



United States Department of Agriculture

Prince of Wales Landscape Level Analysis Project

DRAFT Activity Cards for the Corrected Notice of Intent Scoping Period



**Forest Service
Alaska Region**

**Tongass
National Forest**

**Craig and Thorne Bay
Ranger Districts**

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Introduction

The activity cards for the Prince of Wales (POW) Landscape Level Analysis (LLA) Project are presented in this document and describe all activities potentially considered within the project area, without regard to any specific locations. Information about each activity includes what it usually accomplishes, how it is typically implemented, what constraints and resource-specific guidelines apply, and when it would be implemented. Resource concerns are often mitigated by design criteria, as well as adherence to 2016 Tongass Land and Resource Management Plan Amendment (2016 Forest Plan) Standards and Guidelines and best management practices (BMP), all of which are presented in this appendix where applicable.

The activity cards were designed to be a resource for the public and resource specialists, to assist in alternative development, and to accompany the EIS to provide more clarity for environmental effects analysis. They contain the necessary details to be a framework for the development of action alternatives, allowing for a more simplified comparison between an alternative's components and what the entire spectrum of opportunities is for the project area.

Each card represents an activity that requires environmental analysis and could result in effects on the environment. These activities may be necessary or desired in order to manage the project area over the next 15 years based on what is known from existing data or conditions. This broad list of activities include those that have been suggested in comments, as well as additional ones necessary to meet 2016 Forest Plan objectives or that are otherwise desirable. They are meant to be integrated with one another, to provide integrated management opportunities across the landscape.

Road cards are required for construction or reconstruction of specified roads on the Tongass National Forest and will be developed as site-specific locations are determined. The final road and activity cards, in combination with the Record of Decision and Implementation Plan, would be used throughout the implementation process to ensure that all aspects of the project are implemented within the scope of effects analyzed in the EIS and approved in the Record of Decision for this project. Resource specialists would review and/or survey field locations before any activity would be implemented.

The following text describes the layout of the activity cards and what information is provided. The resource-specific information below is especially important to consider in conjunction with the resource-specific sections on the cards. It provides definitions, explanations, and specific direction for certain circumstances that occur across multiple or possibly all activities. Rather than repeat this information on each individual activity card, the direction for those circumstances is provided here.

Activity Card Sections

Each activity card has a section with general information about the activity, what the general guidelines are that constrain the activity, the resource-specific guidelines that would apply, and when the activity would be implemented. These sections contain the following information:

Description: This is the description of what the ground-disturbing activity entails.

Objectives: This identifies the objective(s) that are typically met with doing the activity; it provides the reader with a way to sort the activities by what it could accomplish.

Connected Actions: These are interdependent parts of an activity and depend on that activity for their justification. Some of these connected actions may have their own applicable activity card, in which case the reader will be directed to those card numbers. Other connected actions do not have their own activity

cards and are fully considered within the card for which it is listed, and for the environmental effects analysis for that activity.

Methods: This is the way the activity is implemented in order to accomplish objectives.

Equipment Used: Any particular types of machinery, tools, or other equipment that is used specific to the implementation of the activity is listed here.

General guidelines constraining this activity: This includes broad Forest Plan direction that confines the activity within the landscape, such as Land Use Designations (LUD), and other regulations that the project may be tiered to.

Resource-specific guidelines: These guidelines are organized by resource and, as listed in the card, pertain to that specific activity. For resource-specific information that pertains to more than one activity, see pages 2 through 23 of this document. Best Management Practices for protecting water quality are cited as applicable. National Core BMPs (USFS 2012) are identified as Activity-Number (*e.g.*, “Veg-3”). Alaska Region BMPs (FSH 2509.22) are identified as BMP-Number (*e.g.*, “BMP 12.6”)

When would we implement: The need for implementation is expressed in terms of existing conditions versus desired conditions, and what might indicate a need for change. There may not be specific times to indicate when implementation would occur; rather, it is the conditions that would lead to implementation. Furthermore, if conducting the activity is contingent on other factors like funding, that information is noted as well.

Integration Opportunities: This section describes what the potential is for combining an activity with others. Meaning, if one activity is typically contingent on another occurring, or if another activity occurring provides the most opportune time for the listed one to occur, whether based on costs, environmental effects, or other factors, then those associations are discussed for consideration.

Silviculture

Silvicultural Systems and Project Objectives

Silvicultural systems are used to manage, harvest, and re-establish stands of forest trees for the purpose of meeting pre-determined objectives. No single silvicultural system for a forest stand can be used to achieve all the desired combinations of amenities and products. Instead, a variety of treatments applied over a project area results in a mosaic of stands for different uses. Through the harvest of timber or other treatments, such as thinning or pruning, existing stands are altered to meet desired conditions over time.

The Forest-wide Standards and Guidelines and USDA Forest Service Manual (FSM) 2400 (Timber Management) provides detailed information about the silvicultural systems recommended for the Tongass National Forest.

A silvicultural prescription will be prepared by a certified Silviculturist according to Forest Service Handbook (FSH) 2409.29d–Silvicultural Examination and Prescription Handbook, to meet the objectives identified in the Forest Plan and by the interdisciplinary planning team according to the selected Alternative. A site-specific interdisciplinary review will be conducted for each proposed activity where the activity cards indicate a prescription is necessary or a review is required.

Silvicultural Prescriptions

Silvicultural treatments are either commercial or precommercial. Commercial stand treatments are those designed around meeting specific silvicultural objectives that require the removal by logging of all or a portion of the trees in the stand. The removal is done by way of a timber sale or stewardship contract and the material removed pays for all or a portion of the treatment cost. Precommercial treatments typically occur in stands that do not have material that can offset any of the treatment cost. Silvicultural treatments in these stands are designed recognizing that none of the cut material will be removed from the site. Precommercial treatments are typically accomplished by way of stand-alone service contracts or as the service portion of a stewardship contract.

Even-aged Management - Clearcut

Even-aged management is most often implemented using the clearcutting regeneration method. This is a commercial treatment designed to primarily produce timber products for sale. It is the most economical and feasible method to harvest timber in the project area.

Culmination of mean annual increment (CMAI) is the age in the growth cycle of a stand at which the mean annual increment for height, diameter, basal area, or volume is at a maximum. CMAI varies by stand productivity and past management of the stand, and is the legal requirement under the National Forest Management Act (NFMA) for determining the youngest age a stand may be considered for even-aged harvest. This translates to a range of rotation ages from about 100 to 110 years old for most stands considered for treatment using even-aged management in the POW LLA Project area. Old-growth stands in nearly all instances have already exceeded CMAI.

For young-growth stands, Forest Plan Standard S-YG-01 (2016 Forest Plan, p. 5-3) allows for harvesting young-growth stands prior to CMAI, under the authority granted by Public Law (P.L.) 113–291, Sec. 3002, subsection (e)(4)(A), the limitation of subsection (e)(4)(B).

(e)(4)(B) LIMITATION.—Any sale of trees pursuant to the authority granted under subparagraph (e)(4)(A) shall not:

- (i) exceed 15,000 acres during the 10-year period beginning on the date of enactment of this Act, with an annual maximum of 3,000 acres sold;
- (ii) exceed a total of 50,000 acres, with an annual maximum of 5,000 acres sold after the first 10-year period;
- (iii) be advertised if the indicated rate is deficit (defined as the value of the timber is not sufficient to cover all logging and stumpage costs and provide a normal profit and risk allowance under the appraisal process of the Forest Service) when appraised using a residual value appraisal; or
- (iv) apply to land withdrawn under subsection (c)(2).

Areas where trees are retained for other resource needs would generally be external to final cutting unit boundaries or are along stream buffers that protrude into the cutting unit. These retention areas typically do not meet distribution requirements for uneven- or two-aged management.

A reasonable assurance of windfirm (RAW) buffer would be applied to unit edges and stream or karst buffers that have high exposure to southeast storm winds and are determined to be at risk from wind damage.

For old growth stands, VCUs that have had concentrated past timber harvest activity and are at risk for not providing the full range of Forest Plan matrix functions are subject to the Legacy Standard and

Guideline. These VCUs are identified in the Forest Plan (p. 4-86). In legacy VCUs, harvest units that are larger than 20 acres are required to leave 30 percent of the original unit opening size in legacy forest structure. Structure left inside of the unit for other resource concerns, excluding TTRA buffers, can be counted towards the 30 percent retention requirement. Adjustment to the planned legacy location may occur during implementation to best implement legacy, while meeting multiple objectives.

Additional silvicultural treatments that follow even-aged harvest may include tree planting, precommercial thinning (PCT), girdling, and/or pruning. These treatments can be used to influence species composition, increase individual tree growth, promote wood quality, and enhance wildlife habitat.

Justification for Clearcutting

Clearcutting must be determined to be the optimum treatment to meet project objectives and per Forest Plan requirements, page 4-68.

Size of Even-aged Openings

NFMA regulations provide that even-aged openings in the western hemlock–Sitka spruce forest type of Southeast Alaska should not exceed 100 acres unless exempted under specific conditions, defined on page 4-72 of the 2016 Forest Plan. Even-aged harvest areas proposed in this project would generally be prescribed to be 100 acres or less.

Two-aged Management

This is a commercial treatment designed to produce timber products for sale in a way that mitigates the effects of the harvest on the landscape. Two-aged management would be implemented using the patch clearcut regeneration method.

Two-aged management results in stands with two distinct cohorts separated in age by more than 20 percent of the stand rotation age. This stand structure results naturally from stands completely regenerated after two distinct disturbance events. Two-aged harvest requires at least 15 percent of the original standing green tree basal area to remain after harvest. These trees can be grouped for operational and environmental concerns or be evenly distributed across the stand. If trees are grouped, the groups must be distributed somewhat evenly across the stand.

The objective of this prescription is to maintain or create two-aged stand structure primarily for increased wildlife benefit while maintaining as much of the operational and economic feasibility of even-aged management as possible. The retention level prescribed is often area based, and harvest openings would be located to balance wildlife needs while creating an economical sale opportunity. Openings must also be planned so that opportunities for the next harvest entry are not forfeited and large enough to promote abundant natural regeneration of all species. Planting to enhance the occurrence of some species may be prescribed for certain stands.

When harvesting young-growth stands prior to reaching CMAI, Forest Plan Standard S-YG-01 (2016 Forest Plan, p. 5-3) applies to two-age management since this regeneration method is a form of even-aged management (FSM 2470, p. 19).

Uneven-aged Management – Single Tree Selection

Uneven-aged management is a commercial treatment designed to create (young growth) or maintain (old growth) multi-aged or multi-layered stand structure. Most young-growth stands in the project area are currently even-aged resulting from previous clear-cut harvest and, therefore, applying uneven-aged

management to these stands is intended to create multi-aged stand structure, while old-growth stands tend to already exhibit uneven-aged structure to varying degrees.

The objective of uneven-aged management is to economically harvest a percentage of the stand while maintaining or creating structural and understory vegetation diversity for wildlife while retaining timber for future economically viable and sustainable entries. In young-growth stands, this prescription generally creates multiple age classes, and trees will be removed across all age groups either individually or in small groups or strips up to two acres in size.

There is no final rotation age as in even-aged or two-aged systems, but instead regular, periodic entries are designed to maintain three or more distinct age classes in a reasonably well dispersed manner across the stand. The next harvest entry under uneven-aged management would likely be in 50 to 100 years.

Consideration of CMAI prior to harvest does not apply to stands that will be managed as uneven-aged.

The first harvest entry under uneven-aged management must be designed so that future entries are not physically or economically isolated and so that tree regeneration from former entries is not excessively damaged. Harvest openings must also be of sufficient size to allow regeneration of all species, not just shade-tolerant hemlock. This system requires more frequent entries than even-aged or two aged management.

Old Growth: Healthy, young trees in the intermediate crown class would be a priority for retention to promote economic future entries. Older trees with low timber but high wildlife value would also be a priority for retention. The canopy gaps and disturbance created by harvest of the remaining trees would promote new tree regeneration to facilitate future harvest entries as well as promote the growth of understory plants important for wildlife. A retention level of 75 percent will be used in units identified as having particular windthrow, visual, or wildlife concerns. A retention level of 50 percent will be used in units with wildlife or visual concerns, but not requiring the higher level of retention. Future entries would continue the process of developing additional age classes. The next entry would likely occur in 50 years for units with 75 percent retention, and 100 years for units with 50 percent retention. This would allow the intermediate age class to develop into mature trees and provide for another economical harvest. The silvicultural prescription would maximize the flexibility of helicopter yarding to allow for the removal of a higher percentage of more economically valuable trees, while retaining a higher percentage of trees that have higher value for wildlife, or smaller diameter trees that would be more economically valuable in the future.

Young growth: In young growth, trees selected for harvest will generally be in groups up to two acres in size. The first harvest entry will typically remove no more than 33 percent of the stand area in these groups. Subsequent harvest entries would be conducted similarly, over time developing three or more distinct age classes. The timing of harvest entries will be contingent on the land management objectives for the stand. In all uneven-aged management areas, windthrow risk to the residual stand would be determined acceptable based on the level of basal area retained and/or the inherent windthrow potential of the stand.

Stand Establishment

Cone Collection (Activity Card 13)

When possible seed and cone collections are normally performed in association with timber sales as part of a Sale Area Improvement (SAI) Plan to support reforestation efforts on harvest areas within the timber sale. Collecting seed cone from trees felled during timber sale operations is not always possible. Timing

of falling operations on a timber sale may not coincide with cone crop maturity and availability. At times a need to collect additional seed cone from areas outside of active timber sales may be identified. Ongoing planting efforts, recent poor germination testing on existing seed caches and intermittent cone crops for some tree species have resulted in a need for additional collections. A series of poor cone crops for yellow cedar and germination test failures of existing red cedar seed caches has made these two species a primary target for additional cone collections. Seed caches of other tree species are aging and may also need to be replaced.

Cone collections would be implemented at such places and times where a good cone crop occurs and is accessible to hand crews. Collections normally occur in late August or September when cone has ripened. Collection sites will be accessed from existing roads and are generally in or within a few hundred feet of the road. Trees cut for cone collections are generally small, scattered and few. Material is normally left on site and may be made available to the public as firewood. It is possible that cone collection activities may result in commercial size material as a by-product. In such an occurrence, small salvage sales may be considered but the likelihood of sufficient quality, quantity, and concentration of salvage material being made available to support a commercial salvage sale is low. Trees will not be cut in the following areas on National Forest System lands: within identified roadless areas, within riparian areas, or land use designations where commercial timber harvest is prohibited.

Planting and Interplanting (Activity Card 12)

The need for planting is evaluated after every harvest. Site conditions are usually determined to be favorable with sufficient seed source present for natural regeneration. Therefore, artificial reforestation is generally not considered necessary at this time nor treated as an essential activity. However, due to concern over regeneration and maintenance of yellow-cedar, non-essential planting for species diversity may be conducted on selected sites to enhance species composition.

Inter-planting of yellow-cedar will be considered when establishing even-aged and two-aged stands if it was present in the project area. Cedar may be planted in harvested late-seral stands if inter-planting would help maintain or increase the Alaska yellow-cedar component in an area. Potential planting sites will be evaluated to avoid mal-adapted sites (low elevation, low productivity, south facing) and favor sites where, although there may be no yellow-cedar currently present, it is expected to do well (higher elevations, north slopes, and well drained sites). Plug 2 seedlings will be planted to improve survival success in stands where deer browse may be an issue. Non-lethal deterrents to discourage deer browse may also be utilized.

Intermediate Treatments

Intermediate treatments are stand improvement activities intended to enhance growth, quality, vigor or composition of a stand between the time the stand has fully regenerated and prior to final harvest. Intermediate treatments include precommercial thinning and commercial thinning.

Precommercial Thinning – (Activity Card 5)

Precommercial thinning is the selective cutting of young-growth trees in regenerated stands prior to trees reaching merchantable size to meet a variety of management objectives by reducing tree densities in overstocked stands to prevent stagnation and increase the growth of the remaining trees. Precommercial thinning activities ideally occur before the stand reaches the stem exclusion stage, approximately 15 to 25 years after stand initiation, depending on site productivity.

Following timber harvest, natural regeneration often results in more trees per acre than there is available growing space. As competition increases, this leads to lower diameter growth and loss of disease

resistance. Increased competition also leads to the shading out of understory vegetation that may be valuable to some wildlife species. Thinning not only improves future tree diameter growth but, by opening the canopy to allow more sunlight into the stand, increases understory shrub and forb growth.

By thinning young-growth stands before the stem exclusion stage begins, understory vegetation persists and the trees respond quickly. Precommercial thinning prescriptions will be developed on a site-specific basis utilizing variable spacing techniques, phenotypic criteria, and species preferences. A combination of treatments will be used to achieve site-specific objectives. These may include, but are not limited to: slash control, wildlife travel corridors, wildlife gaps, pruning, and girdling. Individual stand objectives may include timber, riparian, and/or wildlife emphases.

Riparian Thinning (Activity Card 6)

Riparian areas are important because they contribute large woody debris to channels, shade stream banks for temperature control, regulate nutrient exchange, influence surface and groundwater hydrology, and maintain aquatic biodiversity. Riparian thinning treatments will accelerate growth and development of young-growth riparian areas toward a more mature forest structure mirroring the conditions of undisturbed riparian stands. In general, the pre-harvest condition of many riparian stands were fewer, larger, more widely spaced trees with a more diverse understory. Treatments that would increase growth and stand diversity could also open up the canopy to allow for understory redevelopment, which could benefit wildlife as well as improve nutrient cycling along stream corridors. Thinning activities could occur in stands that are approximately 15 to 35 years old depending on stand location, site productivity, need for restoration, and management objectives. Most riparian prescriptions would include wider spacing of leave trees. In addition, the leave tree species of choice will be Sitka spruce, followed by western hemlock. Red alder and cedar are usually ignored for spacing and left as a component of the stand.

Wildlife Thinning (Activity Card 7)

Many stands in Old Growth Reserves have reached the stem exclusion stage. Wildlife habitat enhancement treatments are necessary to move these existing young-growth stands towards mature forest conditions that include increased structural diversity and understory forage. Treatment methods will be site-specific to achieve these objectives, and may include fixed-space thinning, pruning, and gaps designed to generate a more rapid return to quality winter range, develop and enhance understory and shrub plant communities, and maintain ungulate movement corridors.

Young-growth stands on the Tongass can be dense with 3,000 or more trees per acre; whereas old-growth stands average around 200 trees per acre. Without thinning, young-growth tree density can persist for 100-150 years. Wildlife thinning is designed to create forage for Sitka black-tail deer, restore large trees for raptor nesting and marten denning, and promote snags for cavity nesting birds, while maintaining unthinned areas for slash free travel corridors, between old-growth stands and low-elevation wintering habitat. Wildlife habitat thinning prescriptions are generally wider spaced than the typical timber intensification thinning prescription, allowing more light to reach the ground and providing for a flush of new understory growth. The wider spacing will also delay canopy closure longer than a more tightly spaced thin. Slash would be treated when necessary for deer mobility through the area. In addition to enhanced forage production, thinning accelerates tree growth rates so that large diameter trees are available sooner.

Supplemental Treatments

The following treatments are generally not stand-alone activities. During the implementation of precommercial, riparian, or wildlife thinnings, a combination of these methods may be prescribed to meet specific management objectives.

Girdling (Activity Card 9)

Girdling may be utilized when treating stands with larger diameter trees to meet resource objectives. Girdling has been increasingly used to address the impacts of thinning slash to wildlife by staggering the time frame in which trees selected for removal contribute to the amount of existing slash. In general, trees between 7 inches and 14 inches in diameter at breast height (4.5 feet above the ground; dbh) will be girdled to achieve the desired spacing and reduce the amount of slash left on the ground. This technique may also be used to recruit future snags in stands that have little to no remnant snags. Not only has girdling been shown to be an effective way to decrease the impact of slash in older young growth, it has also been shown that stands thinned with girdling treatment areas have increased deer habitat values compared with untreated stands.

Pruning (Activity Card 10)

Pruning may be utilized in stands where it would be beneficial to have more sunlight reach the forest floor than would be achieved by thinning alone. Trees to be pruned shall be those of the tallest height, largest crown, and straightest stems that are free of damage from insects, disease, physical, or mechanical causes. Pruning improves wood quality and increases wood production, as well as improves wildlife habitat by prolonging the occurrence of understory vegetation favored by Sitka black-tailed deer.

Slash Treatment (Activity Card 11)

Slash treatments may be utilized in stands where thinning treatments will create excessive slash or there is already a large amount of existing slash present. A variety of treatment methods (bucking to various lengths, delimiting, lop and scatter, piling, etc.) may be used to remove or redistribute downed woody material to facilitate wildlife movement or to meet other stand objectives. Slash is not commonly treated in timber emphasis areas except where needed to address wildlife habitat concerns. Specifications for slash treatments of activity generated woody material will be written into the stand prescription when required to meet stand objectives and desired future condition. During precommercial, wildlife, and riparian thinnings, slash shall be pulled clear of roadways, associated ditches, and road banks. Streams and karst features located within units will be buffered and any slash removed.

Wildlife Gaps

Gaps or openings up to one tenth of an acre spaced at about 1 gap per 1-2 acres may be created in stands that have reached the stem exclusion stage. Stem exclusion in previously harvested timber stands on the Tongass can severely limit light reaching the forest floor and as a result understory vegetation is severely inhibited. The stem exclusion phase begins approximately 25 to 35 years after harvest and can last for many decades. Very little forage is available to deer in stem excluded stands, especially in winter. Openings or gaps of one tenth to one quarter acre can stimulate growth of understory plants (deer forage) in young-growth stands.

Prescription Components Common to All Precommercial Thinning

Maintenance of Cedar

The maintenance of yellow-cedar in young growth is important due to the decline prevalent in some old-growth stands across Southeast Alaska. Young-growth yellow-cedar does not appear to be as strongly affected by cedar decline as older stands; however, dying yellow-cedar has been observed recently in a young-growth stand. Naturally regenerated cedar has difficulty competing against other faster growing species like Sitka spruce and western hemlock that can typically dominate regenerating stands. Survival of cedar regeneration is impacted by deer browsing and mortality can be high. In order to promote stand variability and structural diversity as well as maintain a higher component of yellow-cedar and western

red cedar, precommercial thinning prescriptions favor cedar trees over other species and thinning spacing is adjusted accordingly. When a group of two or more cedars (yellow or red) are encountered, the tree spacing is changed to be half the prescribed tree spacing. This tighter spacing is only applied between cedar trees and does not apply between cedars and other tree species. The objective is to create ‘clumps’ of cedar and better approximate the tree’s old-growth form and characteristics.

Wildlife Travel Corridors (Activity Card 8)

Strips of unthinned young growth will be placed strategically throughout thinning units. The purpose of these unthinned strips is to allow wildlife to move more easily through the treated stand. The strip will be a minimum of 100 feet wide. A strip should not be located in an area where it will cross a cliff, log landing, rock pit, or pond. When the strip crosses roads or streams it should meet on both sides. All the strips will run from timberline to timberline. The unthinned strip does not have to be in a straight line. Curves can be used to avoid cliffs and landings, as long as the correct width is maintained. Trees required to be felled adjacent to these corridors should be felled away from and not into the corridor.

Streams

A minimum 10-foot wide no-thin buffer shall be left on each side of protected streams to meet Fisheries and Wildlife objectives. The no-thin buffer shall be measured from the edge of the stream bank. The purpose of this no-thin stream buffer is to maintain or improve water quality and channel stability as well as adding spatial diversity and wildlife travel corridors.

Timber

Log yarding practices are based on slope stability, soil disturbance, channel type, and stream class (Veg-4, Veg-5, BMP 13.9). Additional measures are taken to protect Riparian Management Areas (RMA) from possible disturbance associated with tree felling and yarding. Harvest activities near Class I, Class II, and Class III streams require that trees be felled away from the stream buffer and that trees yarded across Class III stream courses, where applicable, be fully suspended to minimize the exposure of mineral soil (Veg-3, BMP 12.6, 13.16). Trees near Class IV streams are felled away from the stream whenever feasible, and logging debris introduced into Class IV streams is removed. Class IV streams are treated as part of the hillside, under slope stability standards and guidelines (BMP 13.5). Suspension requirements are used to minimize soil erosion, mass movement, and formation of new channels (BMP 13.9).

Some young-growth units may have a portion of the harvest area isolated from the existing road by a mapped RMA, which will be field verified for logging feasibility at the time of implementation (BMP 12.6).

Transportation

The need for roads on Prince of Wales Island has primarily been for access to timber resources. The maintenance and reconstruction requirements of the existing system depend mainly on the volume of timber hauled and, to a lesser extent, on recreational use. With the exception of a few administrative sites and campgrounds, most National Forest System (NFS) roads are single lane, constructed with blasted quarry rock, and designed for off-highway loads. Typical collector and local roads are 14 feet wide with a rough gravel surface. Higher standard arterial roads are normally 16 feet wide and may have a smooth gravel surface.

NFS roads are constructed to provide access to NFS lands and are included in the Forest Development Transportation Plan (see Transportation Standards and Guidelines in Chapter 4 of the 2016 Forest Plan).

Temporary roads are authorized by contract, permit, lease, or emergency operation, are not intended to be part of the Forest transportation system, and are not necessary for long-term resource management.

The objectives of managing the Forest transportation system and motor vehicle use on NFS roads, on NFS trails, and in areas on NFS lands are:

1. To provide sustainable access in a fiscally responsible manner to NFS lands for administration, protection, utilization, and enjoyment of NFS lands and resources consistent with the applicable land management plan.
2. To manage the Forest transportation system, including motor vehicle use and Over Snow Vehicles (OSV) use on NFS roads and NFS trails and in areas on NFS lands, within the environmental capabilities of the land.
3. To provide an appropriate range of recreation opportunities on NFS lands and to minimize conflicts among uses of NFS lands.
4. To manage the Forest transportation system to address user safety and convenience and efficiency of operations in an environmentally responsible manner and, where needed, to restore ecosystems along NFS roads and NFS trails designated for motor vehicle use or OSV use under 36 CFR Part 212, Subpart B or C, within the limits of current and anticipated funding levels.
5. To coordinate travel planning and analysis on NFS lands with Federal, State, county, and other local governmental entities and tribal governments and to allow the public to participate in the designation of NFS roads, NFS trails, and areas on NFS lands for motor vehicle use or OSV use.
6. To designate those NFS roads, NFS trails, and areas on NFS lands that are open to motor vehicle use or OSV use.
7. To make appropriate use of transit and intermodal transportation systems when they best meet the need for transportation to NFS destinations in a sustainable and environmentally acceptable manner.

Road construction, reconstruction, and reconditioning are administered through construction drawings and specifications. Applicable BMPs are used during layout and construction work.

Wildlife

Wildlife analysis is done at a variety of scales, including Wildlife Analysis Areas (WAA), Value Comparison Units (VCU), Biogeographic Provinces, and Game Management Units (GMU). The POW LLA Project is comprised of many WAAs and VCUs, four biogeographic provinces (14, 16, 17, and 18), and one GMU (GMU 2)

Forest-wide Standards and Guidelines (2016 Forest Plan p. 4-85 to 4-97) will be followed. Below is a summary of wildlife Standards and Guidelines that apply to POW LLA activity cards.

Goshawks

The 2016 Forest Plan requires a 100-acre buffer on all known or newly discovered active goshawk nests. Goshawk nest buffers will be applied whenever a nest is discovered. Surveys for goshawk nests will occur prior to project implementation in all polygons that meet the criteria of high priority for goshawk nests that may be impacted by a management activity.

Sitka Black-tailed Deer

Consider Sitka black-tailed deer habitat needs before or as part of project analysis. Ensure interdisciplinary involvement and consideration of deer habitat in project planning and in the environmental analysis process.

Bald Eagles

The Bald Eagle Protection Act provides for special management for bald eagles. National Bald Eagle Management Guidelines (USFWS 2007) will be used for all activities.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. This recommendation applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks that are intended for licensed public display.

Except for authorized biologists trained in survey techniques, avoid operating aircraft within 1,000 feet of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.

First, determine which category your activity falls into (between categories A – H). If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity represented. If your activity is under A or B, our recommendations for buffers are in the table below.

Category A:

- Building construction, 1 or 2 story, with project footprint of ½ acre or less.
- Construction of roads, trails, canals, power lines, and other linear utilities.
- Agriculture and aquaculture – new or expanded operations.
- Alteration of shorelines or wetlands.
- Installation of docks or moorings.
- Water impoundment.

Category B:

- Building construction, 3 or more stories.
- Building construction, 1 or 2 story, with project footprint of more than ½ acre.
- Installation or expansion of marinas with a capacity of 6 or more boats.
- Mining and associated activities.
- Oil and natural gas drilling and refining and associated activities.

	If there is no similar activity within 1 mile of the nest	If there is similar activity closer than 1 mile from the nest
If the activity will be visible from the nest	660 feet. Landscape buffers are recommended.	660 feet, or as close as existing tolerated activity of similar scope. Landscape buffers are recommended.
If the activity will not be visible from the nest	Category A: 330 feet. Clearing, external construction, and landscaping between 330 feet and 660 feet should be done outside breeding season. Category B: 660 feet.	330 feet, or as close as existing tolerated activity of similar scope. Clearing, external construction and landscaping within 660 feet should be done outside breeding season.

Category C. Timber Operations and Forestry Practices

Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time.

Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the breeding season within 660 feet of the nest. The distance may be decreased to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched.

Selective thinning and other silviculture management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season. Precautions such as raking leaves and woody debris from around the nest tree should be taken to prevent crown fire or fire climbing the nest tree. If it is determined that a burn during the breeding season would be beneficial, then, to ensure that no take or disturbance will occur, these activities should be conducted only when neither adult eagles nor young are present at the nest tree (*i.e.*, at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest). Appropriate Federal and state biologists should be consulted before any prescribed burning is conducted during the breeding season.

Avoid construction of log transfer facilities and in-water log storage areas within 330 feet of the nest.

Category D. Off-road vehicle use (including snowmobiles). No buffer is necessary around nest sites outside the breeding season. During the breeding season, do not operate off-road vehicles within 330 feet of the nest. In open areas, where there is increased visibility and exposure to noise, this distance should be extended to 660 feet.

Category E. Motorized Watercraft use (including jet skis/personal watercraft). No buffer is necessary around nest sites outside the breeding season. During the breeding season, within 330 feet of the nest, (1) do not operate jet skis (personal watercraft), and (2) avoid concentrations of noisy vessels (*e.g.*, commercial fishing boats and tour boats), except where eagles have demonstrated tolerance for such activity. Other motorized boat traffic passing within 330 feet of the nest should attempt to minimize trips and avoid stopping in the area where feasible, particularly where eagles are unaccustomed to boat traffic. Buffers for airboats should be larger than 330 feet due to the increased noise they generate, combined with their speed, maneuverability, and visibility.

Category F. Non-motorized recreation and human entry (*e.g.*, hiking, camping, fishing, hunting, birdwatching, kayaking, canoeing). No buffer is necessary around nest sites outside the breeding season. If the activity will be visible or highly audible from the nest, maintain a 330-foot buffer during the breeding season, particularly where eagles are unaccustomed to such activity.

Marine Mammals

Provide for the protection and maintenance of harbor seal, Steller sea lion, and sea otter habitats. Ensure that Forest Service authorized or approved activities are conducted in a manner consistent with the Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), and National Marine Fisheries Service (NMFS) guidelines for approaching seals and sea lions. Consult with the appropriate agency for identification of critical timing events, such as molting, parturition, etc., and recommended distances to avoid disturbances.

Wolves

Provide, where possible, sufficient deer habitat capability, first to maintain sustainable wolf populations and then to consider meeting estimated human deer harvest demands. This is generally considered to equate to the habitat capability to support 18 deer per square mile (using habitat capability model outputs) in biogeographic provinces where deer are the primary prey of wolves.

Since road access and associated human-caused mortality has been determined to contribute to wolf mortality in GMU 2, a total road density of 0.7 to 1.0 mile per square mile or less may be necessary.

Maintain a 1,200-foot forested buffer, where available, around known active wolf dens.

No road construction within 600 feet of a den.

Seabird Colonies

Provide for the protection and maintenance of seabird (marine bird) colonies. Locate facilities and concentrated human activities requiring Forest Service approval as far from known seabird colonies as feasible consistent with the Migratory Bird Treaty Act. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance: a) For aircraft flights on Forest Service authorized or approved activities, when weather ceilings permit, maintain a constant flight direction and airspeed and a minimum flight elevation of 1,500 feet (458 meters) for helicopters and fixed-winged aircraft. If at all possible, avoid flying over seabird colonies; and b) Regulate human use to maintain a 250-meter no-disturbance distance from seabird colonies on upland habitats.

Waterfowl and Shorebird Habitats

Maintain or enhance wetland habitats that receive significant use by waterfowl and shorebirds. “Significant” is relative, but generally relates to use of a specific area by tens or hundreds of individuals of one or more species. Locate facilities and concentrated human activities requiring Forest Service approval as far from known waterfowl or shorebird concentration and nesting areas as feasible. Minimize disturbance of waterfowl by restricting, when feasible, development activities to periods when waterfowl are absent from the area. Minimize human disturbance of habitats during important periods of the year (nesting and brood-rearing, molting, and winter) by managing human use (such as trails and off-highway vehicle use) in significant wetland areas. To reduce human disturbance, provide a minimum distance of 330 feet (100 meters) between human activities on the ground and significant areas being used by other waterfowl.

Heron and Raptor Nest Protection

Provide for the protection of raptor (hawk and owl) nesting habitat and great blue heron rookeries.

Conduct project-level inventories to identify heron rookeries and raptor nesting habitat using the most recent inventory protocols. Protect active rookeries and raptor nests. Active nests will be protected with a forested 600-foot windfirm buffer, where available. Road construction through the buffer is discouraged. Prevent disturbance during the active nesting season (generally March 1 to July 31). Protection measures for the site may be removed if the nest is inactive after two consecutive years of monitoring.

Marbled Murrelet

If nests are found during project implementation, maintain a 600-foot, generally circular, radius of undisturbed forest habitat surrounding identified murrelet nests, where available. Minimize disturbance activities within this buffer during the nesting season (May 1 to August 15). Maintain the buffer zone and monitor the site for nesting activity for not less than two nesting seasons after nest discovery. Maintain the buffer if the nest site is active during the monitoring period. Buffer protection may be removed if the site remains inactive for two consecutive nesting seasons.

Endemic Terrestrial Mammals

The objective is to maintain habitat to support viable populations and improve knowledge of habitat relationships of rare or endemic terrestrial mammals that may represent unique populations with restricted ranges. Where distinct taxa are located, design projects to provide for their long-term persistence on the island. Consider habitat needs of endemic mammals in design of thinning treatments.

Reserve Tree and Cavity-Nesting Habitat

Provide habitat for cavity-nesting wildlife species. The legacy forest structure standard and guideline considers snags and replacement snag needs for those VCUs at risk for not providing sufficient snags within the watershed. Other VCUs will have snags retained within the development LUDs because habitat will be maintained in riparian buffers, the beach fringe, old-growth habitat reserves, and other Non-development LUDs within the VCU.

Landscape Connectivity

The 2016 Forest Plan says to design projects to maintain landscape connectivity. The objective is to maintain corridors of old-growth forest between large and medium old growth reserves (2016 Forest Plan Appendix K) and other forested Non-development LUDs at the landscape scale. Designed corridors should be of sufficient width to minimize edge effect and provide interior forest conditions (generally 660 feet). Consider elevation, natural movement corridors, length of corridor, tree heights, adjacent landscapes, and windthrow susceptibility in corridor design.

Wildlife travel corridors should be designated and designed as needed on a stand-by-stand basis by a team consisting of the Silviculturist and Wildlife Biologist. Wildlife travel corridors are areas that should be left untreated. Within non-development LUDs such as OGRs, in areas functioning as wildlife travelways, the wildlife biologist may recommend or require that PCT areas be up to 660 feet wide. Within development LUDs the travelways should be approximately 100 feet wide. The wildlife biologist may require trees felled away from and not into the corridor and slash treatments.

Forest-wide, within the beach fringe, riparian buffers, and other lands not suitable for timber production, consider designing young-growth treatments to accelerate old-growth characteristics in order to increase connectivity for wildlife.

