a measure of the intactness or completeness of a landscape and the scenic character that describes it. The USDA Forest Service assigns scenic integrity objectives to all Tongass National Forest lands to support design of land management activities in a way that retains the scenic character and the scenery values of the Forest.

Need to Change

- Review and update data and modeling applicable to scenery management; including updates to scenic character descriptions, scenic integrity objectives, and impacts and effects duration, long-term versus short-term, direction.
- Review areas currently assigned a very low scenic integrity objective and identify another scenic integrity objective for those acres to align with updated scenery management manual direction.

Desired Conditions (FW-SCN-DC)

01 Tongass scenery provides viewers with visually appealing scenery with recognition that there will be areas where these landscapes are altered by management activities.

02 Tongass scenery reflects healthy, resilient landscapes that support residents' and visitors' quality of life.

03 Scenic character descriptions represent the Tongass landscape's varied ecosystems and rich cultural and architectural heritage.

04 Tongass scenic qualities, as described by the scenic character are maintained.

05 Infrastructure and facilities on the Tongass reflect the natural architectural and ecological character of the Tongass.

Socio-Economic Management (ECON)

Description and Values

The Tongass National Forest covers over sixty percent of Southeast Alaska lands and plays an important part in residents' daily lives. Water, mineral, and air cycling on the Tongass maintain and

protect water, air, and other natural resources, including flora and fauna, that sustain the cultural, economic, and aesthetic experience of Southeast Alaskans.

The Tongass has been and continues to be an important employer in and contributor to important commercial sectors in Southeast Alaska. Mines located on the Tongass employ a large percentage of local workers. The seafood harvesting and processing industry ranks in the top three non-governmental industries in terms of employment and total earnings in Southeast Alaska. An estimated 75 percent of salmon harvest in Southeast Alaska, originating from waterways draining the Tongass provides an average value of $69 million annually (Johnson et al., 2019). The commercial timber industry continues to operate within the region, and the stunning scenery and world-class recreation opportunities provided by the Tongass also bolster the area's tourist industry, which attracts visitors from around the world.

Southeast Alaskans are interested in balancing the success of local industries with the values of local forest use for subsistence, cultural activities and aesthetic enjoyment. Local community members rely on fish, game, plants and timber to supplement personal food supplies, share with community members, and lower household energy costs. Tribal populations use the forest to harvest important cultural foods, perform spiritual ceremony and pass down knowledge to younger generations. Forest vistas enrich outdoor experiences for locals and contribute to a sense of home that is unique for Southeast Alaskans.

The following socio-economic management components acknowledge the interconnection between the Tongass and communities within Southeast Alaska. The goal of these components is to ensure that forest programs contribute to the social and economic sustainability of the people who live near the Tongass. Social sustainability refers to the capability of society to support the network of relationships, traditions, culture, and activities that connect people to the land and to one another and support vibrant communities (36 CFR 219.9). Economic sustainability refers to the ability of society to produce and consume or otherwise benefit from goods and services including contributions to jobs and markets and non-market benefits. The Tongass acknowledges that the diverse communities of Southeast Alaska may consider different metrics to assess social and economic sustainability, so communication with forest communities is important in meeting local interests.

Due to the interconnectedness of socio-economic sustainability and ecological sustainability, some plan components in other sections relate to social and economic sustainability.

Need to Change

- Incorporate a holistic view of ecosystem services, integrating ecological, social, cultural and economic sustainability, and acknowledging tribal connection and long-standing stewardship of terrestrial, aquatic and marine cultural landscapes and ancestral homelands.
- Integrate concepts of local economic and cultural sustainability with timber management and other resource management.
- Consider regional, community, tribal, and Alaska Native Corporations economic and workforce capacity development priorities.

Desired Conditions (FW-ECON-DC)

01 The provision of sustainable forest services, such as clean air and water supplies, well-managed terrestrial and aquatic ecosystems, and healthy fish and wildlife populations, contributes to the social and economic well-being of local communities.

02 Diverse opportunities exist for hunting, trapping, and fishing on Tongass lands and waters and contribute to social and economic sustainability.

03 Tongass lands and waters provide opportunities for sustainable economic development, including scenic tourism and recreation opportunities, timber harvesting, commercial and sport fisheries, and energy and minerals projects that foster robust industries and support local employment and income.

04 A wide range of services that support resident and visitor engagement with forest resources, such as volunteer programming, educational opportunities, and partnerships with local cultural and scientific institutions are available.

05 The uniqueness and values of rural historic Southeast Alaska communities and the long history of traditional forest use that is important for maintaining these cultures is maintained and supported through Tongass management. The Tongass honors these connections by sustaining place-based meanings tied to cultural identity and heritage; local economies and ways of life, such as sustainable hunting and harvesting; traditional and subsistence uses; aesthetic, spiritual, and recreational experiences; and Indigenous histories, cultures, and practices.

06 Communicate with the state of Alaska, local governments, business owners, nonprofit organizations, community members, tribes, and other local organizations on a regular basis to develop mutual understanding regarding national forest management.

07 Work with local governments, businesses, and organizations to collect socioeconomic data, track changes for businesses in sectors dependent on Forest activities and assess forest-related community issues.

Goals (FW-ECON-G)

01 Engage and collaborate with communities surrounding the Tongass on management activities that impact subsistence uses, food security, hunting and harvesting, cultural practices, recreation and scenic enjoyment.

02 Coordinate with interested local cooperators, contractors and operators, tribes and Alaska Native Corporations to discuss, review, and assess their alignment and capabilities with Tongass program of work to identify economic and contracting opportunities.

03 Economic development opportunities supported by the Tongass include collaboration with tribes and Alaska Native Corporations and support their long-term economic sustainability.

Soils (SOIL)

Soils contain organic matter, air, and water and are habitat for many organisms, thus serving as the basis of terrestrial ecosystems on the Tongass. Soil properties help determine what plant communities can be supported, and they are important for maintaining healthy watersheds. Soils store, purify, and transmit water, and they store and cycle nutrients and carbon. Healthy soils can support productive native plant communities. Likewise, productive plant communities maintain soils by providing cover, root support, and producing surface and belowground organic matter inputs that sustain soil structure, soil porosity, and microorganisms.

By multiple federal and state laws, management activities on National Forest System lands must not produce substantial and permanent impairment of soil productivity and require that soil management include long-term soil quality and ecological function. The 2012 Planning Rule emphasizes the need for soil productivity to sustain the productive capability of the land, its ecological resources, and watershed functions. FSM 2550 Soil Management defines six soil functions: soil biology, soil hydrology, nutrient cycling, carbon storage, soil stability and support (including minimizing erosion, sediment, and management landslides), and filtering and buffering. FSM 2550 as well as regional supplement FSM 2550-2023-1 require land management plans to (1) maintain or restore soil quality and (2) manage resource uses and soil resources to sustain ecological processes and function so that desired ecosystem services are provided in perpetuity. Additionally, soil and water quality are maintained to protect state-designated beneficial uses by consulting the Alaska Nonpoint Source Pollution Control Strategy, the Alaska Department of Environmental Conservation (ADEC), the Soil and Water Conservation Handbook FSH 2509.22, the National Core BMP Technical Guide FS-990a, and the Clean Water Act.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-SOIL-DC)

01 Soil productivity and function contribute to the long-term resilience of ecosystems, including soil types that support unique native plant communities.

02 Organic substrates, such as vegetative litter, down wood, and soil organic matter, are present in sufficient amounts to support soil fertility and ecological functions.

Goals (FW-SOIL-G)

01 Collaborate and coordinate with state, tribal, educational institutions, and other federal agencies to update soil, ecological, and landslide maps and inventories, and to develop risk and hazard models.

Species Diversity (SPDV)

Description and Values

The Tongass National Forest, spanning nearly 500 miles across a mosaic of islands and mainland terrain, is the largest virtually intact coastal temperate rainforest in North America. This vast landscape supports an extraordinary diversity of wildlife, fish, plants, lichens and fungi (collectively referred to as species), shaped by variations in elevation, soils, climate, and disturbance regimes. Numerous islands adjacent to continental areas, combined with dramatic topographic gradients, create a complex network of habitats that sustain ecological processes and species persistence. Wildlife includes mammals, birds, reptiles, amphibians, and invertebrates, while plants encompass vascular and non-vascular plants. Together, with lichens and fungi, these organisms form the foundation of ecosystem integrity and resilience.

The ecological value of this diversity is immense. Native species interact within food webs that regulate nutrient cycling, pollination, seed dispersal, and predator-prey dynamics. Fish species such as salmon are keystone components of aquatic and riparian systems, transporting marine-derived nutrients into forest ecosystems and supporting wildlife from bears to eagles. Plant species stabilize soils, regulate hydrology, and provide forage and cover for wildlife, while fungi and lichens sustain decomposition and nutrient exchange. These interactions maintain ecosystem services essential for clean water, carbon storage, and climate regulation.

Culturally, species diversity is integral to the lifeways of Alaska Natives. Salmon runs, deer hunting, berry gathering, and medicinal plant harvests remain central to subsistence traditions and cultural identity. These resources also support ceremonies, art, and intergenerational knowledge transfer. Socially, the abundance of wildlife and fish contributes to recreation, education, and community well-being, offering opportunities for wildlife viewing, fishing, and hunting that connect people to the land. Economically, these species underpin commercial and sport fisheries, tourism, and guiding services, while sustaining ecosystem functions that protect infrastructure and support regional economies.

Maintaining species diversity requires a strategic approach that combines ecosystem-level conservation with species-specific measures where needed. The Tongass plan emphasizes ecological integrity and resilience as the foundation for sustaining native species and their habitats under changing environmental conditions.

Need to Change

- Focus on maintaining and restoring the diversity of ecosystems and habitat types throughout the Tongass, to support at-risk and other important species. Species-specific direction may be needed to maintain additional species-specific ecological conditions.

Desired Conditions (FW-SPDV-DC)

01 Habitats are diverse and connected, enabling species movement and genetic exchange while maintaining natural disturbance patterns within the range of variation. Habitat conditions exhibit composition, structure, and disturbance patterns within the natural range of variation, supporting native species, maintaining ecosystem resilience, and supporting subsistence users.

02 Native species dominate ecological communities, including a full complement of mammals, birds, fish, amphibians, invertebrates, plants, fungi, and lichens. Species assemblages reflect site-specific conditions, such as biogeographical regions, and maintain functional diversity necessary for ecosystem processes such as pollination, nutrient cycling, and predator-prey dynamics.

03 Habitat structure provides the complexity required for maintaining viable populations of native species, including multi-layered vegetation, riparian corridors with large wood recruitment, and wetland mosaics that sustain amphibians and waterfowl. Aquatic habitats exhibit channel complexity, spawning substrates, and cover essential for salmonids and other aquatic species.

04 Ecological processes operate within natural ranges of variation, supporting hydrologic regulation, soil development, and nutrient exchange. Salmon runs continue to deliver marine-derived nutrients to terrestrial ecosystems, while plant and fungal communities sustain decomposition and carbon storage. These functions also support cultural and subsistence uses by providing reliable access to fish, game, berries, and medicinal plants.

05 Habitats are spatially and temporally connected across landscapes, facilitating wildlife movement, fish passage, and dispersal of botanical species. Riparian networks link terrestrial and aquatic systems, while intact forest corridors reduce fragmentation and maintain resilience under climate change. Connectivity also ensures continued access for subsistence and cultural practices.

Goals (FW-SPDV-G)

01 Collaborate with the State of Alaska, tribes, Alaska Native Corporations, or other appropriate partners on the management of harvestable species: species managed for fishing, hunting, trapping, gathering or collecting.

02 Connect with tribes and Alaska Native Corporations to consider indigenous knowledge in support of habitat management to preserve and enhance culturally-valuable wildlife and fish species and undertake restoration and stewardship projects.

At-Risk Species (RISK)

Description and Values

Although the Tongass National Forest remains one of the most intact coastal temperate rainforests globally, it is not immune to ecological stressors. Changes in land-use patterns outside forest boundaries, climate variability, and the introduction of non-native species have increased reliance on Tongass lands for species survival. Additional risks include but are not limited to historical and current habitat degradation and fragmentation, disjunct populations, and high numbers of species restricted to specific habitat ranges. Multiple-use activities within the forest may also pose localized threats. These factors collectively place certain species at-risk because they face significant challenges to survive and reproduce in their natural habitats.

The 2012 Planning Rule directs the Forest Service to provide ecological conditions necessary to conserve at-risk species, which includes species federally recognized under the Endangered Species Act (ESA) and Regional Forester identified Species of Conservation Concern (SCCs). The Rule requires contributing to the recovery of federally listed threatened and endangered species, conserving proposed and candidate species, and maintaining viable populations of SCCs within the plan area. Federally recognized species receive regulatory protections under ESA and are managed in coordination with the U.S. Fish and Wildlife Service and NOAA Fisheries. SCCs are identified by the Regional Forester based on best available science indicating substantial concern for long-term persistence. Together, these species represent critical components of biodiversity and ecosystem integrity, and their conservation ensures compliance with law and policy while sustaining cultural, social, and economic values tied to wildlife and botanical diversity.

From an ecological perspective, at-risk species are integral to maintaining biodiversity and ecosystem integrity. They often occupy specialized niches and contribute to critical processes such as pollination, nutrient cycling, and food web stability. Many at-risk species are indicators of ecosystem health, and their persistence reflects the resilience of ecological systems under changing conditions. Federally listed species federally proposed and candidate species, and SCCs represent components of this diversity that require focused conservation measures. Their habitats range from riparian corridors supporting fish passage and spawning to alpine and wetland complexes sustaining rare plants and endemic invertebrates.

Culturally, salmon, deer, and certain plant species are central to cultural and subsistence traditions, ceremonies, and intergenerational knowledge transfer. The continued presence of these species ensures access to traditional foods, medicines, and cultural practices that define the identity and heritage of Southeast Alaska communities.

Socially, the persistence of at-risk species enhances opportunities for wildlife viewing, fishing, hunting, and education, contributing to the sense of place and quality of life for residents and visitors. Economically, species such as salmon underpin commercial and sport fisheries, while rare plants and intact habitats support tourism and recreation. The conservation of at-risk species also safeguards ecosystem services—such as water quality and flood regulation—that protect infrastructure and sustain regional economies.

Conservation of at-risk species requires a combination of ecosystem-level strategies and species-specific measures due to their unique vulnerabilities. The 2012 Planning Rule directs the Forest Service to provide ecological conditions necessary for their persistence, contribute to the recovery of ESA-listed species, conserve proposed and candidate species, and maintain viable populations of SCCs within the plan area. These actions ensure compliance with federal law and policy while sustaining the ecological, cultural, and economic values tied to biodiversity in the Tongass.

This resource section provides first plan components for at-risk species in general and is followed by species-specific plan content, as needed. The status of species identified as at-risk and other species currently not identified as at-risk may change during the life of the plan, which in some cases may require amendment(s) to the plan to ensure the long-term persistence of all species in the plan area.

For more information on federally listed species, see the Tongass Federally Recognized Species Resource Assessment, available on the Assessment section of the Plan Revision Library and Supplemental Information (Document Library) website at: https://www.fs.usda.gov/r10/tongass/planning/forest-plan/tongass-national-forest-plan-revision.

For information on the SCC identification process and the current SCC List of the Tongass, visit the Tongass SCC website at: www.fs.usda.gov/r10/tongass/planning/forest-plan/plan-revision-scc-identification-process.

Desired Conditions (FW-RISK-DC)

01 Ecological conditions across the Tongass National Forest provide for the persistence and recovery of at-risk species, including federally listed species under the Endangered Species Act, proposed and candidate species, and species of conservation concern. Natural ecological processes operate within ranges that support species persistence and habitats provide the features necessary for survival and reproduction.

02 Habitats are maintained or restored to support survival, reproduction, and genetic diversity of at-risk species under current and future environmental conditions. These conditions include sufficient habitat quality, quantity, and connectivity to sustain viable populations and allow for movement and dispersal.

03 Viable populations of species of conservation concern are maintained by minimizing habitat fragmentation, conserving key structural and ecological features, and restoring areas where SCC are concentrated or vulnerable. Management actions emphasize maintaining connectivity, reducing stressors, and sustaining ecological conditions that allow SCC to persist over the long term.

Goals (FW-RISK-G)

01 Coordinate with the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries to align management of ESA-listed, proposed, and candidate species with recovery plans and regulatory requirements.