Between large and medium OGRs, only one connection is needed, the beach fringe counts as a connector, and the connection does not have to be the shortest distance between reserves. Where these features do

not provide sufficient productive old-growth forest connectivity, provide stands, where they exist, of productive old-growth forest or other forest that provides adequate wildlife habitat values (*i.e.*, older young growth that provides adequate snow intercept for deer).

Old Growth Reserves (OGR): The 2016 Forest Plan requires that all medium and large OGRs be connected. The POW LLA Project will identify any lack of connectivity between medium and large OGRs and prioritize these areas for treatments to provide connectivity.

Any OGRs that do not meet the minimum acre requirements listed in the 2016 Forest Plan (or the OGR tracking table) will be re-evaluated by an interagency team during the POW LLA Project process.

Legacy Standard: In harvest units greater than 20 acres within VCUs identified, leave 30 percent of the entire unit (based on area) in legacy forest structure.

VCUs where standard applies:

Craig Ranger District: 6100, 6200, 6210, and 6240

Thorne Bay Ranger District: 5320, 5350, 5371, 5380, 5390, 5440, 5450, 5460, 5500, 5542, 5550, 5560, 5570, 5580, 5590, 5600, 5610, 5620, 5700, 5710, 5720, 5790, 5810, 5830, 5840, 5850, 5860, 5871, 5872, 5880, 5900, and 5972

Wildlife Trees

Selection harvests of old-growth forests can target defective trees with existing stem decay for retention to serve as wildlife habitat in managed forests.

Strategies to speed the reintroduction of stem decays in young-growth trees include unintentional and intentional tree injuries (lower and upper bole wounds, and top breakage) during silvicultural entries. Targeted artificial inoculation of trees with decay fungi could be utilized as well.

Aquatics (Fisheries and Hydrology)

Fisheries and Hydrology resources are discussed separately in the Activity Cards, but are grouped as Aquatics in this Introduction because both resources reference common water quality concerns, Forest-wide Standards and Guidelines, regulations, and Best Management Practices (BMP). The combination of several activities within a watershed can result in adverse Cumulative Watershed Effects (CWE), leading to unacceptable changes to peak flow rate, water yield, or sediment delivery to streams. These water quality concerns are minimized through the preservation and improvement of Riparian Management Areas (RMA), through the implementation of stream category protections and mitigations, through the use of BMPs, and by following all applicable regulations and 2016 Forest Plan Standards and Guidelines.

Riparian Management Areas

Riparian Management Areas encompass the zone of interaction between aquatic and terrestrial environments associated with streamsides, lakeshores, and floodplains. RMAs are often used to define the no-harvest stream buffer boundaries (see Stream Category Protections and Mitigations below), and are areas of special concern to fish, other aquatic resources, and wildlife. RMAs are identified and delineated for project areas where resources are to be extracted or ground disturbing activities will occur.

RMAs vary in width according to process group; stream value class; the extent of the flood plain, riparian vegetation or soils, and riparian associated wetland fens; and the location of side-slope breaks.

Additionally the Tongass Timber Reform Act (TTRA) requires, as a minimum, that no commercial timber harvest be allowed within 100 feet horizontal distance on either side of Class I streams and Class II streams that flow directly into Class I streams. TTRA buffers are incorporated in RMAs.

Process Groups and Channel Types

There are nine basic fluvial process groups on the Tongass National Forest, as well as one additional group for lakes and ponds. Each process group includes a number of channel types that more precisely characterize a channel and help predict the probable responses to natural and human influences. The desired conditions, objectives, and management direction for each process group and channel type are described in Appendix D of the 2016 Forest Plan.

Stream Value Classes

The stream value class designations for Tongass National Forest are based primarily on presence or absence of anadromous and resident fish, and secondarily on stream morphology. The 2016 Forest Plan recognizes four stream classes based on the following criteria:

- Class I: Streams and lakes with anadromous (migrating from the ocean) or adfluvial (migrating from lakes) fish or fish habitat, or high quality resident fish waters, or habitat above fish migration barriers known to provide reasonable enhancement opportunities for anadromous fish.
- Class II: Streams and lakes with resident fish or fish habitat – 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. For streams less than 30 percent gradient, special care is needed to determine if resident fish are present.
- 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. Class IV streams do not meet the criteria used to define Class I, II, or III streams. Class IV streams must have bankfull width of at least 0.3 meter (1 foot) over the majority of the stream segment. For perennial streams, with average channel gradients less than 30 percent, special care is needed to determine if resident fish are present (resident fish presence dictates a Class II designation).

Stream Category Protections and Mitigations

Prior to timber harvest, one of three protection categories is assigned to any stream that could be affected by harvest activities. The protection category assignment is usually aligned with the RMA delineation (which considers stream value class, process group, and channel type; see RMA section above) but site-specific concerns could push a stream into a more protective category. Streams are flagged on the ground according to their protection category, and timber sale contracts will specify the protection categories for each stream in a sale area. Specific protections and mitigations for each category are listed below and can be found in R10-C(T)6.51 (6/13).

Category A

Category A requires the greatest protection measures of the three categories including at least a 100-foot no-harvest stream buffer. Class I and Class II streams are typically assigned Category A protection.

These stream reaches are flagged with blue and white (B/W) candy striped flagging. Under the TTRA, there shall be no timber harvest within 100 feet of the stream channel and a Stream Course Protection

Plan will be developed prior to any operation within that buffer (BMP 13.16 and National Core BMPs AqEco-2, Road-5, and Veg-3). Additional buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7).

Category B

Category B has protection measures to address water quality concerns including a no-harvest buffer within the RMA of the stream (defined as the side-slope break). Category B protections are typically assigned to Class III streams, although some Class IV streams can receive this protection category if site-specific water quality concerns warrant the additional protection. These stream reaches are flagged with orange and white (O/W) candy striped flagging and shall be protected in the following manner:

- Trees shall be felled so that the direction of fall is away from the streamcourse
- Felled trees that inadvertently enter or cross stream courses shall not be bucked or limbed until clear of stream courses, unless limbing or bucking would reduce damage to the riparian vegetation or stream banks
- Trees or products shall not be hauled or yarded across the stream course unless fully suspended
- Debris in stream courses resulting from falling or yarding shall be removed immediately to a stable location above high water mark
- Existing natural stable debris shall be left undisturbed
- Additional AHMU and selective harvest buffers may apply, such as no harvest within the RMA (defined as the side-slope break) and windfirm buffers.

Category C

Category C has the fewest protection measures of the three categories and is typically assigned to Class IV streams. These stream reaches are flagged with green and white (G/W) candy striped flagging and shall be protected in the following manner:

- Where practicable, trees will be felled and yarded away from the streamcourse
- The trees that cannot be felled away from stream courses shall be felled to bridge the stream providing these trees will be yarded during the same operating season
- Trees felled to bridge stream courses shall be bucked, limbed, and topped clear of the streamcourse and its banks

Debris which restrict natural water flow, adversely affect water quality, or have potential for debris flow shall be removed to a stable location above high water mark before the yarder leaves the unit or upon completion of seasonal logging activities in the unit, whichever comes first.

Best Management Practices

National Core and R10 BMPs are applied to address nonpoint sources of pollution, such as sediment movement generated by resource extraction or construction activities. Although specific BMPs are called for in the resource specific guidelines section of the Activity Cards, all relevant BMPs apply.

Soils/Wetlands

Applicable federal, state and municipal laws, regulations, policies which govern the management of soils include: The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), the USDA Nonpoint Source Water Quality Policy (December 5, 1986), the National Forest Management Act, the Multiple Use Sustained Yield Act of 1976, the Forest Service Manual 2554, Forest Service Soil and Water Conservation Handbook, and the 2016 Tongass Land and Resource Management Plan Amendment (2016 Forest Plan).

POW LLA Project designs are heavily influenced by the island's soil resources. For instance, efforts to avoid slopes greater than 72 percent (as outlined in the 2016 Forest Plan) often determine the location of unit boundaries, temporary roads, and landings. All activities (trails, timber harvest, roads, etc.) planned for this project would be located and designed to meet 33 CFR 323 guidelines and State-approved BMPs, National Core BMPs, and Region 10 BMPs. Applicable soils direction is included in the 2016 Forest Plan.

Applicable federal, state, and municipal laws, regulations, and policies which govern the management of wetlands include: The 2016 Tongass Land and Resource Management Plan Amendment (2016 Forest Plan); Executive Order 11990: Protection of Wetlands; 40 CFR 230 Section 404; 33 CFR 323.3b; the Clean Water Act Section 404b; and US Corps of Engineers Wetlands Delineation Manual (1987).

The Forest Service is required by Executive Order 11990 and Section 404 of the Clean Water Act to preserve and enhance the natural and beneficial values of wetlands wherever practicable when carrying out its land management responsibilities. Executive Order 11990 and subsequent regulations also require federal agencies to avoid new road construction on wetlands whenever there is a practicable, environmentally-preferred alternative.

Due to the extensive nature of wetlands in the POW LLA Project area, it would be impossible to avoid all wetlands during road planning and construction. Where a wetland cannot be avoided, the impacts would be minimized. R10 Best Management Practices (BMP) 12.5 provides guidance for wetland identification, evaluation and protection. If an activity proposed is not included in the 404 Silvicultural Exemption and fill is planned in wetlands, a wetland delineation would be conducted and a 404 permit would be obtained from the Army Corp of Engineers prior to implementation.

Botany

Unless otherwise noted, activities require a site-specific review by a qualified botanist/ecologist. The activities and their proposed locations will be evaluated to determine if pre-implementation botanical surveys are necessary. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Design features and mitigation measures will be recommended by the botanist/ecologist to avoid impacting any rare and sensitive plants found within the activity area. When sensitive plant populations are found, protection measures may include, but are not limited to: avoidance, directional falling and yarding of trees away from sensitive plants, and partial retention of forest structure.

Sensitive Plants

Sensitive plants are those plants identified by the Regional Forester for which population viability is a concern on National Forest System (NFS) lands within the region. A viability concern is identified by either a significant existing or predicted downward trend in population numbers or density, or a

significant existing or predicted downward trend in habitat capability that would reduce a species' existing distribution. The objective of the Forest Service Sensitive Species Program (FSM 2600) (USDA Forest Service 1991) is to ensure that species numbers and population distributions are adequate so that no federal listing will be required and no extirpation will occur on NFS lands. Revisions to the Regional Forester's Sensitive Plant Species list are periodically completed based on new information derived from recent publications, fieldwork, and laboratory analysis. The Alaska Region Sensitive Species list was updated in 2009 (Goldstein *et al.* 2009). Seventeen plants are designated as sensitive in the Alaska Region; five of these are known to occur within the project area, with an additional five suspected to occur. One sensitive lichen species is also designated as sensitive and is known to occur within the project area.

Table 1
2009 Alaska Region Sensitive Plants Known or Suspected to Occur Within the Project Area¹

Common Name (<i>Scientific Name</i>)	Range and Habitat ²
Spatulate moonwort (<i>Botrychium spathulatum</i>)	Habitat includes coastal forests, stabilized coastal dunes, upper beach meadows, well-drained open areas, alpine habitats, and riparian forests. Suspected in project area.
Moosewort fern (<i>Botrychium tunux</i>)	Moosewort fern grows on upper beach meadows, coastal dunes, stream terraces, river bars and subalpine and alpine slopes. Suspected in project area.
Large yellow lady's slipper (<i>Cypripedium parviflorum</i> var. <i>pubescens</i>)	On the Tongass, this orchid grows in peatlands on calcareous substrates (USDA Forest Service 2015). There are five known occurrences of large yellow lady's slipper on the Tongass, both on northern Prince of Wales Island.
Calder's lovage (<i>Ligusticum calderi</i>)	Habitat includes alpine and subalpine meadows, boggy slopes, open mixed conifer forests, and rocky areas. There are 24 known occurrences on the Tongass; 23 on the Craig Ranger District and one on the Thorne Bay Ranger District.
Lichen, no common name (<i>Lobaria amplissima</i>)	There are 15 known occurrences on National Forest System lands of Prince of Wales and the surrounding islands. This lichen grows on trunks and main branches of Sitka spruce, Pacific crab apple (<i>Malus fusca</i>), and western hemlock in old-growth beach buffer forest (Dillman 2004 as cited in Goldstein <i>et al.</i> 2009)).
Alaska rein orchid (<i>Piperia unalascensis</i>)	This plant is known from 18 occurrences on the Tongass, with 11 occurring on the Thorne Bay Ranger District. Habitat includes dry open sites, under tall shrubs in riparian areas, mesic meadows, drier areas in coniferous and mixed evergreen forests, and bogs and heath habitat from low to subalpine elevations. On the Tongass, this plant generally grows in low-productivity forests at lower elevations in poorly drained soils (Dillman 2011).
Lesser round-leaved orchid (<i>Platanthera orbiculata</i>)	In Alaska, it grows in low elevation forested wetlands, medium to high volume old-growth hemlock forests with high bryophyte cover and a red cedar component, forest edges or near gaps in shady forests, and near muskegs, open water, or boggy areas (Dillman 2008). There are 291 distinct occurrences (including 143 on POW), comprising 61 distinct populations known on the Tongass (USDA Forest Service 2015).

Common Name (Scientific Name)	Range and Habitat ²
Kruckeberg's swordfern (<i>Polystichum kruckebergii</i>)	Habitat includes open ultramafic rock outcrops. Suspected in project area.
Unalaska mist-maid (<i>Romanzoffia unalaschcensis</i>)	This plant grows on ledges and crevices in rock outcrops and in gravelly areas along stream banks, often along coasts. There are two known occurrences on the Tongass; both on the Thorne Bay Ranger District.
Henderson's checkermallow (<i>Sidalcea hendersonii</i>)	On the Tongass, the one documented population grows at the upper edge of an upper beach meadow near the edge of a hemlock and spruce forest (USDA Forest Service 2015). Suspected in project area.
Dune tansy (<i>Tanacetum bipinnatum</i> subsp. <i>huronense</i>)	Habitat for this species includes upper beaches, sand dunes, and well drained and calcareous soils. Suspected in project area.

¹ Sensitive Plant list updated February 2009.

² Range, habitat, and occurrence information, unless otherwise noted, based on Goldstein et al. 2009; Nawrocki et. al. 2013; USDA Forest Service 2012; and USDA Forest Service 2014

If the Regional Sensitive Species list is updated or transitioned to the Species of Conservation Concern, then botany surveys and protection considerations will focus on the species identified in the most current list.

Rare Plants

A rare plant on the Tongass National Forest is defined as a plant that:

1. Is on the Alaska Natural Heritage Program (ANHP) Rare Vascular Plant Tracking List that are known or suspected to occur on the Tongass (ANHP, 2016), is considered S1 and S2 in State ranking (some S3 are considered, but rarely), and is not designated as a Sensitive Species.
2. Is considered rare upon consultation and agreement among Tongass ecologists, District botanists, and the Region 10 botanist because of conservation concerns on the Tongass National Forest (*e.g.*, plants with range edges or disjunct populations on the Tongass but not yet given a state ranking on the ANHP list).
3. Has been or is being raised as an issue (internal or external) because of rarity or conservation concerns (through the NEPA process).

The list of rare plants is dynamic; plants may be dropped when they are found to be more abundant than previously thought, or plants may be added if they are newly discovered in the state or Forest. Plants may also be added or dropped as their taxonomic status changes. The Regional Office maintains a list of plants considered rare in Region 10. Generally, the Regional rare plant list is based on the ANHP rare plant tracking list.

Invasive Plants

Project activities with ground disturbing components require an invasive plant risk assessment. The risk assessment reviews the site and project details to determine: the presence/absence of invasive plant species, nature of disturbance, and potential vectors of invasive plant establishment or spread. Based on the risk assessment, additional site-specific design features to reduce the risk of invasive plant introduction or spread are recommended. Invasive plants are a broad category that are variously defined as including non-natives, noxious weeds, and undesirable vegetation. The Risk Assessment focuses on species identified in the Tongass National Forest High Priority Invasive Species List. These species were chosen based on their potential to spread and cause ecological harm.

The Draft Guidance for Invasive Plant Management Program Tongass National Forest (Krosse 2017) includes applicable BMPs to mitigate the introduction and spread of high priority species by project activities.

Invasive Plant Management BMPs that apply to all activities include:

BMP 1. Determine the risk of invasive plant introduction or spread as part of the project planning and analysis process for proposed actions, especially for ground disturbing and site altering activities, and public use activities.

BMP 2. Use contract and permit clauses to require that the activities of contractors and permittees are conducted to prevent and control the introduction, establishment and spread of invasive plant species.

BMP 3. Make every effort to prevent the accidental spread of invasive plants carried by contaminated vehicles, equipment, personnel, or materials (including plants, wood, plant/wood products, water, soil, rock, sand, gravel, mulch, seeds, grain, hay, straw or other materials).

BMP 4. Provide opportunities in invasive plant training for management, identification, and reporting to Forest Service staff.

BMP 5. Revegetate bare soil resulting from project activities (roads, timber harvest, mining etc.) to minimize spread of invasive plants and if prompt natural regeneration is not expected.

BMP 6. Monitor management activities, including maintenance and revegetation projects, for potential spread or establishment of invasive species in aquatic and terrestrial areas of the Forest.

The associated Invasive Plant Treatment cards will be used to manage High Priority Invasive Species. A site-specific treatment plan will be developed for the districts detailing the species, population locations and treatment methods proposed. Review by resource specialists will further refine the types and locations of treatments that will be applied to High Priority Invasive Species populations on National Forest System lands of Prince of Wales Island.

Geology/Karst

The major focus and intent of the Tongass National Forest karst management strategy is to identify and protect karst systems and the caves and associated resources contained within, as per the requirements of the Federal Cave Resources Protection Act of 1988 (FCRPA). The FCRPA is the primary U.S. law affecting caves. It requires protection of significant caves on Federal lands. A cave must possess one or more of the criteria outlined in 36 CFR Part 290.3 to be determined "significant". Though "non-significant" caves may exist on the Forest, most meet the criteria for "significant". The intent of this act is

to protect cave resources not karst resources. However, it is important to recognize that caves and associated features and resources are an integral part of the karst landscape. Karst must be managed as an ecological unit to ensure protection of the associated cave resources. In practice, the Forest gives equal protection to important karst features, sinking or losing streams, springs, and caves. A Forest-wide treatment of karst and cave resources may be found in Chapter 4 of the 2016 Forest Plan, Karst and Cave Resources, Forest-wide Standards and Guidelines, pages 4-23 to 4-25 and Appendix H, pages H-1 to H-10.

Appropriate protection measures for minor features should be designed on a case-by-case basis as field assessed by a karst management specialist. If additional significant features are identified during unit layout, the Forest Geologist will be contacted to determine the appropriate mitigation measures.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800. Procedures at 36 CFR 800.4(b)(2) for Phased Identification and Evaluation, will be followed for the purpose of complying with Section 106 procedures in developing this EIS. Phased identification and evaluations may be used when the area of potential effect (APE) covers a large area or when exact locations of proposed activities are to be determined; an example would be a large-scale, long-term vegetation management project. These procedures allow for phasing the identification of cultural resources and the assessment of effects in order to issue a NEPA decision document prior to concluding the Section 106 process. It will be clearly indicated in the NEPA decision document that 36 CFR 800.4(b)(2) is being followed and that project implementation Section 106 procedures are not concluded. After the ROD is signed, and during the implementation phase, individual projects will be subject to Section 106 evaluation to determine if historic properties exist in the project area and to ensure they will not be adversely affected by the undertaking.

Cultural Resources are defined broadly in NEPA and may include Sacred Sites, traditional use areas, and any cultural resources that are not eligible for the National Register of Historic Places (NRHP). Historic Properties are cultural resources which have been determined eligible for the NRHP. Under the terms of the Programmatic Agreement (2017), 2016 Forest Plan (Chapter 4, pages 16-21), Forest Service Manual 2360/2361, and Forest Service Handbook 2309.12, any cultural resources not yet formally determined to be eligible historic properties may be treated as eligible for the purposes of making management decisions. The District Archaeologist must be consulted during both the project scoping and project implementation phases of a project to identify and evaluate cultural resources. If adequate field surveys have not been completed in specific areas, the District Archaeologist may be required to resurvey the APE. The Tongass National Forest follows a regionally specific inventory strategy based on the Tongass National Forest Predictive Model (*Programmatic Agreement 2017*). District archaeologists will intensively review proposed activities occurring in 1) areas with concentrations of natural resources (current and paleo shorelines, streams, lakes, anadromous fish runs, karst zones, and raw material sources); 2) areas of known resource extraction activities including former lode and placer mining activity, fish processing, fur industry, forest products industry, and recreation; 3) areas associated with traditional practices/beliefs of a living community and/or identified through historic/ethnographic/oral history; and 4) land from mean lower low water in the intertidal area to 120 feet above mean high water or higher based on the District Archaeologist's assessment.

Existing structures and infrastructure associated with the forest product industry (roads, trails, bridges, MAFs, logging equipment/camps, etc.), the fur and fish processing industry (camps, canneries, fur farms, traps, etc.), and the forest recreation (trails, campsites, cabins, shelters, boardwalks, etc.) that may be 50

years or older, will require an evaluation by the District Archaeologist. It is the Forest Service's policy to avoid disturbing NRHP-eligible sites (which can include those being treated as eligible under the terms of the PA). The District Archaeologist will be called to mitigate historic properties on a case-by-case basis in consultation with the Alaska State Historic Preservation Officer (SHPO) and potentially the Advisory Council on Historic Preservation (ACHP). In the event that human remains are encountered the Forest Service shall comply with the most current State protocols which are available at: <http://dnr.alaska.gov/parks/oha/ahrs/remains.htm>.

Recreation

Activity cards for recreation address ground disturbing actions associated with the development of recreation resources and do not address specific projects. Development of site-specific projects will reference LUD-specific and Forest-wide Standards and Guidelines as defined in Chapters 3 and 4 of the 2016 Forest Plan. These Standards and Guidelines provide general outlines on permissible recreation and trail activities on NFS lands. Site-specific project analysis will also consider the Recreation Opportunity Spectrum setting of the project area and would develop a plan that recognizes ROS Standards and Guidelines, which are defined in Appendix I of the 2016 Forest Plan. Non-recreation activities may result in a change of ROS classification, which will be reflected in the Forest-wide ROS inventory.

The Recreation Opportunity Spectrum (ROS) is a tool to help identify, quantify, and describe the types of recreation settings provided on NFS lands. The ROS system portrays the combination of activities, settings, and experience expectations along a continuum that ranges from highly modified to primitive environments. Seven classifications are identified along this continuum: Urban (U), Rural (R), Roded Natural (RN), Roded Modified (RM), Semi-Primitive Motorized (SPM), Semi-Primitive Non-Motorized (SPNM), and Primitive (P). The ROS inventory may be used as an assessment tool to identify the potential effects of forest resource activities on recreation settings. An example would include, but is not limited to, how a timber harvest and its ancillary activities (*e.g.*, roads) near a trail or structure may impact the solitude of the recreational experience.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

In addition to assessing how other resource activities may impact recreation resources, site-specific recreation projects will consider impacts to immediate and adjacent forest resources. Recreation planners will work with forest resource specialists to comply with their best management practices and would manage project development to minimize impacts from recreation project activities on local resources.

Scenery

Applies to all Activity Cards

Scenic Integrity Objectives (SIO) are developed for all locations on the forest, are specified in the 2016 Forest Plan, and should be identified for every project. Most projects will have LUD-specific SIOs, but young growth and hydropower projects have SIOs specific to those activities. Scenery specialists should be consulted for projects to ensure the activity will meet the SIOs for the area.

The following SIOs from the 2016 Forest Plan provide Standards for management based on the landscape's scenic concern as identified by visibility from Visual Priority Travel Routes and Use Areas (2016 Forest Plan Appendix F) and land use designation objectives.

High SIO: "Design activities to not be visually evident to the casual observer" (Forest Plan, pg. 4-57). Activities may only repeat form, line, color, and texture that are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc. should not be evident.

Moderate SIO: Management and design activities will be subordinate to the landscape character of the area. Changes in the landscape may be evident to the casual observer but appear as natural occurrences when contrasted with the appearance of the surrounding landscape.

Low SIO: Management activities may visually dominate the characteristic landscape. Activities of vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that visual characteristics are those of natural occurrences within the surrounding area or character type.

Very Low SIO: Management activities may dominate the characteristic landscape, yet when viewed as background, should appear to be a natural occurrence.

Best Management Practices

This section provides an overview of BMPs that would be applied in order to protect water quality in the project area as specified in the Forest Plan and in the National Core BMP Technical Guide (2012). Many of the most relevant BMPs are cited on the activity cards or elsewhere in the above resource sections of this introduction, as appropriate.

- BMP 12.5 and National Core BMPs AqEco-2, AqEco-3, Plan-2, Plan-3, and Road-2 apply to any activities that could involve wetlands;
- BMPs 12.6, 12.6a, and 13.16, and National Core BMPs AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, and Veg-3 could apply to any activities involving streams;
- BMPs 13.2, 13.9, and 13.10, and National Core BMPs Veg-1, Veg-2, Veg-4, Veg-5, and Veg-7 could all apply timber harvest activities;
- BMPs 14.1, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, 14.15, 14.17, 14.18, 14.19, 14.20, 14.22, and 14.24, and National Core BMPs AqEco-2, AqEco-3, Fac-2, Fac-5, Fac-10, Min-5, Rec-8, Road-1, Road-3, Road-4, Road-6, Road-7, and Road-11 apply to road construction, maintenance, and other activities, including quarries (as appropriate);
- BMPs 14.26 and 14.27 and National Core BMPs Fac-2, Fac-5, Road-6, and Road-9 apply to activities at existing Log Transfer Facilities; and
- BMPs 12.8, 12.17, 13.1, 13.3, 13.4, 13.5, 13.11, 13.12, 13.14, and 13.17, and National Core BMPs AqEco-2, AqEco-4, Fac-2, Fac-6, Fac-10, Road-6, Road-10, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-8 and apply in general to all timber sale planning and implementation activities.

Watershed Management

BMP 12.5/AqEco-2, AqEco-3, Plan-2, Plan-3, Road-2 (Wetland Identification, Evaluation, and Protection) – To identify wetland functions and value, and provide appropriate protection measures designed to avoid adverse hydrologic impacts.

BMP 12.6/AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-7, Veg-3 (Riparian Area Designation and Protection) – To identify riparian areas and their associated management activities.

BMP 12.6a/Plan-3, Veg-3 (Buffer Design and Layout) – To design streamside buffers to meet objectives defined during the implementation of BMP 12.6.

BMP 12.8/AqEco-2, Fac-6, Road-10 (Oil Pollution Prevention and Servicing/Refueling Operations) – To prevent contamination of surface and subsurface soil and water resources from spills of petroleum product.

BMP 12.17/AqEco-4, Fac-2, Fac-10, Road-6, Veg-2, Veg-4 (Revegetation of Disturbed Areas) – To provide ground cover to minimize soil erosion.

Timber Management

BMP 13.1/Veg-1 (Timber Sale Planning) – To incorporate soil and water resource considerations into timber sale planning.

BMP 13.2/Veg-1 (Timber Harvest Design) – To incorporate site-specific soil and water resource considerations into integrated timber harvest unit design criteria.

BMP 13.3/Veg-1, Veg-1 (Designating Water Quality Protection Needs on Sale Area/Unit Release Maps) – Delineate the location of protection areas and ensure their recognition, proper consideration, and protection on the ground.

BMP 13.4/Veg-1 (Timber Sale Operating Schedule) – To ensure that erosion control and timing responsibilities are incorporated into the Operating Schedule.

BMP 13.5/Veg-1, Veg-2, Veg-5 (Identification and Avoidance of Unstable Areas) – To avoid triggering mass movements and resultant erosion and sedimentation by excluding unstable areas from timber harvest.

BMP 13.9/Veg-2, Veg-4, Veg-5, Veg-7 (Determining Guidelines for Yarding Operations) – To select appropriate yarding systems and guidelines for protecting soil and water resources.

BMP 13.10 (Log Landing Location and Design) – To design and construct landings to minimize soil erosion and water quality degradation.

BMP 13.11/Veg-2 (Scheduling and Enforcement of Erosion Control Measures During Timber Sale Operations) – To ensure that the Purchaser's operations are conducted according to the Timber Sale Contract with respect to soil and water resource protection.

BMP 13.12/Veg-8 (Site Preparation) – Maintain sufficient ground cover to minimize soil erosion.

BMP 13.14/Veg-2, Veg-3 (Completion of Erosion Control for Unit Acceptance and Sale Closure) – To assure that the required erosion control work is completed before unit acceptance.

BMP 13.16/AqEco-2, Road-5, Veg-3 (Stream Channel Protection – Implementation and Enforcement) – To provide the site-specific stream protection prescriptions consistent with objectives identified under BMPs 12.6 and 12.6a. Objectives may include the following:

- Maintain the natural flow regime.
- Provide for unobstructed passage of storm flows.
- Maintain integrity of the riparian buffer to filter sediment and other pollutants.
- Restore the natural course of any stream that has been diverted as soon as practicable.
- Maintain natural channel integrity to protect aquatic habitat and other beneficial uses.
- Prevent adverse changes to the natural stream temperature regime.

BMP 13.17/Veg-1 (Nonrecurring “C” Provisions For Soil and Water Quality Protection) – To insert nonrecurring (Special) “C” provisions into the Timber Sale Contract to protect soil and water resources, where standard “B” or “C” provisions do not apply or are inadequate to protect watershed values.

BMP 13.18/Veg-1 (Modification of the Timber Sale Contract) – To seek an Environmental Modification of the Timber Sale Contract if new circumstances or conditions indicate that the timber sale will cause irreparable damage to soil, water, or watershed values.

Transportation and Other Facilities Management

BMP 14.1/Road-1 (Transportation Planning) – To assure soil and water resources are considered in transportation planning activities.

BMP 14.2/Rec-8, Road-2, Road-4, Road-11 (Location of Transportation Facilities) – To assure water resources protection measures are considered when locating roads and trails.

BMP 14.3/Rec-8, Road-2, Road-3 (Design of Transportation Facilities) – To incorporate site-specific soil and water resource protection measures into the design of roads and trails.

BMP 14.5/AqEco-2, Fac-2, Road-3 (Road and Trail Erosion Control Plan) – Develop erosion control plans for road or trail projects to minimize or mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities. Ensure compliance through effective contract administration and timely implementation of erosion control measures.

BMP 14.6/AqEco-2, Road-3 (Timing Restrictions for Construction Activities) – Minimize erosion potential by restricting the operating schedule and conducting operations during lower risk periods.

BMP 14.7/Fac-2, Min-5, Road-3 (Measures to Minimize Mass Failures) – Minimize the chance and extent of road-related mass failures, including landslides and embankment slumps.

BMP 14.8/Fac-2, Road-3, Road-6 (Measures to Minimize Surface Erosion) – Minimize the erosion from cutslopes, fillslopes, and the road surface, and consequently reduce the risk of sediment production.

BMP 14.9/Fac-2, Road-3, Road-6 (Drainage Control to Minimize Erosion and Sedimentation) – Minimize the erosive effects of concentrated water flows from transportation facilities and the resulting degradation of water quality through proper design and construction of drainage control systems.

BMP 14.10/Road-3, Road-7 (Pioneer Road Construction) – Minimize sediment production associated with pioneer road construction.

BMP 14.11/AqEco-2, Road-3, Road-7 (Timely Erosion Control Measures for Incomplete Projects) – Minimize erosion of and sedimentation from disturbed ground on incomplete projects by completing erosion control work prior to seasonal or extended shutdowns.

BMP 14.12/Road-3, Road-7 (Control of Excavation and Sidecast Material) – Minimize sedimentation from unconsolidated excavated and sidecast material caused by road construction, reconstruction, or maintenance.

BMP 14.14/AqEco-2, Road-7 (Control of In-channel Operations) – Minimize stream channel disturbances and related sediment production.

BMP 14.15/AqEco-2, Road-7 (Diversion of Flows Around Construction Sites) – Identify and implement diversion and de-watering requirements at construction sites to protect water quality and downstream uses.

BMP 14.17/AqEco-2, Road-7 (Bridge and Culvert Design and Installation) – Minimize adverse impacts on water quality, stream courses, and fisheries resources from the installation of bridges, culverts, or other stream crossings.

BMP 14.18/AqEco-3, Fac-2, Min-5 (Development and Rehabilitation of Gravel Sources and Quarries) – To minimize sediment from borrow pits, gravel sources, and quarries, and to limit channel disturbance from gravel sources permitted for development within floodplains.

BMP 14.19/Fac-5, Road-3 (Disposal of Construction Slash and Stumps) – To ensure that debris generated during construction is prevented from obstructing channels or encroaching on stream, and sensitive karst features.

BMP 14.20/Road-6 (Road Maintenance) – Maintain all roads in a manner which provides for soil and water resources protection by minimizing rutting, road prism failures, sidecasting, and blockage of drainage facilities.

BMP 14.22/Road-1, Road-6 (Access and Travel Management) – Control access and manage road use to reduce the risk of erosion and sedimentation from road surface disturbance especially during the higher risk periods associated with high runoff and spring thaw conditions.

BMP 14.24/Fac-10, Road-6 (Road Obliteration) – Reduce sediment generated from temporary or short-term roads and return the land to production by obliterating roads at the completion of their intended use.

BMP 14.26/Fac-2, Fac-5, Road-6 (Daily LTF Cleanup) – Assure cleanup of bark, debris, or other solid materials daily when accumulations are present. Dispose of the materials in an acceptable manner, to prevent water quality degradation.

BMP 14.27/Fac-2, Road-9 (Log Storage/Sort Yard Erosion Control) – To avoid generation of fine particles, and control the overland flow of particles carrying hazardous materials into waterways.

Card Number 01	<h2>Activity: Rotational Harvest of Young Growth Using Even-aged Management</h2>
<p>Description: This activity is the rotational harvest of young timber stands (generally less than 150 years old) where growth may or may not have reached culmination of mean annual increment (CMAI). The harvest results in a stand of trees composed of a single age class in which the range of tree ages is less than 20 percent of the rotation age in openings up to 100 acres.</p>	
<p>Objectives: This activity is used to provide young-growth timber for sale to meet timber industry needs. The activity is generally recognized as the most efficient method of harvesting young growth to achieve an economic timber sale. The activity minimizes the risk of post-harvest windthrow, promotes natural regeneration of desirable species, and minimizes defect and disease that will be present in the future stand to the maximum extent possible.</p>	
<p>Connected Actions: Landings, Tree Planting (Activity Card 12), Precommercial Thinning (Activity Card 5), NFS Road Construction (Activity Card 19), Temporary Road Construction (Activity Card 20), NFS Road Reconstruction (Activity Card 21), Quarry Development (Activity Card 24), Road Maintenance (Activity Card 25), and Log Transfer Facilities (Activity Card 18)</p>	
<p>Methods: Clearcutting</p>	
<p>Equipment Used: Equipment used must provide the needed suspension and limit soil disturbance to meet requirements and recommendations from a soil scientist, the 2016 Forest Plan, and BMPs. These requirements and recommendations may include partial suspension, which means suspending one end of the yarded log, or full suspension, which means suspending the full log being yarded. Common yarding systems include tower and cable yarding systems, skyline (standing, live, running), single span, multi-span, excaliner, and tong thrower. Tracked shovel and helicopter are also common yarding systems. Hand equipment may be used such as in the case of microsalses of products.</p>	
<h3>What are the general guidelines constraining this activity?</h3>	
<p>This activity may only occur within the suitable land base based on legal and technical factors (2016 Forest Plan Appendix A). This activity will also only occur in areas that meet all applicable 2016 Forest Plan direction such as: meeting the objectives of the Land Use Designations (LUDs, Chapter 3), and within potential harvest units as shown in the logging system and transportation analysis (LSTA) prepared for this project. Forest-wide Standards and Guidelines outlined in the 2016 Forest Plan for each LUD will be followed.</p>	
<h3>What are the resource-specific guidelines?</h3>	
<p>Silviculture</p> <p>Harvest of young growth is allowed under the 2016 Forest Plan in all three phases of the Forest Plan timber sale program adaptive management strategy (2008 Forest Plan Amendment ROD, pp. 64 through 66). The 2016 Forest Plan (pages 4-68 to 4-69) requires a number of considerations/determinations before this activity can be applied. Clearcutting must be planned in a way that isolated stands of timber will not be created and existing stands of regeneration from previous harvests will not be destroyed. A finding from a certified Silviculturist that clearcutting is the best method to meet objectives and requirements is necessary. That finding must conform to direction in FSM 2470 Supplement No.: R-10 2400-2005-1 which defines requirements on the use of clearcutting; generally limiting the activity to places where it is necessary to address concerns for insect and disease, windthrow, logging damage, or other factors affecting forest health. For the purpose of this assessment, this means a stand proposed for clearcutting must have a moderate or high windthrow risk, insect or disease rating, or a combination of the three. The 2016 Forest Plan and NFMA limit the size of even-aged openings to 100 acres with certain exceptions. In order to be considered a separate opening from an adjacent timber stand for the purpose of determining the acreage, the adjacent stand must be well stocked with trees at least 5 feet tall. If adjacent stands do not meet this requirement, a stand of timber must be left to separate the two stands. An appropriate sized stand of timber may not be a narrow strip but must be large enough to be managed as a distinct timber stand. This is typically defined as a stand approximately 10 acres or larger. Exceptions to the size of even-aged openings are discussed on page 4-69 of the 2016 Forest Plan and R10 Supplement FSM 2400-2002-1. Harvest openings larger than 100 acres should not to be considered without additional site-specific NEPA analysis and Forest Supervisor approval.</p>	

This activity is limited to the young growth suitable land base outside of the beach and estuary fringe, RMAs outside of TTRA buffers, and the Old-growth Habitat LUD. In these areas, suitable timber can be managed under the two-aged or uneven-aged management systems.

The Defense Authorization Act for 2015 states the following concerning the rotational harvest of young-growth timber:

“the Secretary of Agriculture may allow the harvest of trees prior to the culmination of mean annual increment [CMAI] of growth in areas that are available for commercial timber harvest under the Tongass National Forest Land and Resource Management Plan to facilitate the transition from commercial timber harvest of old growth stands.

(B) LIMITATION.—Any sale of trees pursuant to the authority granted under subparagraph (A) shall not—

- (i) exceed 15,000 acres during the 10-year period beginning on the date of enactment of this Act, with an annual maximum of 3,000 acres sold;
- (ii) exceed a total of 50,000 acres, with an annual maximum of 5,000 acres sold after the first 10-year period;
- (iii) be advertised if the indicated rate is deficit (defined as the value of the timber is not sufficient to cover all logging and stumpage costs and provide a normal profit and risk allowance under the appraisal process of the Forest Service) when appraised using a residual value appraisal; or
- (iv) apply to land withdrawn under subsection (c)(2).”

Timber

The construction of temporary roads will be considered when: that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, the temporary road construction is viable within the standards and guidelines of the Forest Plan, and the construction adheres to all applicable BMPs.

Temporary roads are not intended to be part of the forest transportation system and are considered not necessary for long-term resource management.

Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally will be about 2,000 square feet in size. Continuous roadside landings are also utilized.

Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to isolate suitable timber or restrict future access.

Consider the most cost effective logging method available for each setting (generally in order of shovel, then cable, and finally helicopter). In accordance with the latest Appropriations Bill, all timber sales must appraise positive utilizing the most current Alaska Region 10 RV appraisal.

Consider incorporating a mix of stands with different volumes/values for one sale contract as well as combining young-growth and old-growth sales together to improve economics.

Transportation

Roaded access is required to effectively manage the timber resource. Reconstruction of stored roads may be required. Timber harvest methods may require construction of new roads. Analyze present and long-term access needs to determine the appropriate road classification: temporary or system.

The transport of harvested timber from isolated islands in Southeast Alaska requires both land and water routes to reach processing facilities. Log Transfer Facilities are required for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa).

Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.
National BMPs: Road-2, Road-3, Road-4

Wildlife

Incorporate leave strips that provide travel corridors. Maintain or enhance connectivity between higher and lower elevations. The Wildlife Biologist may recommend opening size and placement and slash treatment to facilitate movement of species.

Evaluate roads needed for harvest to determine ways to lessen disturbance to wildlife; this could include seasonal closures, putting roads in storage, or decommissioning.

Timber harvest is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.

See 2016 Forest Plan Standards and Guidelines p. 5-5 and p. 5-8.

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active eagle nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches within the affected areas will be surveyed, flagged, and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7). When considering even-aged young-growth harvest within an RMA, select areas where treatments would help to achieve the stream process group objectives, such as treating stands where growth is stagnated to the point of not recovering.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures.

R10 BMPs: 12.6, 12.6a, 13.9, 13.14, and 13.16

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of logging activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off-road travel is required.

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National Core BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Prior to implementation, a Tongass Soil Scientist will need to evaluate existing detrimental soil disturbance in each stand per R10 Soil Quality Standards. An on-site slope stability analysis may be required. To minimize additional wetland or soil disturbance, try to utilize existing temp roads, heavy machinery trails, landings, and yarding corridors. Ground-based yarding should follow all BMPs. Ground-based yarding would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. Leaving dense puncheon slash, creating ruts greater than 12 inches, and operating in non-forested areas should be avoided. In some instances, the puncheon trail should be scattered upon completion. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground-based yarding on slopes over 25 percent gradient. A minimum of partial suspension is required for yarding operations. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed.

Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Road-2, Road-5, Veg-1, Veg-2, Veg-4, Veg-5, Veg-6 and R10 BMPs 12.5, 12.17, 13.2, 13.5, 13.9, 13.10, 14.2, 14.5, 14.7, and 14.8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat.

Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is

affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Karst resources will be evaluated according to their vulnerability.

Even-aged management is allowed on lands identified as low vulnerability karst lands. (Consult 2016 Forest Plan Appendix H)

On lands identified as moderate vulnerability karst (see 2016 Forest Plan Appendix H), the maximum size of any created opening for commercial timber harvest must not exceed 10 acres with a maximum removal of 35 percent of the acres of the original harvested stand.

Commercial timber harvest is not allowed on lands identified as high vulnerability karst lands. (Consult 2016 Forest Plan Appendix H.)

Existing roads and quarries should be utilized whenever possible.

Opportunities to restore original flow paths of surface waters to karst features should be sought.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 80 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Logging equipment and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities.

Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). In non-development LUDs, LUD-specific SIOs apply (2016 Forest Plan, SCENE2). Scenery specialists should be consulted during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Explore opportunities for rotational timber harvest to meet timber production goals when young stands approach a condition where at least 50 percent of the total volume would come from trees with at least two full 34 foot logs.

Integration Opportunities: Old-growth harvest activities offer an opportunity to construct/repair roads that may access young-growth stands. Consider this option when designing and timing old-growth timber harvest plans. Young-growth even-aged management areas may provide unmerchantable material for stream restoration including trees with root balls attached or could use equipment mobilized for the logging operation. Time nearby stream restoration activities that require such material to coincide with this activity.

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Card Number 02	Activity: Rotational Harvest of Young Growth Using Two-aged Management
<p>Description: Harvest resulting in a stand with trees of two distinct age classes separated in age by more than 20 percent of the rotation length planned for the stand.</p>	
<p>Objectives: The objective of this prescription is to maintain and manage for two-aged stand structure primarily for increased wildlife benefit over even-aged management while maintaining as much of the operational and economic feasibility of even-aged management as possible. This activity is used to provide young-growth timber for sale to meet timber production targets while maintaining areas within the stand to continue growing toward culmination and provide a more diverse stand structure and product stream across the landscape in the future. The activity may be used to increase the diversity in acreage of young-growth age classes across certain landscapes to address age class imbalances.</p>	
<p>Connected Actions: Landings, Tree Planting (Activity Card 12), Precommercial Thinning (Activity Card 5), Commercial Thinning (Activity Card 4), Second entry harvest, NFS Road Construction (Activity Card 19), Temporary Road Construction (Activity Card 20), NFS Road Reconstruction (Activity Card 21), Quarry Development (Activity Card 24), Road Maintenance (Activity Card 25), and Log Transfer Facilities (Activity Card 18)</p>	
<p>Methods: Patch clearcutting, clearcutting with reserves, seedtree, seedtree with reserves, shelterwood, shelterwood with reserves.</p> <p>Equipment Used: Equipment used must provide the needed suspension and limit soil disturbance to meet requirements and recommendations from Soil Scientist, 2016 Forest Plan, and BMPs. These requirements and recommendations may include partial suspension, which means suspending one end of the yarded log, or full suspension, which means suspending the full log being yarded. Common yarding systems include tower and cable yarding systems, skyline (standing, live, running), single span, multi-span, excaliner, and tong thrower. Tracked shovel and helicopter are also common yarding systems. Hand equipment may be used such as in the case of microsalses of products.</p>	
What are the general guidelines constraining this activity?	
<p>This activity may only occur within the suitable land based on legal and technical factors (2016 Forest Plan Appendix A). This activity will also only occur in areas that meet all applicable 2016 Forest Plan direction such as: meeting the objectives of the Land Use Designations (LUDs; Chapter 3), and are within potential harvest units as shown in the logging system and transportation analysis (LSTA) prepared for this project. Forest-wide Standards and Guidelines outlined in the 2016 Forest Plan for each LUD will be followed.</p>	
What are the resource-specific guidelines?	
<p>Silviculture</p> <p>Harvest of young growth is allowed under the 2016 Forest Plan in all three phases of the 2008 Forest Plan timber sale program adaptive management strategy. The Forest Plan (pages 4-68 to 4-69) requires a number of considerations/determinations before this activity can be applied. A finding from a Certified Silviculturist that patch clearcutting or clearcutting with reserves is the best method to meet objectives and requirements is necessary. That finding must conform to direction in FSM 2470 Supplement No.: R-10 2400-2005-1 which defines requirements on the use of clearcutting, generally limiting the activity to places where it is necessary to address concerns for insect and disease, windthrow, logging damage, or other factors affecting forest health. For the purpose of this assessment, this means a stand proposed for clearcutting must have a moderate or high windthrow risk, insect or disease rating, or a combination of the three.</p> <p>To meet two-aged requirements, at least 15 percent of the original standing green tree basal area of the stand must remain after harvest. These trees can be grouped for operational and environmental concerns or be evenly distributed across the stand. If trees are grouped, the groups must be distributed somewhat evenly across the stand. The activity must be planned in a way that isolated stands of timber will not be created and existing stands of regeneration from previous harvests will not be destroyed during future entries. Utilize the prescription development process to determine if wildlife, windthrow or age-class imbalance issues should be addressed.</p> <p>Portions of the beach and estuary fringe, RMAs outside of TTRA buffers, and the Old-growth Habitat LUD are also classified as suitable (Forest Plan, Appendix A). If used in these areas, the Forest Plan limits this activity to the first 15 years after the approval of the Amendment unless best available scientific information shows that this harvest is warranted and meets the LUD objectives. In these areas, two-aged harvest is limited to a maximum opening of 10 acres or no more than 35 percent of</p>	

the former stand acreage excluding stream buffers and other areas withdrawn from harvest to meet other Standards and Guidelines. Harvest in the beach and estuary buffer requires a 200-foot no-cut shoreline buffer.

Interdisciplinary review of harvest prescriptions prepared for areas in the beach and estuary fringe, RMAs outside of TTRA buffers, and the Old-growth Habitat LUD is required to assure objectives are met.

The Defense Authorization Act for 2015 states the following concerning the rotational harvest of young-growth timber:

“the Secretary of Agriculture may allow the harvest of trees prior to the culmination of mean annual increment of growth in areas that are available for commercial timber harvest under the Tongass National Forest Land and Resource Management Plan to facilitate the transition from commercial timber harvest of old growth stands.

(B) LIMITATION.—Any sale of trees pursuant to the authority granted under subparagraph (A) shall not—

- (i) exceed 15,000 acres during the 10-year period beginning on the date of enactment of this Act, with an annual maximum of 3,000 acres sold;
- (ii) exceed a total of 50,000 acres, with an annual maximum of 5,000 acres sold after the first 10-year period;
- (iii) be advertised if the indicated rate is deficit (defined as the value of the timber is not sufficient to cover all logging and stumpage costs and provide a normal profit and risk allowance under the appraisal process of the Forest Service) when appraised using a residual value appraisal; or
- (iv) apply to land withdrawn under subsection (c)(2).”

Timber

The construction of temporary roads will be considered when that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, the temporary road construction is viable within the Standards and Guidelines of the Forest Plan, and the construction adheres to all applicable BMPs.

Temporary roads are not intended to be part of the forest transportation system and are considered not necessary for long-term resource management.

Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally are approximately 2,000 square feet in size. Continuous roadside landings are also utilized.

Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to isolate suitable timber or restrict future access.

Consider the most cost effective harvest method available for each setting (generally in the order of shovel, then cable, and finally helicopter). In accordance with the latest Appropriations Bill, all timber sales must appraise positive utilizing the most current Alaska Region 10 RV appraisal.

Consider incorporating a mix of stands with different volumes/values for one sale offering as well as combining young-growth and old-growth sales together in one contract offering to improve economics.

Transportation

Roaded access is required to effectively manage the timber resource. Reconstruction of stored roads may be required. Timber harvest methods may require construction of new roads. Analyze present and long term access needs to determine the appropriate road classification, temporary or system.

The transport of harvested timber from isolated islands in Southeast Alaska requires both land and water routes to reach processing facilities. Log Transfer Facilities are required for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa).

Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.
National BMPs: Road-2, Road-3, Road-4

Wildlife

Incorporate leave strips that provide travel corridors. Maintain or enhance connectivity between higher and lower elevations. Wildlife biologist may recommend opening size and placement, and slash treatment to facilitate movement of species.

Evaluate roads needed for harvest to determine ways to lessen disturbance to wildlife; this could include seasonal closures, putting roads in storage or decommissioning.

Timber harvest is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.

See 2016 Forest Plan Standards and Guidelines p. 5-5 and p. 5-8.

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active eagle nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches within the affected areas will be surveyed, flagged, and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7). When considering young-growth harvest within an RMA, give preference to areas where treatments are most needed to accelerate old-growth characteristics and achieve the stream process group objectives.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures.

R10 BMPs: 12.6, 12.6a, 13.9, 13.14, and 13.16

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of logging activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off road travel is required.

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Prior to implementation, a Tongass Soil Scientist will need to evaluate existing detrimental soil disturbance in each stand per R10 Soil Quality Standards. An on-site slope stability analysis may be required. To minimize additional wetland or soil disturbance, try to utilize existing temp roads, heavy machinery trails, landings, and yarding corridors. Ground-based yarding should follow all BMPs. Ground-based yarding would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. Avoid leaving dense puncheon slash, creating ruts greater than 12 inches, and operating in small non-forested areas. In some instances, the puncheon trail should be scattered upon completion. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground-based yarding on slopes over 25 percent gradient. A minimum of partial suspension is required for yarding operations. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed.

Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Road-2, Road-5, Veg-1, Veg-2, Veg-4, Veg-5, Veg-6 and R10 BMPs 12.5, 12.17, 13.2, 13.5, 13.9, 13.10, 14.2, 14.5, 14.7, and 14.8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat.

Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is

affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Karst resources will be evaluated according to their vulnerability.

Even-aged management is allowed on lands identified as low vulnerability karst lands. (Consult 2016 Forest Plan Appendix H)

On lands identified as moderate vulnerability karst (see 2016 Forest Plan Appendix H), the maximum size of any created opening for commercial timber harvest must not exceed 10 acres with a maximum removal of 35 percent of the acres of the original harvested stand.

Commercial timber harvest is not allowed on lands identified as high vulnerability karst lands. (Consult 2016 Forest Plan Appendix H.)

Existing roads and quarries should be utilized whenever possible.

Opportunities to restore original flow paths of surface waters to karst features should be sought.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Logging equipment and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities.

Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). In non-development LUDs, LUD-specific SIOs apply (2016 Forest Plan, SCENE2). Scenery specialists should be consulted during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Explore opportunities for rotational timber harvest to meet production goals when young stands approach a condition where at least 50 percent of the total volume would come from trees with at least two full 36 foot logs. In non-timber development areas evaluate needs with the District Wildlife Biologist, Fish Biologist, or Hydrologist to determine appropriate treatment areas and timing.

Integration Opportunities: Old-growth harvest activities offer an opportunity to construct/repair roads that may access young-growth stands. Consider this option when designing old-growth timber harvest plans. Review yearly road maintenance plans to assure alignment with proposed young-growth harvests. Young-growth harvests may be planned in the beach and estuary buffer where boat launches, kayak launches, shelters and other recreation development projects could occur. Time the development of those projects to coincide with young-growth harvest opportunities. Young growth two-aged management areas may provide unmerchantable material and equipment for stream restoration including trees with root balls attached. Time nearby stream restoration activities that require such material to coincide with this activity.

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Card Number 03	<h2>Activity: Harvest of Young Growth Using Uneven-aged Management</h2>
<p>Description: Harvest following a planned sequence of treatments designed to result in a stand with three or more distinct age classes either intimately mixed or in small groups.</p>	
<p>Objectives: Promote improved wildlife habitat in older young growth while producing a commercial timber product. Manage for multi-aged stand structure primarily for increased wildlife benefit over even-aged or two-aged management. This activity is used to provide young-growth timber for sale to meet timber production targets while maintaining areas within the stand to continue growing toward culmination of mean annual increment and provide a more diverse stand structure and habitat across the landscape in the future. The activity may be used to increase the diversity in acreage of young-growth age classes across certain landscapes to address age class imbalances.</p>	
<p>Connected Actions: Landings, equipment trails, second and third entry harvests, Tree Planting (Activity Card 12), Precommercial Thinning (Activity Card 5), NFS Road Construction (Activity Card 19), Temporary Road Construction (Activity Card 20), NFS Road Reconstruction (Activity Card 21), Quarry Development (Activity Card 24), Road Maintenance (Activity Card 25), and Log Transfer Facilities (Activity Card 18)</p>	
<p>Methods: Single tree selection, group selection, group selection with reserves</p>	
<p>Equipment Used: Equipment used must provide the needed suspension and limit soil disturbance to meet requirements and recommendations from Soil Scientist, 2016 Forest Plan, and BMPs. These requirements and recommendations may include partial suspension, suspending one end of the yarded log or full suspension, and suspending the full log being yarded. Common yarding systems include tower and cable yarding systems, skyline (standing, live, running), single span, multi-span, excaliner, and tong thrower. Tracked shovel and helicopter are also common yarding systems. Hand equipment may be used such as in the case of microsalses of products.</p>	
<h3>What are the general guidelines constraining this activity?</h3>	
<p>This activity may only occur within the suitable land based on legal and technical factors (2016 Forest Plan Appendix A). This activity will also only occur in areas that meet all applicable 2016 Forest Plan direction such as: meeting the objectives of the Land Use Designations (LUDs; Chapter 3), the standards and guidelines of Chapter 4 and the plan components for young growth in Chapter 5 and are within potential harvest units as shown in the logging system and transportation analysis (LSTA) prepared for this project.</p>	
<h3>What are the resource-specific guidelines?</h3>	
<p>Silviculture</p> <p>This activity is limited to single tree or group selection prescriptions. Harvest may be in group selections up to 2 acres in size or via partial harvest using individual tree selection. Conduct stand exams and windthrow risk assessment prior to prescription development. Group selections should harvest no more than approximately 33% of the stand area during any cutting cycle. Subsequent cuttings should be scheduled to avoid habitat loss and/or take advantage of opportunities to lower operating costs. For example consider scheduling future cuttings for when any precommercial thinning slash from activities following a previous cutting have decomposed. Schedule cuttings to coincide with other activities that lower the cost of the operation. Partial harvest (individual tree selection) should maintain at least 50% residual basal area in moderate windthrow risk areas and at least 75% in high risk areas. Implement this activity primarily where the combination of other resource objectives already limits timber harvest opportunities. Incorporate buffers on karst, streams, or wildlife areas as an age class if possible.</p> <p>This activity is appropriate for use in the beach and estuary buffer, RMAs outside of TTRA buffers, and in old growth reserves. If used in these areas, the Forest Plan limits this activity to the first 15 years after the approval of the Amendment unless best available scientific information shows that this harvest is warranted and meets the LUD objectives and that a maximum cutting of 33 percent of a stand's residual basal area or no more than 35 percent harvest of total acreage outside of TTRA buffers be allowed. A 200-foot no-harvest shoreline buffer is required.</p>	
<p>Timber</p> <p>The construction of temporary roads will be considered when that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, and the construction adheres to all</p>	

applicable BMPs. Temporary roads are not intended to be part of the forest transportation system and are considered not necessary for long-term resource management. Uneven-aged management may require the use of helicopter logging to achieve the silvicultural prescription and stand objectives.

Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally are approximately 2,000 square feet in size. Continuous roadside landings are also utilized.

Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to isolate suitable timber or restrict future access.

Consider the most cost effective harvest method available for each setting (generally in the order of shovel, then cable, and finally helicopter). In accordance with the latest Appropriations Bill, all timber sales must appraise positive utilizing the most current Alaska Region 10 RV appraisal.

Consider incorporating a mix of stands with different volumes/values for one sale as well as combining young-growth and old-growth sales together in a sale contract to improve economics.

Transportation

Roaded access is usually needed to effectively manage the timber resource. Reconstruction of stored roads may be required. Timber harvest methods may require construction of new roads. Analyze present and long-term access needs to determine the appropriate road classification: temporary or system.

The transport of harvested timber from isolated islands in Southeast Alaska requires both land and water routes to reach processing facilities. Log Transfer Facilities are required for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa).

Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.
National BMPs: Road-2, Road-3, Road-4

Wildlife

See 2016 Forest Plan, Standards and Guidelines p. 5-5 and p. 5-8.

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active eagle nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

Evaluate roads needed for harvest to determine ways to lessen disturbance to wildlife; this could include putting roads in storage or decommissioning.

Timber harvest is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches within the affected areas will be surveyed, flagged, and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7). When considering young-growth harvest within an RMA, give preference to areas where treatments are most needed to accelerate old-growth characteristics and achieve the stream process group objectives.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures.

R10 BMPs: 12.6, 12.6a, 13.9, 13.14, and 13.16

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of logging activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off road travel is required.

R10 BMPs:12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National Core BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Prior to implementation, a Tongass Soil Scientist will need to evaluate existing detrimental soil disturbance in each stand per R10 Soil Quality Standards. An on-site slope stability analysis may be required. To minimize additional wetland or soil disturbance, try to utilize existing temp roads, heavy machinery trails, landings, and yarding corridors. Ground-based yarding should follow all BMPs. Ground-based yarding would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. Leaving dense puncheon slash, creating ruts greater than 12 inches in depth, and operating on small non-forested wetlands should be avoided. In some instances, the puncheon trail should be scattered upon completion. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground-based yarding on slopes over 25 percent gradient. A minimum of partial suspension is required for yarding operations. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Road-2, Road-5, Veg-1, Veg-2, Veg-4, Veg-5, Veg-6 and R10 BMPs 12.5, 12.17, 13.2, 13.5, 13.9, 13.10, 14.2, 14.5, 14.7, and 14.8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Karst resources need to be evaluated according to their vulnerability.

Uneven-aged management is allowed on lands identified as low vulnerability karst lands. (Consult 2016 Forest Plan Appendix H)

On lands identified as moderate vulnerability karst (see 2016 Forest Plan Appendix H), the maximum size of any created opening for commercial timber harvest must not exceed 10 acres with a maximum removal of 35 percent of the acres of the original harvested stand.

Commercial timber harvest is not allowed on lands identified as high vulnerability karst lands. (Consult 2016 Forest Plan Appendix H.)

Existing roads and quarries should be utilized whenever possible.

Opportunities to restore original flow paths of surface waters to karst features should be sought.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Logging equipment, associated infrastructure, and culturally modified trees may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects. Additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). Scenery specialists should be consulted during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Explore opportunities for rotational timber harvest to meet production goals when young stands approach a condition where at least 50 percent of the total volume would come from trees with at least two full 36 foot logs. In non-timber production areas evaluate needs with the District Wildlife Biologist, Fish Biologist, or Hydrologist to determine appropriate treatment areas and timing.

Integration Opportunities: Old-growth harvest activities offer an opportunity to construct/repair roads that may access young-growth stands. Consider this option when designing old-growth timber harvest plans. Review yearly road maintenance plans to assure alignment with proposed young-growth harvests. Young-growth harvests may be planned in the beach and estuary buffer where boat launches, kayak launches, shelters and other recreation development projects could occur. Time the development of those projects to coincide with young-growth harvest opportunities. Young growth uneven-aged management areas may provide material and equipment for stream restoration. Group selection harvest may provide areas suitable for harvesting trees with root balls attached. Time nearby stream restoration activities that require such material to coincide with this activity.

Card Number 04	Activity: Commercial Thinning of Young Growth
<p>Description: Commercial harvest of young growth that reduces the density of trees in a stand. Only a portion of the trees in the stand are harvested while leaving the remaining trees generally evenly spaced across the stand. Access skid trails are used to remove cut material. The treatment requires the removal of at least part of the felled material as commercial sized products.</p>	
<p>Objectives: This activity is used to improve tree growth, enhance forest health, improve understory and wildlife habitat, reduce slash as compared to precommercial treatments, improve viewsheds around recreation areas, enhance hydrologic function in RMAs and around karst features, or to meet other desired future stand conditions while recovering potential timber values.</p>	
<p>Connected Actions: Landings, equipment trails, recreation site development in young growth, NFS Road Construction (Activity Card 19), Temporary Road Construction (Activity Card 20), NFS Road Reconstruction (Activity Card 21), Quarry Development (Activity Card 24), Road Maintenance (Activity Card 25), and Log Transfer Facilities (Activity Card 18)</p>	
<p>Methods: Mechanical thinning, crown thinning, free thinning, thinning from below.</p>	
<p>Equipment Used: Equipment used must provide the needed suspension and limit soil disturbance to meet requirements and recommendations from Soil Scientist, 2016 Forest Plan, and BMPs. These requirements and recommendations may include partial suspension, which means suspending one end of the yarded log, or full suspension, which means suspending the full log being yarded. Common yarding systems include tower and cable yarding systems, skyline (standing, live, running), single span, multi-span, excaliner, and tong thrower. Tracked shovel and helicopter are also common yarding systems. Hand equipment may be used such as in the case of microsalses of products.</p>	
What are the general guidelines constraining this activity?	
<p>This activity may only occur within the suitable land based on legal and technical factors (2016 Forest Plan Appendix A). This activity will also only occur in areas that meet all applicable 2016 Forest Plan direction such as: meeting the objectives of the Land Use Designations (LUDs; Chapter 3), the Standards and Guidelines of Chapter 4 and the plan components for young growth in Chapter 5, and are within potential harvest units as shown in the logging system and transportation analysis (LSTA) prepared for this project.</p>	
What are the resource-specific guidelines?	
<p>Silviculture</p> <p>Due to economic constraints of partial harvesting compared to even-aged management, apply primarily to enhance wildlife habitat, address viewshed and recreation objectives, and to improve hydrologic function. Commercial thinning is generally not an economic method for generating timber products from young growth stands. Consider other method to obtain those objectives. When conducting commercial thinning, perform a windthrow risk assessment prior to prescription development. Mechanical thin, thin from below, or crown thin while maintaining at least 50% of the pre-treatment basal area in moderate to low windthrow risk stands. In high risk stands maintain at least 75% of pre-treatment basal area. Account for access trails when determining tree removal limits. This activity may occur within the suitable land base.</p> <p>Portions of the beach and estuary fringe, RMAs outside of TTRA buffers, and the Old-growth Habitat LUD are also classified as suitable (2016 Forest Plan, Appendix A). If used in these areas, the 2016 Forest Plan limits this activity to the first 15 years after the approval of the Amendment unless best available scientific information shows that this harvest is warranted and meets the LUD objectives and that a maximum cutting of 33 percent of a stand's residual basal per acre be allowed. A 200-foot no-harvest shoreline buffer is required.</p> <p>Interdisciplinary review of harvest prescriptions prepared for unsuitable areas is required to assure objectives are met.</p>	
<p>Timber</p> <p>The construction of temporary roads will be considered when that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, and the construction adheres to all applicable BMPs. Temporary roads are not intended to be part of the forest transportation system and are considered not necessary for long-term resource management.</p>	

Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally are approximately 2,000 square feet in size. Continuous roadside landings are also utilized.

Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to isolate suitable timber or restrict future access.

Consider the most cost effective harvest method available for each setting (generally in the order of shovel, then cable, and finally helicopter). In accordance with the latest Appropriations Bill, all timber sales must appraise positive utilizing the most current Alaska Region 10 RV appraisal.

Consider incorporating a mix of stands with different volumes/values for one sale as well as combining young-growth and old-growth sales in a sale contract to improve economics

Transportation

Roaded access is needed to effectively and economically manage the timber resource. Reconstruction of stored roads may be required. Timber harvest methods may require construction of new roads. Analyze present and long-term access needs to determine the appropriate road classification: temporary or system.

The transport of harvested timber from isolated islands in Southeast Alaska requires both land and water routes to reach processing facilities. Log Transfer Facilities are required for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa).

Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.
National BMPs: Road-2, Road-3, Road-4

Wildlife

See 2016 Forest Plan Standards and Guidelines p. 5-5 and p. 5-8.

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active eagle nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

Thinning is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.

Consult with Wildlife Biologist to identify areas that may be lacking or limited in heterogeneity across the landscape, travelways between habitats and structural diversity and prioritize those areas for light or no treatments. Prioritize areas to enhance or provide connectivity by leaving untreated or lightly treated areas across the landscape.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches within the affected areas will be surveyed, flagged, and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7). When considering young-growth harvest within an RMA, give preference to areas where treatments are most needed to accelerate old-growth characteristics and achieve the stream process group objectives.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures.

R10 BMPs: 12.6, 12.6a, 13.9, 13.14, and 13.16

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of logging activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off-road travel is required.

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National Core BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Prior to implementation, a Tongass Soil Scientist will need to evaluate existing detrimental soil disturbance in each stand per R10 Soil Quality Standards. An on-site slope stability analysis may be required. To minimize additional wetland or soil disturbance, try and utilize existing temp roads, heavy machinery trails, landings, and yarding corridors. Ground-based yarding should follow all BMPs. Ground-based yarding would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. Leaving dense puncheon slash, creating ruts greater than 12 inches in depth, and operating in small non-forested wetlands should be avoided. In some instances, the puncheon trail should be scattered upon completion. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground-based yarding on slopes over 25 percent gradient. A minimum of partial suspension is required for yarding operations. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Road-2, Road-5, Veg-1, Veg-2, Veg-4, Veg-5, Veg-6 and R10 BMPs 12.5, 12.17, 13.2, 13.5, 13.9, 13.10, 14.2, 14.5, 14.7, and 14.8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Commercial thinning is appropriate on low to moderate vulnerability karstlands when the karst management objectives can be met. Generally, no thinning shall be permitted on lands determined to be of high vulnerability such as within 100 feet of a cave entrance, a karst feature accepting surface flow, or of the edge of a sinking or losing stream within 1/4 mile upstream of their swallow hole or loss point. On a case-by-case basis, other karst features will be assessed as to their susceptibility to surface disturbing activities, the proposed harvest method, and the thinning prescription. The area surrounding these features is still considered high vulnerability and should be mapped as such, however thinning of this sensitive area might be considered permissible. All features not fully protected would be buffered from their center to just outside the lip of the sink allowing for thinning within the area that would normally be a non-harvest buffer. It is recommended that a zone equal to one tree height be left untreated to ensure that no material will be placed in these features. All thinned timber will be directionally felled from the untreated area surrounding the karst feature and split yarded from the area. Any material landing on the slope

break of the feature or within the feature will be hand removed. No yarding across or through the untreated area surrounding the feature will be allowed. Directional falling and split yarding away from the karst depressions and features should provide adequate protection for water quality and karst features. It is believed that the benefit of hydrologic recovery of the areas adjacent to these features outweighs the risk of harvest.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Logging equipment and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects for young-growth harvest. Follow management approaches specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01).

When would we implement this activity?

Ideal implementation timing would be while understory plants are still present in the stand and when trees reach a sufficient size to allow a marketable level of material be harvested that supports at least part of the cost of the operation.

In non-timber development areas evaluate needs with the District Wildlife Biologist, Fish Biologist, or Hydrologist to determine appropriate treatment areas and timing.

Integration Opportunities: Old-growth harvest activities offer an opportunity to construct/repair roads that may access young-growth stands. Consider this option when designing old-growth timber harvest plans. Review yearly road maintenance plans to assure alignment with proposed young-growth harvests. Young-growth harvests may be planned in the beach and estuary buffer where boat launches, kayak launches, shelters, and other recreation development projects could occur. Time the development of those projects to coincide with young-growth harvest opportunities. Commercial thinning is an appropriate method for obtaining logs for stream restoration; however, harvest of whole trees with root balls attached is not appropriate due to the potential for root and other damage to the residual trees.

Card Number 05	Activity: Precommercial Thinning – Timber Emphasis
<p>Description: Precommercial thinning (PCT) is the selective cutting of young growth trees in regenerated stands to reduce the density of trees to improve growth and vigor, enhance forest health, improve understory vegetation or meet other desired future stand conditions.</p> <p>No part of the cut material is required to be removed as part of the contract agreement.</p>	
<p>Objectives: 1) Increase tree and stand growth by removing competition between trees; 2) promote desired species composition; 3) remove deformed or diseased trees; and 4) reduce the time for development of large-diameter trees.</p>	
<p>Connected Actions: A combination of treatments will be used to achieve site-specific objectives. These may include, but are not limited to: slash control (Activity Card 11), wildlife travel corridors (Activity Card 8), wildlife gaps, pruning (Activity Card 10), and girdling (Activity Card 9). Individual stand objectives may include timber, riparian (Activity Card 6), and/or wildlife (Activity Card 7) emphases.</p>	
<p>Methods: Thinning from below</p> <p>Equipment Used: Handcrews with chainsaws</p>	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<p>Silviculture</p> <p>Stands will be surveyed prior to a prescription to determine that the stand is a good candidate for the investment. In general, productive stands in an overstocked state will be prioritized for thinning. The PCT window is considered 15-30 years old, with stands less than 15 not old enough to express the best genotypic and phenotypic trees and stands greater than 30 having the potential for large slash loading.</p> <p>Activities will generally not occur within non-development LUDs or in areas considered unsuitable for timber management due to Forest-wide Standards and Guidelines (1,000-foot beach and estuary zones, etc.). Prioritize treatments on lands with the highest productivity where harvest operability and access is favorable to minimize costs. Target residual density to approximately 222 to 303 trees per acre.</p> <p>A signed prescription by a Certified Silviculturist is required before any tree cutting activities occur. Precommercial thinning prescriptions will be developed on a site specific basis utilizing variable spacing techniques, selected treatments (pruning, girdling, etc.), phenotypic selection criteria, and species preferences.</p>	
<p>Timber</p> <p>None</p>	
<p>Transportation</p> <p>Access to thinning units is generally available on existing open roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and approve temporary use of closed roads by OHV's on a case-by-case basis per the implementation plan.</p>	
<p>Wildlife</p> <p>The Wildlife Biologist may recommend size and placement of thinning openings as well as slash treatments.</p> <p>See 2016 Forest Plan Standards and Guidelines p. 5-5 and p. 5-8.</p> <p>Where feasible locate activities outside of required nest/den buffers.</p> <p>Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.</p>	

Thinning is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches in and around treatment stands should be identified and protected in the following manner:

For Class I, II, and III streams, at least a 10-foot-wide no-thin buffer shall be left on each side of the stream. Evaluate steep side-slopes to determine if trees outside the 10ft no-thin buffer will be prone to falling into the stream course. In this case, a no-thin buffer within the stream's v-notch may be appropriate.

Cut trees shall be felled away from any Class I, II, III, or IV streams. Any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course and out of the no-thin buffer. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 14.19

National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3

Hydrology

BMPs spelled out in the R10 Soil and Water Conservation Handbook and the National Core BMP Technical Guide (FS-990a) are the primary mechanism for meeting water quality standards for nonpoint source pollution.