02 Collaborate and cooperate with tribes and Alaska Native Corporations to understand which animal and plant species are considered at-risk culturally, regardless of whether those species have other legal statuses.

Species of Interest (SPIN)

Description and Values

Species of interest on the Tongass National Forest include animals and plants that are not considered at-risk under the Endangered Species Act or as Species of Conservation Concern, but that require species-specific management because of their ecological, cultural, or economic importance. These species play critical roles in maintaining ecosystem function and resilience, and many are central to the identity and heritage of Southeast Alaska communities. Examples include most salmon, waterfowl, birds of prey, endemic mammals, yellow-cedar, bears, Sitka black-tailed deer, and the Alexander Archipelago wolf.

From an ecological perspective, species of interest are often keystone or foundational species that shape habitat structure and influence food web dynamics. Salmon transport marine-derived nutrients into freshwater and forest ecosystems, sustaining productivity for fish, wildlife, and plants. Bears and wolves regulate prey populations and contribute to trophic balance, while deer influence understory composition and regeneration. Yellow-cedar provides unique structural and chemical properties that support biodiversity and long-term carbon storage. Endemic species represent irreplaceable genetic lineages found only within the Tongass, contributing to global biodiversity.

Culturally, these species are integral to tribal lifeways and Southeast Alaska local traditions. Salmon runs, deer hunting, and berry gathering are central to subsistence practices, ceremonies, and intergenerational knowledge transfer. Materials from species such as yellow-cedar are used for carving, canoe building, and other cultural items. The continued presence of these species ensures access to traditional foods, medicines, and cultural resources that define the identity of Southeast Alaska communities.

Socially, species of interest enhance opportunities for recreation, education, and wildlife viewing, contributing to the sense of place and quality of life for residents and visitors. Economically, salmon underpin commercial and sport fisheries, while wildlife and intact habitats support tourism and guiding services. The conservation and sustainable management of these species safeguard ecosystem services—such as water quality and nutrient cycling—that protect infrastructure and sustain regional economies.

Because of their ecological roles and cultural and economic significance, species of interest require management strategies that maintain population viability, habitat quality, and connectivity across the Tongass. These strategies complement ecosystem-level approaches and ensure that species-specific needs are addressed under changing environmental conditions.

Desired Conditions (FW-SPIN-DC)

01 Ecological conditions across the Tongass National Forest sustain healthy, viable populations of species of interest, that support reliable access to fish, game, berries, and plant materials central

to tribal practices, local traditions and subsistence practices, sustainable commercial and sport fisheries, and wildlife viewing.

Subsistence (SBST)

While the Tongass is managed for multiple uses, including those that may be identified as subsistence, such as hunting, fishing, gathering, personal wood collection, and commercial uses, this section provides plan content addressing federal subsistence, as defined in ANILCA (1980). Subsistence uses on federal public lands in Alaska is defined as:

> The customary and traditional use by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing for personal or family consumption; and for customary trade. (ANILCA Title VIII)

To support qualified subsistence users, maintaining habitat, conserving healthy fish and wildlife populations, and providing reasonable access to subsistence resources across the Tongass is vital. While many species of fish, wildlife, and plants are harvested for subsistence purposes, salmon and other fish, deer, and berries are the commonly harvested wild foods in Southeast Alaska. Wood products, such as cedar, and other non-food uses are also important for shelter, fuel, handicrafts, transportation and cultural uses. The important foods and materials, and the social and cultural structures around subsistence ways of life are different depending on local resources, landforms, marine interface and traditions. In many cases, access for hunting, fishing, or gathering in Southeast Alaska is by small boats with limited capability to travel long distances in rough water. Therefore, good hunting and fishing areas near communities, with protected anchorages and sheltered sea passages, are necessary for sustainable harvest practices.

ANILCA Title VIII legally directs subsistence uses on the Tongass. The plan content in this section tiers to ANILCA, which is the driving law and should be consulted for all projects. The Forest Service Region 10 Handbook 2090.23 provides direction for the Forest Service to implement federal subsistence requirements from ANILCA related to land management decisions and the NEPA requirements for those decisions. The implementation of ANILCA Title VIII subsistence use of fish and wildlife on National Forest System lands in Alaska is based upon interagency coordination through the Federal Subsistence Management Program (FSMP) as jointly promulgated in 36 CFR 242 and 50 43 CFR 100 51 Sub Parts A, B, C and D. The authority for National Forest System lands is vested in the Secretary of Agriculture as specified in ANILCA Section 814 (FSH 2609.25).

A brief description of some sections of Title VIII of ANILCA provides context for the plan components.

- Section 801 defines subsistence and introduces Title VIII. In summary, it explains how Congress identified “the continuation of the opportunity for subsistence uses by rural Alaska residents, including both Natives and non-Natives, as essential to the physical, economic, traditional, and social or cultural existence” (ANILCA Sec. 801).
- Section 802 states that the purpose of Title VIII is "to provide the opportunity for rural residents engaged in a subsistence way of life to do so[.]"

- Section 804 requires that, "Except as otherwise provided in this Act and other Federal laws, the taking on public lands of fish and wildlife for non-wasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes".
- Section 805 establishes the Federal Subsistence Board and regional advisory councils for each subsistence region of Alaska. The Federal Subsistence Board regulates federal subsistence activities on federal public lands and waters. The Federal Subsistence Board is made up of the Directors of the DOI federal land management agencies in Alaska, plus, the Chair and five public members. The Board is informed by a State Liaison and the Chairman of each of the 10 Subsistence Regional Advisory Councils. The Councils are statutorily required and provide a forum for rural residents with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal public lands in Alaska.
- Section 809 states that, "The Secretary [of Agriculture] may enter into cooperative agreements or otherwise cooperate with other Federal agencies, the State, Native Corporations, other appropriate persons and organizations, and, acting through the Secretary of State, other nations to effectuate the purposes and policies of this title."
- Section 810 requires certain actions approved by federal land managers that may restrict subsistence uses and needs must be analyzed and considered, notice must be given to the local subsistence committees and regional councils, and a subsistence hearing must be held in the vicinity of the area involved. Additionally, for such actions, an environmental review must include the notice and hearing and include findings regarding subsistence uses and needs. Finally, it requires that reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources from management actions, and that alternatives to reduce or minimize adverse impacts are evaluated.

Need to Change

- Provide clear and consistent subsistence use management guidance. This could include considerations for timing of harvest, clarification of the Tongass roles and responsibilities in managing subsistence. Provide plan direction to carry out Title VIII of ANILCA as specific to the Tongass instead of repeating ANILCA direction.

Desired Conditions (FW-SBST-DC)

01 Access to subsistence resources is maintained or enhanced during subsistence seasons. This includes access served by infrastructure such as but not exclusively roads, trails, cabins, marine access facilities, public use boats and moorings.

02 A sustainable quantity of subsistence resources is available and maintained.

03 Habitat improvement and enhancement projects and management activities reduce the need for harvester restrictions.

04 In-season subsistence harvester restrictions are informed by fish and wildlife monitoring to address conservation, access and competition concerns.

05 Access to updated area closures, regulations, and monitoring data is available to the public.

06 Consider indigenous knowledge, subsistence users, and local community knowledge, when undertaking activities that may affect subsistence and management of subsistence resources and habitats.

Goals (FW-SBST-G)

01 Partner with and support development of regulatory proposals to address federally qualified subsistence user issues with federal and state subsistence advisory boards; including by providing support staff to councils and boards.

02 Share information with other agencies, tribes, and the public to maintain and increase awareness and engagement in the federal subsistence management program.

03 Partner with the public, tribes, and communities to support subsistence resources and users and build capacity for fish and wildlife monitoring and access infrastructure.

04 Work with the Southeast Regional Subsistence Council to meet, implement and monitor ANILCA requirements.

05 Collaborate with the state, tribes, and subsistence users on regulatory proposals, closure reviews, as well as temporary and emergency closures, to ensure externally held data and information is incorporated into these constraints on subsistence activities.

06 Collaborate with partner organizations and agencies to share population and harvest data to develop reports, analyze regulatory proposals, closure reviews, and inform in-season management.

07 Participate in the Fisheries Resource Monitoring Program in conjunction with the Office of Subsistence Management by assisting in the development of partner project proposals, technical review committee, and implementation of partner projects.

08 Engage with subsistence users about special actions and regulatory boundary maps and share monitoring data to enhance access to and understanding of subsistence resources.

09 Consult with tribes and the Southeast Subsistence Regional Advisory Council on projects and permitted activities that may impact subsistence resources.

Timber and Other Forest Products (TBR)

Description and Values

Forest management, including timber harvest, is an important tool for establishing and maintaining sustainable and diverse communities, economies, and ecological conditions. In Southeast Alaska, timber production is a valuable ecosystem service provided by the Tongass NF and other forest lands. Timber harvest helps meet the demands of the public for products such as sawlogs, carving logs, firewood, and specialty products such as musical instrument wood, shakes and shingles, boat wood, posts and pilings, and high-quality construction materials. Timber harvest also contributes to social

and economic sustainability by supporting employment opportunities and economic diversification in rural communities; providing markets for byproducts of forest restoration activities; supporting traditional and cultural use of the forest; and maintaining infrastructure that supports access for subsistence and other resource uses that contribute to community well-being.

The Tongass is characterized by extensive, unmodified natural environments. Old-growth forests are one of the predominant vegetation types on the Tongass and connections between patches of old-growth are evident. Areas of previously harvested stands now support young growth forests at different ages of succession. A young growth industry and availability of young growth for commercial harvest continues to develop on the Tongass while the Tongass also continues to provide old-growth as a component of the timber program and production of high value specialized products.

Alaska is inherently a high-cost operating environment. Prudent project design of timber projects is imperative to the overall success of the timber program, and its ability to support socio-economic interests locally and beyond. Thus, considerations such as wood quality, yarding system cost, treatment area sizes, or access and road construction, are critical to identifying economically feasible acres. Project location and accessibility, such as whether a remote logging camp or marine towing will be necessary for example, also affect timber sale economics. This plan section focuses on the timber resource and program, the design of projects with timber management activities, and the design of socio-economically viable projects to support the timber industry as well as the other multiple-uses of the Tongass if timber projects are undertaken. This plan section also provides guidance regarding acres identified as suitable for timber production and sustained yield limits.

Need to Change

- Increase flexibility of management options to address emergent unknown and uncertain impacts of increasing temperatures and changing precipitation patterns.
- Update lands suited for timber production, to account for current land ownership, updated vegetation data, and improved modeling processes
- Determine how to integrate concepts of local economic and cultural sustainability with timber management direction, including:
    - long-term management of cultural use wood
    - integrating wildlife habitat improvement with thinning, timber, or other vegetation improvement treatment direction
    - Economically sustainable timber harvest
- Reduce complexity and overlapping or conflicting direction for timber harvest. This would include integrating the young-growth direction from the 2016 plan amendment into forestwide direction, removing requirements for specific types of analysis, and focusing on restoration of vegetation structure and composition on an ecosystem scale.
- Add plan direction for management of forest products other than timber.
- Review and clarify direction surrounding free use timber.

Desired Condition (FW-TBR-DC)

01 Vegetation management activities have a role in affecting the composition, structure, and pattern of vegetation and maintaining or trending vegetation towards the desired conditions. Natural disturbances, such as windthrow, insect infestations and diseases, and wildfire are also present in the landscape.

02 The Tongass provides quality sawtimber material and other merchantable wood products to support predictable and sustainable forest product yields that contribute to maintaining and improving local economies and are sufficient to meet the needs of the desired pace and scale of ecological restoration.

03 A variety of forest products of social or economic value, such as fuelwood, posts, poles, and logs, Christmas trees, native seeds, and ornamentals, are available for commercial and non-commercial harvest while continuing to maintain the integrity of forest stands and ecological values.

04 Active management of young-growth forest resources supports Southeast Alaska communities' socio-economically, including but not limited to supply for a variety of mill sizes and operators, offering small and micro-sales, and availability of a variety of forest products beyond sawtimber, and long-term timber yields where appropriate.

05 Young-growth vegetation management supports game habitat restoration and maintenance as appropriate.

06 Tongass forests, particularly the western hemlock-Sitka spruce forests, continue to support ecological and economic needs of the Tongass National Forest and its surrounding communities.

07 Fuelwood is available in areas accessible to the public, consistent with other resource desired conditions.

08 Salvage of dead and dying trees captures some of the economic value of the wood while retaining key features in quantities that provide wildlife habitat, soil productivity, and other desired conditions of forest ecosystems.

09 Tongass timber resources are available for administrative purposes, such as facility, infrastructure and transportation system construction activities, restoration and enhancement projects.

10 Forest stand composition post-harvest is primarily driven by natural reforestation, but artificial reforestation is also suitable.

11 Cultural trees are available across the Tongass.

12 Timber harvest regeneration maintains or restores a mix of dominant overstory tree species to provide for the diversity of forest stands and forest habitats to support wildlife and botanical species.

13 Reserve trees provide structural diversity and biological legacy to support producing stands of structural diversity.

14 At the end of the planned rotation for young growth, stands are in a condition whereby regeneration harvests using even-aged, two-aged or uneven- aged silvicultural systems are feasible and appropriate.

Goals (FW-TBR-G)

01 Engage with and support the State of Alaska, local harvesters, industry partners, tribes, and Alaska Native Corporations to provide an economically viable supply of forest products and resources.

02 The availability of forest resources contributes to the livelihoods and traditions of communities near the forest, as well as fostering a connection to the land.

03 Partner with communities, tribes and Alaska Native Corporations to support access to potential fuelwood and to support firewood distribution programs.

04 Collaborate with tribes and Alaska Native Corporations on cedar tree management, cultural monument trees, traditional and cultural timber uses, and consideration of indigenous knowledge in timber management activities and harvest.

Timber Production (TBRP)

Timber production is defined as the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. The 2012 Planning Rule requires identification of lands that are suited and not suited for timber production based on factors that include legal withdrawal (for example, timber production prohibited

due to statute, executive order, etc.), technical factors (non-forested lands, geology or soil conditions, etc.), and compatibility with desired conditions and objectives stated in the plan (plan components). Therefore, on acres identified as suitable for timber production, active vegetation management and some regular flow of timber products is likely to occur. Unless prohibited by other plan components, timber harvest may occur on lands unsuitable for timber production to meet other resource objectives.

Desired Conditions (FW-TBRP-DC)

01 Production of timber contributes to ecological, social, and economic sustainability and associated desired conditions. A sustainable mix of forest products is offered under a variety of harvest and contract methods in response to market demand and restoration needs.

02 Acres identified as suitable for timber production, as shown in Table 13, have a regularly scheduled timber harvest program that contributes jobs, income, and raw materials to the local and regional economy, while achieving ecosystem resilience and sustainability by meeting management direction and moving towards desired conditions.

Table 13. Analysis of Tongass National Forest acres to identify acres suitable for timber production with consideration of 2001 roadless rule areas.

Land Classification Category	Without Roadless Acres[1]	With Roadless Acres[2]
Total National Forest System lands in the plan area	16,743,000	16,743,000
Lands not suited for timber production due to legal or technical reasons	15,816,000	14,092,000
Lands that ***may*** **be suited** for timber production	927,000	2,651,000
Total lands **suited** for timber production because timber production is compatible with the desired conditions and objectives established by the plan	To be determined	To be determined
Lands not suited for timber production because timber production is not compatible with the desired conditions and objectives established by the plan	To be determined	To be determined
Total lands **not suited** for timber production	To be determined	To be determined

[1] The 2001 roadless rule areas are identified as legally not suitable for timber production

[2] The 2001 roadless rule areas are not identified as legally not suitable for timber production

03 Acres identified as suitable for timber production are managed for sustained long-term timber yields. Suitable forest lands are managed to produce sawtimber and other wood products on an even-flow, long-term sustained yield basis; the timber yield produced contributes to Projected Timber Sale Quantity (PTSQ).

04 Maintain and promote wood production from forest lands that are suitable for timber production, providing a continuous supply of wood to meet society's needs.

05 Seek to provide a supply of timber from the Tongass National Forest that meets the annual and planning-cycle market demand.