R10 BMPs: 12.8, 12.9

National Core BMPs: AqEco-2

Soils/Wetlands

To minimize additional erosion, buffer any existing landslides within a thinning unit with a 50-foot buffer around the headwall to provide root stability. Apply National Core BMPs AqEco-2, Veg-2, and Veg-8 and R10 BMPs 12.5, 12.17, and 13.5.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi-purpose for enhancing the creation of wildlife travelways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Precommercial thinning is appropriate on all karstlands when the karst management objectives can be met. Precommercial thinning to near the edge of karst features or the bank of sinking or losing streams is allowed; however, no slash or debris

may fall or be placed in these features. It is recommended that a zone equal to one tree height be left untreated to insure that no slash or debris will be placed in these features. If any introduced slash or debris finds its way into karst features or losing streams it must be removed by hand.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). In non-development LUDs, LUD-specific SIOs apply (2016 Forest Plan, SCENE2).

When would we implement this activity?

Precommercial thinning activities would occur before the stand reaches the stem exclusion stage, approximately 15 to 30 years after completion of harvesting activities depending on stand location, site productivity, access, and management objectives.

Integration Opportunities: ---

<i>Card Number</i> 06	Activity: Riparian Thinning
Description: Thinning young growth in Riparian Management Areas (RMA) to accelerate a return to old-growth conditions.	
Objectives: 1) Decrease the time needed for trees to grow and be recruited into the stream channel to stabilize bed load, create deep pools for fish, serve as a substrate for aquatic insect production, improve water quality by stabilizing stream banks and dampen high flows events as well as increase the diversity of the stream channel, resulting in improved fish habitat. 2) Increase the value of the riparian zone for wildlife by promoting vegetative diversity and forage.	
Connected Actions: A combination of treatments will be used to achieve site-specific objectives. These may include, but are not limited to: slash control (Activity Card 11), wildlife travel corridors (Activity Card 8), wildlife gaps, pruning (Activity Card 10), girdling (Activity Card 9), as well as the harvest of cut and rootwad trees for in-stream restoration (Activity Card 29). Individual stand objectives may include timber, riparian, and/or wildlife (Activity Card 7) emphases.	
Methods: thinning from below, single tree selection, group selection, variable density thinning, commercial thinning	
Equipment Used: Handcrews with chainsaws, mechanical equipment	
What are the general guidelines constraining this activity?	
No commercial timber harvest is allowed within 100 feet horizontal distance either side of Class I streams and Class II streams that flow directly into a Class I stream (Tongass Timber Reform Act). Provide reasonable assurance of windfirmness (RAW).	
What are the resource-specific guidelines?	
Silviculture	
Evaluate risk of windthrow. When RAW is determined to be moderate or greater, protect RMA by leaving additional windfirm trees standing in the area adjacent to RMA. Target residual density to approximately 109 to 222 trees per acre.	
A signed prescription by a Certified Silviculturist is required before any tree cutting activities occur. Riparian thinning prescriptions will be developed on a site-specific basis utilizing variable spacing techniques, selected treatments (pruning, girdling etc.), phenotypic selection criteria, and species preferences.	
Timber	
Consider integration of projects, other resource activities, and other harvests during initial project area determination.	
Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation if commercially viable products become available by this activity. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally will be approximately 2,000 square feet in size. Continuous roadside landings are also utilized.	
Consider the most cost effective harvest method available (generally in order of shovel, then cable, and finally helicopter).	
Transportation	
Access to thinning units is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
Wildlife	
See 2016 Forest Plan Standards and Guidelines p. 5-6 and p. 5-7.	
Where feasible locate activities outside of required nest/den buffers.	
Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.	
Thinning is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.	

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches in and around riparian treatment stands should be protected in the following manner:

For Class I, II, and III streams, at least a 10-foot-wide no-thin buffer shall be left on each side of the stream. Evaluate steep side-slopes to determine if trees outside the 10-foot no-thin buffer will be prone to falling into the stream course. In this case, a no-thin buffer within the stream's v-notch may be appropriate.

Cut trees shall be felled away from any Class I, II, III, or IV streams. Any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course and out of the no-thin buffer. Prohibit equipment storage, maintenance, and refueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 14.19

National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3

Hydrology

Take care when refueling equipment.

R10 BMPs: 12.8, 12.9

National Core BMPs: AqEco-2

Soils/Wetlands

All proposed areas using mechanized equipment will need to be reviewed by a Tongass Soil Scientist for suitability upon implementation. Heavy machinery is required to operate on puncheon material and should not operate on slopes greater than 25 percent. If the site is well drained, a Soil Scientist may approve equipment to operate up to 35 percent slopes. Heavy machinery should avoid creating ruts greater than 12 inches in depth. All rootwad extraction locations are required to be approved by a Soil Scientist prior to removal and must follow the R10 guidelines for extraction. Wetland areas should be avoided. Dense slash and woody debris accumulations are not permitted. Avoid locating temporary roads on slopes greater than 67 percent. Minimize soil disturbance. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-2, Road-3, Road-5, Road-6, Road-9, Road-10, Veg-2, Veg-4, Veg-6, and Veg-8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi-purpose for enhancing the creation of wildlife travel ways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1).

Integrate weed prevention and management in all soil, watershed and stream restoration projects (Invasive Plant Management BMP 22).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Logging equipment and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01).

When would we implement this activity?

Thinning activities could occur in stands that are approximately 15 to 40 years old depending on stand location, site productivity, need for restoration, and management objectives.

Integration Opportunities: Stream restoration, commercial thinning

<i>Card Number</i> 07	Activity: Wildlife Thinning
Description: Thinning, either precommercial or commercial, to benefit wildlife by improving forage production and connectivity. Thinning to benefit wildlife should not be limited to non-development LUDs.	
Objectives: 1) to increase light to the forest floor by opening the canopy to increasing forage production in areas with limited or no forage; 2) to create a juxtaposition and diversity of a variety of habitat types (thinned/unthinned and old-growth areas) across a homogeneous landscape; 3) to provide untreated corridors (unthinned) within treated stands to facilitate wildlife movement through the stand; and 4) to increase structural diversity and future large trees and/or snags.	
Connected Actions: A combination of treatments will be used to achieve site-specific objectives. These may include, but are not limited to: slash control (Activity Card 11), wildlife travel corridors (Activity Card 8), wildlife gaps, pruning (Activity Card 10), and girdling (Activity Card 9). Individual stand objectives may include timber, riparian (Activity Card 6), and/or wildlife emphases, including through precommercial thinning (Activity Card 5) and commercial thinning (Activity Card 4).	
Methods: Thinning from below, single tree selection, group tree selection, variable density thinning, commercial thinning	
Equipment Used: Handcrews with chainsaws, mechanical equipment.	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<u>Silviculture</u>	
A signed prescription by a Certified Silviculturist is required before any tree cutting activities occur. Wildlife thinning prescriptions will be developed on a site specific basis utilizing variable spacing techniques, selected treatments (pruning, girdling etc.), phenotypic selection criteria, and species preferences. Target residual density to approximately 170 to 222 trees per acre. Include other treatment elements (<i>i.e.</i> , slash control, wildlife travel corridors, wildlife gaps, pruning, and girdling) when beneficial to meeting wildlife objectives.	
<u>Timber</u>	
If commercially viable products become available by this activity, the construction of temporary roads may be considered when: that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, and the construction adheres to all applicable BMPs. Temporary roads are not intended to be part of the forest transportation system and are considered not necessary for long-term resource management. Temporary roads will be decommissioned when their use period has ended.	
Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation if commercially viable products become available by this activity. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally average 2,000 square feet in size. Continuous roadside landings are also utilized.	
Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to strand or restrict future access through isolation of potential future timber harvests.	
Consider the most cost effective harvest method available for each setting (generally in order of shovel, then cable, and finally helicopter).	
<u>Transportation</u>	
Access to thinning units is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	

Wildlife

Consult with the Wildlife Biologist to identify areas that may be lacking or limited in heterogeneity across the landscape, travelways between habitats, and structural diversity and prioritize those areas for light or no treatments. Prioritize areas to enhance or provide connectivity by leaving untreated or lightly treated areas across the landscape.

See 2016 Forest Plan Standards and Guidelines p. 5-5 and p. 5-8.

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

Thinning is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction to Activity Cards for more information.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

For PCT treatments, stream reaches in and around treatment stands should be identified and protected in the following manner:

For Class I, II, and III streams, at least a 10-foot-wide no-thin buffer shall be left on each side of the stream. Evaluate steep side-slopes to determine if trees outside the 10-foot no-thin buffer will be prone to falling into the stream course. In this case, a no-thin buffer within the stream's v-notch may be appropriate.

Cut trees shall be felled away from any Class I, II, III, or IV streams. Any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course and out of the no-thin buffer. Prohibit equipment storage, maintenance, and refueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 14.19

National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3

For CT treatments, stream reaches within the affected areas will be identified and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7). When considering young-growth harvest within an RMA, give preference to areas where treatments are most needed to accelerate old-growth characteristics and achieve the stream process group objectives.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures.

R10 BMPs: 12.6, 12.6a, 13.9, 13.14, and 13.16

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Take care when refueling equipment.

R10 BMPs: 12.8, 12.9

National BMPs: AqEco-2

Soils/Wetlands

All proposed areas using mechanized equipment will need to be reviewed by a Tongass Soil Scientist for suitability upon implementation. Heavy machinery are required to operate on puncheon material and should not operate on slopes greater than 25 percent. If the site is well drained, a Soil Scientist may approve equipment to operate up to 35 percent slopes. Heavy machinery should avoid creating ruts greater than 12 inches in depth. Wetland areas should be avoided. Dense slash and

woody debris accumulations are not permitted. Avoid locating temporary roads on slopes greater than 67 percent. Minimize soil disturbance. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-2, Road-3, Road-5, Road-6, Road-9, Road-10, Veg-2, Veg-4, Veg-6, and Veg-8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi-purpose for enhancing the creation of wildlife travel ways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01).

When would we implement this activity?

Thinning activities could occur, when possible, before the stand reaches the stem exclusion stage at approximately 15 to 35 years old depending on stand location, site productivity, and management objectives.

Integration Opportunities: Stream restoration, tree rootwad extraction, commercial thinning.

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<i>Card Number</i> 08	Activity: Wildlife Travelways
Description: Maintenance or creation of corridors for wildlife. The maintenance or creation of corridors can occur in both young growth and old growth.	
Objectives: The main objective of this activity is to provide untreated corridors or very lightly treated corridors within the treated stand or landscape to facilitate wildlife movement both through the stand and to provide a connection between habitat types. A second objective of this activity would be to create a juxtaposition and greater diversity of a variety of habitat types across a landscape.	
Connected Actions: All commercial and precommercial timber treatments (Activity Cards 1 through 7, 14, and 15) including pruning (Activity Card 10), and slash bucking (Activity Card 11)	
Methods: Areas reserved from disturbance, trail clearing, slash treatment. Old-growth retention (if required by the Legacy Standard and Guideline) and unsuitable areas (<i>e.g.</i> , unstable slopes). In old growth, the corridors could also be done by lightly treating an area, including but not limited to 75% retention, where the acres treated still function as old growth (POG). For thinned areas, allow an untreated portion to remain to have an area without slash.	
Equipment Used: Hand crews, tracked equipment.	
What are the general guidelines constraining this activity?	
Thinning contract specs for PCT specify a maximum of 100-foot wide corridors; the Wildlife Biologist may recommend wider corridor widths in young growth especially in non-development LUDs. In old growth, the Wildlife Biologist may recommend the retention of old-growth corridors in widths to facilitate movement of old-growth dependent species.	
What are the resource-specific guidelines?	
Silviculture Conduct an interdisciplinary review of areas proposed for wildlife travelways to determine optimum locations and long-term management strategies. Locations should benefit multiple resources without unnecessarily limiting timber production objectives in areas appropriate for timber development. Vegetative disturbances exceeding ¼ acre may require a silvicultural prescription.	
Timber Consider integration of projects and other resource activities in planning for this activity. If possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible, make commercial timber available for sale or for use by the public.	
Transportation During clearing operations, construction specifications require that breaks be established in the windrowed slash. Other disposal methods may be specified which do not impede wildlife movement.	
Wildlife Consult with the Wildlife Biologist to identify areas that may be lacking or limited in heterogeneity across the landscape, travelways between habitats and structural diversity and prioritize those areas for light or no treatments. Prioritize areas to enhance or provide connectivity by leaving untreated or lightly treated areas across the landscape. The Wildlife biologist may, especially in non-development LUDs, recommend or require size and placement of untreated/lightly treated corridors. In lightly treated corridors, slash treatment will be recommended or required. Use distance limitation that have been identified in literature to prioritize areas where connections between habitats may be limited or lacking. Mean maximum travel distance have been identified as about 8 miles for marten (13 km; Flynn 1991) and a spacing between small OGRs of about 0.6 mile for flying squirrels (1 kilometer; Smith <i>et al.</i> 2011). Some species generally prefer interior forest habitats and tend to be sensitive to forest edge habitat which can extend 100 meters (330 feet) or more into the forest (Concannon 1995). Untreated or lightly treated old-growth corridors; therefore, a minimum corridor width of at least 660 feet would be necessary to minimize the edge effect.	

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

Consult with the Wildlife Biologist for placement of unsuitable and legacy acres that may function as corridors.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to any slash creating activities like thinning and pruning, stream reaches in and around treatment areas should be identified and protected in the following manner:

For Class I, II, and III streams, at least a 10-foot-wide no-thin buffer shall be left on each side of the stream. Evaluate steep side-slopes to determine if trees outside the 10 foot no-thin buffer will be prone to falling into the stream course. In this case, a no-thin buffer within the stream's v-notch may be appropriate.

Cut trees shall be felled away from any Class I, II, III, or IV streams. Any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course and out of the no-thin buffer. Prohibit equipment storage, maintenance, and refueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 14.19

National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3

Hydrology

Take care when refueling equipment. When using tracked equipment follow BMP 13.9.

R10 BMPs: 12.8, 12.9, 13.9

National Core BMPs: AqEco-2

Soils/Wetlands

To minimize additional erosion, buffer any existing landslides within a thinning unit with a 50-foot buffer around the headwall to provide root stability. All proposed areas using tracked equipment will need to be reviewed by a Tongass Soil Scientist for suitability upon implementation. Tracked equipment are required to operate on puncheon material and should not operate on slopes greater than 25 percent. If the site is well drained, a soil scientist may approve equipment to operate up to 35 percent slopes. Heavy machinery should avoid creating ruts greater than 12 inches in depth. Wetland areas should be avoided.

Dense slash and woody debris accumulations are not permitted. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Veg-2, Veg-4, Veg-6, and Veg-8 and R10 BMPs 12.5, 12.17, 13.5, and 13.9.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi-purpose for enhancing the creation of wildlife travelways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). In non-development LUDs, LUD-specific SIOs apply (2016 Forest Plan, SCENE2). Scenery specialist should be consulted during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Integration Opportunities: ---

<i>Card Number</i> 09	Activity: Girdling
Description The severing of the bark through the cambium around the entire circumference of the bole of larger diameter trees during thinning operations instead of felling so as to delay tree mortality (approximately 2 to 5 years).	
Objectives: To delay the accumulation of slash on the ground during thinning activities so as not to impede wildlife movement as well as provide future snag recruitment for wildlife.	
Connected Actions: Thinnings (Activity Cards 5 through 7), wildlife travel corridors (Activity Card 8), and wildlife trees (Activity Card 30).	
Methods: Traditional girdling or slab girdling (preferred method).	
Equipment Used: Handcrews using chainsaws or other devices designed for the purpose.	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<u>Silviculture</u> A signed prescription by a Certified Silviculturist detailing girdling specifications is required before any tree cutting activities occur. Girdling may be utilized during thinning operations on trees between approximately 7 inches to 14 inches dbh to achieve desired spacing, reduce the amount of slash left on the ground as well as reduce thinning costs.	
<u>Timber</u> None	
<u>Transportation</u> Access to areas for girdling trees is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u> Prioritize WAAs that have limited or are lacking deer winter range (low-elevation south facing slopes). Prioritize areas within these WAAs to provide deer winter range by increasing forage production in areas where it is currently lacking or limited. Girdling will increase the structural diversity of a stand as well as increase light to the forest floor. The increased light will result in increased forage production. Increased forage production will benefit a variety of wildlife species. Girdling as a treatment will result in less slash on the ground, increasing access to the forage and movement through the treated area. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> Avoid girdling trees within 10 feet of Class I, II, and III streams. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks. R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9 National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3	
<u>Hydrology</u> Take care when refueling equipment.	

R10 BMPs: 12.8, 12.9 National Core BMPs: AqEco-2
<p><u>Soils/Wetlands</u></p> <p>To minimize additional erosion, buffer any existing landslides within a thinning unit with a 50-foot buffer around the headwall to provide root stability. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Veg-2, and Veg-8 and R10 BMPs 12.5, 12.17, 13.5, and 13.9.</p>
<p><u>Botany</u></p> <p>Botanical surveys are not needed unless activity is located within beach buffer. Within the beach buffer, conduct targeted surveys for the Region 10 Sensitive lichen, <i>Lobaria amplissima</i>. If found, avoid these areas to maintain live trees for this species' habitat.</p>
<p><u>Invasive Plants</u></p> <p>A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.</p> <p>See Introduction for additional BMPs that apply to all activities.</p>
<p><u>Geology/Karst</u></p> <p>None</p>
<p><u>Heritage</u></p> <p>All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.</p>
<p><u>Recreation</u></p> <p>Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.</p> <p>Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.</p>
<p><u>Scenery</u></p> <p>Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). In non-development LUDs, LUD-specific SIOs apply (2016 Forest Plan, SCENE2).</p>
<p><u>When would we implement this activity?</u></p> <p>In stands where felling all the trees required to meet thinning objectives would result in a large accumulation of slash, or there are a number of larger diameter trees that would substantially increase thinning costs, girdling of trees within a specific</p>

diameter range may be utilized to prevent negative impacts. Girdling may also be utilized to provide future snag recruitment for wildlife purposes.

Integration Opportunities: ---

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<i>Card Number</i> 10	Activity: Pruning
Description: Removal of limbs on the lower bole of crop trees after precommercial thinning to enhance wood quality, increase wood growth, and promote/retain understory vegetation, or meet other desired future stand conditions.	
Objectives: 1) Increase the amount of sunlight reaching the forest floor to enhance forage production; 2) Improve tree structure, form, and/or wood quality; 3) Address forest health concerns; 4) For safety purposes particularly around recreation sites; or 5) for visibility and/or aesthetics.	
Connected Actions: Precommercial, riparian, wildlife, and commercial thinnings (Activity Cards 4 through 7), and wildlife travel corridors (Activity Card 8)	
Methods: Removal of lower branches to various specifications	
Equipment Used: Handcrews using pruning saws/pole saws or other equipment designed for the purpose	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<u>Silviculture</u> A signed prescription by a Certified Silviculturist is required before any tree cutting activities occur. Pruning prescriptions will be developed on a site specific basis taking into consideration phenotypic selection criteria and species preferences. A variety of pruning intensities may be utilized depending on site specific characteristics and stand objectives. This will range from pruning every tree up to every 8th tree. No tree less than 15 feet in height will be pruned. All live and dead branches shall be removed from the tree bole to a height up to 50 percent of the total tree height, not to exceed 17 feet as measured from uphill side of the tree. Lift will not remove greater than 60 percent of existing tree canopy. All branches, alive and dead, shall be removed from the ground level up to the specified pruning height. These branches shall be completely severed from the tree as close to the bole as possible without cutting into the branch collar. The sever point shall not exceed ½ inch beyond the branch collar. Branch stubs should not exceed 4 inches in length. When feasible pruning will be performed in conjunction with other thinning activities. Consider epicormic branching when pruning spruce. All care should be taken to minimize any damage to adjacent trees.	
<u>Timber</u> None	
<u>Transportation</u> Access to thinning units is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u> Prioritize WAAs that have limited or are lacking deer winter range (intact low-elevation old-growth forest on south facing slopes); prioritize areas within these WAAs to provide deer winter range by increasing forage production in areas where it is currently lacking or limited. Young-growth treatments that maintain or improve vegetation important to wildlife habitat could include pruning. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active eagle nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	

Fisheries

Any slash that inadvertently enters a stream shall be pulled back out of the stream course before handcrews leave the site. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.6, 12.6a, 12.8, 12.9

National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3

Hydrology

Take care when refueling equipment.

National Core BMPs: AqEco-2

R10 BMPs: 12.8, 12.9

Soils/Wetlands

Minimize soil disturbance. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Veg-2, and Veg-8 and R10 BMPs 12.5, 12.17, 13.5, and 13.9.

Botany

Botanical surveys are not needed unless activity is located within beach buffer. Then targeted surveys for the Region 10 Sensitive lichen, *Lobaria amplissima*, should be conducted.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi-purpose for enhancing the creation of wildlife travelways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects in development LUDs. In addition, additional management approaches are specified for Modified Landscape (ML) and Scenic Viewshed (SV) LUDs (2016 Forest Plan, S-YG-SCENE-01). In non-development LUDs, LUD-specific SIOs apply (2016 Forest Plan, SCENE2).

When would we implement this activity?

Stands will not be pruned until trees exceed 15 feet in height at approximately 15 to 20 years depending on species and site productivity. When feasible pruning will be performed in conjunction with other thinning activities.

Integration Opportunities: ---

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Card Number 11	Activity: Slash Treatment
Description: Treatment (removal or redistribution) of woody material from thinning activities to reduce the influence of slash on wildlife movement, forage production or to meet other desired future stand conditions.	
Objectives: 1) To facilitate wildlife movement; 2) increase forage production and availability; 3) encourage natural regeneration; and/or 4) increase wood fungi colonization	
Connected Actions: Commercial, precommercial, wildlife, and riparian thinnings (Activity Cards 4 through 7), and wildlife travelways (Activity Card 8)	
Methods: Bucking to various lengths, delimiting, lop and scatter, machine/hand pile and burn, chipping, crushing	
Equipment Used: Handcrews with chainsaws, mechanical equipment	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
Silviculture Specifications for slash treatments of activity generated woody material will be part of the stand prescription when required to meet stand objectives and desired future condition. During all precommercial, wildlife, and riparian thinnings, slash shall be pulled clear of roadways, associated ditches, and road banks. No harvest buffers for streams and karst features located within units will have any slash removed. To aid decomposition, felled material will be bucked to within 2 feet or less of the ground.	
Timber None	
Transportation Access to thinning units is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
Wildlife This activity may improve forage production, wildlife access to the forage, and access through the treated area. When slash is piled, the piles will create small mammal habitat. An increase in small mammals benefits a variety of wildlife species. Therefore, slash treatment may be more intensive in areas of wildlife travelways, beach buffers, and riparian management areas. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
Fisheries Any slash that inadvertently enters a stream shall be pulled back out of the stream course before handcrews leave the site. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks. R10 BMPs: 12.6, 12.6a, 12.8, 12.9 National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3	
Hydrology Take care when refueling equipment. R10 BMPs: 12.8, 12.9 National Core BMPs: AqEco-2	

Soils/Wetlands

To minimize additional erosion, buffer any existing landslides within a thinning unit with a 50-foot buffer around the headwall to provide root stability. A site-specific slope stability assessment is required by a Tongass Soil Scientist upon implementation to determine landslide and erosion potential. Avoid burning stands with thin organic layers, slopes greater than 55 percent, shallow karst soils, and/or McGilvery soils. All proposed areas using mechanized equipment will need to be reviewed by a Tongass Soil Scientist for suitability upon implementation. Mechanized equipment are required to operate on puncheon material and should not operate on slopes greater than 25 percent. If the site is well drained, a Soil Scientist may approve equipment to operate up to 35 percent slopes. Mechanized equipment should avoid creating ruts greater than 12 inches in depth. Wetland areas should be avoided. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fire-2, Veg-2, Veg-4, Veg-6, and Veg-8 and R10 BMPs 12.5, 12.17, 13.5, 13.9, 19.2, and 19.3.

Botany

No botanical surveys required.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi-purpose for enhancing the creation of wildlife travelways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

Very Low SIO applies to young-growth projects.

When would we implement this activity?

When thinning activities would create excessive slash or in units where there is already a large amount of existing slash present, material may be treated to improve wildlife habitat or to meet other stand objectives. Any required slash treatments should be implemented in conjunction with thinning activities or within a year or two of completion.

Integration Opportunities: ---

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Card Number 12	Activity: Timber Stand Establishment – Planting and Inter-planting
Description: Planting or inter-planting of tree seedlings in stands where a reforestation need has been identified to meet desired future conditions.	
Objectives: <u>Planting:</u> 1) Promote species diversity; 2) to accelerate tree establishment and growth; 3) in the event natural regeneration is insufficient to meet the 1976 National Forest Management Act certification after the third growing season, or the minimum stocking level falls below the Tongass National Forest stocking guidelines. <u>Inter-planting of yellow cedar:</u> 1) To maintain yellow-cedar as a component of the stand's species composition; 2) to facilitate the migration of yellow cedar to better drained locations and higher elevations; 3) to aid yellow cedar in competing with faster growing Sitka spruce and western hemlock.	
Connected Actions: Non-lethal browse control measures (<i>i.e.</i> , tree shelters, netting, enclosures, repellents, alternative forage), even-aged, two-aged, and uneven-aged management (Activity Cards 1, 2, 3, 14, and 15)	
Methods: hand planting Equipment Used: manual (hoe-dad or shovel)	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<u>Silviculture</u> Exams for reforestation will be scheduled post-harvest to evaluate all harvested units to determine that a sufficient seed source is present and site conditions are favorable to promote natural regeneration. If planting is considered necessary to enhance species composition or diversity, or to achieve satisfactory stocking levels, a prescription will be written, seedlings ordered, and planting activities scheduled as soon as feasible. Subsequent precommercial thinning treatments should be scheduled and implemented in a timely manner to maintain planting investment.	
<u>Timber</u> None	
<u>Transportation</u> Access to units is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u> This activity will increase both the species and structural diversity of a stand, both of which will be beneficial to a variety of wildlife species. The Wildlife Biologist recommends non-lethal browse control measures (<i>i.e.</i> , tree shelters, netting, enclosures, repellents, alternative forage). All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> No fisheries-specific guidelines for seedling planting; see Fisheries information in the connected actions cards (even-aged, two-aged, uneven-aged management).	
<u>Hydrology</u> None	

<u>Soils/Wetlands</u>
Soil disturbance should be minimized to the extent practicable. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Veg-2, and Veg-8 and R10 BMPs 12.5, and 12.17.
<u>Botany</u>
Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.
<u>Invasive Plants</u>
A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants. See Introduction for additional BMPs that apply to all activities.
<u>Geology/Karst</u>
None
<u>Heritage</u>
All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.
<u>Recreation</u>
Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails. Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.
<u>Scenery</u>
None
When would we implement this activity?
If planting or inter-planting activities are required, they will be scheduled within 3 to 5 years after completion of harvest activities.
Integration Opportunities: ---

<i>Card Number</i> 13	Activity: Cone Collection
Description: Harvesting of mature cones to obtain native seed for reforestation purposes.	
Objectives: To collect and maintain a viable seed cache sufficient to support current and future reforestation efforts.	
Connected Actions: Commercial salvage sale (Activity Card 16)	
Methods: Pruning or felling of select trees and collecting cones by hand	
Equipment Used: hand crew with chainsaws	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
Silviculture	
The number of bushels per species to be collected will be determined by a Certified Silviculturist. Cone will be collected from individually selected trees located within a few hundred feet of roads. Trees not selected by Forest Service personnel must be approved prior to the start of any collection activities. All precautions will be taken to prevent damage to adjacent trees.	
Timber	
Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
Transportation	
Access is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
Wildlife	
Where feasible locate activities outside of required nest/den buffers.	
Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.	
All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
Fisheries	
When pruning or felling trees that will not also be made available as commercial timber, stream reaches in and around cone collection sites should be identified and protected in the following manner:	
For Class I, II, and III streams, at least a 10-foot-wide no-cut buffer shall be left on each side of the stream. Evaluate steep side-slopes to determine if trees outside the 10-foot no-cut buffer will be prone to falling into the stream course. In this case, a no-cut buffer within the stream's v-notch may be appropriate.	
Cut trees shall be felled away from any Class I, II, III, or IV streams. Any cut trees or slash that inadvertently enters a stream shall be pulled back out of the stream course and out of the no-cut buffer. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.	
R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 14.19	
National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3	
When felling trees for cone collection that will also be made available as commercial timber, stream reaches within cone collection sites will be identified and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).	

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some young-growth harvest can occur outside the TTRA buffer in these additional buffer areas (2016 Forest Plan, p. 5-6 and 5-7). When considering young-growth harvest within an RMA, give preference to areas where treatments are most needed to accelerate old-growth characteristics and achieve the stream process group objectives.

Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.6, 12.6a, 13.9, 13.14, and 13.16

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Road-10, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

This activity is listed as a hand crew/chainsaw operation. Take care when refueling equipment. Ensure felling of trees does not damage or alter stream courses. Remove slash from streamcourses.

National Core BMPs: AqEco-2,

R10 BMPs: 12.8, 12.9

Soils/Wetlands

Avoid harvesting cones and cutting trees within 50 feet of a new or existing landslide and within non-forested wetland areas. Apply R10 BMPs 12.5 and 13.5 and National Core BMP Veg-2.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

None

Scenery

None

When would we implement this activity?

Collection would occur in late August or September after cones have ripened during good cone crop years, usually every 5 to 7 years when necessary to maintain the Region's seed cache or a permit is issued under a TIMS product plan.

Integration Opportunities: ---

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Card Number 14	<h2 style="margin: 0;">Activity: Rotational Harvest of Old Growth using Even-aged Management</h2>
<p>Description: Harvest of old-growth timber that results in a new stand of trees composed of a single age class in which the range of tree ages is less than 20 percent of the rotation age.</p>	
<p>Objectives: This activity is used to regenerate existing stands of timber that are poorly stocked with healthy trees and are not expected to obtain a desirable condition as defined by the LUD direction given their current growth trajectory. This activity converts mature to over-mature timber stands where growth is being offset or exceeded by decay into healthy stands of young-growth timber. The activity minimizes the risk of post-harvest windthrow, promotes natural regeneration of desirable species, and minimizes defect and disease that will be present in the future stand to the maximum extent possible. The activity is generally recognized as an efficient method of harvesting old-growth timber that promotes the potential for an economic timber sale.</p>	
<p>Connected Actions: Landings, Tree Planting (Activity Card 12), Precommercial Thinning (Activity Card 5), NFS Road Construction (Activity Card 19), Temporary Road Construction (Activity Card 20), NFS Road Reconstruction (Activity Card 21), Quarry Development (Activity Card 24), Road Maintenance (Activity Card 25), and Log Transfer Facilities (Activity Card 18)</p>	
<p>Methods: Clearcutting and clearcutting with reserves.</p>	
<p>Equipment Used: Equipment used must provide the needed suspension and limit soil disturbance to meet requirements and recommendations from Soil Scientist, 2016 Forest Plan, and BMPs. These requirements and recommendations may include partial suspension, which means suspending one end of the yarded log, or full suspension, which means suspending the full log being yarded. Common yarding systems include tower and cable yarding systems, skyline (standing, live, running), single span, multi-span, excaliner, and tong thrower. Tracked shovel and helicopter are also common yarding systems.</p>	
<h3>What are the general guidelines constraining this activity?</h3>	
<p>This activity may only occur within the suitable lands based on legal and technical factors (2016 Forest Plan Appendix A). This activity will also only occur in areas that meet all applicable 2016 Forest Plan direction such as: meeting the objectives of the Land Use Designations (LUDs; Chapter 3), and are within potential harvest units as shown in the logging system and transportation analysis (LSTA) prepared for this project. Forest-wide Standards and Guidelines outlined in the 2016 Forest Plan for each LUD will be followed.</p>	
<h3>What are the resource-specific guidelines?</h3>	
<p>Silviculture</p> <p>The 2016 Forest Plan (pages 4-68 to 4-69) requires a number of considerations/determinations before this activity can be applied. Clearcutting must be planned in a way that isolated stands of timber will not be created and existing stands of regeneration from previous harvests will not be destroyed. A finding from a Certified Silviculturist that clearcutting is the best method to meet objectives and requirements is necessary. That finding must conform to direction in FSM 2470 Supplement No.: R-10 2400-2005-1 which defines requirements on the use of clearcutting, generally limiting the activity to places where it is necessary to address concerns for insect and disease, windthrow, logging damage, or other factors affecting forest health. For the purpose of this assessment, this means an old-growth stand proposed for clearcutting must have a moderate or high windthrow risk, insect or disease rating, or a combination of the three. The 2016 Forest Plan and NFMA limit the size of even-age openings to 100 acres with certain exceptions. In order to be considered a separate opening from an adjacent timber stand for the purpose of determining the acreage, the adjacent stand must be well stocked with trees at least 5 feet tall. If adjacent stands do not meet this requirement, a stand of timber must be left to separate the two stands. An appropriate sized stand of timber may not be a narrow strip but must be large enough to be managed as a distinct timber stand. This is typically defined as a stand approximately 10 acres or larger. Exceptions to the 100 acre size of even-aged openings are discussed on page 4-69 of the 2016 Forest Plan and R10 Supplement FSM 2400-2002-1. Harvest openings larger than 100 acres will not be considered without additional site-specific NEPA analysis and Forest Supervisor approval.</p>	
<p>Timber</p> <p>The construction of temporary roads will be considered when that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, the temporary road construction is viable within the Standards and Guidelines of the Forest Plan, and the construction adheres to all applicable BMPs.</p>	

Temporary roads are not intended to be part of the Forest transportation system and are considered not necessary for long-term resource management.

Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally are approximately 2,000 square feet in size. Continuous roadside landings are also utilized.

Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to isolate suitable timber or restrict future access.

Consider the most cost effective harvest method available for each setting (generally in the order of shovel, then cable, and finally helicopter). In accordance with the latest Appropriations Bill, all timber sales must appraise positive utilizing the most current Alaska Region 10 RV appraisal.

Consider incorporating a mix of stands with different volumes/values as well as combining young-growth and old-growth sales together to improve economics.

Transportation

Roaded access is required to effectively manage the timber resource. Reconstruction of stored roads may be required. Timber harvest methods may require construction of new roads. Analyze present and long-term access needs to determine the appropriate road classification: temporary or system.

The transport of harvested timber from isolated islands in Southeast Alaska requires both land and water routes to reach processing facilities. Log Transfer Facilities are required for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa).

Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.
National BMPs: Road-2, Road-3, Road-4.

Wildlife

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Timber harvest is considered a Category C activity in the National Bald Eagle Management Guidelines. See Introduction to Activity Cards for more information.

All activity in OGRs will be limited to one tree length from the road.

Fisheries

Prior to implementation, stream reaches within the affected areas will be surveyed, flagged, and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.1, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.3, 13.4, 13.5, 13.9, 13.10, 13.11, 13.14, 13.16, 14.2, 14.19, 14.25, 14.27

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Road-10, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of logging activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off road travel is required.

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Upon implementation, a Tongass Soil Scientist review for harvest suitability is required if there are wetlands, landslides, and/or hollow topography present, ground-based equipment proposed, or if units are located on slopes greater than 55 percent. All proposed yarding activities should follow BMPs with a minimum of partial suspension to meet soil and wetland resource concerns. Some units may only be suitable under full suspension requirements. The ground based operator should avoid the small non-forested areas of the unit to prevent rutting. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground based yarding on slopes over 25 percent gradient. Avoid track slippage and rutting. Temporary roads will also be reviewed for suitability. Avoid locating roads on slopes greater than 67 percent or on slopes greater than 55 percent on glacial till soils. When determining temporary road locations, wetlands should be avoided to the extent practicable. All applicable laws, R10 Soil Quality Standards, and Forest Service S&Gs must be followed. Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Road-2, Road-5, Veg-1, Veg-2, Veg-4, Veg-5, Veg-6 and R10 BMPs 12.5, 12.17, 13.2, 13.5, 13.9, 13.10, 14.2, 14.5, 14.7, and 14.8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her

approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

This activity would be considered primarily for the purpose of contributing old-growth timber volume to the large, small, and stewardship timber sale programs. The timing and intensity of the activity across the landscape would be limited to stands where the silvicultural requirements regarding the justification for clearcutting are met.

What are the potential resource integration opportunities? This activity normally requires road construction and maintenance. This creates an opportunity to coordinate with road maintenance needs including red pipe replacement and offers an opportunity to leverage mobilization of heavy equipment so that other roads important for subsistence use and for other activities can be maintained. Clearcut timber harvest results in some trees that are non-merchantable as sawtimber being cut; this creates an opportunity for that material to be used for other purposes like personal use firewood, biomass, and stream restoration material. Road construction requires rock pit development that creates an opportunity for personal use rock sources.