Watersheds and Water Resources (WTR)

Description and Values

With over 1,000 islands the Southeast Alaska archipelago includes over 900 subwatersheds (hydrologic unit code - HUC12) with many smaller drainages flowing directly to the ocean. A given watershed can include multiple flow regimes, such as rainfall, snowmelt, versus glacial-melt, with regional variability governed by latitude, elevation, proximity to the ocean, and drainage area. Therefore, future changes in temperature and precipitation patterns, and shifts in seasonal snowfall are expected to affect the function and condition of watersheds in various ways. The terrestrial and aquatic ecosystem section provides further details on key ecological characteristics that make up a given watershed.

Watersheds, particularly salmon bearing streams have been managed for millennia by Alaska Natives, and their condition at the time of Euro-American arrival was a product of their stewardship. Although most watersheds are still considered pristine, intensive timber harvest and road building occurred in the most accessible locations where low gradient streams and associated salmon spawning habitat are most sensitive to these impacts. Therefore, watershed restoration continues to be an important avenue for collaboration and cooperation with tribes, partners and local landowners.

Since the founding of the Forest Service under the Organic Act of 1897, protecting water resources has been recognized as one of the agency's key roles in managing our national forests. The Safe Drinking Water Act of 1974 and the Clean Water Act of 1972 provide the regulatory foundation for water quality protection in the United States. The State of Alaska sets water quality standards for chemical, physical, and biological parameters for waters on NFS lands. The Alaska Department of Environmental Conservation (ADEC) and the Forest Service have agreed that the Forest Service is the agency responsible for monitoring and protecting water quality on the NFS lands of Alaska for the purpose of meeting the Clean Water Act, as amended. Best management practices (BMPs), as described in the Soil and Water Conservation Handbook (USDA Forest Service 2006), the Alaska Nonpoint Source Pollution Control Strategy, and the Alaska Water Quality Standards (18 Alaska Administrative Code [AAC] 70) together form the "Forest Service Alaska Region Water Quality Management Plan," as agreed to in the Memorandum of Agreement dated April 6, 1992 (ADEC and USDA Forest Service 1992). With implementation of this land management plan, the State of Alaska recognizes that the Forest Service BMPs are the primary means to protect water quality from nonpoint sources of pollution.

The spatial scale for desired conditions is at the lower end of the scale set in the ecosystems section; delineated by watershed boundary dataset 12-digit hydrologic unit code (HUC12 subwatersheds) ranging from 10,000 to 40,000 acres.

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (FW-WTR-DC)

01 Watershed and landscape-scale features including natural disturbance regimes and the aquatic and riparian ecosystems to which species, populations, and communities are uniquely adapted are well distributed, diverse, and complex.

02 Watersheds and associated aquatic ecosystems retain their inherent resilience to respond and adjust to disturbances, including climate change, without long-term, adverse changes to their physical or biological integrity.

03 In-stream flows are sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows are generally retained.

04 The quality of both surface and subsurface water sustains native terrestrial and aquatic species and ecosystems, meets federal and state water quality standards, and supports State of Alaska designated beneficial uses.

Goals (FW-WTR-G)

01 Consult and coordinate with state, federal, tribal, and local governments for the inventory, protection, mitigation, and improvement of water resources.

02 Watershed restoration activities improve ecological function and processes, facilitate restoration-based economic development, and foster stewardship through partnerships with tribes, partners, landowners, and other community interests.

03 Participate actively in planning by other federal, state, and local agencies when these plans could affect the water resources on NFS lands.

04 Consult with tribes and Alaska Native Corporations on opportunities to support salmon stream management, for habitat assessments both stream and limnological, escapement monitoring, stream restoration, and habitat expansion.

Municipal Watersheds and Source Water Protection Areas (MWSP)

Description and Values

Municipal watersheds and source water protection areas are two separate constructs for drinking water protection that are applicable to National Forest System land management. Direction for management of National Forest System watersheds that supply municipal water is provided in 36 CFR 251.9 and Forest Service Manual 2542. Municipal watersheds include the following incorporated cities and boroughs: Craig, Hydaburg, Juneau, Kake, Ketchikan, Klawock, Petersburg, Sitka, and Wrangell. For the Petersburg watershed, consult 36 CFR 251.35.

Public drinking water systems receive additional protections under the current legal framework beyond the Forest Service designation of being a municipal watershed. The Safe Drinking Water Act requires protection of drinking water source areas from surface or groundwater contamination. Public drinking water systems are defined as entities that provide "water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year”. Source water protection areas that contribute to public drinking water systems have been spatially delineated on NFS lands by the State. The Alaska

Department of Environmental Conservation (ADEC) has a publicly accessible web map application for viewing source water protection areas.

The scale for direction in this section encompasses a given municipal watershed or source water protection area considering the latest mapping products produced by ADEC.

Need to Change

- Review agreements between Forest Service or U.S. Department of Agriculture and municipalities to ensure plan components support those agreements. Maintain or restore the integrity of public water supplies, sole source aquifers, source water protection areas, and other sources of drinking water in the plan area, working with state, and regional and local agencies.

Desired Conditions (FW-MWSP-DC)

01 Municipal watersheds and source water protection areas provide water that meets or exceeds federal and state water quality standards and drinking water regulations.

Goals (FW-MWSP-G)

01 Consult with Alaska Department of Environmental Conservation and affected municipalities prior to authorizing activities in municipal watersheds and source water protection areas.

Riparian Management Zones (RMZ)

Description and Values

Riparian management zones are portions of a watershed where riparian-dependent resources receive primary emphasis, and for which plan components are in place to maintain or restore riparian and ecological functions. Riparian management zones are delineated by process groups and waterbody classifications described in the Region 10 Aquatic Habitat Management Handbook (FSH 2090.21-2001-1). Waterbodies are classified biologically and physically as follows:

- Class I: Streams and lakes with anadromous or adfluvial fish or fish habitat, or high-quality resident fish waters or habitat above fish migration barriers known to provide reasonable enhancement opportunities for anadromous fish.
- Class II: Streams and lakes with resident fish or fish habitat - generally steep channels 6 to 25 percent or higher gradient - where no anadromous fish occur, and otherwise not meeting Class I criteria.
- Class III: Perennial and intermittent streams with no fish populations, but which have sufficient flow, or transport sufficient sediment and debris, to have an immediate influence on downstream water quality or fish habitat capability.
- Class IV: Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capacity to directly influence downstream water quality or fish habitat capability.

Process groups further categorize streams and rivers with similar physical *processes*, considering interrelationships between watershed runoff, landform relief, geology, and glacial or tidal influences on fluvial erosion and deposition. Channel types, a finer delineation within process groups, further informs site specific RMZ widths and project-level design criteria. Table 14 summarizes RMZ minimum widths and site-specific considerations by process groups and stream classes.

Table 14. Riparian management zone widths and considerations based on process group and stream class.

Process group	Stream Classes	Minimum Widths (feet)	Site specific considerations for widths greater than the minimum
Alluvial Fan	I, II and III	140	Distance from the edges of the active stream channel to the outer edges of the active alluvial fan.
Flood Plain and Glacial Outwash	I, II and III	130	Distance from the edges of the active stream channel to the outer edges of the floodplain, or to the outer edges of riparian vegetation or soils, or to the outer edges of riparian associated wetland fens, whichever is greatest.
Low and Moderate Gradient Contained	I and II	100	Distance from the edges of the active stream channel to the outer edges of the floodplain, or to the side slope breaks, whichever is greatest.
	III	See site specific considerations	Distance from the edges of the active stream channel to the side slope breaks.
Moderate Gradient, Mixed Control	I, II and III	120	Distance from the edges of the active stream channel to the outer edges of the floodplain, or to the outer edges of riparian vegetation or soils, or to the outer edges of riparian associated wetland fens, whichever is greatest.
High Gradient Contained	I and II	100	Distance from the edges of the active stream channel to the side slope breaks.
	III	See site specific considerations	Distance from the edges of the active stream channel to the side slope breaks.
Palustrine	I, II and III	100	Distance from the edges of the active stream channel to the outer edges of the floodplain, or to the outer edges of riparian vegetation or soils, or to the outer edges of riparian associated wetland fens, whichever is greatest.
Estuarine	I	1,000	Distance encompassing the extent of channels, saltwater marches, meadows, mudflats, and gravel deltas.
Lakes and Ponds	I and II	See site specific considerations	Distance from the water body to the outer edges of the riparian vegetation or soil, or to the outer edges of riparian associated wetland fens, or to a distance equal to the height of one site-potential tree, whichever is greatest.

The spatial scale for desired conditions is finer than described in the watershed section; delineated by watershed boundary dataset 14-digit hydrologic unit code (HUC14 drainages) ranging from 1,000 to

10,000 acres. In some circumstances smaller scales may be needed where drainages less than 1,000 acres flow directly into lakes or the ocean.

Desired Conditions (FW-RMZ-DC)

01 Instream habitat conditions for managed watersheds move in concert with or towards those in reference watersheds. Aquatic habitats are diverse, with channel characteristics and water quality reflective of the climate, geology, and natural vegetation of the area. Stream habitat features across the forest, such as large woody material, percent pools, residual pool depth, median particle size, and percent fines are within reference ranges as defined by agency monitoring.

02 The timing, variability, scale, and duration of floodplain inundation is within the natural range of variation. Floodplains are accessible to water flow and sediment deposits to allow for floodplain development and the propagation of flood-associated riparian plant and animal species.

03 Riparian management zones reflect a natural composition of native flora and fauna and a distribution of physical, chemical, and biological conditions appropriate to natural disturbance regimes affecting the area. The species composition and structural diversity of native plant communities in riparian management zones provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration. Nutrients, large woody debris, and fine particulate organic matter are supplied in amounts and distributions sufficient to sustain physical complexity and stability.

Goals (FW-RMZ-G)

01 Coordinate and consult with tribal, state and federal agencies on riparian resource management, as appropriate.

02 Partner with tribes and Alaska Native Corporations, to learn and implement culturally respectful stewardship practices to enhance and restore culturally valued riparian vegetation.

Designated Areas Preliminary Direction

A designated area is defined as an area or feature statutorily or administratively identified and managed to maintain its unique special character or purpose. Examples of statutorily designated areas include but are not limited to designated wilderness areas, wild and scenic rivers, and National Monuments. Examples of administratively designated areas include but are not limited to research natural areas, and special areas with unique values. Table 15 lists designated areas on the Tongass National Forest.

Some of the designated areas require specific management plans with additional requirements. Specific designated area management plans must be consistent with forestwide and area plan components (36 CFR 219.15(e)), while also providing specific allowable uses and management to protect and maintain the characteristics for which the designated areas were established. Table 15 indicates the designated areas on the Tongass National Forest and the type of designation that established them.

Table 15. Designated areas on the Tongass National Forest.

Designated Area	Amount	Designation Type
Designated Wilderness	19 Areas, 6 million acres	Congressional
Land Use Designation II (LUDII)	20 areas, >870,000 acres	Congressional
Alaska Mental Health Trust Land Exchange Lands	18,000 acres that became part of the Tongass	Congressional
National Monuments	2 areas	Congressional
Research Natural Areas	12 areas	Administrative
Experimental Forests	Maybeso and Héen Latinee	Administrative
Special Interest Areas	7 areas	Administrative
Suitable Wild and Scenic Rivers	31 rivers	Administrative
Inventoried Roadless Areas	9.3 million acres	Administrative

The Tongass National Forest has two administratively designated experimental forests within its administrative boundary, the Maybeso and the Héen Latinee. The approximately 10,600-acre Maybeso Experimental Forest is located on Prince of Wales Island and was established in 1956. Between 1953-1960 the area was clearcut, removing all commercial size timber, including in riparian areas. It is an example of a second-growth spruce and hemlock forest and the effects of large-scale clearcutting on the habitat, hydrology and the effect of harvesting in spawning areas for anadromous salmon. Permanent research plots were established and are monitored to study hillslope erosion, movement of large woody debris in and through streams, forest regeneration and vegetation responses to precommercial and commercial thinning (USDA 2008). The approximately 25,600-acre Héen Latinee Experimental Forest is located north of Juneau and was established in 2009. Héen Latinee was a name recommended by the Central Council of Tlingit and Haida Indian Tribes of Alaska, meaning *river watcher.* This experimental area was designated to provide a representative site of coastal temperate rainforest. This area provides a wide range of habitat types encompassing temperate rainforests,

marine estuaries, glacial ridges and alpine tundra. Experimental Forests are managed by the Pacific Northwest Research Station and are not managed through the Tongass land management plan. Management responsibilities are the primary responsibility of the Station Director with assistance and coordination from the Tongass National Forest.

Alaska Mental Health Trust Land Exchange Lands (DA-AMHT)

Description and Values

A land exchange was authorized under The Alaska Mental Health Trust Act of 2017 through the Consolidated Appropriations Act, 2017, Public Law 115-31. The Tongass conveyed and disposed of 18,500 federal acres to the State of Alaska Mental Health Trust in exchange for 18,000 non-federal acres. Lands included in the exchange are associated with six different communities in Southeast Alaska, as shown in Table 16. The exchanged lands were assigned land use designations to ensure management of these acres preserved the undeveloped natural character of the land and the wildlife, as well as watershed, recreational, and scenic values consistent with the Alaska Mental Trust Act. Plan components described in this section focus on continuing to manage the exchanged acres to preserve their undeveloped nature and support their watershed, recreational, and scenic values.

Table 16. Alaska Mental Health Trust Land Exchange Act parcels and acres on the Tongass National Forest.

Parcel Name (LEX IDs)	Ranger District	Acres
Mt Bradley Trail (J-1A)	Juneau	428
Douglas S (J-1B)	Juneau	2261
Signal Mtn. (K-1)	Ketchikan Misty Fjords	1878
Minerva Mtn. (K-2)	Ketchikan Misty Fjords	707
Deer Mtn. (K-3 and K-3 Conservation Easement)	Ketchikan Misty Fjords	901
Gravina Mid (K-4A)	Ketchikan Misty Fjords	3180
Meyers Chuck (MC-1)	Wrangell	168
No Name Bay (NB-1)	Petersburg	3373
Twin Creek (Administrative Site)	Petersburg	42
Twin Creek (P-1A)	Petersburg	3120
Twin Creek (P-1B)	Petersburg	143
S Fall Creek (P-2B)	Petersburg	182
Blind Pt. E (P-3B)	Petersburg	92
Kupreanof N (P-4)	Petersburg	280
Indian Creek E (S-2)	Sitka	284
Indian Creek W (S-3)	Sitka	109
Cascade Creek (S-4)	Sitka	26
W-1 (W-1)	Wrangell	204

Parcel Name (LEX IDs)	Ranger District	Acres
W-2 (W-2)	Wrangell	104
W-3 (W-3)	Wrangell	63
W-4 (W-4)	Wrangell	658

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (DA-AMHT-DC)

01 Alaska Mental Health Trust Lands Exchange Act lands retain their undeveloped natural character, scenic, watershed, recreational, and wildlife values, while providing opportunities for sustainable recreation.

Designated Wilderness (DA-WILD)

Description and Values

The Wilderness Act of 1964 established the National Wilderness Preservation system. The Wilderness Act defines wilderness areas as areas that are "...in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man…" The Act further defines wilderness as "an area of undeveloped Federal land without permanent improvements which is managed to preserve its natural conditions" and which "generally appears to have been affected primarily by the forces of nature" with "outstanding opportunities for solitude or a primitive and unconfined type of recreation." Wilderness "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

In addition to the Wilderness Act and ANILCA, the Forest Service provides direction for the management of wilderness through FSM 2320, wilderness-specific management plans, and this plan. Wilderness areas located within the Tongass are also managed in accordance with ANILCA provisions to provide public use of the wilderness with motorized and non-motorized access and travel, including reasonable traditional subsistence use by tribes and rural residents.

There are 19 wilderness areas, shown in Table 17 located within the Tongass. The history of their establishment is outlined in the assessment.

Table 17. Wilderness areas on the Tongass National Forest.

Wilderness Area	Acres
Chuck River	75,031
Coronation Island	19,118
Endicott River	98,396
Karta River	39,916
Kootznoowoo	989,944

Wilderness Area	Acres
Kuiu	60,183
Maurelle Islands	4,814
Misty Fjords National Monument	2,144,010
Petersburg Creek-Duncan Salt Chuck	46,756
Pleasant-Lemesurier-Inian Islands	23,081
South Baranof	315,820
Russell Fjord	348,131
South Etolin	82,593
South Prince of Wales	86,771
Stikine-LeConte	436,084
Tebenkof Bay	66,994
Tracy Arm-Fords Terror	648,883
Warren Island	11,559
West Chichagof-Yakobi	271,214

National Forest System acres from the 2024 Land Acres of the National Forest System, National Wilderness Areas by State report: Land Areas of the National Forest System (LAR).

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (DA-WILD-DC)

01 Each area's wilderness character is preserved or improved relative to that which existed at the time of designation, while providing for the public purposes of recreational, scenic, scientific, educational, conservation, rural residence use, and historical uses.

02 Wilderness areas continue to be managed consistent with the special provisions and exceptions in ANILCA.

Inventoried Roadless Areas (DA-IRA)

Description and Values

The intent of the 2001 Roadless Area Conservation Rule (Roadless Rule) is to provide lasting protection for inventoried roadless areas (IRAs) within the National Forest System (NFS) in the context of multiple-use management. The prohibitions and restrictions established under the rule and the boundaries of the areas are not subject to reconsideration, revision, or rescission during plan revision (36 CFR 294.14(e)). However, the USDA Forest Service could reconsider prohibitions and restrictions in the plan area if the rule were rescinded or amended. There are about 9.3 million acres of IRAs covering about 56 percent of the Tongass National Forest. While they cover about half of the Tongass, these acres often overlap with other types of designated areas. Inventoried roadless areas provide large,

relatively undisturbed blocks of important habitat for a variety of terrestrial and aquatic wildlife and plants; contribute to ecosystem services like healthy watersheds and clean drinking water; and provide extensive opportunities for outdoor recreation and tourism.

Management activities on the Tongass must follow the direction in the Roadless Rule, as provided for in the U.S. District Court for the District of Alaska's Judgement in Organized Village of Kake v. USDA, 776 F. Supp. 2d 960. The Roadless Rule allows road construction, reconstruction, and timber harvesting in specific circumstances, which require additional project review under current regional direction (36 CFR 294 Subpart B, 294.12 and 294.13).

Need to Change

- No need to change identified for this resource in the assessment.

Desired Conditions (DA-IRA-DC)

01 2001 Roadless Area Conservation Rule roadless area characteristics are protected.

Land Use Designation II (DA-LUDII)

Description and Values

Land use designation II (LUDII) areas were established under the 1979 Tongass Land Management Plan with the purpose of managing LUDII in a roadless state to retain their wildland character, while allowing management flexibility. Some of these areas were converted into congressionally designated areas, with the name LUDII, by TTRA, ANILCA Amendment, Section 201 on November 28, 1990, and detailed in the 1991 Amendment of the 1979 Land Management Plan. Additional areas were also designated by Congress as LUDIIs by the Sealaska Land Entitlement Finalization on December 19, 2014, from the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015, Sec. 3002. Regardless of which Act they were designated under, all areas shown in Table 18 are required, by statute, to remain in a roadless state and retain their wildland character.

Table 18. Designated Land Use Designation II (LUDII) areas on the Tongass.

LUD II	Establishment	Date
Anan Creek	TTRA	November 28, 1990
Berners Bay	TTRA	November 28, 1990
Kadashan	TTRA	November 28, 1990
Lisianski River/Upper Hoonah Sound	TTRA	November 28, 1990
Mt. Calder/Mt. Holbrook	TTRA	November 28, 1990
Naha	TTRA	November 28, 1990
Nutkwa	TTRA	November 28, 1990
Outside Islands	TTRA	November 28, 1990
Point Adolphus/Mud Bay	TTRA	November 28, 1990
Salmon Bay	TTRA	November 28, 1990

LUD II	Establishment	Date
Trap Bay	TTRA	November 28, 1990
Yakutat Forelands	TTRA	November 28, 1990
Bay of Pillars	Sealaska Land Entitlement Finalization	December 19, 2014
Kushneahin Creek	Sealaska Land Entitlement Finalization	December 19, 2014
Northern Prince of Wales	Sealaska Land Entitlement Finalization	December 19, 2014
Western Kosciusko	Sealaska Land Entitlement Finalization	December 19, 2014
Eastern Kosciusko	Sealaska Land Entitlement Finalization	December 19, 2014
Sarkar Lakes	Sealaska Land Entitlement Finalization	December 19, 2014
Honker Divide	Sealaska Land Entitlement Finalization	December 19, 2014
Eek Lake and Sukkwan Island	Sealaska Land Entitlement Finalization	December 19, 2014

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (DA-LUDII-DC)

01 LUDII areas retain their wildland character and are predominantly roadless.

02 Fish and wildlife habitat needs and conditions are maintained and enhanced while allowing and supporting sustainable recreation.

National Monuments (DA-NMT)

Description and Values

In 1978 the President proclaimed Admiralty Island and Misty Fjords as National Monuments within the Tongass. Congress enacted ANILCA in 1980 statutorily establishing the National Monuments and designating wilderness within the monuments, as shown in Table 19.

Admiralty Island, exclusive of the Mansfield Peninsula, was designated as a National Monument for the scientific purpose of preserving an intact unique coastal island ecosystem. The goal of preservation was to ensure continued opportunities for study of Admiralty Island's ecology and its notable cultural, historical, and wildlife resources, within its relatively unspoiled natural ecosystem. Protection and study of Tlingit cultural resources, other historical resources, brown bear and bald eagle populations are also specifically directed.

Misty Fjords was designated as a National Monument to serve the scientific purposes of preserving a unique ecosystem and the remarkable geologic and biological objects and features it contains. The goal of preservation was to ensure continued opportunities for study of Misty Fjord's geology and ecology, including the complete range of coastal to interior climates and ecosystems. Protection and study of geology, plant and animal succession, historical resources, and fish and wildlife resources are all specifically directed.

The designated wilderness portions of both monuments are guided by direction found here for the National Monuments, as well as guidance in the designated wilderness section (DA-WILD). Plan direction in this section applies to both the non-wilderness and wilderness portions of the National Monuments. The purposes of National Monument designation are fulfilled by protecting and learning more about the special resources they contain, as well as protecting objects of ecological, cultural, geological, historical, prehistorical and items of scientific interest as specified by ANILCA.

Table 19. National Monuments and acres of wilderness and non-wilderness within them.

National Monument	Established	Wilderness Acres	Non-Wilderness Acres	USFS Administered Acres
Admiralty	1978	989,922	18,147	1,008,069
Misty Fjords	1978	2,144,010	149,152	2,293,162

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (DA-NMT-DC)

01 The ecological, cultural, geological, historical, prehistoric, and scientific interests identified by ANILCA and the Presidential Proclamations establishing the National Monuments are protected or enhanced.

02 Uses and activities, including public access, are consistent with ANILCA and the Presidential Proclamations establishing the National Monuments.

Research Natural Areas (DA-RNA)

Description and Values

Research natural areas are part of a national network of ecological areas designated in perpetuity for research and education and to maintain biological diversity on National Forest System lands. These are preserved for their ecological importance in their natural condition for the purposes of research, monitoring, education, and to maintain natural diversity. Each research natural area has its own establishment record that contains detailed location maps, information on distinguishing features, and the purpose for which the research natural area was established. The research natural areas are cooperatively managed with the Pacific Northwest Research Station. Additional guidance for management of research natural areas can be found in FSM 4063, establishment records, and other management plans established for the individual research natural areas.

The Tongass has twelve designated research natural areas, as listed in Table 20. Seven of the twelve were established in the 1997 Tongass Land Management Plan and the other five were established by administrative designation between 1951 and 1980.

Table 20. Research Natural Areas on the Tongass National Forest.

Research Natural Area	Established	Acres	Characteristics
Limestone Inlet	1951	9,102	Represents an intact drainage, found in the northern mainland coast with representative vegetation, avalanche chutes and stream characteristics found in the area
Old Tom Creek	1951	4,544	Representative cedar-hemlock old-growth forest with some riparian spruce forest, tidal meadows with both the presence of bald eagles and black bear populations (reduced in size by Public Law 113-291)
Cape Fanshaw	1965	614	Undisturbed old-growth yellow-cedar and western hemlock forests
Dog Island	1976	705	Small island ecosystem with the upper limit of Pacific yew (*Taxus brevifolia*), scrub timber and mixed-conifer
Red River	1980	8,031	Representative of the northern range of Pacific silver fir (*Abies amabilis*)
Kadin Island	1997	1,623	An area of high interest as it is both a source of new loess deposition and receives high rainfall, which is a very rare combination. This area also has a very high concentration of bald eagle nests. Kadin Island is now included in Honker Divide LUD II area due to Public Law 113-291
Marten River	1997	6,213	An area with riparian spruce stands and habitat preferred by brown bear.
Rio Roberts	1997	1,560	Riparian flood plain spruce stands, upland old-growth and natural young-growth stands, and upland hemlock on drumlin fields
Robinson Lake	1997	4,297	Representative of the vegetation found in the southern part of Southeast Alaska, at a natural slump lake, with shoreline vegetation found next to deep water
Tonalite Creek	1997	9,515	Home to many important species found on the Tongass as an intact representation of Sitka spruce, western and mountain hemlock and yellow cedar forest habitats which support several wildlife and aquatic species
Warm Pass	1997	8,980	The northernmost representation of subalpine fir in Alaska. Due to a rain shadow effect, the habitat has a different climate which supports a mixture of species that use both high and low elevation habitats
West Gambier Bay	1997	11,790	Representative of the northern island habitats of Southeast Alaska with Pybus Lake and a variety of geologic features and species of interest

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (DA-RNA-DC)

01 The ecological features, vegetation types, wildlife habitats, and aquatic communities for which they were established, are protected or enhanced, primarily through natural ecosystem processes.

02 These areas are available for research, study, observation, monitoring, and educational activities while ensuring the protection of the purposes for which they were established.

Special Interest Areas (DA-SIA)

Description and Values

Special interest areas are designated to protect and manage public use and enjoyment in addition to managing them for unique other resource values. The interests for which they can be designated include special recreation areas with scenic, geological, botanical, zoological, paleontological, historical, or other special characteristics or unique values. These areas are designated depending on size by Regional Foresters, or Secretarial designation. The Tongass proposes to retain and manage multiple different types and sizes of special interest areas as shown in Table 21.

Table 21. Special interest areas proposed to be retained as special interest areas on the Tongass National Forest.

Special Interest Area	Area Type	Acres	Characteristics
Bailey Bay Hot Springs	Recreation	3,500	Designated in 1997 plan as a notable scenic area providing dispersed recreational opportunities.
Mendenhall Glacier	Recreation, Scenic	5,800	Designated in 1947 for recreational purposes.
Pike Lakes	Recreation	2,300	Designated in 1997 plan to manage a unique muskeg habitat with lakes that are the only known habitat of the northern pike (*Esox Lucius*) in Southeast Alaska.
Ward Lake	Recreation	7,500	Established in 1948 as an area around Ward Lake to support additional recreational opportunities.
Hubbard Glacier	Geological	46,000	Established in 1986 to observe and study the movement of glaciers across the landscape. It is within Russell Fjord Wilderness.
Tracy Arm-Fords Terror	Scenic	283,000	Established in 1960 for scenic purposes. It is within Tracy Arm-Fords Terror Wilderness.
North Hamilton River Redcedar	Cultural and Botanical	80	Designated in 1997 plan as an area to manage the northernmost reach of redcedar which are important for subsistence and cultural use.

Need to Change

- Assess existing special interest areas to determine if designations are needed or if intent and purpose can be achieved through plan direction forestwide or through management areas and thus the special interest areas can be managed without this designation.

Desired Conditions (DA-SIA-DC)

01 Areas are characterized by generally unmodified environments in which special characteristics and unique values are protected. Special interest areas provide opportunities for public use and enjoyment, and research in a way that protects or enhances the special characteristics and unique values of the area.

Suitable Wild and Scenic Rivers (SWSR)

There are no designated wild and scenic rivers under the Wild and Scenic River Act on the Tongass. However, in 1990 and 1991, an eligibility study found 112 river segments eligible for inclusion in the National Wild and Scenic Rivers System on the Tongass. In 1997 a suitability study was completed for those eligible segments and a decision in 2000 determined that 31 river segments were suitable for inclusion in the National Wild and Scenic River System. Table 22 displays the suitable river segments, their preliminary classifications of wild, scenic, or recreational, and their identified outstandingly remarkable values. These segments will be protected and managed to maintain their identified outstandingly remarkable values, their free-flowing status and their preliminary classification.

Additionally, as required by the 2012 planning rule, a study is being conducted to identify eligible rivers, but it is not complete at this time. Upon completion of the study, any river segments found eligible will be managed and protected to retain their free-flowing status, their preliminary classification and the outstandingly remarkable values for which they have been found eligible until such time as a suitability study is completed, or until Congress makes a designation decision.

Plan components included in this section are applicable to the river segments found to be suitable and will be applicable to any river segments found to be eligible upon completion of the eligibility evaluation. The plan components apply to the river corridor of each segment.

Table 22. Suitable wild and scenic river segments on the Tongass National Forest.

River Name	Preliminary Classification(s)	Outstandingly Remarkable Values	Miles
Aaron, Oerns, and Berg Creeks	Scenic, Recreational	Scenery, Recreation, Fish, Wildlife	58
Anan Creek	Wild, Scenic	Recreational, Fish, Wildlife	18
Blind River	Recreational	Recreation, Fish, Wildlife, Other	5
Blue River	Wild	Scenery, Geology, Wildlife, Other	26
Chickamin River	Wild, Scenic	Scenery, Recreation, Geology, Fish, Wildlife, History, Culture, Other	96
Essowah Lakes and Streams	Wild	Scenery, Fish, Wildlife	13
Fall Dog Creek	Wild	Scenery, Fish, Wildlife, Culture	4

River Name	Preliminary Classification(s)	Outstandingly Remarkable Values	Miles
Farragut River	Wild, Scenic	Scenery, Fish, Wildlife	30
Gilkey River	Wild	Scenery, Geology	9
Glacial River	Wild	Scenery, Geology	10
Gokachin, Mirror, Low, and Fish Creeks	Wild	Scenery, Recreation, Fish, Wildlife, History, Culture	30
Harding River	Scenic	Recreation, Fish, Wildlife	16
Hassleborg River and Lakes	Wild	Recreation, Fish, Wildlife, Culture	24
Kadake Creek	Recreational	Recreation, Fish, Wildlife, History, Culture	23
Kadashan River	Scenic	Scenery, Fish, Wildlife, Other	8
Kah Sheets Creek and Lake	Wild, Scenic	Recreation, Fish, Wildlife, Culture	9
Katzehin River	Wild	Scenery, Geology, Fish	10
Kegan Lake and Streams	Wild	Scenery, Recreation, Fish	9
King Salmon River	Wild	Fish, Wildlife	8
Kutlaku Creek and Lake	Wild	Fish	2
LeConte Glacier	Wild	Scenery, Geology	6
Lisianski River	Wild	Wildlife, Other	5
Naha River	Wild, Scenic	Recreation, Fish, Wildlife, History, Culture	19
Orchard Creek and Lake	Wild, Recreational	Scenery, Recreation, Fish, Wildlife, Other	26
Petersburg Creek	Wild	Scenery, Recreation, Fish, Historic	7
Salmon Bay Lake and Stream	Wild, Scenic	Scenery, Fish, Wildlife	6
Santa Anna Creek and Lake Helen	Wild, Scenic	Recreation, Fish	4
Sarkar Lakes	Wild, Scenic, Recreational	Scenery, Fish, Wildlife, History, Culture	19
Thorne River and Hatchery Creek	Scenic, Recreational	Scenery, Recreation, Fish, Wildlife	42
Virginia Lake and Creek	Recreational	Recreation, Fish	9
Wolverine Creek and McDonald Lake	Wild	Recreation, Fish, Wildlife	6

Need to Change

- No need to change identified for this resource in the Assessment.

Desired Conditions (MA-SWSR-DC)

01 Eligible and suitable wild and scenic river segments free-flowing character is not adversely modified, outstandingly remarkable values are protected, and preliminary classification are maintained.

Potential Management Area Preliminary Direction

The content in this section is preliminary considerations about how specific locations, preliminarily identified as management areas, might be managed through potential direction in the forest plan. Management area allocations are specific to areas across the Tongass with similar management needs and desired conditions to maintain the unique character, purpose, or management emphasis of the identified area.