Card Number 15	<h2>Activity: Harvest of Old Growth using Uneven-aged Management</h2>
<p>Description: Harvest following a planned sequence of treatments designed to result in a stand with three or more distinct age classes either intimately mixed or in small groups. Partial harvest designed to retain old-growth structure while removing a percentage of the trees in the stand. The harvest may be by individual tree or in small groups of trees up to two acres.</p>	
<p>Objectives: Maintain old-growth structure while producing valuable timber products.</p>	
<p>Connected Actions: Landings, equipment trails, Tree Planting (Activity Card 12), Precommercial Thinning (Activity Card 5), NFS Road Construction (Activity Card 19), Temporary Road Construction (Activity Card 20), NFS Road Reconstruction (Activity Card 21), Quarry Development (Activity Card 24), Road Maintenance (Activity Card 25), and Log Transfer Facilities (Activity Card 18)</p>	
<p>Methods: Retention system, Single tree selection, group selection, group selection with reserves</p>	
<p>Equipment Used: Equipment used must provide the needed suspension and limit soil disturbance to meet requirements and recommendations from Soil Scientist, 2016 Forest Plan, and BMPs. These requirements and recommendations may include partial suspension, which means suspending one end of the yarded log, or full suspension, which means suspending the full log being yarded. Common yarding systems include tower and cable yarding systems, skyline (standing, live, running), single span, multi-span, excaliner, and tong thrower. Tracked shovel and helicopter are also common yarding systems or by hand in the case of microsalses of products.</p>	
<h3>What are the general guidelines constraining this activity?</h3>	
<p>This activity may only occur within the suitable land based on legal and technical factors (2016 Forest Plan Appendix A). This activity will also only occur in areas that meet all applicable 2016 Forest Plan direction such as: meeting the objectives of the Land Use Designations (LUDs; Chapter 3), and are within potential harvest units as shown in the logging system and transportation analysis (LSTA) prepared for this project. Forest-wide Standards and Guidelines outlined in the 2016 Forest Plan for each LUD will be followed.</p>	
<h3>What are the resource-specific guidelines?</h3>	
<p>Silviculture</p> <p>This activity is limited to single tree or group selection prescriptions. Harvest may be in group selections up to 2 acres in size or via partial harvest using individual tree selection. Conduct stand exams and windthrow risk assessment prior to prescription development. Group selections should harvest no more than approximately 33% of the stand area during any cutting cycle. Subsequent cuttings should be scheduled to avoid habitat loss and or take advantage of opportunities to lower operating costs. Partial harvest (individual tree selection) should maintain at least 50% residual basal area in moderate windthrow risk areas and at least 75% in high risk areas. Implement this activity primarily where the combination of other resource objectives already limits timber harvest opportunities. The activity is most suited for areas requiring helicopter logging to meet other resource objectives.</p>	
<p>Timber</p> <p>The construction of temporary roads will be considered when that construction is necessary for the facilitation of the yarding system, the economic value of the timber within a harvest area supports its construction, the temporary road construction is viable within the Standards and Guidelines of the Forest Plan, and the construction adheres to all applicable BMPs. Temporary roads are not intended to be part of the Forest transportation system and are considered not necessary for long-term resource management.</p> <p>Landings will generally be constructed and utilized to facilitate the yarding and loading of harvested timber for transportation. The location and size of landings are dependent on: the yarding system used, direction of yard (uphill or downhill), road type and traffic direction, length of logs, loading and processing of logs, number of sorts, hot or cold decking, and daily production. Landings generally are approximately 2,000 square feet in size. Continuous roadside landings are also utilized.</p> <p>Ensure access for entry for future timber harvest and other management activities during harvest unit planning, as well as the planning of road locations so as not to isolate suitable timber or restrict future access.</p>	

Consider the most cost effective harvest method available for each setting (generally in the order of shovel, then cable, and finally helicopter). In accordance with the latest Appropriations Bill, all timber sales must appraise positive utilizing the most current Alaska Region 10 RV appraisal.

Consider incorporating a mix of units with different volumes/values as well as combining young-growth and old-growth harvest units together to improve economics for the contract offering.

Transportation

Roaded access is required to effectively manage the timber resource. Reconstruction of stored roads may be required. Timber harvest methods may require construction of new roads. Analyze present and long term access needs to determine the appropriate road classification, temporary or system.

The transport of harvested timber from isolated islands in Southeast Alaska requires both land and water routes to reach processing facilities. Log Transfer Facilities are required for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa).

Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.
National BMPs: Road-2, Road-3, Road-4

Wildlife

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Timber harvest is considered a Category C activity in the National Bald Eagle Management Guidelines. See Introduction to Activity Cards for more information.

Fisheries

Prior to implementation, stream reaches within the affected areas will be surveyed, flagged, and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Under the TTRA, no commercial timber harvest can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.1, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.3, 13.4, 13.5, 13.9, 13.10, 13.11, 13.14, 13.16, 14.2, 14.19, 14.25, 14.27

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Road-10, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of logging activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off-road travel is required.

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Upon implementation, a Tongass Soil Scientist review for harvest suitability is required if there are wetlands, landslides, and/or hollow topography present, ground-based equipment proposed, or if units are located on slopes greater than 55%. All

proposed yarding activities should follow BMPs with a minimum of partial suspension to meet soil and wetland resource concerns. Some units may only be suitable under full suspension requirements. The ground-based operator should avoid the small non-forested areas of the unit to prevent rutting. Slopes over 25% gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground-based yarding on slopes over 25% gradient. Avoid track slippage and rutting. Temporary roads will also be reviewed for suitability. Avoid locating roads on slopes greater than 67% or on slopes greater than 55% on glacial till soils. When determining temporary road locations, wetlands should be avoided to the extent practicable. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Road-2, Road-5, Veg-1, Veg-2, Veg-4, Veg-5, Veg-6 and R10 BMPs 12.5, 12.17, 13.2, 13.5, 13.9, 13.10, 14.2, 14.5, 14.7, and 14.8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Low vulnerability karst lands are those areas where resource damage threats associated with land management activities in the areas are not likely to be appreciably greater than those posed by similar activities on non-carbonate substrate.

The moderate vulnerability karst lands are those areas where resource damage threats associated with land management activities in the areas are appreciably greater than those posed by similar activities on low vulnerability karst lands.

Management objectives on these lands is to provide for other land uses while taking into account function and biological significance of the karst and cave resources within the landscape. Timber harvest and related activities could be conducted in such areas under more restrictive guidelines than normally employed on lands underlain by non-carbonate bedrock. To protect the fragile soils found here, as a minimum, the yarding system selected may be required to achieve partial suspension. Longer timber harvest rotational periods may be appropriate. Reduced timber harvest unit size and a greater dispersal of harvest units may be required. Existing roads will be utilized in preference to the construction of new ones. Roads should avoid sinkholes and other collapse features and sinking or losing streams. Roads should not divert water to or from karst features. Measures shall be taken to reduce erosion and sediment transport from the road surface and cut slopes. Assess the need for ditches and culverts. Sediment traps, cut and fill slope revegetation, and road closure and revegetation may be appropriate. Because subsurface drainage networks may be more open to the surface in moderate vulnerability areas, additional design criteria may be required. Existing quarries will be utilized in preference to the construction of new ones. No quarry shall be developed atop karst without adequate site survey and design (see 2016 Forest Plan Appendix H).

The high vulnerability karst lands are those areas where resource damage threats associated with land management activities are appreciably greater than those posed by similar activities on low or moderate vulnerability karst lands. These are the areas contributing to or overlying significant caves and areas containing a high density of karst features. Timber management and related activities should be excluded from these lands. Small expanses of these areas may be crossed by roads to access areas where harvest is appropriate, *i.e.*, low or moderate vulnerability karst lands and non-carbonate areas.

This would only be allowed if no other route or option was available and karst resource values would not be compromised. No quarry development would be allowed on these lands (see 2016 Forest Plan Appendix H).

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

This activity would be considered primarily for the purpose of contributing to the economic viability of Prince of Wales communities.

Integration Opportunities: This activity normally requires road construction and maintenance. This creates an opportunity to coordinate with road maintenance needs including red pipe replacement and offers an opportunity to leverage mobilization of heavy equipment so that other roads important for subsistence use and for other activities can be maintained. Timber harvest results in some trees that are non-merchantable as sawtimber being cut; this creates an opportunity for that material to be used for other purposes like personal use firewood, biomass, and stream restoration material. Road construction requires rock pit development that creates an opportunity for personal use rock sources.

Card Number 16	Activity: Salvage of Dead, Dying, and Damaged Timber
<p>Description: Commercial salvage of individual trees that are dead, down, or are expected to die within the next five years based on existing insect or disease activity, physical damage, or a live crown ratio less than 10 percent. This includes removal of hazard trees along roads, recreation, and administrative sites. This activity also covers larger salvage opportunities resulting from catastrophic windthrow events and large insect or disease outbreaks.</p>	
<p>Objectives: Removal of hazard trees that pose the danger of falling near places where people frequent. Salvage of high-value products and other material that can be utilized by local businesses from trees that are already dead or down in accordance to the microsale direction.</p>	
<p>Connected Actions: Roads (Activity Cards 19, 20, 21, and 25), Landings, Access management, Slash treatment (Activity Card 11)</p>	
<p>Methods: Salvage of individual trees or groups of trees.</p> <p>Equipment Used: Equipment used must provide the needed suspension, limit soil disturbance to meet requirements and recommendations from Soil Scientist, and reduce damage to existing vegetation including young growth. These requirements and recommendations may include partial suspension, which means suspending one end of the yarded log, or full suspension, which means suspending the full log being yarded. Common yarding systems include cable yarding systems, tracked shovel, hand, and helicopter yarding.</p>	
What are the general guidelines constraining this activity?	
<p>This activity will only occur in areas that meet all applicable requirements of the 2016 Forest Plan.</p> <p>Limited standing undamaged timber (up to 20 percent of total salvage) may be removed only for safety reasons or for feasibility of salvage operations. Standards and Guidelines outlined in the 2016 Forest Plan for each LUD should be used as guidelines.</p>	
What are the resource-specific guidelines?	
<p><u>Silviculture</u></p> <p>Activity is limited to dead, down, dying, and damaged trees. Incidental cutting of other trees during salvage operations may occur to address access and safety concerns. Dead trees are defined as trees with no visible green foliage. Down trees are those trees that may have green foliage but have a compromised root system leaving the tree leaning at a 45 degree (or more) angle. Dying and damaged trees are defined as those that have a total of 10 percent or less live foliage remaining in the crown and or significant disease or decay that would result in the expected falling or death of the tree within approximately 5 years. Evaluate individual trees or groups of trees proposed for salvage with the District Silviculturist to determine if these requirements are met and if a silvicultural prescription is required.</p>	
<p><u>Timber</u></p> <p>Incidental cutting of live trees to facilitate the operation and for safety concerns can occur. Microsales would be limited to dead and down trees in accordance with the microsale program. Patches of dying trees could be offered as small sales.</p>	
<p><u>Transportation</u></p> <p>Access is generally available on existing roads but new road may be constructed where necessary, depending on the LUD and resource benefits for the removal of the timber. Off-highway vehicles are occasionally used when highway vehicle access is not available. Maintain roads commensurate with use. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.</p>	
<p><u>Wildlife</u></p> <p>Identify snags for retention per Forest-wide Standards and Guidelines and in accordance with safe operations to provide habitat for cavity-nesting wildlife species.</p> <p>Where feasible implement activities outside of required nest/den buffers.</p>	

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prior to implementation, stream reaches within the affected areas will be identified and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards).

Salvage of dead or down material may occur in Wild, Scenic, and Recreational Rivers LUDs, and in LUD IIs when the salvage is needed to protect an important fish stream. Consult a Fish Biologist for site specific recommendations for protecting fish habitat.

With the exception of stream damage prevention in LUD II, and dead or down trees within the Wild, Scenic, and Recreation Rivers LUD, no commercial timber salvage can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some commercial timber salvage can occur outside the TTRA buffer in these additional buffer areas if the salvage is for young growth (2016 Forest Plan, p. 5-6 and 5-7), or if a Watershed Analysis (2016 Forest Plan, Appendix C) concludes that the salvage activity is needed to meet or further riparian management objectives for the process group.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.1, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.3, 13.4, 13.5, 13.9, 13.10, 13.11, 13.14, 13.16, 14.2, 14.19, 14.25, 14.27

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Road-10, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Minimize the impacts of salvage activities on watershed health by following BMPs. Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off-road travel is required.

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

National BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

Soils/Wetlands

Upon implementation, a Tongass Soil Scientist review is required for suitability if there are wetlands, landslides, and/or hollow topography present, ground-based equipment proposed, or if trees are located on slopes greater than 55 percent. Ground-based yarding should follow all BMPs. Specifically the shovel operator should avoid the small non-forested areas of the unit to prevent rutting. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground based yarding on slopes over 25 percent gradient. Avoid track slippage and rutting. A minimum of partial suspension is required to meet soil and wetland resource concerns. Exposed mineral soil should be grass seeded with a Tongass approved mix or have a slash treatment as mitigation. Consult a Tongass Soil Scientist if the area is greater than 100 square feet. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-4, and Veg-5 and R10 BMPs 12.5, 12.17, 13.2, 13.5, and 13.9.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is

affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all salvage timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

On lands underlain by carbonate, where salvage of windthrown timber is proposed, a karst resource inventory shall be conducted. The openness of the underlying karst system, that system's vulnerability to surface disturbance, and the likelihood of additional sediment production or surface runoff by harvesting the windthrown timber shall be determined. The appropriateness of salvage of windthrown timber on karstlands will be determined on a case-by-case basis in the field by a karst management specialist.

Salvage is appropriate on low to moderate vulnerability karstlands when the karst management objectives can be met. Generally, no salvage shall be permitted on lands determined to be of high vulnerability, within 100 feet of a losing stream, a karst feature, or on lands that overlie a "significant cave". For relatively minor, isolated features surrounded by low to moderate vulnerability karst, if the logging system to salvage the windthrown timber can be designed to not disturb the timber spanning or blown into the feature, salvage shall be permitted within 100 feet of the lip or edge of the feature. This salvage must be carefully designed. Before harvest, the sale administrator, purchaser representative, and the karst management specialist should walk through the harvest unit to review the layout and resource management concerns.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities shall consider the Recreation Opportunity Spectrum (ROS) setting for the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers should be provided, if possible, in areas where resource activities could disrupt the integrity of the recreation experience or negatively impact the value of recreation resources.

Hazard trees will be removed for public safety and the protection of resources at recreation sites and along trails.

Scenery

SIOs for area should be met where possible (2016 Forest Plan, Chapters 3 and 4).

When would we implement this activity?

This activity would constitute an ongoing program of primarily small salvage timber sales that are contingent on the occurrence and harvest feasibility of trees that meet salvage sale or hazard tree removal requirements.

Integration Opportunities: Salvage harvesting may provide a source of material for instream restoration work. Hazard tree analysis and removals performed for new and existing recreation and other infrastructure should consider the opportunity to integrate as a commercial operation. Salvage operations may function as a source for maintenance of roads or closure of temporary roads following large timber sales if delaying road closure is desired.

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Card Number 17	Activity: Wood Energy Product Salvage
Description: Cutting and removal of dead and down trees within 200 feet of roadsides. Includes removal and processing cull material from log decks created by past NEPA projects and following future commercial harvest operations.	
Objectives: Provide an opportunity for the development of a biomass market, and maintain and enhance the opportunity for commercial firewood.	
Connected Actions: Road management and access	
Methods: Salvage	
Equipment Used: By hand, by groundlead skidding with motorized vehicles, log loaders.	
What are the general guidelines constraining this activity?	
Salvage of material for commercial use requires a timber sale permit.	
What are the resource-specific guidelines?	
Silviculture Activity is generally limited to dead and down trees or otherwise may require a silvicultural prescription. Dead trees are defined as trees with no visible green foliage. Down trees are those trees that may have green foliage but have a compromised root system leaving the tree leaning at a 45 or more degree angle. This activity may occur as a commercial sale conducted to salvage existing cull log decks or other material for biomass or firewood. Commercial sales of standing dead trees for firewood in easily accessible areas should be avoided if it may interfere with non-commercial demand. Before closing new temporary roads, evaluate the potential for this activity to occur and adjust the timing of the closure as needed. Commercial harvest of previously cut thinning slash is permitted so long as the permit stipulates that residual tree damage must be avoided. Review all commercial harvest plans with the District Silviculturist prior to approval.	
Timber None	
Transportation Access is generally available on existing roads. Use of closed roads is allowed with proper permits and mitigation. Commercial users maintain roads commensurate with their use.	
Wildlife Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. Activities limited to one-tree length from road in OGRs. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
Fisheries Prior to implementation, stream reaches within the affected areas will be identified and protected according to their stream class, channel type, and protection category (see the Aquatics section in the Introduction to Activity Cards). Salvage of dead or down material may occur in Wild, Scenic, and Recreational Rivers LUDs, and in LUD IIs when the salvage is needed to protect an important fish stream. Consult a Fish Biologist for site-specific recommendations for protecting fish habitat. With the exception of stream damage prevention in LUD II, and dead or down trees within the Wild, Scenic, and Recreation Rivers LUD, no commercial timber salvage can occur within 100 feet of a Class I stream or any Class II stream that flows into a Class I stream. Additional no-harvest buffers required by the 2016 Forest Plan and the Aquatic Habitat Management Handbook (AHMU) may apply, although some commercial timber salvage can occur outside the TTRA buffer in these additional buffer areas if the salvage is for young growth (2016 Forest Plan, p. 5-6 and 5-7), or if a Watershed Analysis (2016	

Forest Plan, Appendix C) concludes that the salvage activity is needed to meet or further riparian management objectives for the process group.

During road construction, reconstruction, and maintenance activities in and around streams, avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.1, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.3, 13.4, 13.5, 13.9, 13.10, 13.11, 13.14, 13.16, 14.2, 14.19, 14.25, 14.27

National Core BMPs: AqEco-2, AqEco-4, Plan-2, Plan-3, Road-2, Road-5, Road-7, Road-10, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, and Veg-7

Hydrology

Use existing roads when possible and minimize off-road travel. Limit new road construction to the degree possible, and close roads that are no longer in use. Vegetation mats/puncheon should be laid down when off-road travel is required.

Salvage in the RMA must remain outside of the 100-foot TTRA buffer for Category A protected streams.

Conduct fueling operations well away from stream channels.

National Core BMPs: Plan-2, Plan-3, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-3, Veg-4, Veg-5, Veg-6 and Veg-7

R10 BMPs: 12.5, 12.6, 12.6a, 12.8, 12.9, 13.1, 13.2, 13.5, 13.9, 13.10, 13.14, 13.16

Soils/Wetlands

Upon implementation, a Tongass Soil Scientist review for suitability is required if there are wetlands, landslides, and/or hollow topography present, ground-based equipment proposed, or if trees are located on slopes greater than 55 percent. Ground-based yarding should follow all BMPs. Specifically the shovel operator should avoid the small non-forested areas of the unit to prevent rutting. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Use care when approving ground-based yarding on slopes over 25 percent gradient. Avoid track slippage and rutting. A minimum of partial suspension is required to meet soil and wetland resource concerns. Exposed mineral soil should be grass seeded with a Tongass approved mix or have a slash treatment as mitigation. Consult a Tongass Soil Scientist if the area is greater than 100 square feet. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-4, and Veg-5 and R10 BMPs 12.5, 12.17, 13.2, 13.5, and 13.9.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Silvicultural prescriptions and logging plans will include weed prevention measures (Invasive Plant Management BMP 17.1). Treat pre-existing and proposed marine access facilities, landings, skid trails and helispots that are weed infested before logging activity to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Pre-contact sites and logging equipment/infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Hazard trees will be removed for public safety and the protection of resources at recreation sites and along trails.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

The activity would be implemented on a case-by-case basis, based on individual requests for commercial sales.

Integration Opportunities: New road construction and timber harvesting associated with commercial timber sales provides the best opportunity to expand the availability of the resource.

Card Number 18	Activity: Log Transfer Facilities – Maintenance and Reconstruction
Description: Maintain and reconstruct Log Transfer Facilities (LTF) with an associated sortyard.	
Objectives: Log transfer facilities include the site and structures used for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa). This work would keep these facilities at an operational level.	
Connected Actions: Commercial timber management (Activity Cards 1, 2, 3, 4, 14, and 15), Quarry development (Activity Card 24)	
Methods: Uplands are cleared and rocked to provide sufficient log storage for anticipated needs. A transfer facility is constructed to move the logs bundles into the water for log booms or onto barges. Sufficient area needs to be used to provide a safe, efficient operation.	
Equipment Used: Heavy equipment – excavators, loaders, rock trucks, rock drills, loaders	
What are the general guidelines constraining this activity?	
Log Transfer Facility Guidelines, 2016 Forest Plan Appendix G has detailed guidelines on siting, construction and maintenance, and monitoring and reporting.	
What are the resource-specific guidelines?	
<u>Silviculture</u> If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid damaging the remaining trees adjacent to the facility to eliminate future hazards. Evaluate the site for existing hazard trees and address during site development.	
<u>Timber</u> When planning to construct, perform maintenance, or reconstruct LTFs, ensure location meets the needs both physically and economically of planned and future timber sales and activities. Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
<u>Transportation</u> Log Transfer Facility Guidelines, Forest Plan Appendix G, Forest-wide Standards and Guidelines, Region 10 BMPs: 14.25 and 14.26	
<u>Wildlife</u> LTFs are listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction to Activity Cards for more information. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> Consult a Fish Biologist prior to the expansion of existing LTFs so that any streams in the affected areas are identified and protected. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks. R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.2, 14.4, 14.9, 14.10, 14.11, 14.12, 14.15, 14.19, 14.25, 14.26, 14.27	

National Core BMPs: AqEco2, AqEco-3, Fac-2, Fac-5, Fac-10, Plan-2, Plan-3, Rec-8, Road-2, Road-3, Road-4, Road-6, Road-7, Road-10, Road-11, Veg-2, Veg-3, Veg-4

Hydrology

Follow BMPs to minimize erosion potential.

Region 10 BMPs: 12.8, 12.9, 14.25 and 14.26

Soils/Wetlands

LTF reconstruction and maintenance outside of the existing footprint would need to be reviewed for soils and wetlands by a Tongass Soil Scientist upon implementation. Minimize soil disturbance. All areas of exposed mineral soil should be grass seeded with a Tongass approved seed mix. Location of LTFs should avoid wetlands to the extent practicable. If wetland avoidance is not feasible, a wetland delineation is required by a Tongass Soil Scientist and a 404 permit will need to be obtained from the Army Corp of Engineers. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-1, fac-2, Fac-6, Road-1, Road-9, Road-10, Veg-2, Veg-4, and Veg-6 and R10 BMPs 12.5, 12.8, 12.13, 12.17, 13.9, 13.10, 14.4, 14.5, 14.25, 14.26, and 14.27.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Ensure that weed prevention is considered in all timber projects. Treat pre-existing marine access facilities, if infested before logging activity, to ensure they are weed free, including monitoring after harvest activities end (Invasive Plant Management BMP 17.2).

Monitor for weeds after sale activity and treat as needed (Invasive Plant Management BMP 6.1). Collect KV or other funds to treat soil disturbance or weeds as needed after timber harvest and regeneration activities (Invasive Plant Management BMP 18.1).

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.4, 7.5)

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable. (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and barrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Pre-contact sites and logging equipment/infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Exceptions may be made for a non-conforming development as a log transfer facility within a High SIO or non-development LUD (2016 Forest Plan p. 4-55).

When would we implement this activity?

Log Transfer Facilities are needed when logs and timber products must be moved by water-based transportation.

Integration Opportunities: Use of heavy equipment is required for LTF maintenance and reconstruction. Other work in the area requiring heavy equipment may benefit with saved mobilization and implementation costs.

Card Number 19	Activity: NFS Road Construction
<p>Description: New roads to be constructed and added to the National Forest transportation system. These roads are considered to be permanent and will be maintained as such (although may be in a stored condition that does not allow motorized traffic). These roads are mostly open for public as well as administrative use although seasonal closures may occur for safety, wildlife protection, or other reasons. These roads will be displayed on the Motor Vehicle Use Maps (MVUM) if they are open for public use.</p>	
<p>Objectives: These roads are intended to provide long-term access to National Forest System lands. The construction of roads has primarily been for access to timber resources and, to a lesser extent, for recreational use.</p>	
<p>Connected Actions: Quarry development (Activity Card 24), Road Maintenance (Activity Card 25), Road storage (Activity Card 22)</p>	
<p>Methods: Road construction requires clearing of timber, stumps, rock, and other materials to allow for construction. Most NFS roads are single lane, constructed with blasted quarry rock, and designed for off-highway loads. Typical construction method is to utilize an excavator to clear to the clearing limits, excavate as needed and establish a pioneer road. A spread cat and dump trucks follow this with an overlay of blasted quarry rock (shot rock) from an established source. Culverts and bridges are installed in specific locations to account for drainage and stream crossing requirements. Rock is developed from quarries and hauled in trucks to the construction site.</p> <p>Equipment Used: Heavy equipment – excavator, loaders, crawler tractors, rock drills, dump trucks, graders, rock crushers, cranes, along with sawyers for initial clearing of timber.</p>	
What are the general guidelines constraining this activity?	
<p>The management prescriptions in the 2016 Forest Plan describes the guidelines for transportation activities by LUD. Forest-wide Standards and Guidelines are established to guide road location, design, and construction.</p> <p>Best Management Practices, both Region 10 specific and National Core provide performance and accountability standards in relation to road construction activities.</p>	
What are the resource-specific guidelines?	
<p><u>Silviculture</u></p> <p>None</p>	
<p><u>Timber</u></p> <p>Ensure road locations meet the needs of planned and future timber harvests and consider the integration of other resource activities and projects. Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.</p>	
<p><u>Transportation</u></p> <p>Specific road construction activities are controlled through specifications and Best Management Practices (BMPs). Standard construction specifications and Forest Service special project specifications for each individual project are assigned to control construction activities. Construction drawings are assigned as needed for specific work items.</p> <p>Undertake access and travel management planning based on 2016 Forest Plan goals, objectives, and desired conditions. Designate the class of vehicles and if appropriate time of year for allowable use.</p> <p>Road maintenance is required to keep roads at required working levels throughout the use period. NFS roads may be stored during periods when access is not needed.</p> <p>Forest-wide Standards and Guidelines specific to the associated LUD construction is occurring within, and 2016 Forest Plan Chapter 4 -Transportation. Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24. National BMPs: Road-2, Road-3, Road-4.</p>	

Wildlife

Roads are listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction for more information.

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Monitor road density for each watershed to avoid negatively affecting water quality. Locate roads as far from waterbodies as is practicable to achieve access objectives. Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Any new fish crossing structures must provide fish passage. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.1, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.14, 13.16, 14.1, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, 14.14, 14.15, 14.19, 14.20

National Core BMPs: AqEco2, AqEco-3, AqEco-4, Fac-2, Fac-6, Fac-10, Plan-2, Plan-3, Road-1, Road-2, Road-3, Road-4, Road-7, Road-10, Road-11, Veg-2, Veg-3, Veg-4

Hydrology

Crossings must pass the appropriate flows for the area of watershed drained and the degree of anticipated land disturbance. Design and maintain roads to provide proper drainage such that increases of sediment delivery to streams will be minimized.

R10 BMPs: 12.8,12.9, 12.17, 14.1,14.2,14.3,14.5, 14.6, 14.7, 14.8, 14.9, 14.10,14.12, 14.14, 14.15, 14.17

National Core BMPs: Road-7

Soils/Wetlands

Avoid locating roads on wetlands to the extent practicable. Use overlay construction where possible and install extra cross drains to avoid altering subsurface flow. Avoid locating roads on slopes greater than 67 percent and on glacial till soil greater than 55 percent in order to minimize mass failures. All areas of mineral soil exposed during construction activities shall be grass seeded and fertilized. Practice erosion control measures in accordance with contract specifications and applicable BMPs. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-1, Road-2, Road-3, Road-4, Road-10 and Veg-2 and R10 BMPs 12.5, 12.17, 14.2, 14.3, 14.5, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, and 14.22.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.4, 7.5)

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable. (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Forest Plan Appendix H; 4, a. ii. and 4, b. ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Forest Plan Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved in project planning to ensure SIOs will be met. For this activity, follow the Forest-wide Standards and Guidelines for SIOs for transportation including the development of rock sources and roadside cleanup.

When would we implement this activity?

NFS road construction would be implemented when vehicular access is needed for the protection, administration, and utilization of the National Forest.

Integration Opportunities: NFS road construction can provide motorized access to new areas. This access can provide opportunities for free use and personal use forest products. Microsales for timber, subsistence uses, and recreation uses can also occur in areas previously not accessible by motorized methods. Rock quarries are needed for road construction; these quarries can provide opportunities for personal use rock for the public.

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<i>Card Number</i> 20	Activity: Temporary Road Construction
Description: A road necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road and that is not included in a Forest transportation atlas. Temporary roads are not intended to be part of the National Forest transportation system and not necessary for long-term resource management.	
Objectives: These roads are intended to provide short-term access for activities within National Forest System lands. These roads are decommissioned after their designated use period is over.	
Connected Actions: Quarry development (Activity Card 24)	
Methods: Road construction requires clearing of timber, stumps, rock, and other materials to allow for construction. Typical construction method is to utilize an excavator to clear to the clearing limits, excavate as needed, and establish a pioneer road. A spread cat and dump trucks follow this with an overlay of blasted quarry rock from an established source. Culverts and bridges are installed in specific locations to account for drainage and stream crossing requirements. Rock is developed from quarries and hauled in trucks to the construction site.	
Equipment Used: Heavy equipment– excavators, loaders, crawler tractors, rock drills, dump trucks, graders, rock crushers, cranes, along with sawyers for initial clearing of timber.	
What are the general guidelines constraining this activity?	
The management prescriptions in the 2016 Forest Plan describes the guidelines for transportation activities by LUD. Forest-wide Standards and Guidelines are established to guide road location, design, and construction. Best Management Practices, both Region 10 specific and National Core, provide performance and accountability standards in relation to road construction activities.	
What are the resource-specific guidelines?	
Silviculture The activity is typically covered by the prescription prepared for the associated silvicultural activity. If temporary road construction is done in support of other resource management activities, consult the District Silviculturist to determine if a prescription is necessary. Conduct interdisciplinary review to determine the appropriate timing for the closure of the road to maximize the utility of the road for small sales, free use, and firewood.	
Timber Must be economic for stand or stands.	
Transportation Specific road construction activities are controlled through specifications and BMPs. Timber sale road construction specifications in the timber sale contract are assigned to control construction activities. Construction drawings are assigned as needed for specific work items. Road maintenance is required to keep roads at required working levels throughout the use period. Temporary roads are decommissioned after their use period is over. Forest-wide Standards and Guidelines specific to the associated LUD construction is occurring within, and 2016 Forest Plan Chapter 4 -Transportation. Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24. National BMPs: Road-2, Road-3, Road-4.	
Wildlife Temporary roads are listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction for more information. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.	

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Monitor road density for each watershed to avoid negatively affecting water quality. Locate roads as far from waterbodies as is practicable to achieve access objectives. Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Any new fish crossing structures must provide fish passage. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks. Road closure devices may be needed to protect fish streams.

R10 BMPs: 12.1, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.14, 13.16, 14.1, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, 14.14, 14.15, 14.19, 14.20

National Core BMPs: AqEco2, AqEco-3, AqEco-4, Fac-2, Fac-6, Fac-10, Plan-2, Plan-3, Road-1, Road-2, Road-3, Road-4, Road-5, Road-6, Road-7, Road-10, Road-11, Veg-2, Veg-3, Veg-4

Hydrology

Crossings must pass the appropriate flows for the area of watershed drained and the degree of anticipated land disturbance.

When crossings are removed, the stream channel should be returned to near-natural conditions.

R10 BMPs: 12.8, 12.9, 12.17, 13.11, 14.1, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.14, 14.15, 14.17, 14.18, 14.19, 14.20 and 14.24.

National BMPs: Road-5, Road-7

Soils/Wetlands

Avoid locating roads on wetlands to the extent practicable. Use overlay construction where possible and install extra cross drains to avoid altering subsurface flow. Avoid locating roads on slopes greater than 67 percent and on glacial till soil greater than 55 percent in order to minimize mass failures. All areas of mineral soil exposed during construction activities shall be grass seeded and fertilized. Practice erosion control measures in accordance with contract specifications and applicable BMPs. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-1, Road-2, Road-3, Road-4, Road-5, Road-10 and Veg-2 and R10 BMPs 12.5, 12.17, 14.2, 14.3, 14.5, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, and 14.22.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.4, 7.5)

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable. (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Appendix H, 4, a. ii. and 4, b. ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Temporary road construction would occur when short-term access to resources is needed and the road will not be needed as part of the forest transportation system.

Integration Opportunities: Rock quarries are needed for road construction; these quarries can provide opportunities for personal use rock for the public.

Card Number 21	Activity: NFS Road Reconstruction
Description: Opening stored roads for motorized vehicular access or upgrade a road to provide a higher level of access.	
Objectives: This action rebuilds a road to allow vehicular access on road that otherwise would not be passable. These actions generally occur to facilitate timber haul; other road uses include recreational and subsistence access.	
Connected Actions: Quarry development (Activity Card 24), Road Maintenance (Activity Card 25)	
Methods: Road reconstruction is highly variable depending on the existing road condition. Typical work entails clearing of brush from the roadway, removing berms and other vehicular blockages, installation of drainage structures (culverts and bridges), and new rock surfacing. Rock is developed from quarries and hauled in trucks to the reconstruction site.	
Equipment Used: Heavy equipment – excavators, loaders, cats, rock drills, dump trucks, graders, rock crushers, cranes, along with sawyers for initial clearing of timber if heavily overgrown with trees.	
What are the general guidelines constraining this activity?	
The management prescriptions in the Forest Plan describes the guidelines for transportation activities by LUD. Forest-wide Standards and Guidelines are established to guide road reconstruction.	
Best Management Practices, both Region 10 specific and National Core, provide performance and accountability standards in relation to road construction activities.	
What are the resource-specific guidelines?	
<u>Silviculture</u>	
This action would not typically require a silvicultural prescription if constrained to the existing road prism.	
<u>Timber</u>	
In some cases merchantable young-growth timber may need to be removed. Harvest all merchantable timber and handle appropriately to avoid damage and loss of value. Deck merchantable timber where it will be readily available for sales or other uses such as administrative uses and restoration. Work with engineering to ensure road locations meet the needs of planned and future timber harvests and consider the integration of other resource activities and projects. Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
<u>Transportation</u>	
Specific road construction activities are controlled through specifications, construction drawings, and BMPs. Standard construction specifications and Forest Service special project specifications for each individual project are assigned to control reconstruction activities. Construction drawings are assigned as needed for specific work items.	
Undertake access and travel management planning based on 2016 Forest Plan goals, objectives, and desired conditions. Designate the class of vehicles and if appropriate time of year for allowable use.	
Road maintenance is required to keep roads at required working levels throughout the use period. NFS roads may be stored during periods when access is not needed.	
Forest-wide Standards and Guidelines specific to the associated LUD construction is occurring within, and Forest Plan Chapter 4 -Transportation. Region 10 BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24. National BMPs: Road-2, Road-3, Road-4.	
<u>Wildlife</u>	
Roads are listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction for more information.	
Where feasible locate activities outside of required nest/den buffers.	
Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.	

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Any new fish crossing structures must provide fish passage. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.14, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.15, 14.19, 14.20,

National Core BMPs: AqEco2, AqEco-3, AqEco-4, Fac-2, Fac-6, Fac-10, Plan-2, Plan-3, Road-1, Road-3, Road-4, Road-7, Road-10, Road-11, Veg-2, Veg-3, Veg-4

Hydrology

Crossings must pass the appropriate flows for the area of watershed drained and the degree of land disturbance. Waterbars and road closures serve as erosion mitigating measures, and should be maintained in areas adjacent to streams or waterways.