This content is intended to foster dialogue about what should or should not be included in the direction in the forest plan and is not indicative of any decision about content or specific direction being made. Five management areas were tentatively identified in the *Notice of initiation of the development of a proposed plan revision and notice of intent to prepare an environmental impact statement* (published in the Federal Register on February 18, 2026) and are described in this section with some potential descriptions, desired conditions and preliminary considerations. These are not exhaustive compilations of content that may be translated into the forest plan draft components. This content is a point in time of ideas generated for dialogue and consideration. The NOI identified management areas have been redescribed in this document as follows, Community Use Priority Areas renamed and described in this document as Community Use Management Area, High Use Recreation Areas renamed and described in this document as High Commercial Recreation Use Management Area, Low Use Recreation Areas renamed and described in this document as Low Commercial Recreation Use Management Area, Old-Growth Habitat Areas renamed and described in this document as Old-Growth Management Area, Conservation Watersheds renamed and described in this document as Key Fisheries Watersheds Management Area, and General Forest is proposed to be addressed by forestwide direction. This section includes a description of the potential management areas, and preliminary management direction. Maps of these potential management areas by ranger district can be found at the end of this document under *Potential Management Area Maps*.

Need to Change

- Update and modernize the plan, consistent with the 2012 Planning Rule, by simplifying, clarifying, reorganizing, and reducing the number of management areas for concise, easy to follow direction.

Community Use (MA-CMTY)

Description and Values

Community use areas benefit from additional direction to facilitate increasing shared stewardship with local communities in Southeast Alaska. Emphasis is placed on the importance and value of these acres to the surrounding communities and on including these communities in the planning and implementation of management activities to ensure the local community needs are better integrated and considered.

Desired Conditions (MA-CMTY-DC)

01 Maintain or improve economic, social, and cultural values needed for communities' way of life.

02 Provide a diversity of uses, including opportunities for recreation special uses, that do not interfere with the ability to maintain each community's way of life.

03 Support personal and free use wood collection, timber harvest for wildlife habitat improvement, and cultural uses, and maintenance and reconstruction of key access roads and other facilities.

Goals (MA-CMTY-G)

01 To meet the economic, social and cultural needs of each community, coordinate with local and tribal governments on proposed management actions within this area.

02 Work with each community to create a collaborative understanding, when requested by the community.

Preliminary additional considerations:

- Timber production is not suitable on land within this management area.

High Commercial Recreation Use (MA-HCREC)

Description and Values

High commercial recreation use areas require additional direction to manage the density of commercial recreational use. Emphasis is placed on management to support concentrated tourism and high levels of recreation special use permitted activities.

Desired Conditions (MA-HCREC-DC)

01 Infrastructure and facilities can accommodate large commercial groups and large group tour operators.

02 Interpretation and education activities provide learning opportunities to visitors about the natural and cultural environment and responsible visitor behavior.

Preliminary additional considerations:

- Consider accommodating additional recreation special use authorizations or partnership agreements to support providing quality recreation experiences, visitor services, and interpretation and education.
- Changes in visitor use levels, patterns of use, or the necessity to protect resources may result in more infrastructure, heavier maintenance, or more controls such as setting capacity limits.
- Timber production is not suitable on land within this management area.

Key Fisheries Watersheds (MA-FISH)

Description and Values

Key fisheries watershed areas benefit from additional direction to protect unique watersheds on the Tongass that support remarkable fisheries. While most watersheds on the Tongass support fish, and salmon occur in most streams and rivers without a barrier, some watersheds have extraordinary fisheries diversity, support at-risk species, are key to subsistence uses, or have other unique fisheries values. Emphasis is placed on management to maintain and conserve these watersheds to support salmon and other fish habitat, populations, and subsistence use.

Desired Conditions (MA-FISH-DC)

01 Water quantity, quality, and riparian function is within the range of natural variation.

02 Aquatic habitats to support fisheries are maintained and restored.

03 Water quantity and quality and riparian function are within the range of natural variation.

04 Roads and motorized trails are present at levels that maintain water quality and aquatic habitat needs.

Preliminary additional considerations:

- Timber production is suitable on land within this management area. Timber harvest of old-growth timber stands is only allowed for the purpose of improving fisheries or aquatic habitat conditions.
- To maintain or improve water quality, management activities should be designed to reduce the potential for soil runoff and soil impacts.
- When there is conflict in use, aquatic ecosystem habitat protection is the priority.
- Management activities within a larger buffer than riparian management zones should be undertaken for the purposes of restoring or maintaining the aquatic habitat to minimize detrimental disturbance.
- Potential for alterations in runoff and sediment input into streams from management actions including roads is minimized.
- Density of roads and presence of roads remains stable or decreases over time.

Low Commercial Recreation Use (MA-LCREC)

Description and Values

Low commercial recreation use areas require additional direction to limit and manage to maintain limits on the density of commercial recreational use. Emphasis is placed on management to support non-commercial recreational activities, minimal tourism and low levels of recreation special use permitted activities.

Desired Conditions (MA-LCREC-DC)

01 Infrastructure and facilities accommodate recreational uses by small groups, emphasizing self-guided recreational uses.

02 Conflicts between commercial and non-commercial recreational uses are infrequent.

03 Local communities can readily access these areas for a variety of motorized and nonmotorized experiences.

Preliminary additional considerations:

- Timber production is not suitable on land within this management area.

Old-Growth (MA-OGRW)

Description and Values

Old-growth areas include existing old-growth reserves and potentially other ecologically important stands of old-growth. These areas require additional direction to protect the unique ecological and cultural values of old-growth stands and reserves. Emphasis is placed on management to maintain and restore old-growth forest structure, composition, and function.

Desired Conditions (MA-OGRW-DC)

01 Old-growth stand habitat characteristics are maintained and restored.

02 Maintain the abundance, distribution, and landscape-scale connectivity of old-growth stands and their habitats to sustain natural ecological processes and viable populations of associated native species.

03 Old-growth stands are resilient, maintaining and recovering their defining structural complexity and ecological functions naturally or through adaptive processes following disturbance and under changing future conditions. These forests also continue to support cultural practices, subsistence uses, and recreation opportunities that connect communities to the land.

04 Active management of young-growth stands contributes to old-growth habitat and connectivity, including connectivity between islands, for native species and supports recovery of the late successional forest characteristics where feasible.

05 Young-growth stands within this management area resemble the natural scale and distribution of disturbance patterns on the forest, such as windthrow gaps, landslide corridors, and mortality-driven thinning, to progress toward old-growth structure.

Preliminary additional considerations:

- Timber production is not suitable on land within this management area. Timber harvest for the purposes of accelerating development of old-growth characteristics, improving habitat conditions, administrative uses, or cultural uses is allowed.

- If an old growth management area is analyzed in detail as part of the land management plan, the team will review young growth stands within the management area boundary to determine their contribution to old growth habitat conservation and connectivity. If young growth stands are identified as being unnecessary for future old growth connectivity they will be considered for removal from this management area and may be added to the suitable base for timber production.

Potential Activity Specific Preliminary Direction

The content in this section provides preliminary considerations for specific activities identified as drivers or stressors in the Assessment maybe managed through potential direction in the forest plan. This content is intended to foster dialogue about what should or should not be included in the direction in the forest plan and is not indicative of any decision about content or specific direction being made. These ideas are displayed in bullet form under three activity headings: recreation and tourism management, subsistence harvest, and timber harvest. Within these three activity headings subheadings are used to organize the bullets by other resource considerations when these activities are undertaken. These are not an exhaustive compilation of other resource considerations, nor an exhaustive list of preliminary considerations that may be translated into the forest plan draft components. This content is a point in time of ideas generated for dialogue and consideration.

Recreation and Tourism Management

- Management actions and authorized activities that could affect recreation opportunity setting characteristics should include specific measures (such as the timing of activities or removal of roads that were needed for temporary access) to minimize effects on recreational opportunities.
- New recreation developments and updates to existing developed sites should be consistent with the recreation opportunity setting, and with the Forest Service architectural character and site design principles (such as the Built Environment Image Guide and the Sustainable Recreation Site Design Guide). Exemptions may occur on a case-by-case basis to reflect environmental conditions such as meeting snow loads.
- Aging, outdated, and unsustainable developed recreation sites, infrastructure, or cabins should be removed or updated to achieve sustainable recreation desired conditions.
- To provide sustainable recreation and maintain scenic character, retain trees at developed recreation sites and cabins to the extent possible.
- Dispersed recreation sites and areas that degrade forest resources should be concentrated, designated, and may include developed recreation infrastructure to provide sustainable recreation and minimize effects to forest resources.

Habitat Considerations From Recreation Activities

- Wildlife viewing sites and supporting developments should be designed and located to prevent impacts to wildlife behavior and habitat function.

Recreation Special Use Permitting

- A special use permit is required for all aircraft: helicopters, fixed-wing, and uncrewed aircraft system, taking off or landing on National Forest System lands for commercial uses or activities, except when legally exempted.

- To provide for public purposes of designated wilderness, recreation special use activities may be authorized in wilderness areas when they support the public purposes of wilderness and protect wilderness character.
- Recreation special use activities in designated wilderness should align group sizes and numbers of groups at a location at one time with maintenance of wilderness characteristics.
- Recreation special use activities in designated wilderness should be managed so they do not interfere with other wilderness uses, maintain access for other visitors, minimize impacts on subsistence activities, and avoid overuse of specific locations to protect solitude for all wilderness users.

Soil Considerations From Recreation Activities

- Maintain land and soil productivity when undertaking recreation land disturbing activities, including application of best management practices for water quality and soil design.
- To minimize new soil disturbance, use existing disturbed areas to the extent possible for development of new recreation facilities and infrastructure.

Trails

- Trail design, construction, realignment, and maintenance should utilize sustainable trail building principles and techniques to eliminate or minimize natural and cultural resource impacts, reduce long term maintenance, reduce user conflict, and enhance sustainable recreation.
- New trail construction should be focused on contributing to sustainable recreation and providing recreation opportunities to local communities or commercial tours.
- Restore unauthorized trail developments.
- Locate road crossings and clearings away from trails to retain recreation trail experiences and opportunities to the extent possible.

Water Considerations From Recreation Activities

- When reserving water rights, the review of uses and needs considers at least the following items: in-stream flow needs, adequate flow for fish passes and habitat, Forest Service administrative and domestic use and developed special uses and recreation sites.

Subsistence Harvest Management

- Effects to subsistence resources and uses by rural residents should be considered when designing management actions or evaluating authorized activities.
- To support subsistence wildlife populations, vegetation management projects should be designed to replicate natural disturbances and promote browse.

- To minimize effects to subsistence resources and access to the extent possible, coordinate project activities to avoid subsistence seasons for resources with potential to be affected by project activities.
- Wildlife viewing sites, supporting developments, and visitation rates should not interfere with subsistence uses.
- To educate and support subsistence user access, area closures, regulatory information and monitoring data regarding and relevant to subsistence users should be published and available to the public.

Timber Harvest Management

Access

- Allow timber sanitation and salvage harvest in present or proposed federal or state transportation system corridors.
- Coordinate the location of timber harvest access with the forest transportation system when feasible.
- To avoid sediment delivery to streams, avoid new road and landing construction, including temporary roads, in riparian management zones except where: a) necessary for stream crossings, b) a road relocation contributes to attainment of aquatic and riparian desired conditions, c) Forest Service authorities are limited by law or regulation.

Beach and Estuary Fringe

- Active management of young-growth stands within the beach and estuary fringe supports a range of social, economic and ecological needs. These areas provide habitat and connectivity for wildlife and opportunities to provide timber products to accelerate old-growth characteristics while also providing timber products.
- Approximately 3,500 acres of young-growth forest in the beach and estuary fringe will be added to the suitable timber base for timber production to promote the transition to primarily young-growth timber harvest. In these stands, harvest is not allowed within a minimum 200-foot forested buffer beginning at mean high tide and opening size is limited to 10 acres.

Culmination of Mean Annual Increment

- Final harvest of even-aged timber stands shall not occur before stand growth has reached or surpassed 95 percent of the culmination of mean annual increment in cubic feet. Exceptions may be made where special resource considerations require earlier harvest, where small inclusions of young stands in harvest units that otherwise meet this requirement will result in more logical management units allowing greater efficiency or less resource impacts or to meet other legal requirements.

- When harvesting trees prior to the culmination of mean annual increment of growth under the authority granted by Public Law (P.L.) 113– 291, Sec. 3002, subsection (e)(4)(A), the limitation of subsection (e)(4)(B) shall be applied.
- Even-aged stands may be regenerated without having reached culmination of mean annual increment where salvage is prescribed after windthrow, where stands are in imminent danger from insect or disease attack or when cutting for experimental and research purposes.

Disturbance Patterns and Opening Sizes

- Vegetation manipulation projects shall be shaped and blended to the natural terrain to meet the scenic integrity objectives when feasible given different harvesting systems and difficult terrain.
- Openings created by clearcutting, seedtree, shelterwood, or other harvests that are designed to regenerate an even-aged stand of timber in one harvest operation shall not exceed 100 acres unless analysis and mitigations demonstrate that a larger opening size, up to 200 acres, is necessary due to natural biological hazards to the survival of residual trees and surrounding standards, with approval of the Forest Supervisor. The 100-acre size limit shall not apply to areas that are harvested because of natural catastrophic conditions such as fire, insect and disease attacks, or windstorms.

Fuelwood and Other Forest Products

- To provide access to forest resources products for local communities consider opportunities to provide fuelwood and other products for traditional use during vegetation management projects.

Habitat Considerations

- To provide sufficient coarse woody debris and maintain snags or standing dead trees over the long term for wildlife habitat and ecosystem processes, snags, felled for safety concerns during vegetation management activities, should be left on site. Exceptions may occur where there is elevated concern for public safety or fire risk, such as in developed sites and areas adjacent to infrastructure.
- Constraints on timing or proximity, such as seasonal restrictions or buffers from occupied nests, dens and other habitat components, may be applied where appropriate to timber harvest to protect the viability of at-risk species. Similar constraints to support subsistence harvest species may be applied during site-specific analysis.

Harvest Methods

- Pre-commercial thin young-growth stands when they are the appropriate age to support future active management, to reduce or eliminate stem exclusion, and decrease stand rotation time.
- To achieve desired stocking levels in all vegetation communities, natural reforestation should be considered as an appropriate practice since there is generally excellent natural regeneration on the Tongass.

- To reduce the risk of dwarf-mistletoe infection and disease, or risk of windthrow, clearcut timber harvest methods should be undertaken. Use other timber harvest methods, such as two-aged systems and uneven-aged systems can be applied when these risks are minimal.
- Most standard logging or helicopter yarding systems are supported by a planned transportation network of roads and helicopter access points.

Lands Not Suited for Timber Production

- On lands not suited for timber production, reforestation of deforested lands should contribute to ecological restoration, while providing benefits such as improving scenic character, restoring connectivity for wildlife, increasing carbon sequestration and improving watershed condition.
- On lands not suited for timber production, timber harvest is allowable for purposes other than timber production, such as, but not limited to, personal use, administrative use, cultural use, and vegetation treatments for restoration or understory development. Timber harvest for salvage, sanitation, or for public health and safety would also be allowed.
- The following designated areas are not suited for timber production: designated wilderness, national monuments, research natural areas, LUDIIs, and Alaska Mental Health Trust Land Exchange Lands.
- The following management areas are not suited for timber production: community use, high commercial recreation use, low commercial recreation use, old-growth.

Lands Suited for Timber Production

- On lands identified as suitable for timber production, design a site-specific silvicultural prescription to ensure that lands are adequately restocked within 5 years of a regeneration harvest.
- When timber harvest on lands identified as suited for timber production is undertaken, require utilization and optimum feasible use of wood material. Promote the use of wood for its highest value product commensurate with present and anticipated supply and demand.
- On lands suitable for timber production, reforestation should be designed to achieve stocking levels, spatial arrangements, and species composition to allow for long-term resilience of the developing forest, while considering potential future plantation management, carbon carrying capacity, and climate change adaptation. If an assessment determines a need to plant trees, spruce and cedar would likely be favored and planted within two seasons of harvest to accelerate both establishment and growth of successive forest cover to meet objectives.

Log Transfer Systems

- Log transfer facility fill structures must be designed and constructed to prevent erosion, pollution, and structural displacement.
- The design, construction and operation of log transfer systems, contiguous sort yards, and log storage yards must utilize practicable procedures for control of surface water runoff from facilities.

- The log transfer system and adjacent sort yard handling equipment must be operated and maintained to minimize petroleum and lubricating products from entering waters.

Mining Activity

- To avoid mining activity, marker, and improvement interference, coordinate with claimant(s) ahead of timber sales, regarding the location of timber sale units and roads.

Planned Timber Sale Program

Per the National Forest Management Act and planning rule regulations, the total quantity of saw timber that may be sold from all lands (excluding salvage or sanitation harvest volume) must be less than or equal to the sustained yield limit. The sustained yield limit is the amount of timber meeting applicable utilization standards, "which can be removed from [a] forest annually in perpetuity on a sustained-yield basis" as addressed in the National Forest Management Act at section 11, 16 United States Code 1611, 36 CFR 219.11(d)(6). The sustained yield limit is not a target but is a limitation on harvest. Calculation of the sustained yield limit is based on lands that may be suitable for timber production and is not limited by plan components or considerations of the anticipated fiscal capability or organizational capacity.

To clearly display the intended timber program associated with achieving ecological, social, and economic desired conditions, the plan identifies the projected wood sale quantity and projected timber sale quantity. The projected wood sale quantity is the estimated output of timber and all other wood products (such as fuelwood, firewood, or biomass) expected to be sold during the planning period for any purpose (except salvage harvest or sanitation harvest) on all lands on the Tongass. The projected timber sale quantity is the portion of the projected wood sale quantity that meets applicable utilization standards (the sawlog portion of offered timber sales). Both the projected wood sale quantity and the projected timber sale quantity are limited by the projected fiscal capability and organizational capacity of the Tongass.

- Offer timber, meeting timber product utilization standards, for sale at a projected timber sale quantity increasing to 72 million board feet per year in the next decade, due to more young growth reaching harvestable age.
- Offer wood products, including fuelwood, biomass, and other volumes that do not meet timber product utilization standards, increasing to 20,000 tons over the next decade.
- Not including salvage or sanitation harvest, the quantity of timber sold in a decade may not exceed the ten times the annual sustained yield limit. This includes timber sold from both lands suitable for timber production and lands not suitable for timber production.
- Update and post annually, by December 31 of each year, the five-year timber sale schedule to track and monitor timber sales.

- Offer increasing annual volumes of economically viable [1] young-growth timber and gradually reduce old-growth timber to an average of 5 million board feet annually by 2032, to support Southeast Alaska mills.
- Seek to provide an economic timber supply sufficient to meet the annual market demand for Tongass National Forest timber, and the market demand for the planning cycle. The volume of young growth as part of the yearly offer increases annually until young growth is the dominant portion of what is offered.

Soil Considerations

- Management activities shall leave a minimum of 85 percent activity area in an acceptable soil quality condition. In activity areas with existing detrimental soil conditions exceeding or approaching 15 percent, soil restoration activities shall address long-term soil condition improvements.
- To reduce detrimental impacts to soil productivity and function, all ground based mechanical equipment should not operate on sustained slopes steeper than 35% on well drained soils and 25% on poorly drained soils.
- All management practices are designed or modified as necessary to maintain land productivity.
- Project-specific best management practices for water quality and soil design features shall be incorporated into land management activities as necessary to maintain soil productivity.
- Evaluate potential soil mass wasting effects, and stability of Class IV channels and minor drainage ways or *non-streams*. At the Forest Plan level, slope gradients of 72 percent or more are removed from the lands suitable for timber production due to high risk of soil mass movement and accelerated erosion of Class IV channel systems. At the project planning level, the Forest Supervisor or District Ranger may approve timber harvest on slopes of 72 percent or more on a case-by-case basis, based on the results of an on-site analysis of slope and Class IV channel stability and an assessment of potential impacts of accelerated erosion on downslope and downstream fish habitat, other beneficial uses of water, and other resources.
- To support short and long-term soil ecosystem function and resiliency, habitat and vegetation management activities should retain organic matter and down wood, in a variety of species, sizes, and decay stages based on vegetation communities. Recommended acceptable amounts are based on best available science and multi-resource objectives. Avoid dense slash and woody debris accumulations. Encourage natural vegetation where seed source and soil conditions are favorable for revegetation of disturbed sites.
- To minimize new soil disturbance, projects should prioritize using existing disturbed areas. Exemptions may include using specific design criteria that weigh ecological risks and benefits.

[1] The Two-Log Rule was developed to better predict when stands reach a condition where economic harvest opportunities may exist prior to stands reaching culmination of mean annual increment of growth. The Two-Log Rule implies at least half of the merchantable volume within a stand is comprised of trees with two or more logs. A *two-log* tree is defined as a tree that is at least nine inches diameter at breast height, six inches in diameter at the small end and contains a minimum of two logs that are at least 34 feet long.

- To maintain soil stability, avoid locating roads and landings on slopes greater than 67 percent, on an unstable slope, or in a landslide prone area, where feasible.

Tribal and Cultural

- Over the life of the plan co-develop with tribes and Alaska Native Corporations guidance for forest products to ensure resources are maintained to support public and tribal harvesting and gathering.
- In close coordination with the tribes develop a cultural tree strategy within the life of the plan.
- To support access to cultural trees, evaluate the presence of cultural trees before commercial timber sales.
- Harvest of old-growth timber across the Tongass is allowed for cultural trees, such as for totem poles, canoes for example, but harvest for these uses does not contribute to the projected timber sale quantity.

Water and Riparian Management Zone Considerations

- Prohibit commercial timber harvest within 100 feet of Class I streams, and Class II streams that flow directly into a Class I stream. Exceptions include: 1) a Class II stream that flows directly into the ocean or joins a Class I stream only at lower than mean high tide; and 2) a Class II tributary stream segment that flows into a Class III stream that in turn flows into a Class I stream.
- To avoid post-harvest windthrow, a reasonable assurance of windfirmness (RAW) buffer should be prescribed in situations where a high risk of blowdown factors is present. In situations where multiple low risk factors are present and high-risk factors are minimal, a RAW zone addition to riparian buffers is not warranted. Where high-value aquatic resources (such as a Class I stream or municipal water supplies) are at-risk, use of a wider buffer may be warranted even when the risk of windthrow is judged to be low or moderate. Some harvest may be appropriate in RAW buffers depending on site-specific conditions.
- To avoid sediment delivery to streams, new landings, designated skid trails, staging or decking should be located outside riparian management zones. If landings are needed inside of riparian management zones, minimize the disturbance area footprint and locate activities outside the active floodplain.
- To protect public drinking water systems, all activities in municipal watersheds should be designed to meet all applicable agreements and memoranda of agreement or understanding with municipalities.
- To protect public drinking water systems, adjust the intensity and timing of management activities in municipal watersheds and source water protection areas.
- Young-growth stands within riparian management zones, excluding Tongass Timber Reform Act buffers, are suitable for timber production when timber management is compatible with desired conditions.

- Young-growth stand timber harvest in riparian management zones supports a range of social, economic and ecological needs including to accelerate old-growth characteristics to improve riparian function.
- The maximum size of any created opening for young-growth commercial timber harvest in a riparian management zone may not exceed 10 acres.

Potential Management Area Maps

Figure 3. Admiralty Island National Monument potential management areas.

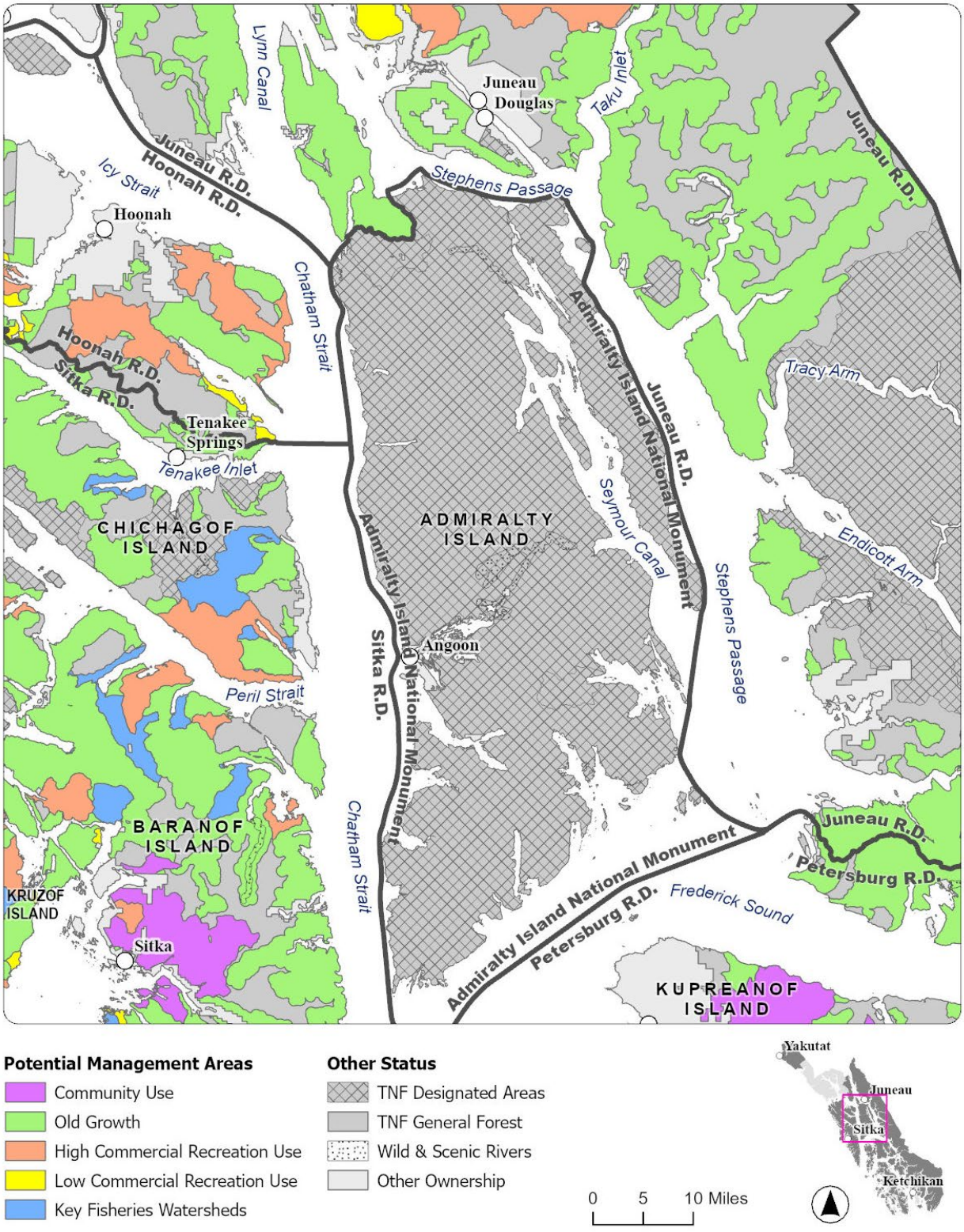


Figure 4. Craig Ranger District potential management areas.

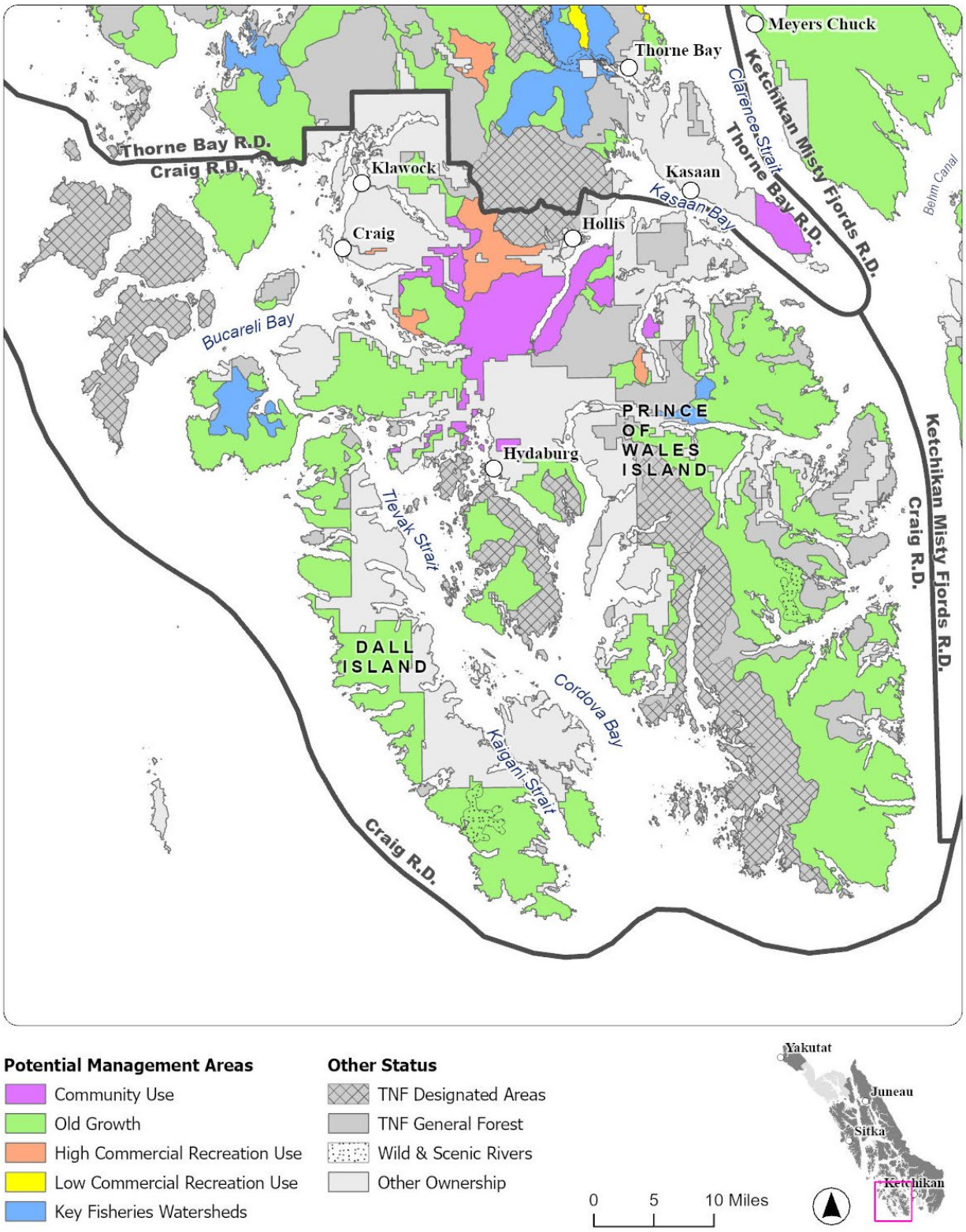


Figure 5. Hoonah Ranger District potential management areas.