Design and maintain roads to provide proper drainage such that increases of sediment delivery to streams will be minimized. Drainage and crossings should be brought up to current standards for newly reconstructed roads.

R10 BMPs: 12.8, 12.9, 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, 14.18, 14.19, 14.20 and 14.24.

National Core BMPs: Road-7

Soils/Wetlands

All areas of mineral soil exposed during construction activities shall be grass seeded and fertilized. Implement erosion control measures in accordance with contract specifications and applicable BMPs. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-1, Road-2, Road-3, Road-4, Road-5, Road-10 and Veg-2 and R10 BMPs 12.5, 12.17, 14.2, 14.3, 14.5, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, and 14.22.

Remove berms: Minimize soil disturbance. All areas of exposed mineral soil should be grass seeded with a Tongass approved seed mix. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-3, Road-4, Road-7, and Road-10 and R10 BMPs 12.5, 12.8, 12.17, 13.9, 14.5, 14.8, and 14.20.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.3, 7.4, 7.5)

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable. (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced

roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Forest Plan Appendix H, 4, a. ii. and 4, b. ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Forest Plan Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the current Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. For this activity, follow the Forest-wide Standards and Guidelines for SIOs for transportation, including the development of rock sources and roadside cleanup.

When would we implement this activity?

NFS road reconstruction would be implemented when vehicular access is needed for the protection, administration, and utilization of the National Forest.

Integration Opportunities: NFS road reconstruction can provide motorized access to areas that have been closed or if a higher standard of road is needed. This access can provide opportunities for free use and personal use forest products. Microsales for timber, subsistence, and recreation uses can also occur in new areas previously not accessible by motorized methods. Rock quarries are needed for road reconstruction; these quarries can provide opportunities for personal use rock for the public.

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<i>Card Number</i> 22	Activity: NFS Road Storage
Description: System Roads not needed for access for long periods may be put into storage (Intermittent Stored Service—Maintenance Level [ML] 1) to reduce maintenance costs. ML-1 roads receive basic custodial maintenance focusing on maintaining drainage facilities and runoff patterns to avoid or minimize damage to adjacent resources and to perpetuate the road for future use. The integrity of the roadway is retained to the extent practicable and measures are implemented to reduce sediment delivery from the road surface and fills and reduce the risk of crossing failure and stream diversion. These roads will not be displayed on the Motor Vehicle Use Maps (MVUM) as open to motorized vehicles.	
Objectives: Avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources by storing closed roads not needed for long periods. Stabilize prism to preserve the road structure and/or to reduce erosion and then stored between use cycles. When appropriate, stored roads may be dual designated as motorized trails for off-highway vehicles.	
Connected Actions: Access Travel Management Planning	
Methods: Drainage structure removal in locations that present an unacceptable risk of failure or diversion, construct waterbars as needed, traffic control measures.	
Equipment Used: Heavy equipment – excavator, dump truck	
What are the general guidelines constraining this activity?	
36 CFR 212 establishes direction on travel management planning. 36 CFR 211.5 directs the responsible official identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. Roads not needed for access for long periods may be put into storage. Best Management Practices, both Region 10 specific and National Core, provide performance and accountability standards in relation to road storage activities.	
What are the resource-specific guidelines?	
Silviculture Interdisciplinary review of road segments proposed for the activity should occur to assess if the near-term future needs of the road for silvicultural activities has changed. Leave the road in a passable condition for off-road vehicles and foot traffic. Replacement of structures rather than removal, is preferable on roads where future silvicultural activities are planned. In development LUDs, damage to adjacent timber should be avoided.	
Timber Limit the activity to roads that do not provide access to salvage, small timber sale, firewood, and free use opportunities.	
Transportation Specific road storage activities are controlled through specifications, construction drawings, and BMPs. Standard construction specifications and Forest Service special project specifications for each individual project are assigned to control storage activities. Construction drawings are assigned as needed for specific work items. Forest-wide Standards and Guidelines and 2016 Forest Plan Chapter 4 –Transportation. Region 10 BMPs: 12.17, 14.5, 14.7, 14.8, 14.9, 14.12, 14.14, 14.24, National BMPs: Road-6.	
Wildlife and Subsistence Roads are listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction for more information. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed, including subsistence hearings.	

Fisheries

Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. If stored roads are going to continue to be accessible to motorized use, fish streams must be protected; consult a fish biologist for site-specific protections.

Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.3, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17,13.14, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.20, 14.22

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-10, Plan-2, Plan-3, Road-1, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3, Veg-4

Hydrology

Remove crossings to provide natural flow passage where possible, maintain monitoring and maintenance where structures remain to ensure flood flow passage. Take care when refueling equipment.

R10 BMPs: 12.8, 12.9

National BMPs: Road-6, Road-7

Soils/Wetlands

All areas of mineral soil exposed during construction activities shall be grass seeded and fertilized. Practice erosion control measures in accordance with contract specifications and applicable BMPs. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-1, Road-4, Road-5, Road-6, Road-10 and Veg-2 and R10 BMPs 12.5, 12.17, 14.5, 14.8, 14.9, 14.10, 14.11, 14.12, and 14.22.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If needed, surveys would focus on areas of disturbance such as waterbars, structure removal, and traffic control installations. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Avoid blading roads or pulling ditches when weeds are in seed set stage (Invasive Plant Management BMP 7.3).

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable. (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Appendix H, 4, a. ii. and 4, b, ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Roads identified through analysis as not needed for long periods are candidates for storage activities. Funding is required to implement road storage through public works contracts. It is advantageous to implement a number of storage activities within a small geographic area in order to make it financially viable.

Integration Opportunities: Opportunity for watershed rehabilitation within the same area as road storage, as similar equipment is used. Off-highway vehicle access through development of motorized trails on stored roads can provide access for subsistence and recreation uses.

<i>Card Number</i> 23	Activity: NFS Road Decommissioning
Description: Activities that result in the stabilization and restoration of unneeded NFS roads to a more natural state. Roads no longer needed are identified during transportation planning activities at the Forest, watershed, or project level. The road may be decommissioned or converted to a trail as appropriate (see Activity Card 36 – Roads to Trails). Temporary roads constructed for a specific short-term purpose are decommissioned at the completion of their intended use (see Activity card # 20 – Temporary Road Construction).	
Objectives: Decommissioned roads are stabilized and restored to a more natural state to protect and enhance NFS lands.	
Connected Actions: Access Travel Management Planning	
Methods: Road decommissioning includes a variety of treatments to block the road, revegetate the road surface, restore surface drainage, remove crossing structures and fills, mitigate road surface compaction, re-establish drainage ways, remove unstable road embankments, and recontour the surface to restore natural slopes. One or more treatments are applied to decommission the road depending on resource objectives and cost.	
Equipment Used: Heavy equipment – excavator, dump truck	
What are the general guidelines constraining this activity?	
36CFR211.5 directs the responsible official identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. Best Management Practices, both Region 10 specific and National Core, provide performance and accountability standards in relation to road decommissioning activities.	
What are the resource-specific guidelines?	
<u>Silviculture</u> Interdisciplinary review of road segments proposed for the activity should occur prior to funding to assure there are no future needs of the road for silvicultural activities. Leave the road in a passable condition for foot traffic. In development LUDs, damage to adjacent timber should be avoided.	
<u>Timber</u> Consider the potential for future salvage of dead and dying timber, salvage of wood energy material, public use for firewood, personal use timber, and berry picking and other special forest products before road is decommissioned.	
<u>Transportation</u> Specific road decommissioning activities are controlled through specifications, construction drawings, and BMPs. Standard construction specifications and Forest Service special project specifications for each individual project are assigned to control decommissioning activities. Construction drawings are assigned as needed for specific work items. Forest-wide Standards and Guidelines and 2016 Forest Plan Chapter 4 –Transportation. Region 10 BMPs: 12.17, 14.5, 14.7, 14.8, 14.9, 14.12, 14.14, 14.24, National BMPs: Road-6.	
<u>Wildlife</u> Roads are listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction to Activity Cards for more information. Where possible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska.	

Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.3, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.14, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.20, 14.22

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-10, Plan-2, Plan-3, Road-1, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3, Veg-4

Hydrology

Remove crossings to provide natural flow passage where possible, maintain monitoring and maintenance where structures remain to ensure flood flow passage. Take care when refueling equipment.

R10 BMPs: 12.8, 12.9

National BMPs: Road-6, Road-7

Soils/Wetlands

All areas of mineral soil exposed during construction activities shall be grass seeded and fertilized. Practice erosion control measures in accordance with contract specifications and applicable BMPs. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-1, Road-4, Road-5, Road-6, Road-10 and Veg-2 and R10 BMPs 12.5, 12.17, 14.5, 14.8, 14.9, 14.10, 14.11, 14.12, and 14.22.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Avoid blading roads or pulling ditches when weeds are in seed set stage (Invasive Plant Management BMP 7.3).

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable. (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor revegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

Treat weeds in obliteration and reclamation projects before roads are decommissioned (Invasive Plant Management BMP 13.1).

See introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Appendix H, 4, a. ii. and 4, b. ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Roads identified through analysis as not needed are candidates for road decommissioning. Funding is required to implement road decommissioning through public works contracts. It is advantageous to implement a number of decommissioning activities within a small geographic area in order to make it financially viable.

Integration Opportunities: Opportunity for watershed rehabilitation within the same area as road decommissioning; similar equipment is used. Hiking access or off-highway vehicle access through development of trails on decommissioned roads can provide access for subsistence and recreation uses.

Card Number 24	Activity: Quarry Development
<p>Description: Clearing and blasting to produce crushed rock for road maintenance and construction. These quarries would be located adjacent to open roads and would provide a source of rock for a period of years. When rock sources are developed within an economical zone around private land or communities, extra rock will be shot and maintained for issuance under non-commercial mineral material permits.</p>	
<p>Objectives: Construction of roads, log transfer facilities, boat launches, recreation site pads, and other facilities require rock to stabilize and provide a base for construction. Provide economical rock sources accessible to private lands and communities to address non-commercial construction needs. Quarries should be sized so that additional rock will be available to support future activities where possible.</p>	
<p>Connected Actions: Roads and other developments requiring a rock source (Activity Cards 19, 20, and 21), sale of cleared timber from development, and Invasive Plant Treatments (Activity Cards 33 and 34)</p>	
<p>Methods: Quarry site is stripped of vegetation and overburden, rock drills produce holes to pack with explosives to produce useable material. In existing quarries material can often be developed by “ripping” exposed rock with an excavator.</p>	
<p>Equipment Used: Heavy equipment – excavators, rock drills, explosives</p>	
<p>What are the general guidelines constraining this activity?</p>	
<p>Standard specifications guide the implementation of quarry development. Mine Safety and Health Administration regulations apply to quarry use and development.</p>	
<p>What are the resource-specific guidelines?</p>	
<p><u>Silviculture</u></p> <p>This activity would generally not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Set clearing limits so that all potentially damaged timber is removed prior to blasting.</p>	
<p><u>Timber</u></p> <p>Fall all merchantable timber and handle appropriately to avoid unnecessary damage and loss of value. Stockpile logs where they will not be damaged by quarry development and may be sold or used for other activities if they are not already included as part of an existing timber sale. Commercial timber resulting from this activity should be made available for sale or for administrative or public use if it is within 2016 Forest Plan direction, meets all legal requirements, is feasible, and if not already included in a timber sale offering.</p>	
<p><u>Transportation</u></p> <p>Project specifications and drawings regulate the implementation of quarry development. Quarry development and use is considered an irretrievable and irreversible use of resources.</p> <p>Forest-wide Standards and Guidelines and 2016 Forest Plan Chapter 4 –Transportation. Region 10 BMPs: 12.17, 14.18. National BMPs: Min-5</p>	
<p><u>Wildlife</u></p> <p>Where feasible locate activity outside of required nest/den buffers.</p> <p>Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.</p> <p>All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.</p>	

Fisheries

Consult a Fish Biologist prior to quarry development so that any streams in the affected areas are identified and protected. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.2, 14.4, 14.9, 14.10, 14.11, 14.12, 14.15, 14.18, 14.19, 14.25, 14.26,

National Core BMPs: AqEco2, AqEco-3, AqEco-4, Fac-2, Fac-5, Fac-10, Min-5, Plan-2, Plan-3, Road-2, Road-3, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3, Veg-4

Hydrology

Minimize surface erosion potential and protect water quality through the use of BMPs.

National Core BMPs Fac-1, Fac-2, Fac-8, Min-3, Min-5, Min-6, Min-7 and Veg-2.

R10 BMPs: 12.8, 12.9, 12.10, 14.5, 14.6, 14.8, 14.18 and 14.25

Soils/Wetlands

Blasting operations should be designed to reduce risk of mass failure on potentially unstable or saturated soils. Blasting and/or excavating under saturated soil conditions is restricted. Incorporate erosion control and stabilization measures in project plans for all human induced soil disturbances. New rock pit development should avoid wetlands. To minimize soil erosion, clear off any overburden on the cut face of the rock pit. All areas of exposed mineral soil from construction should be grass seeded with a Tongass approved mix. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply R10 BMPs 12.5, 12.10, 14.5, 14.6, 14.18, and 14.25 and National Core BMPs Fac-1, Fac-2, Fac-8, Min-5, Min-6, and Veg-2.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2). Monitor for emerging weeds on stockpiled material at new and existing pits. Monitor the area where pit material is used to ensure that no weed seeds are transported to the use site (Invasive Plant Management BMP 10.3).

Minimize weed establishment in mining operations and reclamation (Invasive Plant Management BMP 19).

Before equipment moves into new or existing mining operations, treat weeds along existing access roads within the area of operation (Invasive Plant Management BMP 20.1).

Minimize weed spread caused by moving infested gravel and fill material (Invasive Plant Management BMP 21).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Appendix H, 4, a. ii. and 4, b, ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during project planning to ensure SIOs will be met. Consideration should be used to design the quarry in areas with higher SIOs to be less obvious to the observer and to use the landscape to minimize the appearance as much as possible.

When would we implement this activity?

Quarry development is implemented when rock is needed for project development. Rock can be developed for both Forest Service use or as a commercial product.

Integration Opportunities: Personal use rock and commercial use of developed or new sources are potential opportunities.

Card Number 25	Activity: Road Maintenance and Reconditioning
<p>Description: The ongoing upkeep of a road necessary to retain or restore the road in accordance with its road management objective. Road maintenance consists of superficial periodic repairs to an existing road surface, brushing, cleaning, and repairing drainage features. Maintenance and reconditioning of existing NFS roads is an ongoing process that occurs on a periodic basis.</p>	
<p>Objectives: These tasks are performed to keep the roads in the safe and useful condition for which they were designed. Control of road use and operations and appropriate maintenance can protect road investment and soil, water quality, and riparian resources. Periodic inventory and assessment of road conditions are used to determine operational controls and maintenance needs.</p>	
<p>Connected Actions: ---</p>	
<p>Methods: Road maintenance requires the use of heavy equipment to perform a variety of tasks. Typical maintenance items include brushing, blading, drainage structure maintenance, and surface rock replacement.</p>	
<p>Equipment Used: Heavy equipment – brushers, graders, rollers, excavator, dump trucks</p>	
What are the general guidelines constraining this activity?	
<p>This type of work is determined to fit the category of routine repair and maintenance of roads that do not individually or cumulatively have a significant effect on the quality of the human environment and may be categorically excluded, 36 CFR 220.6(d)(4).</p>	
What are the resource-specific guidelines?	
<p><u>Silviculture</u></p> <p>Interdisciplinary review of the road maintenance schedule should be conducted annually to align it with expected silvicultural activities and existing road conditions. Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.</p>	
<p><u>Timber</u></p> <p>Interdisciplinary review of the road maintenance schedule should be conducted annually to align it with expected timber harvest and sale activities, salvage, personal use, and existing road conditions.</p>	
<p><u>Transportation</u></p> <p>Specific road maintenance activities are controlled through specifications, construction drawings, and BMPs. Standard construction specifications and Forest Service special project specifications for each individual project are assigned to control maintenance activities. Maintenance drawings are assigned as needed for specific work items.</p> <p>Forest-wide Standards and Guidelines, Region 10 BMPs: 12.17, 13.11, 14.5, 14.6, 14.7, 14.8, 14.9, 14.12, 14.17, 14.18, and 14.20. National BMPs: Road-4</p>	
<p><u>Wildlife</u></p> <p>Where feasible locate activities outside of required nest/den buffers.</p> <p>Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.</p> <p>All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.</p> <p>Roads are listed in the National Bald Eagle Management Guidelines as a Category C activity. See the Introduction for more information.</p>	
<p><u>Fisheries</u></p> <p>During road maintenance activities, any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Any new fish crossing structures must provide fish passage. Minimize fish access to ditches by selecting properly sized crossing structures and installing ditch-blocks where</p>	

appropriate. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.15, 14.19, 14.20,

National Core BMPs: AqEco2, AqEco-3, AqEco-4, Fac-2, Fac-6, Plan-2, Plan-3, Road-1, Road-3, Road-4, Road-7, Road-10, Road-11, Veg-2, Veg-3, Veg-4

Hydrology

Maintain functionality of ditches and cross drains.

BMPs: 12.8, 12.9, 12.17, 13.11, 14.5, 14.6, 14.7, 14.8, 14.9, 14.12, 14.20

Soils/Wetlands

Minimize soil disturbance and avoid disturbing wetlands. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-6, Fac-9, Road-4, Road-9, Road-10, Veg-2, and Veg-8 and R10 BMPs 12.5, 12.17, 14.5, 14.8, and 14.20.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Road maintenance activities on the 2000 road north of the Neck Lake/Whale Pass must avoid, where consistent with other resource protection, impacting populations of yellow lady slipper (*Cypripedium parviflorum* var. *pubescens*) which occurs at multiple locations within the ROW. Consult with the District Botanist/Ecologist prior to implementation of this activity in/along that road and connecting road segments.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.3, 7.4, 7.5)

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8" of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Appendix H, 4, a. ii. and 4, b, ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Appendix H, 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Roads and drainage systems normally deteriorate because of traffic, weather, and age. Many such conditions can be avoided and corrected by timely maintenance. Maintenance is implemented on an annual and cyclic basis depending on need. Emergency repairs may be required due to storms or other catastrophic events.

Integration Opportunities: Combining road maintenance activities with other work that requires the use of the road maintenance equipment can provide cost savings in mobilization and implementation.

Card Number 26	Activity: Stream Crossing Structures
Description: Culverts or bridges placed during road construction or reconstruction at junctures with streams.	
Objectives: Avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources when constructing, reconstructing, or maintaining temporary and permanent waterbody crossings.	
Connected Actions: Road Construction and reconstruction (Activity Cards 19, 20, and 21)	
Methods: Bridges and culverts are used to cross waterbodies for roads and trails.	
Equipment Used: Heavy equipment – excavator, loader, dump trucks	
What are the general guidelines constraining this activity?	
Forest-wide Standards and Guidelines are established to guide road location, design and construction. Best Management Practices, both Region 10 specific and National Core, provide performance and accountability standards in relation to road construction activities.	
What are the resource-specific guidelines?	
<u>Silviculture</u> Review plans for sourcing native construction material (log stringers) with the District Silviculturist and TMA. Avoid using high timber value logs when possible. When structures are removed, stage stringer logs so that salvage is possible.	
<u>Timber</u> Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
<u>Transportation</u> Stream crossing structures are designed to accommodate specific flood flows based on the type of structure. Forest Service Handbook provides direction on design criteria. Construction specifications and drawings control construction activities and specify how structures are constructed. Forest-wide Standards and Guidelines, Region 10 BMPs: 14.3, 14.9, 14.14, 14.17, National BMP Road-7	
<u>Wildlife</u> Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Any new fish crossing structures must provide fish passage. Minimize fish access to ditches by selecting properly sized crossing structures and installing ditch-blocks where appropriate. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks. R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.15, 14.19, 14.20, National Core BMPs: AqEco2, AqEco-3, AqEco-4, Fac-2, Fac-6, Plan-2, Plan-3, Road-1, Road-3, Road-4, Road-7, Road-10, Road-11, Veg-2, Veg-3, Veg-4	

Hydrology

Crossings must pass the appropriate flows for the amount of watershed drained and the degree of anticipated harvest disturbance. Structure installation should be conducted under low flow conditions to minimize impacts from construction activities.

If heavy equipment is to be used instream, it should be no heavier than 50,000 GVW. Excess soil from excavator tracks should be removed prior to each stream entry. At the point of entry use cut trees to "bridge" from stream bank to stream bed to minimize impact to stream bank. Non-toxic, biodegradable fluids and oils should be used for equipment when working in or near streams. Heavy equipment used within a stream's high water marks should be power-washed prior to mobilization onto NFS land. Fueling, maintenance, and equipment storage should all take place away from waterbodies. Spill Prevention Control and Countermeasures (SPCC), spill response plans, and emergency response plans will be developed for each project. When off-road travel is necessary, use puncheon material to provide adequate bearing strength in order to prevent rutting. Puncheon trails should be scattered upon completion of project.

In order to minimize cumulative effects to water quality, time operations such that the sediment plume generated from stream crossing structure work does not occur at the same time as other sediment plume inducing activities contributing to the same stream network.

National Core BMPs AqEco-2, Road-2, Road-3, Road-4, Road-5, Road-7, and Road-10

Region 10 BMPs: 12.8, 12.9, 14.3, 14.9, 14.14, 14.15, 14.17

Soils/Wetlands

Heavy machinery should avoid non-forested wetland areas to prevent rutting. Slopes over 25 percent gradient may not be suitable for heavy machinery under some soil moisture conditions. Heavy equipment would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. In some instances, the puncheon trail should be scattered upon completion. Minimize soil disturbance. All areas of exposed mineral soil should be grass seeded with a Tongass approved seed mix. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-2, Road-3, Road-4, Road-5, Road-7, and Road-10 and R10 BMPs 12.5, 12.8, 12.17, 13.9, 14.2, 14.5, 14.8, and 14.20.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.3, 7.4, 7.5)

Retain shade to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor revegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP

10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

For all road related issues on low and moderate vulnerability karst see Appendix H, 4, a. ii. and 4, b. ii., 1(1), (2), and (3). For high vulnerability karst, roads are considered inappropriate with the exceptions listed in Appendix H 4, c. ii., if no other route or option is available and karst resource values would not be compromised.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Stream crossing structures are installed as needed for roads and trails to allow for passage of vehicles and pedestrian traffic.

Integration Opportunities: During road storage activities it may be advantageous to construct off-highway vehicle crossing structures when converting to motorized trails.

Card Number 27	Activity: Improve Fish Passage on Road and Trail Systems (Red Pipes)
<p>Description: Use heavy equipment to replace, remove, or improve stream crossings structures where fish passage is inhibited. Use explosives to remove stream crossing structures where fish passage is inhibited.</p>	
<p>Objectives: To provide a means to improve fish passage on stream crossing structures that fail to meet the aquatic organism passage standards.</p>	
<p>Connected Actions: Road activities (Activity Cards 19 through 26)</p>	
<p>Methods: Remove, replace, or improve structures and ensure drainage features are functional through use of heavy equipment or blasting techniques.</p>	
<p>Equipment Used: Heavy equipment (excavator, loader, skidder, bulldozer, dump truck) or Explosives</p>	
<p>What are the general guidelines constraining this activity?</p>	
<p>The 2016 Forest Plan outlines Standards and Guidelines on how to minimize effects to resources during project implementation. All applicable laws, Forest-wide Standard and Guidelines, Region 10 BMPs, and National Core BMPs will be followed.</p>	
<p>What are the resource-specific guidelines?</p>	
<p><u>Silviculture</u></p> <p>When choosing between replacement, removal, or improvement of stream crossing structures for fish passage improvement, interdisciplinary review to assess the near-term future needs of the road for silvicultural and other activities will help inform what other uses could be impacted and which stream crossing treatment best serves multiple resources. Replacement of structures is preferable on roads where future silviculture or timber harvest activities are planned. In development LUDs, damage to adjacent timber should be avoided.</p>	
<p><u>Timber</u></p> <p>Concerns addressed in silviculture section.</p>	
<p><u>Transportation</u></p> <p>Undertake access and travel management planning based on Forest Plan goals, objectives, and desired conditions. Designate the class of vehicles and if appropriate time of year for allowable use. Design the appropriate crossing structure to meet the road management objectives and aquatic organism passage standards. On roads where no vehicle use is allowed, blasting may be an appropriate method to restore hydrologic function.</p>	
<p><u>Wildlife and Subsistence</u></p> <p>Where feasible locate activities outside of required nest/den buffers.</p> <p>Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.</p> <p>All applicable laws, BMPs, and Forest-wide Standard and Guidelines must be followed, including subsistence hearings.</p> <p>If culverts are removed, might impact subsistence use in that area.</p>	
<p><u>Fisheries</u></p> <p>Any in-stream work in a fish stream needs to occur during species-specific timing windows, and must receive concurrence with the State of Alaska. All applicable laws, BMPs, and Forest-wide Standard and Guidelines must be followed to minimize effects to fish habitat and water quality, including those specific to heavy equipment use. Fish stream crossing replacements will be designed to meet current fish passage standards per handbook direction.</p>	
<p><u>Hydrology</u></p> <p>If heavy equipment is to be used instream, it should be no heavier than 50,000 GVW. Excess soil from excavator tracks should be removed prior to each stream entry. At the point of entry use cut trees to "bridge" from stream bank to stream bed</p>	

to minimize impact to stream bank. Heavy equipment used within a stream's high water marks should be power-washed prior to mobilization onto NFS land. Fueling, maintenance, and equipment storage should all take place away from waterbodies. Spill Prevention Control and Countermeasures (SPCC), spill response plans, and emergency response plans will be developed for each project. When off-road travel is necessary, use puncheon material to provide adequate bearing strength in order to prevent rutting. Puncheon trails should be scattered upon completion of project.

Stream channel should resemble natural width, bank full depth, and substrate.

In order to minimize cumulative effects to water quality, time operations such that the sediment plume generated from fish passage work does not occur at the same time as other sediment plume inducing activities contributing to the same stream network.

R10 BMPs: 12.8, 12.9, 14.17

National Core BMPs: AqEco-2, Road-4, Road-7, and Road-10

Soils/Wetlands

If activities require equipment to operate off of the road prism, heavy machinery should avoid non-forested wetland areas to prevent rutting. Slopes over 25 percent gradient may not be suitable for heavy machinery under some soil moisture conditions. Heavy equipment would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. In some instances, the puncheon trail should be scattered upon completion. Minimize soil disturbance. All areas of exposed mineral soil should be grass seeded with a Tongass approved seed mix. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standard and Guidelines must be followed. Apply National Core BMPs AqEco-2, Road-4, Road-7, and Road-10 and R10 BMPs 12.5, 12.8, 12.17, 13.9, 14.5, and 14.20.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Remove seed source that could be transported by passing vehicles by minimizing roadside sources of weed seeds (Invasive Plant Management BMP 7.1, 7.2, 7.3, 7.4, 7.5)

Retain shade sources to suppress weeds. Minimize the removal of trees and other roadside vegetation to the extent practicable (Invasive Plant Management BMP 8.1).

Re-establish and monitor vegetation on bare ground due to construction activities to minimize weed spread. For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor revegetation activities (Invasive Plant Management BMP 9.1). Follow Tongass recommended seeding specifications, which includes guidance on the use of native plant materials (Invasive Plant Management BMP 9.2).

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Ensure that weed prevention and related resource protection are considered in travel management (Invasive Plant Management BMP 11).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads, trails, and associated infrastructure 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

None

When would we implement this activity?

Stream crossing structures could be removed, replaced, or improved when a need has been identified to improve fish passage. Stream crossing structures could be obliterated with explosives when a need has been identified to remove structures that are impairing fish passage.

Integration Opportunities: Impaired watersheds where other restoration activities are being considered may benefit from culvert and road material removal/replacement, especially if the removal/replacement will improve fish passage. Routine road maintenance may be integrated with fish passage remediation.

<i>Card Number</i> 28	Activity: Stream and Floodplain Restoration
Description: Conduct work in stream channels and floodplains of impaired stream reaches.	
Objectives: Restore hydrologic function of impaired streams to achieve process group objectives, support critical salmon life stages, and increase flood resiliency. Improve or restore aquatic habitat characteristics to more closely align with reference stream reaches.	
Connected Actions: Other related stream work including riparian thinning, fish passage, and harvest of rootwad trees (Activity Cards 6, 27, and 29)	
Methods: Install wood or (occasionally) boulder structures for energy displacement, floodplain connectivity, and habitat complexity. Excavate and re-shape streambed and banks to bolster structures and create habitat features consistent with natural channel design approaches. Construct equipment access trails as needed and rehabilitate post-project. Stabilize and revegetate disturbed soils.	
Equipment Used: Heavy equipment (excavator, loader, skidder, bulldozer, dump truck), chain saws, low boy and other trucks, helicopter, ATV, hand tools	
What are the general guidelines constraining this activity?	
The 2016 Forest Plan outlines the goals, objectives, and desired conditions for fish habitat, riparian areas, and each process group. Restoration projects would be constrained to streams and floodplains where desired conditions are not being met. The 2016 Forest Plan also outlines Standards and Guidelines on how to minimize effects to resources during project implementation. All applicable laws, Forest-wide Standard and Guidelines, Region 10 BMPs, and National Core BMPs will be followed.	
What are the resource-specific guidelines?	
<u>Silviculture</u> Discuss the activity with the District Silviculturist before proceeding. A silvicultural prescription will generally be required before conducting the activity. If material is sourced from adjacent riparian stands, the prescription will set requirements for which trees to be removed or retained so that an appropriate stocking is maintained for future recruitment and other objectives. Plan and review the location of access routes and potential wood sources with the interdisciplinary team no later than the season prior to when the work is scheduled. Locate machinery routes to avoid damaging the roots and boles of adjacent trees. Utilize non-commercial debris sourced from areas unsuitable for timber production when practical. See additional recommendations for the harvest of rootwad trees.	
<u>Timber</u> When considering source wood for restoration projects attempt to avoid high-value trees and stands, stands that are in or planned to be included in future commercial timber harvests, and removing a high number of trees from one location. Preference should be given to hemlock with high defect and trees in non-development LUDs.	
<u>Transportation</u> Maintain access on roads as practicable and implement proper road signage as needed for project implementation. Maintain or improve the road to a condition similar to the pre-project condition.	
<u>Wildlife</u> Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standard and Guidelines must be followed.	
<u>Fisheries</u> Select wood sources from healthy (properly functioning) watersheds unless cutting treatments in young-growth stands help in attaining the desired future condition of a riparian area. Prohibit equipment storage, maintenance, and re-fueling within riparian areas and frequently inspect equipment for leaks (Road-10). Equipment should use vegetable-based hydraulic fluid	

for hydraulics when operating in or near water (AqEco-2). Avoid fish disturbance and mortality by using ADF&G timing windows and other mitigation measures deemed necessary for in-stream work. When appropriate, use minnow traps to remove fish from worksite, and block nets to prevent fish from re-entering until in-stream work is complete. Conduct operations during low-flow periods and prepare or mitigate for the potential higher flow (AqEco-2).

Hydrology

Heavy equipment used instream should be no heavier than 50,000 GVW. Excess soil from excavator tracks should be removed prior to each stream entry. At the point of entry use cut trees, tree tops, or fabricated erosion control materials to "bridge" from stream bank to stream bed to minimize impact to stream bank. Work is to be planned during periods of low flow, and temporarily suspended should streamflow increase substantially during operations. Non-toxic, biodegradable fluids and oils should be used for equipment and saws when working in or near streams. Heavy equipment used within a stream's high water marks should be power-washed prior to mobilization onto NFS land. Fueling, maintenance and equipment storage should all take place away from waterbodies. Spill Prevention Control and Countermeasures (SPCC), spill response plans, erosion control plans, and emergency response plans will be developed for each project. When off-road travel is necessary, use puncheon material to provide adequate bearing strength in order to prevent soil disturbance and rutting. Puncheon trails should be de-compacted and material scattered upon completion of project.

In order to minimize cumulative effects to water quality, time operations such that the sediment plume generated from stream restoration does not occur at the same time as other sediment plume inducing activities (such as culvert/bridge work) contributing to the same stream network.

National BMPs: AqEco-1, AqEco-2, AqEco-4, Road-10

R10 BMPs: 12.3, 12.8, 12.9, 18.3

Soils/Wetlands

Heavy machinery access points should be reviewed by a Tongass Soil Scientist upon implementation. Non-forested wetland areas should be avoided to prevent rutting. Slopes over 25 percent gradient may not be suitable for heavy machinery under some soil moisture conditions. Heavy equipment would require the use of puncheon or a slash mattress to provide adequate bearing strength and prevent rutting. In some instances, the puncheon trail should be scattered upon completion. Minimize soil disturbance. All areas of exposed mineral soil should be grass seeded with a Tongass approved seed mix. R10 Soil Quality Standards must be followed. Apply National Core BMPs AqEco-2, Road-4, Road-7, and Road-10 and R10 BMPs 12.5, 12.8, 12.17, 13.9, 14.5, and 14.20.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Integrate weed prevention and management in all soil, watershed and stream restoration projects (Invasive Plant Management BMP 22).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Contact geologist or karst specialist when working in high vulnerability karst areas. Avoid ground disturbance when working around sink holes or resurgence locations.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Pre-contact cultural sites may be present within these activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Streams suspected of not meeting 2016 Forest Plan desired conditions for process group, riparian area, or fish habitat will be evaluated to determine what action, if any, is needed. Evaluation includes consideration of previous land management activities, overall watershed condition, Proper Functioning Condition (PFC) surveys, and Tier II surveys to evaluate stream condition, stream function, and fish habitat objectives. If evaluation shows restoration is needed to meet the desired conditions, then streams would be restored in order of priority and proximity to other ongoing land management activities.

Integration Opportunities: Wood for instream placement could be sourced from old-growth timber harvest and road activities such as road right-of-way clearing and log bridge decommissioning. Young-growth thinning projects (riparian, wildlife gaps, and corridors) could also contribute wood to nearby stream restoration activities. Equipment access and material staging to streams from roads must be coordinated with other road uses, followed by appropriate road maintenance, storage, or decommissioning as applicable.

Card Number 29	Activity: Harvesting Rootwad Trees for Stream Restoration
Description: Pushing trees over so that the roots are still attached. Trees and their rootwads may then be removed from the original location and transported to another location for stream restoration.	
Objectives: To provide a source of Large Woody Debris (LWD) for stream restoration projects where trees with rootwads are needed to achieve stream restoration objectives.	
Connected Actions: Stream Restoration (Activity Card 28)	
Methods: Push and pull trees such that the rootwad stays attached	
Equipment Used: Heavy equipment (excavator, loader, skidder, bulldozer, dump truck), low boy and other trucks, hand tools	
What are the general guidelines constraining this activity?	
All applicable laws, Forest-wide Standard and Guidelines, Region 10 BMPs, and National Core BMPs will be followed.	
What are the resource-specific guidelines?	
<u>Silviculture</u> Consult the District Silviculturist before conducting the activity. A silvicultural prescription will generally be required. Individual trees harvested in this fashion should be designated by a team consisting of a Certified Silviculturist, a Tongass Soil Scientist, and when in RMAs, an aquatics specialist. General sideboards for site and tree selection: Source lower timber value material from non-development LUDs when possible. Utilize trees that are easily accessible from existing roads particularly trees that are growing on the cut bank or within 20 feet of the road surface. High-value species and/or quality trees that may produce a valuable sawlog are not appropriate for the activity. If harvest occurs in development LUDs, damage to the root and boles of adjacent trees must be avoided. If trees are harvested beyond 20 feet from existing roads in development LUDs, plan for small group openings where machinery can work and not damage the residual stand.	
<u>Timber</u> Consult timber/silviculture for locations outside the RMA. When considering source trees with rootwads for restoration projects attempt to avoid high-value trees and stands, stands that are planned to be included in future commercial timber harvests, and removing a high number of trees from one location. Preference should be given to hemlock with high defect. Consider trees in non-development LUDs to reduce the effect on the suitable timber base.	
<u>Transportation</u> Contractors implementing these projects must maintain roads commensurate with their use. Use of closed or decommissioned roads requires appropriate permits and mitigation.	
<u>Wildlife</u> Consult with the Wildlife Biologist before harvesting any trees. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standard and Guidelines must be followed. Timber harvest is considered a Category C activity in the National Bald Eagle Management Guidelines. See the Introduction for more information.	
<u>Fisheries</u> Select wood sources from healthy (properly functioning) watersheds, meeting riparian objectives if harvesting within an RMA. Harvest treatments in young-growth stands in RMAs need to meet the desired future condition of a riparian area. Follow guidance per Rootwad Harvest Guidelines (Landwehr 2009). Prohibit equipment storage, maintenance, and re-fueling within	

riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.3, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 18.1, 18.3

National Core BMPs: AqEco2, AqEco-3, AqEco-4, Plan-2, Plan-3, Road-10, Veg-2, Veg-3, Veg-4

Hydrology

When harvesting within an RMA wood should be sourced from properly functioning watersheds/stream reaches that meet riparian objectives. Harvest treatments in young-growth stands in RMAs need to meet the desired future condition of a riparian area.