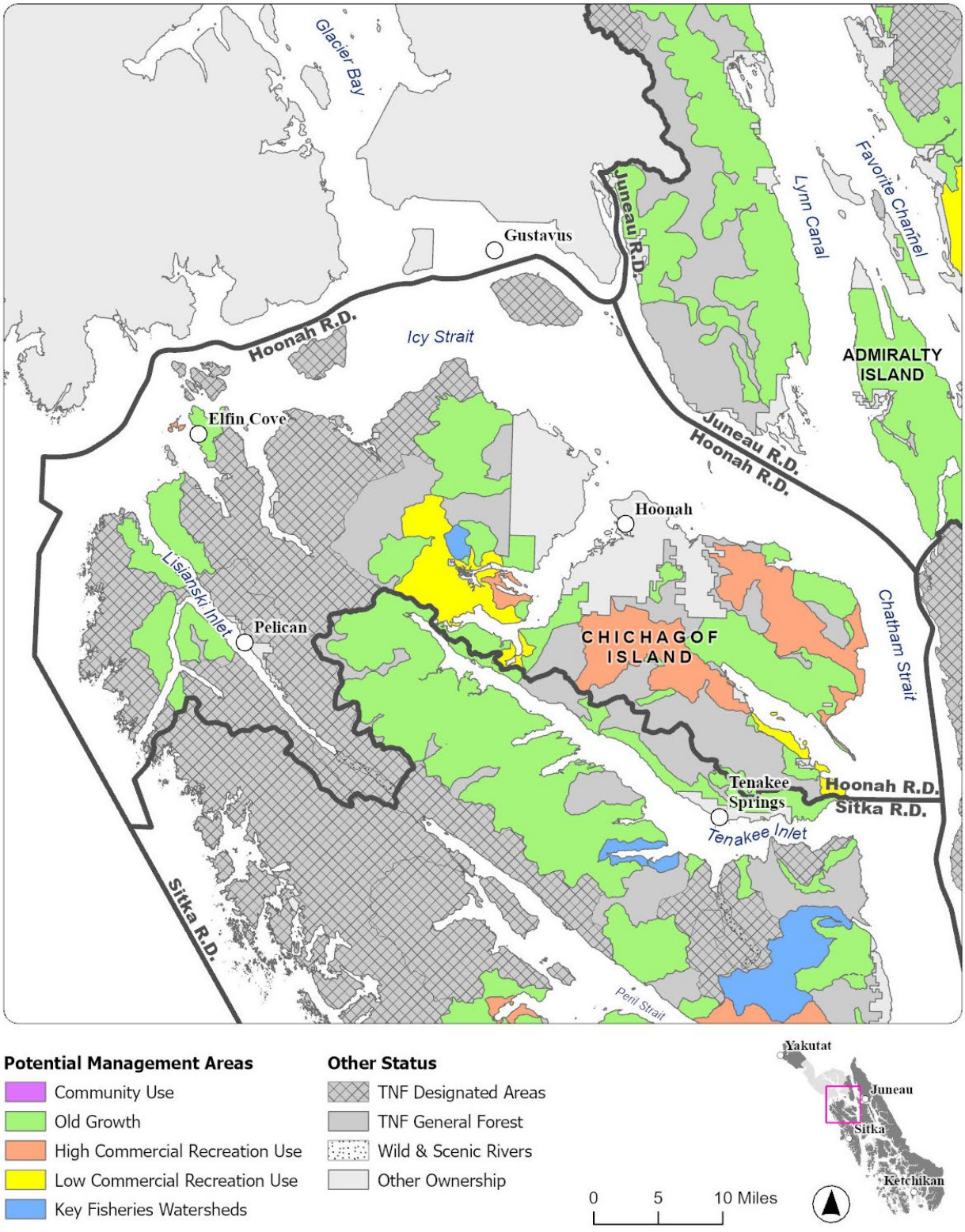


Figure 6. Juneau Ranger District North potential management areas.

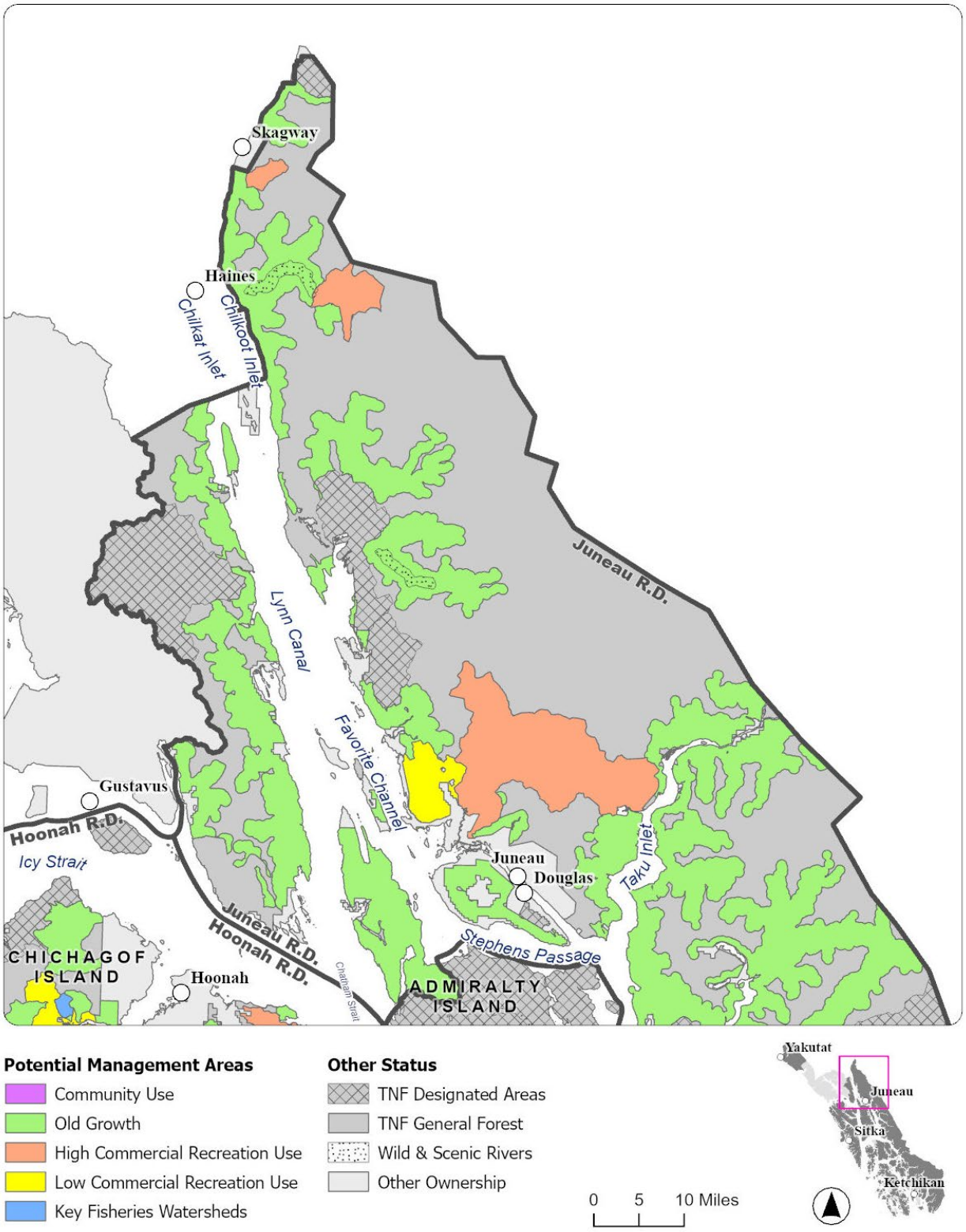


Figure 7. Juneau Ranger District South potential management areas.

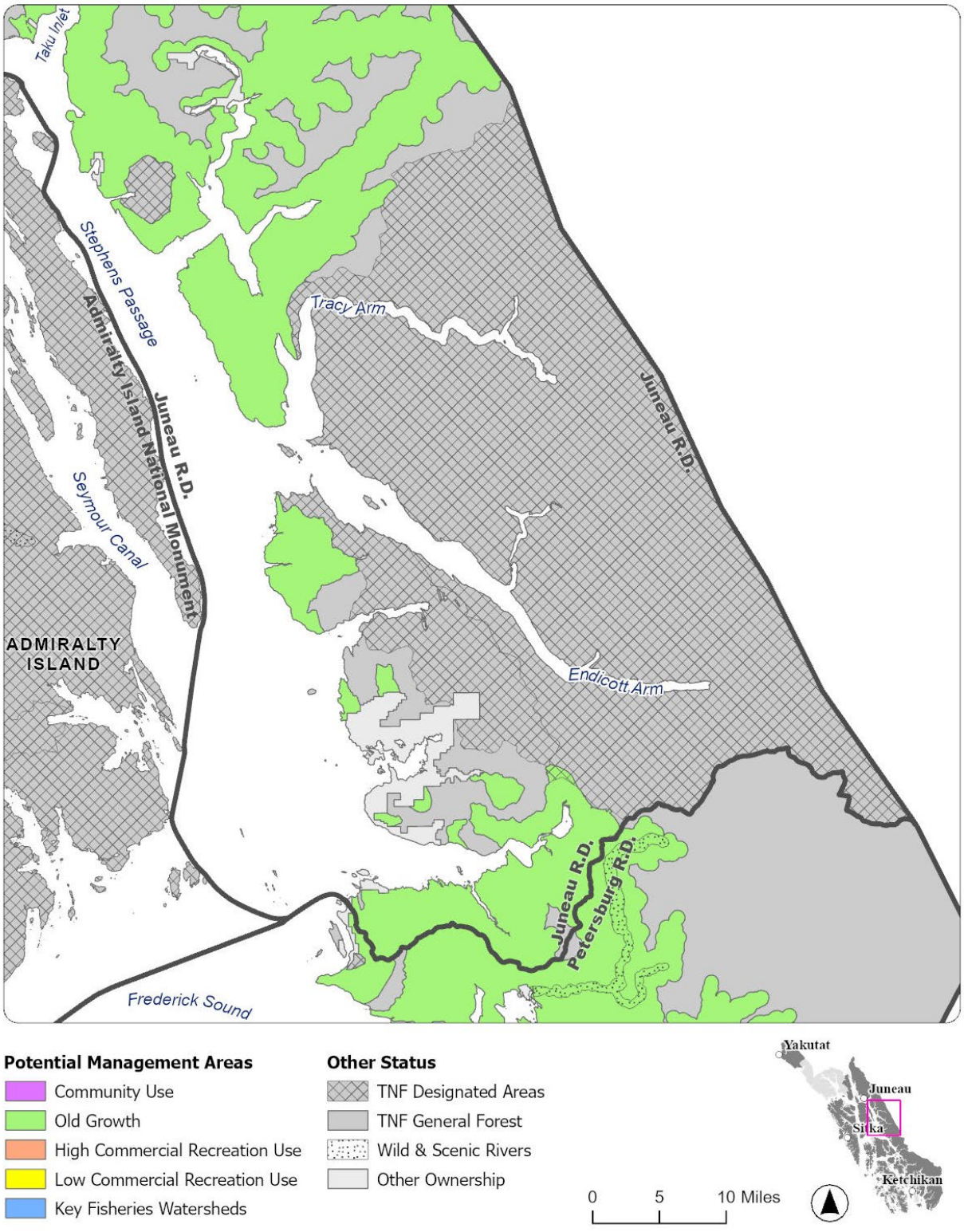


Figure 8. Ketchikan Misty Fjords Ranger District potential management areas.

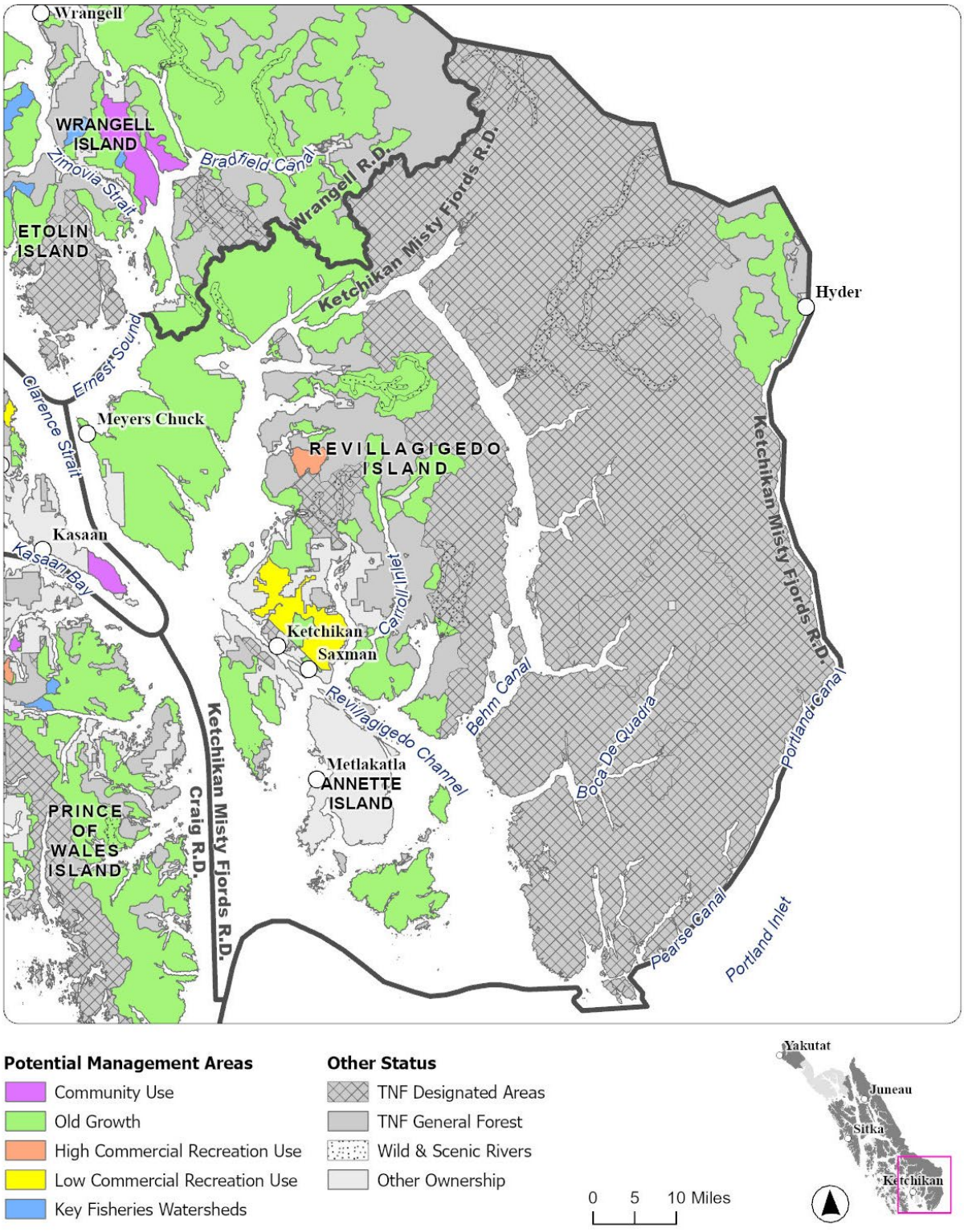


Figure 9. Petersburg Ranger District potential management areas.

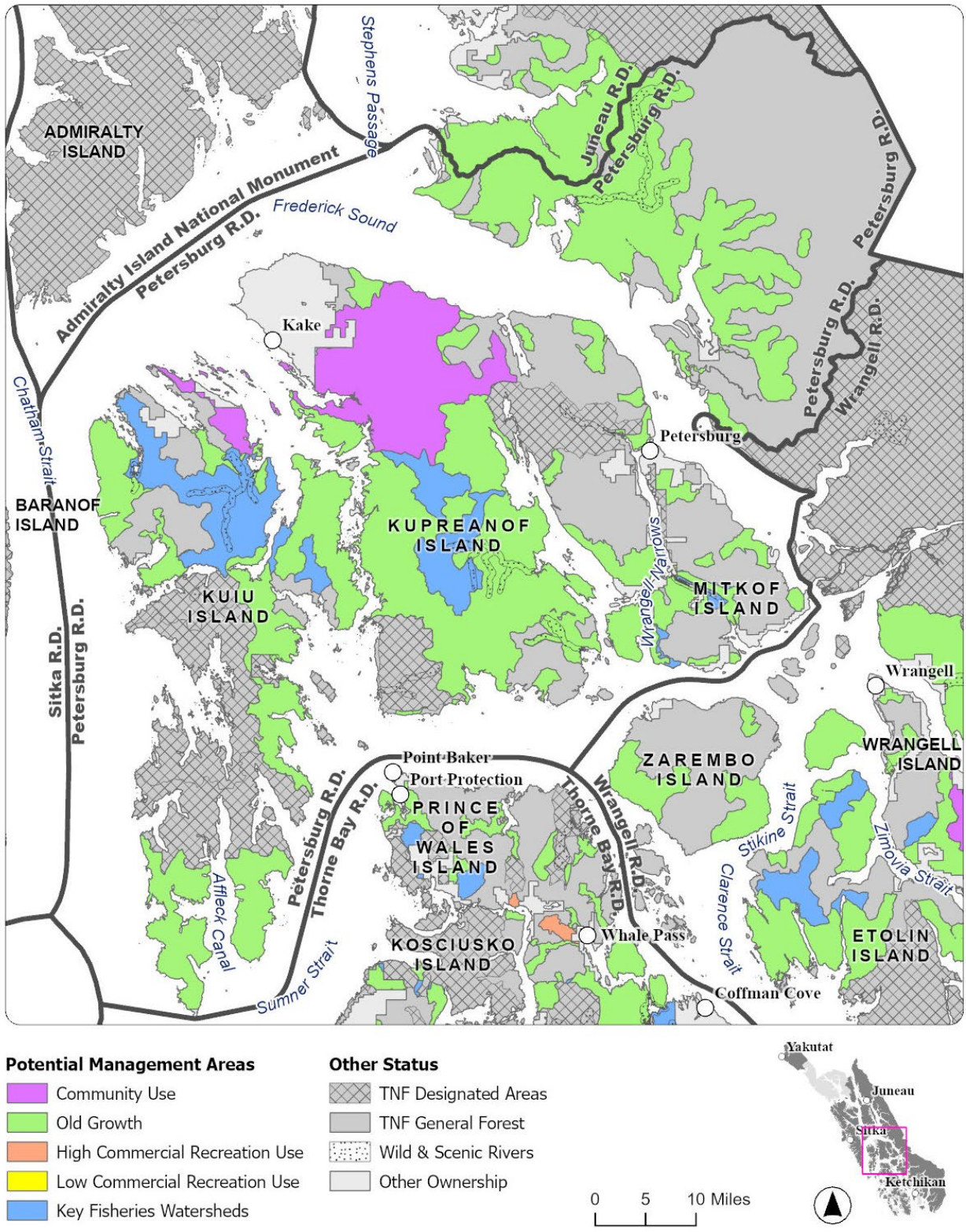


Figure 10. Sitka Ranger District North potential management areas.