National Core BMPs: AqEco-2, Road-2, Raod-3, Road-5, Road-6, Road-9, Road-10, Veg-2, Veg-4, Veg-6, and Veg-8.

R10 BMPs: 12.3, 12.8, 12.9

Soils/Wetlands

All proposed extraction locations are required to be reviewed by a Tongass Soil Scientist for rootwad extraction suitability upon implementation. Heavy machinery are required to operate on puncheon material and should not operate on slopes greater than 25 percent. If the site is well drained, a Tongass Soil Scientist may approve equipment to operate up to 35 percent slopes if they are not carrying a load. Heavy machinery should avoid creating ruts greater than 12 inches in depth. Wetland areas should be avoided. Minimize soil disturbance. All exposed mineral soil in rootwad areas are required to be covered with slash or grass seed. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standard and Guidelines must be followed. Apply R10 BMPs 12.5, 12.17, and 13.9 and National Core BMPs AqEco-2, Road-2, Raod-3, Road-5, Road-6, Road-9, Road-10, Veg-2, Veg-4, Veg-6, and Veg-8.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Integrate weed prevention and management in all soil, watershed, and stream restoration projects (Invasive Plant Management BMP 22).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3, 4, and 5). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Rootwad trees would be harvested as needed for restoration activities.

Integration Opportunities: Rootwad trees could be harvested in watersheds in which land management activities are ongoing so that operation costs could be minimized. Land management activities that could be integrated include timber harvest and road work.

<i>Card Number</i> 30	Activity: Wildlife Trees in Young-growth Stands
Description: Identify areas within young-growth stands that could benefit from the creation of wildlife trees such as snags or trees with damage (such as broken tops) or decay. Use methods below to create snags and/or other structural diversity in the identified area. Fungal inoculation or blasting or topping trees may create nesting habitat for various species of birds and other animals.	
Objectives: This action will improve wildlife cavity habitat in areas that were impacted by timber harvest.	
Connected Actions: Girdling (Activity Card 9), Precommercial Thinning (Activity Card 5), Commercial Thinning (Activity Card 4), Riparian Thinning (Activity Card 6), and Pruning (Activity Card 10).	
Methods: Blasting, fungal inoculation, girdling. The methods used are generally very site-specific and result in little to no disturbance other than to the target tree.	
Equipment Used: TNT; dynamite, C4; native fungus	
What are the general guidelines constraining this activity?	
No blasting within 1/2 mile of eagle nests. Address safety issues by using the guidelines in Reserve Tree Selection Guidelines, R10- MB-215, March 1993. See Reserve Tree/Cavity-Nesting Habitat Standard and Guideline information in the Introduction to Activity Cards.	
What are the resource-specific guidelines?	
<u>Silviculture</u>	
Limit the activity to young-growth stands that are 45 years old or older and located in areas unsuitable for timber production. Consult the District Silviculturist before conducting the activity. A silvicultural prescription will generally be required.	
<u>Timber</u>	
Avoid damage to surrounding commercial trees and stands.	
<u>Transportation</u>	
Access to work sites is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u>	
Provide habitat for cavity-nesting wildlife species. Consult with the Wildlife Biologist to identify areas with limited or lacking cavity nesting or denning habitat.	
Where feasible locate activities outside of required nest/den buffers.	
Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.	
All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u>	
Avoid girdling trees within 10 feet of Class I, II, and III streams. When considering blasting near fish streams consult a fish biologist for site-specific protections. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.	
R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 18.1, 18.3	
National Core BMPs: AqEco-2, Fac-6, Plan-3, Road-10, Veg-3, Veg-8	
<u>Hydrology</u>	
None	

<p><u>Soils/Wetlands</u></p> <p>Avoid non-forested wetlands and minimize soil disturbance. Avoid blasting around unstable slopes. An on-site evaluation may be needed if the tree is located on slopes greater than 55 percent. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Chem-1, and Veg-2 and R10 BMPs 12.4, 12.5, 12.9, and 13.5.</p>
<p><u>Botany</u></p> <p>Botanical surveys are not needed unless activity is located within beach buffer. Within the beach buffer, conduct targeted surveys for the Region 10 Sensitive lichen, <i>Lobaria amplissima</i>. If found, avoid these areas to maintain the live trees for this species' habitat.</p>
<p><u>Invasive Plants</u></p> <p>A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.</p> <p>See Introduction for additional BMPs that apply to all activities.</p>
<p><u>Geology/Karst</u></p> <p>None</p>
<p><u>Heritage</u></p> <p>All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP. Logging equipment and associated infrastructure may be present within proposed activity areas.</p> <p>Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.</p>
<p><u>Recreation</u></p> <p>None</p>
<p><u>Scenery</u></p> <p>None</p>
<p>When would we implement this activity?</p> <p>Where the existing condition in young-growth stands is lacking in structural diversity and the desired condition is to provide or increase the structural diversity. This activity would be contingent on other activities in the area.</p>
<p>Integration Opportunities: ---</p>

<i>Card Number</i> 31	Activity: Prescribed Burning (in consideration for development)
Description: Activity is being considered for development as a tool to enhance deer forage/habitat.	
Objectives: ---	
Connected Actions: ---	
Methods: ---	
Equipment Used: ---	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<u>Silviculture</u>	
<u>Timber</u>	
<u>Transportation</u>	
<u>Wildlife</u>	
<u>Fisheries</u>	
<u>Hydrology</u>	
<u>Soils/Wetlands</u>	
<u>Botany</u>	
<u>Invasive Plants</u>	
<u>Geology/Karst</u>	
<u>Heritage</u>	
<u>Recreation</u>	
<u>Scenery</u>	
When would we implement this activity?	

Integration Opportunities: ---	

Card Number 32	Activity: Restore Altered Karst Surface Water Flow Paths
Description: Removal of material blocking historic flow into and out of karst systems where drainages and channels are altered by past activity, such as roads.	
Objectives: Where karst systems have been impacted, blockages may be removed and diverted water flow from culverts and ditch features would be remedied. Past activities caused sediment to be delivered into karst systems and some blockages have occurred. These blockages have increased surface flow and erosion in some areas. Opportunities exist to improve the karst systems where ditches, culverts, slash, and beaver dams/structures are impeding natural water flows or creating unnatural water flows to karst features.	
Connected Actions: ---	
Methods: Removal of material from losing streams or diverting water flows to historic pathways. Equipment Used: Hand tools and heavy equipment	
What are the general guidelines constraining this activity?	
Appendix H of the 2016 Forest Plan, Section 4 (b)(ii) and 4 (c)(ii)	
What are the resource-specific guidelines?	
<u>Silviculture</u> This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain adjacent to karst features.	
<u>Timber</u> Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
<u>Transportation</u> Access to work sites is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u> Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> Any in-stream work in a fish stream needs to occur during species-specific timing windows, and must receive concurrence with the State of Alaska. Prohibit equipment storage, maintenance, and re-fueling within riparian areas and frequently inspect equipment for leaks (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions). If heavy equipment will be operating within a stream channel then vegetable-based hydraulic fluid should be used, fish should be removed from the worksite where applicable, and nets should be installed to prevent fish from re-entering until in-stream work is complete. R10 BMPs: 12.3, 12.4, 12.6, 12.6a, 12.8, 12.9, 14.20, 18.3, National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Plan-2, Plan-3, Road-4, Road-7, Road-10, Veg-2, Veg-3, Veg-4	

Hydrology

Work should be done under low-flow conditions to minimize impacts.

R10 BMPs: 12.8, 12.9

National Core BMPs: AqEco-2

Soils/Wetlands

Minimize soil disturbance. If the heavy machinery leaves the road prism, the machinery is required to operate on puncheon material. Heavy equipment should avoid creating ruts greater than 12 inches in depth. Soil disturbance should be kept to minimum. Avoid operating heavy equipment in wetlands. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AcEco-2, Fac-1, Road-4, Road-6, Road-9, Road-10, and Veg-2 and R10 BMPs 12.5, 12.8, 12.17, 14.5, 14.8, 14.20, and 14.24.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Integrate weed prevention and management in all soil, watershed, and stream restoration projects (Invasive Plant Management BMP 22).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Such restoration should be carefully designed and accomplished during periods with little precipitation or at low flows.

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with

proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

As opportunities were identified and machines were available.

Integration Opportunities: Could be combined with road building, road decommissioning, or stream restoration opportunities.

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<i>Card Number</i> 33	Activity: Invasive Plant Treatments – Manual and Mechanical
Description: Control non-native, invasive plant populations with manual and/or mechanical treatments. Most of the known non-native, invasive plant infestations occur in developed areas, such as along roadsides, at administrative sites, rock pits, and recreation areas.	
Objectives: These treatments are used to achieve the Forest-wide goal of maintaining ecosystems capable of supporting the full range of native and desired non-native species and ecological processes. Specifically, through the objective to manage the Forest in order to reduce, minimize, or eliminate the potential for introduction, establishment, spread, and impact of non-native, invasive species.	
Connected Actions: Potential for seeding post-treatment.	
Methods: Methods vary by species, infestation size, life-stage, and growing substrate. Hand pulling can effectively remove above- and below-ground portions of plants while limiting disturbance to the surrounding vegetation. When using hand tools (e.g., shovels, pulaski, weed fork) the potential for soil disturbance and non-target vegetation damage increases. Weed torches destroy above ground portions of plants and may cause heat damage to nearby non-target vegetation. Effectively tarping small infestations can remove all vegetation in the tarped area but has minimal disturbance to the ground surface.	
Equipment Used: Hand tools, weed torch, ground tarp	
What are the general guidelines constraining this activity?	
Tongass National Forest Land and Resource Management Plan Amendment, Forest-wide Standards and Guidelines. Invasive Species Control and Management: INV3	
What are the resource-specific guidelines?	
<u>Silviculture</u> This activity does not require review by a Certified Silviculturist.	
<u>Timber</u> None	
<u>Transportation</u> Access to work sites is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u> All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> None	
<u>Hydrology</u> None	
<u>Soils/Wetlands</u> Soil disturbance should be kept to a minimum. If an area greater than 100 square feet of mineral soil is exposed by pulling or burning, a Tongass Soil Scientist should be consulted to review and make mitigation recommendations. Avoid using a weed torch on dry days. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, and Veg-2 and R10 BMPs 12.5, 12.17, 14.8 and 14.25.	

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

The Invasive Plant Program Manager will evaluate invasive plant populations to determine appropriate method and tool for control. Implementation of treatment methods will be coordinated to meet 2016 Forest Plan Objectives.

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

None

When would we implement this activity?

Documented populations of Priority Invasive Species are targeted for treatment to reduce their population size and/or limit their spread using an integrated pest management approach. Manual and mechanical treatments will be selected at sites where Priority Invasive Species are known to occur and where the Invasive Plant Program Manager has determined they will achieve the desired level of control.

Integration Opportunities: Sites are often susceptible to invasive plant invasion following any ground disturbing activity. Post-implementation monitoring after these activities is useful to identify introduced invasive plant populations early and successfully control/eradicate before they become large infestations.

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Card Number 34	Activity: Invasive Plant Treatments – Herbicidal
<p>Description: Control non-native, invasive plant populations with herbicide applications. Most of the known non-native, invasive plant infestations occur in developed areas, such as along roadsides and at administrative sites, rock pits, and recreation areas.</p>	
<p>Objectives: These treatments are used to achieve the Forest-wide goal of maintaining ecosystems capable of supporting the full range of native and desired non-native species and ecological processes. Specifically, through the objective to manage the Forest in order to reduce, minimize, or eliminate the potential for introduction, establishment, spread, and impact of invasive species. The eradication or control of existing and new infestations of targeted Priority Invasive Species. Due to the life history and ecological requirements of the targeted species, which are difficult to control using only manual and mechanical treatment methods. This activity will provide a mechanism to allow quick detection and rapid response to changing and/or new non-native, invasive plant infestations, and protect non-infested areas from future introduction or spread of non-native, invasive plants from existing populations.</p>	
<p>Connected Actions: Potential for seeding post-treatment and temporary area closures following herbicide application.</p>	
<p>Methods: Methods vary by species and infestation size. Three herbicides (glyphosate, aminopyralid, and imazapyr) are under consideration for use under this activity. To reduce the risks of environmental harm, only aquatically approved formulations of glyphosate and imazapyr are proposed for use; no aquatic formulation is currently available for aminopyralid. Only low-risk aquatically approved surfactants will be used as adjuvants. Herbicide use is proposed using only ground-based methods, such as spot and selective hand spraying that targets individuals and groups of plants. No aerial or broadcast application would be used. Generally herbicide treatments are approved under an annual plan that can be reviewed by interested specialists.</p>	
<p>Equipment Used: Backpack sprayers, stem injectors, sponge, paint brush, cloth wick</p>	
What are the general guidelines constraining this activity?	
<p>Federal, Alaskan State, and local standards for herbicide use, herbicide label directions, risk assessment guidance, and implementing project design features developed by resource specialists.</p>	
What are the resource-specific guidelines?	
<p><u>Silviculture</u></p> <p>Prepare a specific treatment plan for all sites where herbicide application is proposed. The plan should include the location, target species, herbicide, application method and rate. Review treatment plans with the District Silviculturist to determine if mitigations are necessary to avoid damage to non-target trees or vegetation.</p>	
<p><u>Timber</u></p> <p>None</p>	
<p><u>Transportation</u></p> <p>Access to work sites is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.</p>	
<p><u>Wildlife</u></p> <p>All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.</p>	
<p><u>Fisheries</u></p> <p>When considering herbicidal applications near fish streams consult a Fish Biologist for site-specific protections.</p> <p>R10 BMPs: 12.4, 12.6, 12.6a, 12.8, 12.9, 15.1, 15.2, 15.4, 15.5</p> <p>National Core BMPs: AqEco2, AqEco-3, Chem-1, Chem-2, Chem-3</p>	

Hydrology

Use only aquatically approved pesticides in the proximity of waterbodies.

National Core BMPs: AqEco-2, Chem-3, Chem-4

R10 BMP: 15.5

Soils/Wetlands

Locations of herbicide use will need to be approved by a Tongass Soil Scientist to determine the suitability of the soil and wetlands for each type of herbicide prior to implementation. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Chem-1, Chem-2, Chem-3, Chem-4, Chem-5, Chem-6, Fac-6, and Veg-8 and R10 BMPs 12.4, 12.5, 12.9, 15.1, 15.2, 15.4, and 15.5.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Herbicides may not be applied within 60 feet of documented sensitive plant populations.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

A Pesticide Use Proposal must be completed and reviewed by the Regional Pesticide Use Coordinator, and approved by the Regional Forester prior to implementation. The District Invasive Plant Program Manager will evaluate invasive plant populations and prepare a treatment plan detailing the locations and types of herbicides to be used. This plan will be available for review by resource specialists to ensure appropriate project design features and BMPs are included. The decision maker must review the treatment plan to ensure the proposed treatments are within the scope of the effects analyzed prior to approving the plan for implementation. Treatment plans will be made available to the public.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

None

When would we implement this activity?

Documented populations of Priority Invasive Species are targeted for treatment to reduce their population size and/or limit their spread using an integrated pest management approach. New infestations would be treated in Early Detection and Rapid Response efforts using an integrated pest management approach. Herbicide treatments would be selected when the targeted invasive species is resistant to manual/mechanical methods due to its biology or the infestation site characteristics. Rhizomatous invasive plants such as Canada thistle and Japanese knotweed can reproduce from small root fragments and may be spread by manual treatments. Areas with soil prone to erosion may be selected for herbicide to reduce the disturbance that may occur from removing roots of invasive plants by tool or hand pulling.

Integration Opportunities: Sites are often susceptible to invasive plant infestation following any ground disturbing activity. Post-implementation monitoring after these activities is useful to identify introduced invasive plant populations early and successfully control/eradicate before they become large infestations.

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<i>Card Number</i> 35	Activity: Signage
Description: Improve signage on NFS lands to include informative and interpretive signs.	
Objectives: To improve the network of signs on POW related to recreation structures, facilities, and activities. The intent of this activity would be to improve the ability for the public to find recreation sites on POW, whether on roads, trails, or waterways. This action would not only make navigation easier for the public, but could increase their safety by mitigating the chances of becoming disoriented on public lands and being able to identify their location in the case of emergency. Additionally, the addition of and improvement on interpretive signs could serve to enhance appreciation of the island's points of interest and their cultural, natural, and geographic significance or for better understanding of management activities.	
Connected Actions: Signage could be connected to the full array of activities on the forest to include, but not limited to: Roads (Activity Cards 19, 21, 25); Boat Launches (Activity Card 40); Trails (Activity Card 37); Structures (Activity Card 44); Campgrounds (Activity Card 43); Canoe and Kayak Access Points (Activity Card 39).	
Methods: Signs would be placed at strategic locations along trails and or roads, or points of interest, to aid the public with direction finding or to provide interpretive narratives and graphics to the public. Signage, methods, and equipment would follow Land Use Designation (LUD) and Forest-wide Standards and Guidelines, and will meet current regional Forest Service specifications and current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS). Signage may include, but is not limited to, place names, direction arrows, mileages, or interpretive narratives and graphics and will be secured to posts using mechanical fasteners (e.g., nuts and bolts, lag bolts, etc.). The installation of signs may require the use of posthole diggers or mechanical augers to drill foundation holes for metal or wooden sign posts. Sign posts may be secured either by earth tamping or with concrete, or by post fasteners to concrete foundations. Some site clearing may be required, but efforts would be made in planning to place signs at locations that result in minimal disturbance to the natural setting. Narratives on interpretive signs will be reviewed by the appropriate specialists prior to being set in place.	
Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of earth moving equipment (e.g., backhoe with bucket or "bobcat") in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the site. Dependent on the required level of clearing there may be a need to haul off excess material such as soils, rocks, brush, and slash. Felled timber may be left on site as future firewood, or to decompose naturally; slash and brush may be burned on site or left on site. Hauling inorganic or organic material from the site may require the use of manpower with wheelbarrows or small-scale hauling equipment (e.g., OHV with dump bed); dependent on the LUD. Locations in proximity to direct road access may benefit from being able to directly load onto dump trucks. Regardless, in the planning phase of the project, efforts would be made to minimize the need for hauling natural materials from the site. Erection of signs would require the use of a variety of hand tools and, if permitted in the LUD, power and/or pneumatic tools, including the use of generators for power and compressors for pneumatics. Building materials would be transported as close to the site as possible, to include concrete, based on authorized available routes. Transportation to and from the job site may require the use of short haul equipment (e.g., OHV) or may need to be transported manually.	
What are the general guidelines constraining this activity?	
LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation activities within a specific use area. LUD-specific Standards and Guidelines for recreation are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation are listed in Chapter 4 of the 2016 Forest Plan. Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the installation of some signs.	
What are the resource-specific guidelines?	
Silviculture This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. If signage is to contain information regarding trees, vegetation, or silvicultural activities, have the language reviewed by the Forest Silviculturist.	

<u>Timber</u>
None
<u>Transportation</u>
Follow the Manual on Uniform Traffic Control Devices when placing signs along roadways.
<u>Wildlife</u>
Where feasible locate these areas outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.
<u>Fisheries</u>
Consult a Fish Biologist for site-specific protections when considering the use of earth moving equipment within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions). Avoid cutting trees within 10 feet of a Class I, Class II, or Class III stream. Any cut trees or slash that inadvertently enters a stream shall be pulled back out of the stream course and out of the no-cut buffer. Prohibit equipment storage, maintenance, and re-fueling within riparian areas, and frequently inspect equipment for leaks. R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 14.19 National Core BMPs: AqEco-2, Fac-6, Road-10, Veg-3
<u>Hydrology</u>
None
<u>Soils/Wetlands</u>
Avoid locating signs in wetlands and minimize soil disturbance to the extent practicable. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National BMPs AqEco-2, Fac-1, Fac-2, Fac-9, Rec-1, Rec-2, and Road-9 and R10 BMPs 12.4, 12.5, 12.13, 12.17, 14.5, 14.25, and 16.1.
<u>Botany</u>
Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.
<u>Invasive Plants</u>
A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants. Increase weed awareness and prevention efforts among forest users. Post prevention practices at all NFS trailheads, roads, boat launches, and forest portals (Invasive Plant Management BMP 15.2). See Introduction for additional BMPs that apply to all activities.
<u>Geology/Karst</u>
None
<u>Heritage</u>
All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage

Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Information pertaining to cultural history must follow standards set forth by the National Historic Preservation Act and Archaeological Resource Protection Act, and must receive tribal consultation prior to project implementation.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Installation of signs would be implemented based on need as expressed by the public or defined through agency assessments. Consideration will also be given to public safety. Agency funding limitations may constrain or delay the installation of signs; however, funding through grants, collaborative, or other outside sources may mitigate agency funding constraints. The intent of the Forest Service on POW is to develop recreation activities, to include signage, which meet the long-term needs of the public and are maintainable by district staff.

Integration Opportunities: Sign installation, whether informative or interpretive, may be associated with many recreation activities and could be integrated to site development when a need is identified. These activities include the development of facilities, structures, trails, water access points, etc. Signage may also be integrated with road development and improvements plans, and forestry activities, as well as with features and activities associated with hydrology, fisheries, geology, cultural history and archaeology, landforms, etc.

Card Number

36

Activity: Convert Roads to Trails

Description: Designated closed/gated roads could be selected to be maintained as recreational trails, such as walking, hiking, biking, OHV (less than 50 inches wide), winter recreation (e.g., snow mobile, snowshoe, cross-country skiing), and interpretive trails.

Objectives: To maintain or expand recreation opportunities on Prince of Wales Island by providing the public with a range of access opportunities on NFS lands, to include trails of varying levels of development (i.e., classes) and uses. Trails provide the public the means to experience the forest away from concentrated recreation activities and roads and allow the public to avoid having to “bushwhack” through vegetated areas to reach points of interest and destinations; furthermore, trails help to mitigate damage to forest resources by providing designated routes for travel.

Connected Actions: Road decommissioning (Activity Card 23), Road storage (Activity Card 22), Trails (Activity Card 37), Signage (Activity Card 35), Sea kayak and canoe access points (Activity Card 39).

Methods: Trails would be designed and built to current regional Forest Service specifications and meet current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS) setting. General specifications may be guided by LUD Standards and Guidelines. In some cases, roads converted to trails may already meet designation standards for OHV less than 50 inches wide and over-the-snow recreation; however, there may be a need to perform construction activities to modify for trail use. Construction of a trail may include: site layout and preparation, to include if necessary: select tree removal, brushing and grubbing, boulder removal, etc. Layout and preparation would consider standard design parameters (i.e., tread width, surface, grade, cross slope, clearing, and turns), which in turn allows for site-specific deviations based on site condition, topography, intended use, and development level (i.e., trail class). In most cases, slash, brush, felled timber, rocks, and disturbed soils will be used in trail construction or dispersed in the immediate vicinity to blend in with local resources. In cases where debris must be removed consideration must be given to the LUD and Forest-wide Standards and Guidelines, as defined in the 2016 Forest Plan, on the means of removal (e.g., manual versus motorized). Trail tread, width, and easement will be determined based on the intended use and would be specified in the Trail Management Objectives (TMO) and design plan. Segments along the full extent of a trail may utilize varying tread types dependent on local resources, topography, and accessibility considerations; therefore, trail segments could include, but are not limited to, the use of bridges, fords, elevated boardwalks, puncheons, gravel, and staircases. In cases of developed or structural tread there could be a need for excavation work to establish post foundations and abutments, and to cut and fill terrain to account for structural limitations. Additional features of a trail may include the installation of interpretive signs at points of interest, informative signs that indicate the trailhead, and directional signs at trail junctions.

Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of small-scale earth moving equipment (“bobcat” with attachments, OHV with dump, etc.) in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the trail tread and width, and establish the requisite easement for intended trail use. In some cases the use of explosives may be utilized to remove large obstacles or expedite grading. Helicopters may also be used to provide logistical support with delivery of materials; consideration must be given to adequate drop zones. Dependent on the required level of clearing there may be a need to haul off excess material such as soils, rocks, brush, and slash. Felled timber could be left on site to decompose naturally; slash and brush could be left to decompose naturally or burned on site. Hauling soils or organic material from the site may require the use of manpower with wheelbarrows or small-scale hauling equipment (e.g., OHV with dump bed), dependent on the LUD. Locations in close proximity to direct road access may benefit from being able to directly load onto dump trucks. Regardless, in the planning phase of the project efforts would be made to minimize the need for hauling natural materials from the site. Construction of developed or structural tread may require the use of a variety of hand tools and, if permitted in the LUD, power and/or pneumatic tools, including the use of generators for power and compressors for pneumatics. Building materials would be transported as close to the site as possible, to include concrete, based on authorized available routes. Transportation of materials to and from the job site may require the use of short-haul equipment such as an OHV, or will need to be transported manually.

What are the general guidelines constraining this activity?

LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation activities within a specific use area. LUD-specific Standards and Guidelines for recreation and trails are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation and trails are listed in Chapter 4 of the 2016 Forest Plan.

Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the development of trail systems.

What are the resource-specific guidelines?

Silviculture

This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is kept within existing roadbeds. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain which could create future hazards. Alder or other brush management may be required at the time of the closure or in the years that follow to keep the road passable. Consider this when designing the type of closure. Generally a gate is preferred over a large berm or other structure that limits access for maintenance and future silvicultural activities.

Timber

None

Transportation

Undertake access and travel management planning based on 2016 Forest Plan goals, objectives, and desired conditions. If motorized access is appropriate designate the class of vehicles and if appropriate time of year for allowable use. Roads determined as not needed may be converted to trails. Maintenance Level 1 roads may be dual designated as off-highway vehicle trails during their storage cycle. Appropriately designed trail structures may need to be implemented.

Before converting unneeded NFS roads to NFS trails or establishing coincidental NFS roads and NFS trails, consider:

1. Whether the route would provide a recreation experience consistent with desired Trail Management Objectives (FSM 2353.12);
2. Environmental effects of the continued existence of the route;
3. The need for mitigation, removal, repair, or alteration of structures along the route; and
4. Long-term trail maintenance and available funding.

See FSM 2309.18, section 21.2, for additional direction on converting unneeded NFS roads to NFS trails. See FSM 7731.11, on traffic management strategies and for further direction that may assist in deciding whether to convert NFS roads to NFS trails or establish coincidental routes.

Wildlife

Calculate road density at the WAA scale. The 2016 Forest Plan says that road densities of 0.7-1.0 miles per square mile may be necessary where wolf mortality issues have been identified. The Wildlife Biologist may recommend converting roads to trails in WAAs that exceed these levels. The Wildlife Biologist may recommend or require seasonal road closures in WAAs that exceed recommended road densities.

National Bald Eagle Management Guidelines state that off-road vehicle use (including snowmobiles) is a Category D activity. See the Introduction for more information.

Where feasible locate recreation facilities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. If these recreational trails are going to continue to be accessible to motorized use (OHV less than 50 inches), fish streams must be protected; consult a Fish Biologist for site-specific protections.

Any cut trees or slash that inadvertently enters a stream shall be pulled back out of the stream course. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.3, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.20, 14.22

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-6, Plan-2, Plan-3, Rec-4, Road-1, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3

Hydrology

Take care when refueling equipment. Follow BMPs to minimize erosion potential during construction and for trail use.

National BMPs: Road-10

R10 BMPs: 12.8, 12.9, 14.5, 16.4, 16.5

Soils/Wetlands

If the road was fully designated a trail and fully converted from a road, it would no longer meet the 404 Silvicultural Exemption and the entire “new trail” would require a wetland delineation by a Tongass Soil Scientist and a 404 permit from the Army Corp of Engineers upon implementation. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Rec-2, Rec-4, Rec-5, and Rec-7 and R10 BMPs 12.5, 14.5, 14.7, 14.8, 16.4, and 16.5.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1)

Increase weed awareness and prevention efforts among forest users. Post prevention practices at all NFS trailheads, roads, boat launches, and forest portals (Invasive Plant Management BMP 15.2).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Roads and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Determining if and when the designation of a new trail from an old road might be implemented would be based on whether the project meets long term recreation objectives, and/or public safety considerations. The intent of the Forest Service on POW is to sustain or develop recreation facilities that meet the long-term needs of the public, and are maintainable by district staff.

Public input would be a contributor in the process of site selection.

Funding will be an important consideration when developing proposals for the development of new trails and long-term maintenance. Trails are a fee-free activity; therefore, there may be a need to gain full or partial funding through grants, collaborative resources, or other outside sources.

Integration Opportunities: The conversion of old roads to trails may be integrated with the development of proposed recreation facilities and structures, as well as with the establishment of new trails. When roads have been identified for storage, decommissioning, or obliteration, integration opportunities could be evaluated by recreation planners and roads managers to determine the viability of making the conversion to trail.

Card Number

37

Activity: Trails

Description: Includes walking, hiking, biking, OHV (less than 50 inches wide), winter recreation (e.g., snow mobile, snowshoe, and cross-country skiing), interpretive trails, and spur trails for kayak and canoe water access.

Objectives: To maintain or expand recreation opportunities on Prince of Wales Island by providing the public with a range of access activities on NFS lands to include trails of varying levels of development (i.e., classes) and uses. Trails provide the means for the public to experience the forest away from concentrated recreation activities and roads. Trails also allow the public to avoid “bushwhack” through heavily vegetated areas to reach points of interest and destinations, and mitigate damage to forest resources by providing designated routes for travel.

Connected Actions: Access roads to trailhead parking areas, parking areas, informative and interpretive signage (Activity Card 35), sea kayak and canoe access points (Activity Card 39), cabins and three-sided shelters (Activity Card 44), campgrounds and campsites (Activity Card 43).

Methods: Trails will be designed and built to current regional Forest Service structural specifications and meet current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS) setting. General specifications may be guided by LUD Standards and Guidelines. Construction of a trail will include: site layout and preparation, to include if necessary, select tree removal, brushing and grubbing, boulder removal, etc. Layout and preparation will consider standard design parameters (i.e., tread width, surface, grade, cross slope, clearing, and turns), which in turn allow for site-specific deviations based on site conditions, topography, intended use, and development level (i.e., trail class). In most cases slash, brush, felled timber, rocks, and disturbed soils will be used in trail construction or dispersed in the immediate vicinity to blend in with the local landscape. In cases where debris must be removed consideration must be given to the LUD and Forest-wide Standards and Guidelines, as defined in the 2016 Forest Plan, on the means of removal (e.g., manual versus motorized). Trail width and easement will be determined based on the primary intended use and will be specified in the Trail Management Objectives (TMO) and design. Along the full extent of a trail, segments may utilize varying tread types dependent on the ecosystem, topography, and accessibility considerations; therefore, trail segments could include, but are not limited to, the use of bridges, fords, elevated boardwalks, puncheons, gravel, and staircases. In cases of developed or structural tread it may be anticipated that there will be a need for excavation work to establish post foundations and abutments, and to cut and fill terrain to allow for structural limitations. Additional features of a trail may include the installation of interpretive signs at points of interest, informative signs that indicate the trailhead, as well as directional signs at trail junctions.

Certain trails may be designated for over-snow travel, which would give access to sub-alpine and alpine areas to winter recreationists. Consideration of trail design and TMO would need to consider the appropriate trail attributes to facilitate this use.

Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of small-scale earth moving equipment (“bobcat” with attachments, excavator, OHV with dump, etc.) in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the trail tread and establish the requisite easement for the intended trail use. In some case the use of explosives may be utilized to remove large obstacles or expedite grading. Helicopters may also be used to provide logistical support with delivery of materials. Dependent on the required level of clearing there may be a need to haul off excess material such as soils, rocks, brush, and slash. Felled timber will be left on site to decompose naturally; slash and brush could be left to decompose naturally or burned on site. Hauling soils or organic material from the site may require either the use of manpower with wheelbarrows or small-scale hauling equipment such as an OHV with dump bed, dependent on the LUD. Locations in close proximity to direct road access may benefit from being able to directly load onto dump trucks. Regardless, in the planning phase of the project efforts will be made to minimize the need for hauling natural materials from the site. Construction of developed or structural tread will require the use of a variety of hand tools and, if permitted in the LUD, power and/or pneumatic tools, including the use of generators for power and compressors for pneumatics. Building materials will be transported as close to the site as possible, to include concrete, based on authorized available routes. Transportation of materials to and from the job-site may require either the use of short-haul equipment such as an OHV, or will need to be transported manually.

What are the general guidelines constraining this activity?

LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation activities within a specific use area. LUD-specific Standards and Guidelines for recreation and trails are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation and trails are listed in Chapter 4 of the 2016 Forest Plan.

Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the development of trail systems.

For trails that will be used for winter travel reference will need to be made to 36CFR212 Subpart C. This rule requires designation of roads, trails, and areas where over-snow vehicle use is allowed.

What are the resource-specific guidelines?

Silviculture

This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance for the trail is generally kept to less than 15 feet wide. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain which could create future hazards. Evaluate trail locations for existing hazard trees and address during site development. Stage merchantable material in areas conducive for log salvage when possible.

Timber

Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.

Transportation

Trailheads are typically accessed by roads. Ensure road maintenance objectives are current and suitable for promoting anticipated traffic.

Wildlife

Trails are listed in the National Bald Eagle Management Guidelines as being a Category A activity. Management Guidelines state that off-road vehicle use (including snowmobiles) is a Category D activity. See the Introduction for more information.

Where feasible locate recreation facilities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. If any recreational trails are going to be accessible to motorized use (OHV less than 50 inches), fish streams must be protected; consult a Fish Biologist for site-specific protections.

Any cut trees or slash that inadvertently enters a stream shall be pulled back out of the stream course. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.20, 14.22, 16.1, 16.4, 16.5

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-6, Plan-2, Plan-3, Rec-4, Road-1, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3

Hydrology

Take care when refueling equipment. Follow BMPs to minimize trail use erosion.

R10 BMPs: 12.8, 12.9, 14.5, 16.4, 16.5

National BMPs: Road-10

Soils/Wetlands

The proposed areas will need an on-site field review by a Tongass Soil Scientist to determine extent of proposed soil disturbance, landslide risk, and presence of wetlands prior to implementation. A wetland delineation may be required. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National BMPs AqEco-2, Rec-1, Rec-2, Rec-4, Rec-5, Rec-7, Road-9, and Veg-2 and R10 BMPs 12.4, 12.5, 12.13, 12.17, 13.5, 14.5, 14.7, 14.25, 16.1, 16.4, and 16.5.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1). Motorized trail users should inspect and clean their vehicles prior to using on NFS lands. Provide educational materials to outfitters & guides, ATV and snowmobile groups alerting them of this need (Invasive Plant Management BMP 14.2).

Increase weed awareness and prevention efforts among forest users. Post prevention practices at all NFS trailheads, roads, boat launches, and forest portals (Invasive Plant Management BMP 15.2).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Trails and associated infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with

proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Determining if and when the construction of a new trail might be implemented would be based on whether the need exists or if it is feasible for recreation opportunities, and/or safety considerations. The intent of the Forest Service on POW is to develop recreation facilities that meet the long-term needs of the public and are maintainable by district staff.

Public input would be a contributor in the process of site selection.

Funding will be an important consideration when developing proposals for the development of new trails. Trails are a fee-free activity; therefore, there may be a need to gain full or partial funding through grants, collaborative resources, or outside entities.

Integration Opportunities: Development of trails may be integrated with the development of proposed recreation facilities and structures, as well as with the establishment of sea kayak and canoe access points and routes, and boat launches. In addition, trails may be associated with improvements to the POW road network to allow the public access to points of interest.