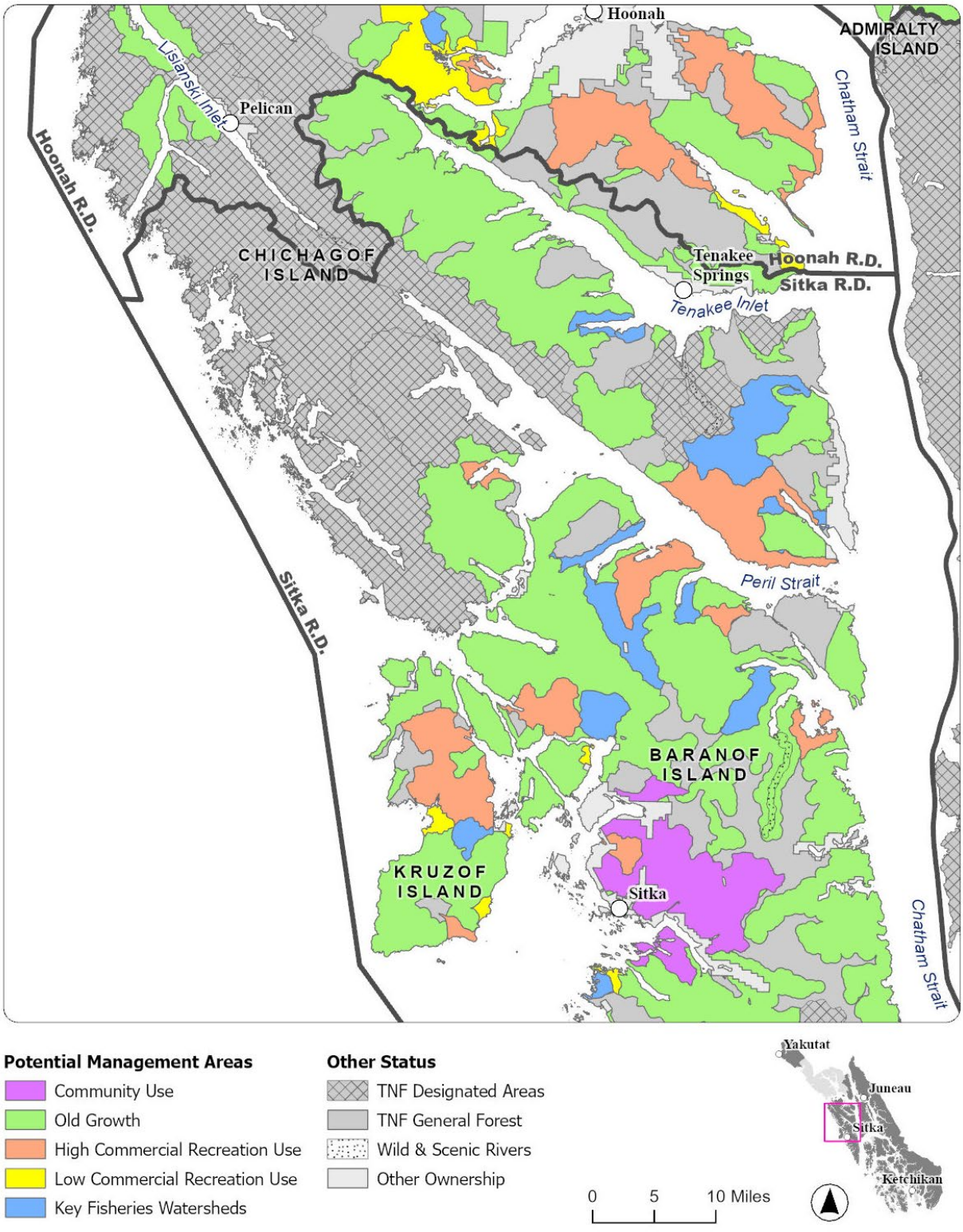


Figure 11. Sitka Ranger District South potential management areas.

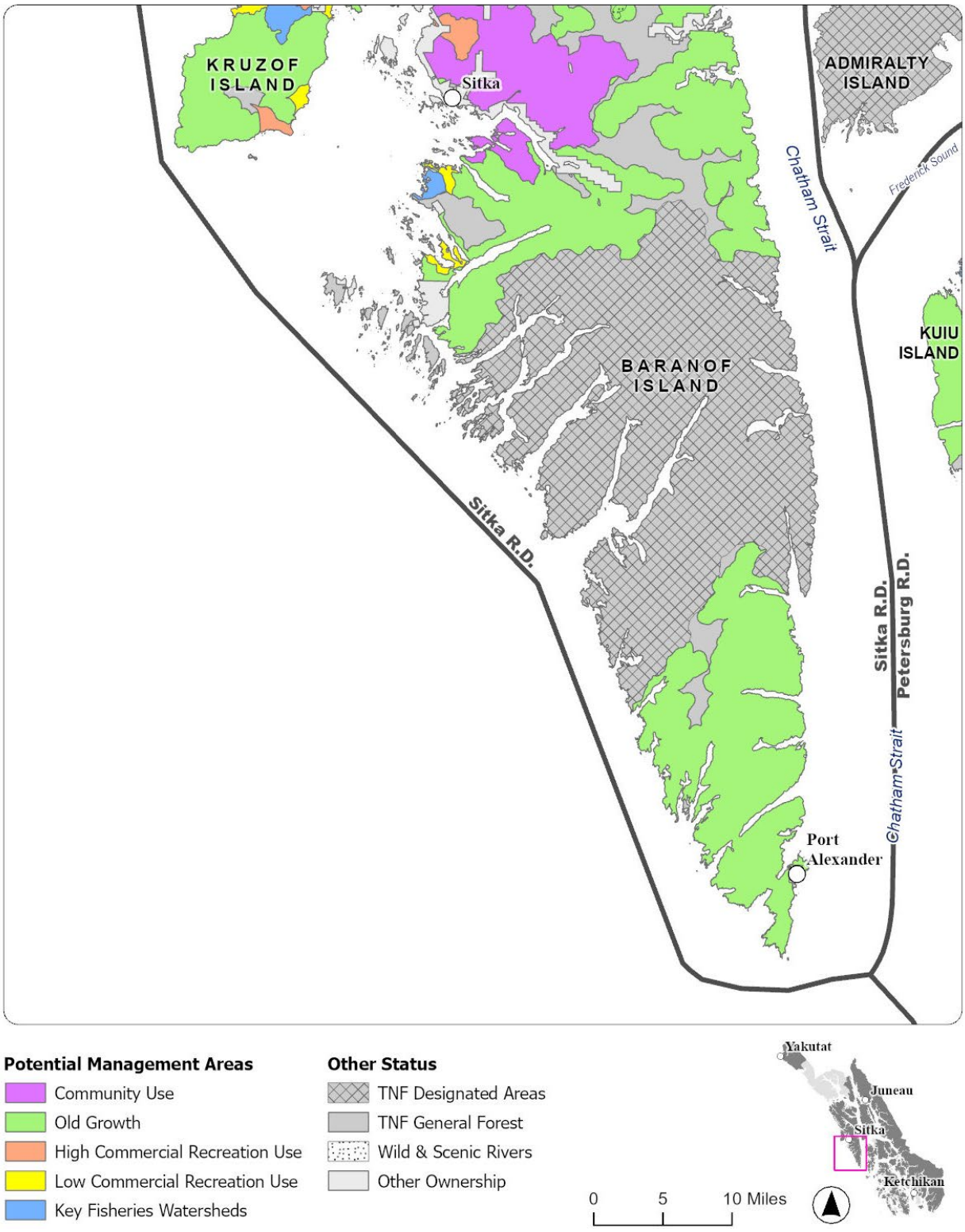


Figure 12. Thorne Bay Ranger District potential management areas.

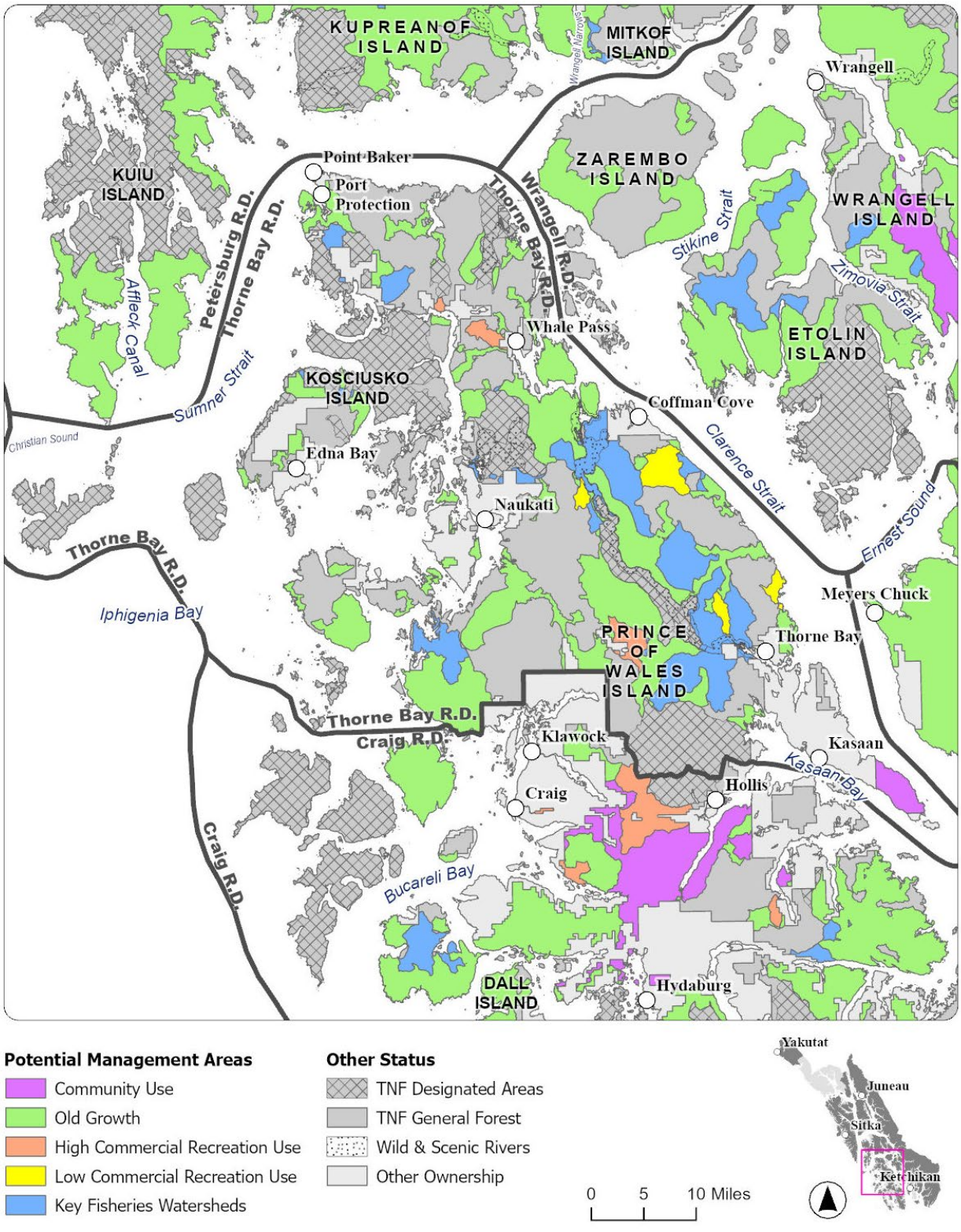


Figure 13. Wrangell Ranger District South potential management areas.

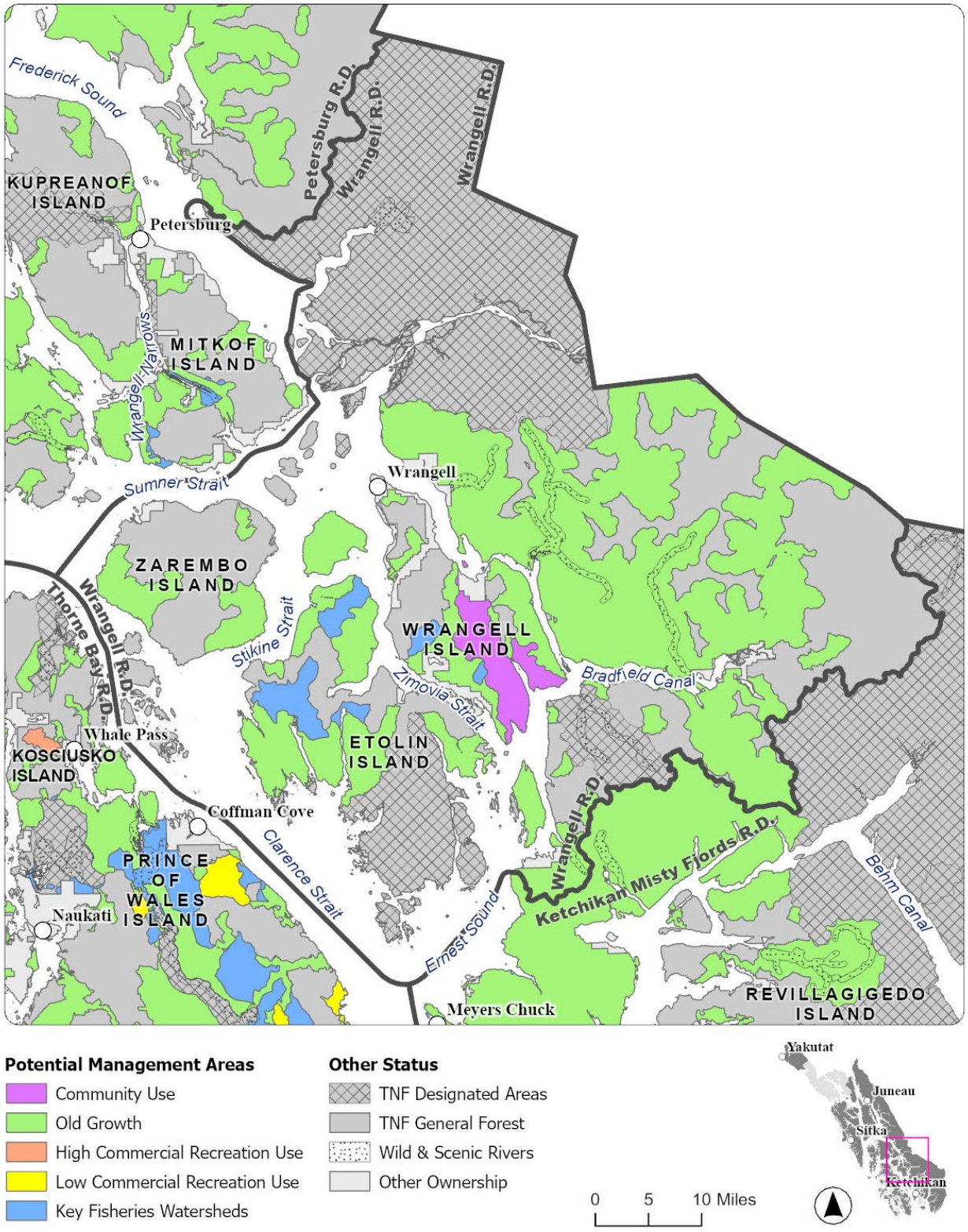


Figure 14. Yakutat Ranger District potential management areas.