In addition, integration opportunities may be sought out with other resource activities to provide recreation and trail opportunities on the district, per 2016 Forest Plan REC2 (II). Examples of this may include providing possible winter travel opportunities at higher elevation harvest areas, or identifying new trail segments in old- or young-growth stands that could be developed in conjunction with non-recreation resource activities.

Card Number 38	Activity: Over-the-snow Vehicle use and Winter Sport Access Improvements
<p>Description: Development of an over-the-snow vehicle use map. Improvements to winter sport areas that may require: The cutting of trees and vegetation in corridors up to 40 feet wide, sub-grading of trails up to 8 feet wide, construction of access roads with expanded parking areas and permanent loading ramps, grooming of roads and trails during winter months, and construction of emergency shelters.</p>	
<p>Objectives: Address requirements of 36 CFR 212 Subpart C and ANILCA 811(b) and 1110(a). Provide access to the snowline in winter and improve over-snow access between parking areas and alpine areas to facilitate and promote winter snow sports. Opening trail corridors promotes additional snow accumulation in timbered areas that allow snow machine trails to be more resilient throughout the winter. Sub grading of trail sections to reduce obstacles provides easier over-snow access and reduces potential for resource damage. Higher elevation roads that access the snow line allow for a longer snow season and opens areas for a wide range of users.</p>	
<p>Connected Actions: Timber harvest, access management, road construction (Activity Card 19), recreation developments, fish passage</p>	
<p>Methods: trail clearing, road construction, excavation using tracked equipment to a sub-grade with puncheon. Trail grooming during winter.</p>	
<p>Equipment Used: Chainsaws, tracked equipment, hand tools, groomers.</p>	
<p>What are the general guidelines constraining this activity?</p>	
<p>36 CFR 212 Subpart C and management prescriptions in the 2016 Forest Plan describe the guidelines for transportation activities by LUD. Forest-wide Standards and Guidelines are established to guide road location, design, and construction. LUD-specific and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation activities within a specific use area. LUD-specific Standards and Guidelines for recreation and trails are found in Chapter 3 of the 2016 Forest Plan. Best Management Practices, both Region 10 specific and National Core provide performance and accountability standards in relation to road construction activities.</p>	
<p>What are the resource-specific guidelines?</p>	
<p>Silviculture</p> <p>The District Silviculturist should be consulted to determine if a prescription is necessary. This will be dependent on the scale of the development. Clearing of corridors for roads and trimming of trees and vegetation along winter trails would not typically require a silvicultural prescription. Where openings are desired to improve snow conditions on winter trails or trail development is planned, develop a silvicultural prescription that utilizes uneven-age management where appropriate and coordinate with timber sale activities if possible.</p>	
<p>Timber</p> <p>If commercial products are available for clearing a trail, consider offering them for sale. Non-commercial products could still be used for personal firewood or wood energy.</p>	
<p>Transportation</p> <p>Follow requirements of 36 CFR 212 Subpart C. Trailheads are typically accessed by roads. Ensure road maintenance objectives are current and suitable for promoting anticipated traffic.</p>	
<p>Wildlife</p> <p>National Bald Eagle Management Guidelines state that off-road vehicle use (including snowmobiles) is a Category D activity. See the Introduction for more information.</p> <p>Where feasible locate recreation facilities outside of required nest/den buffers.</p> <p>Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.</p>	

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Hydrology

Design and maintain trails and parking areas to provide proper drainage such that increases of sediment delivery to streams will be minimized.

Take care when refueling equipment. Follow BMPs to minimize trail use erosion.

National Core BMPs: AqEco-2, Rec-1, Rec-2, Rec-4, Rec-5, Rec-7, Road-1, Road-2, Road-3, Road-4, Road-7, Road-9, Road-10 and Veg-2

R10 BMPs: 12.8, 12.9, 14.5, 16.4, 16.5

Soils/Wetlands

The proposed areas will need an on-site field review by a Tongass Soil Scientist to determine extent of proposed soil disturbance, landslide risk, and presence of wetlands prior to implementation. A wetland delineation may be required. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National BMPs AqEco-2, Rec-1, Rec-2, Rec-4, Rec-5, Rec-7, Road-9, and Veg-2 and R10 BMPs 12.4, 12.5, 12.13, 12.17, 13.5, 14.5, 14.7, 14.25, 16.1, 16.4, and 16.5.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1). Motorized trail users should inspect and clean their vehicles prior to using on NFS lands. Provide educational materials to outfitters & guides, ATV and snowmobile groups alerting them of this need (Invasive Plant Management BMP 14.2).

Increase weed awareness and prevention efforts among forest users. Post prevention practices at all NFS trailheads, roads, boat launches and forest portals (Invasive Plant Management BMP 15.2).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her

approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during design and project planning to ensure SIOs will be met.

When would we implement this activity?

Development of an over-the-snow use map could occur with public input during the environmental analysis process. Trail clearing and other minor developments may be undertaken by volunteer user groups as interest allows. Larger developments may require coordination with timber sales and road construction activities to be economically feasible and would be timed to occur with those activities. Ideally timber harvests would be designed to meet access objectives where possible.

Integration Opportunities: Integrate with timber sale opportunities particularly those where helicopter yarding or road construction is necessary.

Card Number

39

Activity: Access Points for Kayak and Canoe Launches

Description: Identify and develop access points to launch kayaks and canoes at saltwater and freshwater locations.

Objectives: To maintain or enhance recreation opportunities on POW. Establishing access points for paddle craft could enhance recreation opportunities on the landscape by providing established points of entrance onto, and egress points off of, the water bodies on and around POW. These points could be established as part of an informal coastal "trail" network or be placed strategically as put-ins and take-outs for one-way trips on lakes, bays, and the coast. In some instances these access points may be established in conjunction with trail development. Providing established access points could provide the added benefit of mitigating damage to immediate forest resources from the public "blazing" trails. Furthermore, readily identifiable coastal access points connected to mainland roads and trails may serve a safety need by providing egress points for paddlers and boaters when weather conditions deteriorate or an emergency arises.

Connected Actions: Establishment of trails (Activity Card 37), construction of three-sided shelters (Recreation Structures) (Activity Card 44), construction of pit or vault outhouses (Activity Card: 42), development of public and or administrative ground access to the site from a designated access point (parking area, roads, etc.)

Methods: Access points will consist of trails (*i.e.*, spur or longer) that provide access to the line of mean high-tide for boaters and paddlers. These trails may provide access from a parking area, road, recreation facility, or system trail. Access trails will be designed and built to current regional Forest Service structural specifications and meet current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS) setting. General specifications may be guided by LUD Standards and Guidelines. Construction of a trail will include: site layout and preparation, to include, if necessary, select tree removal, brushing and grubbing, boulder removal, etc. Layout and preparation will consider standard design parameters (*i.e.*, tread width, surface, grade, cross slope, clearing, and turns), which in turn allow for site-specific deviations based on site conditions, topography, intended use, and development level (*i.e.*, trail class). In most cases, slash, brush, felled timber, rocks, and disturbed soils will be used in trail construction or dispersed in the immediate vicinity to blend in with the landscape. In cases where debris must be removed consideration will be given to the LUD and Forest-wide Standards and Guidelines, as defined in the 2016 Forest Plan, on the means of removal (*e.g.*, manual versus motorized). Trail width and easement will be determined based on the primary intended use and will be specified in the Trail Management Objectives (TMO) and trail design. Along the full extent of a trail, segments may utilize varying tread types dependent on forest resource considerations, topography, and user accessibility; therefore, trail segments could include, but are not limited to, the use of bridges, fords, elevated boardwalks, puncheons, gravel, and staircases. In cases of developed or structural tread the need for excavation work to establish post foundations or abutments, and to cut and fill terrain to allow for structural limitations may be anticipated. Additional features of a trail may include the installation of interpretive signs at points of interest, informative signs indicating the trailhead, and directional signs at trail junctions. Consideration will be given to the integrity of the shoreline, and the impact users may have on bank stability and riparian areas on fresh water bodies. To mitigate bank damage it may necessary to construct access structures (stairs, boardwalks, etc.) The same considerations to methods mentioned above may apply, along with additional attention given to mitigating sedimentation from construction activities, which may require implementation of abatement measures.

Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of small-scale earth moving equipment ("bobcat" with attachments, OHV with dump, etc.) in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the trail tread and establish the requisite easement for the intended trail use. In some case the use of explosives may be utilized to remove large obstacles or expedite grading. Helicopters may also be used to provide logistical support (*i.e.*, delivery of materials). Dependent on the required level of clearing there may be a need to haul off excess material such as soils, rocks, brush, and slash. Felled timber will be left on site to decompose naturally; slash and brush could be left to decompose naturally or burned on site. Hauling soils or organic material from the site may require either the use of manpower with wheelbarrows or small-scale hauling equipment such as an OHV with a dump bed, dependent on the LUD. Locations in close proximity to direct road access may benefit from being able to directly load onto dump trucks. Regardless, in the planning phase of the project efforts will be made to minimize the need for hauling natural materials from the site. Construction of developed or structural tread, or structural water access, will require the use of a variety of hand tools and, if permitted in the LUD, power and or pneumatic tools, including the use of generators for power and compressors for pneumatics. Building materials will be transported as close to the site as possible, to include concrete, based on authorized available routes. Transportation of materials to and from the job site may require either the use of short-haul equipment such as an OHV, or will need to be transported manually.

What are the general guidelines constraining this activity?

LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation activities within a specific use area. LUD-specific Standards and Guidelines for recreation and trails are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation and trails are listed in Chapter 4 of the 2016 Forest Plan.

Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the development of trail systems.

Recreation planners will work with FS hydrologists and aquatics specialists to identify adequate sites for fresh water and riparian access points, and develop design measures to protect hydrologic and aquatic resources.

What are the resource-specific guidelines?

Silviculture

This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain which could create future hazards. Evaluate the site for existing hazard trees and address during site development.

Timber

None

Transportation

Recreation sites are often accessed by roads. Ensure road maintenance objectives are current and suitable for promoting anticipated traffic.

Wildlife

Where feasible locate recreation facilities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Trails are listed in the National Bald Eagle Management Guidelines as being a Category A activity. See the Introduction for more information.

Fisheries

A site-specific review by a Fish Biologist is required to ensure proposed access points do not excessively impact fish spawning and rearing habitat. Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. If any recreational trails are going to be accessible to motorized use, fish streams must be protected; consult a Fish Biologist for site-specific protections.

When considering blasting near fish streams consult a Fish Biologist for site-specific protections. Any cut trees or slash that inadvertently enters a stream shall be pulled back out of the stream course. Prohibit equipment storage, maintenance, and refueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.20, 14.22, 16.1, 16.4, 16.5

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-6, Plan-2, Plan-3, Rec-1, Rec-2, Rec-4, Rec-8, Road-1, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3

Hydrology

Take care when refueling equipment. Construction should take place during low-flow/precipitation periods to minimize impacts.

R10 BMPs: 12.8,12.9, 14.5,14.6

National BMPs: Rec-2, Rec-3, Road-10

Soils/Wetlands

The proposed areas will need an on-site field review by a Tongass Soil Scientist upon implementation to determine extent of proposed soil disturbance and presence of wetlands. A wetland delineation may be required. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Rec-2, Rec-3, Rec-8, and Veg-2 and R10 BMPs 12.4, 12.5, 12.17, 14.5, 16.1, and 16.4.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1). Motorized trail users should inspect and clean their vehicles prior to using on NFS lands. Provide educational materials to outfitters & guides, ATV and snowmobile groups alerting them of this need (Invasive Plant Management BMP 14.2).

Increase weed awareness and prevention efforts among forest users. Post prevention practices at all NFS trailheads, roads, boat launches and forest portals (Invasive Plant Management BMP 15.2).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Pre-contact cultural resources and recreation infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during design and project planning to ensure SIOs will be met.

When would we implement this activity?

Determining if and when the construction of a new canoe or kayak access point might be implemented would be based on whether the need exists or if it is feasible for recreation opportunities, and/or safety considerations. The intent of the Forest Service on POW is to develop recreation facilities that meet the long-term needs of the public and are maintainable by district staff.

Public input would be a contributor to the process of site selection.

Funding will be an important consideration when developing proposals for the development of new canoe or kayak access points. Access points are a fee-free activity; therefore, there may be a need to gain full or partial funding through grants, or collaborative or outside sources.

Integration Opportunities: Kayak and canoe access points could be integrated with the development of proposed recreation facilities and structures located in close proximity to bodies of water, as well as with the establishment or revival of trails. Recreation planners could work with hydrologists and aquatics specialists to identify potential integration opportunities for access points, which may arise during in-stream restoration or other resource specialist activities.

Card Number 40	Activity: Construct Boat Launches
Description: Provide ramps for launching trailered boats.	
Objectives: Increase subsistence and recreation access in areas currently with no boat launches.	
Connected Actions: Quarry development (Activity Card 24), fill on tidelands, road access, parking areas, Access and Travel Management	
Methods: Site-specific details would determine the type of boat launch constructed. In some cases, blasted quarry rock may be sufficient, and in other cases more developed ramps may be appropriate.	
Equipment Used: Heavy equipment	
What are the general guidelines constraining this activity?	
An MOU with the State of Alaska allows the United States as an upland owner to construct marine access points without written authorization from the State at specific access points. These access points include construction of boat launches. Other permits from Federal Agencies may be required. Boat launches constructed in other locations would need the appropriate permits from both State and Federal Agencies.	
What are the resource-specific guidelines?	
Silviculture This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain which could create future hazards. Evaluate the site for existing hazard trees and address during site development. Assess the need for silvicultural treatments in surrounding areas to reduce windthrow hazards.	
Timber Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
Transportation Appropriate surveys and designs are required. Parking areas and turnarounds for trailers would be incorporated into the design.	
Wildlife Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed. Roads, docks, and trails are listed in the National Bald Eagle Management Guidelines as being a Category A activity. See the Introduction for more information.	
Fisheries A site-specific review by a Fish Biologist is required so that any streams in the affected areas are identified and protected, and to ensure proposed access points do not excessively impact fish habitat. Any instream work in a fish stream needs to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Any new fish crossing structures must provide fish passage. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.	

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 13.16, 14.1, 14.5, 14.6, 14.7, 14.8, 14.9, 14.11, 14.12, 14.14, 14.20, 14.22, 16.1, 16.4, 16.5

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-2, Fac-6, Plan-2, Plan-3, Rec-1, Rec-2, Rec-4, Rec-8, Road-1, Road-4, Road-6, Road-7, Road-10, Veg-2, Veg-3

Hydrology

Take care when refueling equipment. Follow BMPs to minimize erosion.

National Core BMPs AqEco-2, Rec-2, Rec-3, Rec-8, Road-9, and Veg-2

R10 BMPs: 12.8, 12.9

Soils/Wetlands

The proposed areas will need an on-site field review by a Tongass Soil Scientist upon implementation to determine extent of proposed soil disturbance and presence of wetlands. A wetland delineation may be required. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Rec-2, Rec-3, Rec-8, Road-9, and Veg-2 and R10 BMPs 12.4, 12.5, 12.17, 14.5, 14.25, 16.1, and 16.4.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize the movement of existing and new weed species caused by moving infested gravel and fill material. Inspect all active gravel and borrow sources before use and transport. If weeds are present, treat before transport and use or avoid infested areas. Avoid establishing new material sources in areas where weeds are present (Invasive Plant Management BMP 10.1). If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8 inches of contaminated material is removed and stockpiled (Invasive Plant Management BMP 10.2).

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1). Motorized trail users should inspect and clean their vehicles prior to using on NFS lands. Provide educational materials to outfitters & guides, ATV and snowmobile groups alerting them of this need (Invasive Plant Management BMP 14.2).

Increase weed awareness and prevention efforts among forest users. Post prevention practices at all NFS trailheads, roads, boat launches and forest portals (Invasive Plant Management BMP 15.2).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her

approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Pre-contact cultural resources may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during design and project planning to ensure SIOs will be met.

When would we implement this activity?

Boat launches would be constructed when analysis shows the need. Construction funding would be required.

Integration Opportunities: Other recreation facilities may be an appropriate improvement along with a boat launch.

<i>Card Number</i> 41	Activity: Viewshed Improvements
Description: Removing, trimming and/or pruning trees around new or existing recreation sites or at a road turnout to improve a panoramic view of the opposing landscape or of saltwater.	
Objectives: Improvement of the viewshed around recreation sites or for panoramic views would enhance the recreation experiences.	
Connected Actions: Precommercial thinning (Activity Card 5), pruning (Activity Card 10), slash management (Activity Card 11), commercial thinning (Activity Card 4), and salvage of dead and dying timber or hazard tree removal (Activity Card 16), old-growth uneven-aged management (Activity Card 15), brush cutting, and mowing.	
Methods: ---	
Equipment Used: Chainsaws, weed whackers, mowers, hand tools, chippers, excavators, explosives.	
What are the general guidelines constraining this activity?	

What are the resource-specific guidelines?	
<u>Silviculture</u> Review the proposed activity with the District Silviculturist to determine if a silvicultural prescription is necessary. Follow the guidelines for the connected action or actions listed above that fits the needs of the site. Plan large-scale viewshed improvements to occur at the time of new site development to reduce overall impacts to recreation users when possible. Cut stumps and brush close to ground level to reduce hazards and reduce impacts to the viewshed. Consider the impacts of wind on the site. If thinning is planned and the windthrow potential is expected to be moderate or high following the treatment, plan for the improvement to occur in a series of light treatments spaced over time to gradually increase windfirmness.	
<u>Timber</u> Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.	
<u>Transportation</u> Access to work sites is generally available on existing roads. Off-highway vehicles are commonly used when highway vehicle access is not available. Follow applicable travel regulations, and when necessary obtain permits to use the closed road system.	
<u>Wildlife</u> Timber removal, including thinning, is considered a Category C activity in the National Bald Eagle Management Guidelines. See Introduction for more information. Where feasible locate activities outside of required nest/den buffers. Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	
<u>Fisheries</u> Prior to implementation, stream reaches in and around treatment stands should be identified and protected in the following manner: For Class I, II, and III streams, at least a 10-foot-wide no-cut buffer shall be left on each side of the stream. Evaluate steep side-slopes to determine if trees outside the 10-foot no-cut buffer will be prone to falling into the stream course. In this case, a no-cut buffer within the stream's v-notch may be appropriate.	

Cut trees shall be felled away from any Class I, II, III, or IV streams. Any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course and out of the no-cut buffer.

Any instream work or equipment crossings in a fish stream need to occur during species specific timing windows, and must receive concurrence with the State of Alaska. When considering blasting near fish streams consult a fish biologist for site-specific protections. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.17, 14.19

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-6, Plan-2, Plan-3, Road-10, Veg-1, Veg-2, Veg-3, Veg-8

Hydrology

Take care when refueling equipment.

National Core BMPs: Road-10

R10 BMPs: 12.8, 12.9, 14.5

Soils/Wetlands

Soil disturbance should be minimized to the extent practicable. Grass seed or cover exposed mineral soil areas with slash. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-1, Rec-2, and Veg-8 and R10 BMPs 12.5, 12.17, 14.5, 14.25, 16.1, and 16.4.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

With all thinning or other slash creating activities, it is recommended that the woody material be bucked small enough to allow the largest wood pieces to touch the ground to aid in faster wood fungi colonialization and decomposition rates. This recommendation is multi- purpose for enhancing the creation of wildlife travel ways and conditions that allow more light to penetrate to the forest floor that encourages vascular plant growth. See Forest Monitoring Plan Biodiversity #5.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Existing recreation infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3, 4, and 5). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Ideally when new construction occurs, but it may need to take place over time around existing sites since vegetation grows rapidly. Conduct the activity when the view from porches and windows of recreation buildings is obstructed by tree growth or brush. Time the activity to occur during normal yearly maintenance or when new construction occurs.

Integration Opportunities: Utilize the activity to manage windthrow and hazard tree risk around developed sites and where new sites are being developed.

Card Number 42	Activity: Outhouses (Pit and Vault)
<p>Description: Vault or pit outhouses could be constructed in proximity to recreation structures and facilities (e.g., cabins or three-sided shelters, campgrounds, boat launches, and day-use areas).</p>	
<p>Objectives: Toilets may be placed in close proximity to recreation structures and facilities for user convenience. Installation of these facilities will maintain sanitary conditions of the recreation site and protect immediate and adjacent resources by providing a facility for the deposit of human waste.</p>	
<p>Connected Actions: Campground (Activity Card 53), Recreation Structures (Activity Card 44), Sea Kayak or Canoe Access points (Activity Card 39), Trails (Activity Card 37), Boat launches (Activity Card 40), parking, access trail from the recreation structure or facility to the outhouse, administrative access to the site for regular vault maintenance, and maintenance (i.e., pumping or burning).</p>	
<p>Methods: Structures will be built to current regional Forest Service structural specifications and meet current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS) setting. General specifications may be guided by LUD Standards and Guidelines. Construction of a structure will include: site layout and preparation, to include if necessary, select tree removal, grubbing, and leveling; establishment of structural foundation, which may include ground boring or excavation for concrete footings; in the case of vault outhouses excavation will be required for the sub-grade placement of the vault; erection of the structure, which would be determined by the project specifications, which may include building elevated or grade floor systems such as a concrete slab, erection of exterior walls, and a dried in roof; in some cases the design of the outhouse may call for the use of pre-cast synthetic or concrete components. Construction of the structure may also include installation of any specified doors or windows, and other specified finish components dependent on the type and design of the structure. All waste construction materials will be removed from the site and hauled away when construction activities are completed. Toilets should be placed in relative proximity to the primary recreation resource they serve, and should be fully accessible to the public.</p>	
<p>Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of earth moving equipment (backhoe with bucket, excavator, “bobcat”, etc.) in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the site for the structure. Dependent on the required level of clearing there may be a need to haul off excess material such as soils, rocks, brush, and slash. Felled timber may be left on site as future firewood for the adjacent structure or facility, or to decompose naturally; slash and brush could be burned on site or left to decompose. Hauling soils or organic material from the site may require either the use of manpower with wheelbarrows or small-scale hauling equipment such as an OHV with a dump bed, dependent on the LUD, or be dispersed to blend in with the landscape. Locations in close proximity to direct road access may benefit from being able to directly load onto dump trucks. Regardless, in the planning phase of the project efforts will be made to minimize the need for hauling natural materials from the site. Erection of the structure will require the use of a variety of hand tools and, if permitted in the LUD, power and/or pneumatic tools, including the use of generators for power and compressors for pneumatics. In the case of structures built of pre-cast concrete components there may be a requirement for lifting equipment on site such as a crane. In these cases, sufficient lateral and overhead clearance will be required for safe operations. Building materials will be transported as close to the site as possible, to include concrete, based on authorized available routes. Transportation to and from the job site may require either the use of short-haul equipment such as an OHV, or will need to be transported manually.</p>	
<p>What are the general guidelines constraining this activity?</p>	
<p>LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation structures within a specific use area. LUD-specific Standards and Guidelines for recreation are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation are listed in Chapter 4 of the 2016 Forest Plan.</p> <p>The 2016 Forest Plan defines considerations and determinations that must be evaluated before a proposed project may be implemented. In conjunction with the Forest-wide Standards and Guidelines, LUD-specific Standards and Guidelines provide area specific considerations which must be adhered to.</p> <p>Consideration should be given to directly impacted and adjacent resources (e.g., hydrology, aquatics, and soils) due to the ground disturbing activities inherent to the development of an outhouse, and the nature of the facility.</p>	
<p>What are the resource-specific guidelines?</p>	

<p><u>Silviculture</u></p> <p>This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain which could create future hazards. Evaluate the site for existing hazard trees and address during site development. Assess the need for silvicultural treatments in surrounding areas to reduce windthrow hazards.</p>
<p><u>Timber</u></p> <p>None</p>
<p><u>Transportation</u></p> <p>Recreation sites are often accessed by roads. Ensure road maintenance objectives are current and suitable for promoting anticipated traffic. Outhouses requiring pumping will need roaded access for pumper truck to outhouse.</p>
<p><u>Wildlife</u></p> <p>Where feasible locate activities outside of required nest/den buffers.</p> <p>Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.</p> <p>All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.</p>
<p><u>Fisheries</u></p> <p>Where feasible, locate parking, campgrounds, sanitation, and other recreation facilities outside the RMAs to avoid adverse effects on water quality and riparian function.</p> <p>Cut trees shall be felled away from any Class I, II, III, or IV streams, and any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course.</p> <p>Any equipment crossings in a fish stream need to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.</p> <p>R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.15, 12.16, 16.1, 16.4</p> <p>National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-4, Fac-5, Fac-6, Plan-2, Plan-3, Rec-1, Rec-2, Road-10, Veg-3</p>
<p><u>Hydrology</u></p> <p>Locate facilities on high ground when possible, and 100 feet away from water bodies.</p> <p>R10 BMPs: 12.6,12.8,12.9, 14.5,14.6</p> <p>National BMPs: Rec-2, Road-10</p>
<p><u>Soils/Wetlands</u></p> <p>Avoid locating outhouses in wetland locations and on poorly drained soils or soils with high, seasonal water tables, or preferential flow paths. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-1, Fac-4, and Rec-1 and R10 BMPs 12.4, 12.5, 12.13, 12.15, 12.17, 14.25, and 16.1.</p>
<p><u>Botany</u></p> <p>Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.</p>

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Existing recreation infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities.

Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during design and project planning to ensure SIOs will be met.

When would we implement this activity?

The construction of outhouses may coincide with the development of recreation structures (*i.e.*, cabins or three-sided shelters), campgrounds, or select day-use facilities (pavilions, boat launches, etc.) Due to the concentration of user activity at these types of sites it is important that facilities are provided for the disposal of human waste, to protect resources and prevent unsanitary conditions.

Funding will be an important consideration when developing proposals for the development of outhouses. Cabins are fee sites; therefore, an outhouse associated with a cabin may be at least partially funded through fee collection. Three-sided shelters have historically been non-fee first-come-first-served sites; therefore, there may be a need to gain funding from collaborative or outside sources for outhouses adjacent to a three-sided shelter. Outhouses for day-use facilities may also require funding assistance from collaborative or outside sources. Funding for outhouses at campgrounds may be partially funded from fees paid for campground use.

Integration Opportunities: Development of outhouses associated with recreation structures may be integrated with the development of proposed sea kayak routes and point-to-point island trails. In addition to trails and routes, outhouses may be associated with the development of boat launches and spur trails accessing the median high water line for beach kayak access.

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Card Number 43	Activity: Campground or Campsites
Description: New campgrounds or expanding areas to include campsites on NFS lands.	
Objectives: To maintain, improve on, or expand recreation opportunities on POW. Campgrounds, which are fee sites, provide multi-day recreation opportunities for the public.	
Connected Actions: Construction of pit or vault outhouses (Activity Card 42), Sea Kayak or Canoe Access (Activity Card 39), Signage (Activity Card 35), development of public and administrative ground access to the site from a designated access point and parking.	
Methods: Campgrounds will be designed and built to current regional Forest Service specifications and meet current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS) setting. General specifications may be guided by Land Use Designation (LUD) Standards and Guidelines. Development of a campground will include: site layout and preparation, to include if necessary, select tree removal, grubbing, and leveling (leveling may require the use of retaining systems to avoid excessive site excavation); establishment of an internal road for site access; campsite parking; laying out signage (e.g., interpretive and or informative); installation of fire rings; placement of picnic tables; campgrounds could include RV pads, which may include the laying of a concrete pads and establishment of infrastructure (e.g., power and water), which may require ground trenching, boring, and drilling; for campground designs with three-sided shelters see Activity Card 50 for methods. In most cases, slash, brush, felled timber, rocks, and disturbed soils may be used in site development or dispersed in the immediate vicinity to blend in with the landscape. In cases where debris must be removed, consideration will be given to the LUD and Forest-wide Standards and Guidelines, as defined in the 2016 Forest Plan, on the means of removal (e.g., manual versus motorized). All waste construction materials will be removed from the site and hauled away when construction activities are completed.	
Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of earth moving equipment (e.g., front-end loader, grader, backhoe, excavator, or "bobcat") in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the site. Dependent on the required level of clearing there may be a need to haul off excess material such as timber, soils, rocks, brush, and slash using mechanical or manual methods (e.g., dump truck, OHV with dump trailer, wheelbarrows). Felled timber may be sold, left on site as future firewood for the campground, or left to decompose naturally; slash and brush could be burned on site or left to decompose. Hauling soils or organic material from the site will require the use of hauling equipment (e.g., dump truck, OHV with dump trailer, wheelbarrows). In the planning phase of the project, efforts will be made to minimize the need for hauling natural materials from the site. Erection of structures, signage, and infrastructure will require the use of a variety of hand, power, and/or pneumatic tools, including the use of generators for power and compressors for pneumatics. Building materials, to include concrete, will be transported as close to the site as possible to minimize damage to the site and adjacent resources.	
What are the general guidelines constraining this activity?	
LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation activities within a specific use area. LUD-specific Standards and Guidelines for recreation are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation are listed in Chapter 4 of the 2016 Forest Plan.	
Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the development of a campground.	
What are the resource-specific guidelines?	
Silviculture	
This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain which could create future hazards. Evaluate the site for existing hazard trees and address during site development. Assess the need for silvicultural treatments in surrounding areas to improve viewshed, and reduce windthrow hazards. To avoid conflicts with future timber harvests, locate facilities so that timber development lands are not in the viewshed.	

Timber

Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.

Transportation

Recreation sites are often accessed by roads. Ensure road maintenance objectives are current and suitable for promoting anticipated traffic.

Wildlife

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

This activity is listed in the National Bald Eagle Management Guidelines as being a Category C activity. See the Introduction for more information.

Fisheries

Where feasible, locate parking, campgrounds, sanitation, and other recreation facilities outside the RMAs to avoid adverse effects on water quality and riparian function.

Cut trees shall be felled away from any Class I, II, III, or IV streams, and any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course.

Any equipment crossings in a fish stream need to occur during species specific timing windows, and must receive concurrence with the State of Alaska. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.15, 12.16, 16.1, 16.4

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-4, Fac-5, Fac-6, Plan-2, Plan-3, Rec-1, Rec-2, Road-10, Veg-3

Hydrology

Take care when refueling equipment. Follow BMPs to avoid impacts to water quality. When possible locate shelters and related parking and sanitation facilities on high ground 100 feet away from water bodies.

R10 BMPs: 12.8,12.9, 14.5,14.6

National BMPs: Rec-2, Rec-3, Road-10

Soils/Wetlands

The proposed areas will need an on-site field review by a Tongass Soil Scientist to determine extent of proposed soil disturbance and presence of wetlands upon implementation. A wetland delineation may be required. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-1, Fac-2, Fac-3, Fac-4, Fac-5, Rec-2, Road-9, and Veg-2 and R10 BMPs 12.4, 12.5, 12.13, 12.15, 12.16, 12.17, 14.5, 14.25, 16.1, and 16.4.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat.

Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Existing recreation infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during stand design and project planning to ensure SIOs will be met.

When would we implement this activity?

Campgrounds could be developed to increase recreation opportunities on POW. Determining if and when the construction of a new campground, or addition of new campsites, might be implemented would be based on whether there is an existing or anticipated need. The intent of the Forest Service on POW is to develop recreation facilities that meet the long-term needs of the public and are maintainable by district staff.

The Forest Service would identify proposed sites for campgrounds and determine their capacity based on prospective use, ease of accessibility, and maintainability. Public input would be a contributor in the process of site selection. Campgrounds would be fee sites.

Funding will be an important consideration when developing proposals for the development of campgrounds or campsites. Campgrounds are fee sites, which may be at least partially funded through fee collection. Additional funding may need to be sourced through grants, collaborative, or other outside sources.

Integration Opportunities: Development of new campgrounds and campsites may be integrated into improvements on existing sites, or associated with POW infrastructure improvements such as road paving that could create reasonable accessibility for campground access.

Recreation planners could work with other district resource specialists to identify potential campgrounds through integration opportunities presented by non-recreation resource activities.

DRAFT

Card Number 44	Activity: Cabins and Three-sided Shelters (Recreation Structures)
Description: Construction of public use cabins or three-sided shelters on NFS lands.	
Objectives: To maintain or expand recreation opportunities on POW. Cabins, which are fee sites, provide multi-day recreation opportunities for the public. Three-sided shelters are non-fee sites that provide single-night/multi-day stopovers for campers on NFS lands, often accessed from watercraft or from hiking trails. When confronted with extreme weather conditions or emergency situations recreation structures may serve to provide recreationists with safe havens in remote locations.	
Connected Actions: Construction of pit or vault outhouses (Activity Card 42), Cabin Decommission (Activity Card 45), Trails (Activity Cards 36 and 37), Sea Kayak and Canoe Access (Activity Card 39), Timber thinning and hazard tree removal (Activity Card 16), development of public and or administrative ground access to the site from a designated access point (e.g., median high water mark or a parking area), and parking.	
Methods: Structures will be built to current regional Forest Service structural specifications and meet current regional Forest Service aesthetic standards applicable to the LUD and Recreation Opportunity Spectrum (ROS) setting. General specifications may be guided by LUD Standards and Guidelines. The site for a structure may be selected based on accessibility/location, topography, vegetation, and consideration of impacts to direct or adjacent resources. Construction of a structure will include: site layout and preparation, to include if necessary, select tree removal, grubbing, and leveling; establishment of structural foundation, which may include ground boring or excavation for concrete footings; construction of the structure, which would be determined by the project specifications; erection of the structure, which will include building elevated or grade floor systems, 3 to 4 sheathed walls, and a dried in roof. Construction of the structure may also include installation of any specified doors or windows, wood stove or heater, and other finish components dependent on the type and design of the structure. All waste construction materials will be removed from the site and hauled away when construction activities are completed. Ancillary structures associated with the construction of a recreation structure may include a wood shed for firewood and an outhouse. These structures will be sited in reasonable proximity to the primary structure.	
Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of earth moving equipment (e.g., backhoe with bucket, excavator, or "bobcat") in conjunction with chainsaws and other power, pneumatic, and/or hand tools to clear the site for the structure. Explosives may be used to expedite removal of obstacles to construction when convention methods are ineffective. Dependent on the required level of clearing there may be a need to haul off excess material such as soils, rocks, brush, and slash. Felled timber will be left on site as future firewood for the structure, or to decompose naturally; slash and brush could be burned on site or left to decompose. Hauling soils or organic material from the site may require either the use of manpower with wheelbarrows or small-scale hauling equipment such as an OHV with a dump bed, dependent on the LUD. Locations in close proximity to direct road access may benefit from being able to directly load onto dump trucks. Regardless, in the planning phase of the project efforts will be made to minimize the need for hauling natural materials from the site. Erection of the structure will require the use of a variety of hand tools and, if permitted in the LUD, power and/or pneumatic tools, including the use of generators for power and compressors for pneumatics. Building materials will be transported as close to the site as possible, to include concrete, based on authorized available routes. Transportation of materials to and from the job site may require either the use of hauling equipment (OHV, truck, etc.), airlift, or will need to be transported manually.	
What are the general guidelines constraining this activity?	
LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of recreation structures within a specific use area. LUD-specific Standards and Guidelines for recreation are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines for recreation are listed in Chapter 4 of the 2016 Forest Plan.	
Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the development of a cabin or shelter.	
Within wilderness areas, notification of the intent to construct a cabin will need to be given to the House Committee on Interior and Insular Affairs and Senate Committee on Energy and Natural Resources; per Section 1315 of ANILCA.	
What are the resource-specific guidelines?	

Silviculture

This activity would not require a silvicultural prescription or the input from the District Silviculturist if the area of disturbance is generally kept to less than ¼ acre. If the activity is expected to require the cutting of live trees or vegetative disturbance beyond that, the District Silviculturist should be consulted to determine if a prescription is necessary. Avoid cutting tree roots and damaging the boles of trees that will remain, which could create future hazards. Evaluate the site for existing hazard trees and address during site development. Assess the need for silvicultural treatments in surrounding areas to improve viewshed, and reduce windthrow hazards. To avoid conflicts with future timber harvests, locate recreation structures so that timber development lands are not in the viewshed.

Timber

Commercial timber resulting from this activity should be made available for sale or for use by the public if it is possible within the framework of the 2016 Forest Plan, meets all legal requirements, and is feasible.

Transportation

Cabins and shelters are often accessed by roads. Ensure road maintenance objectives are current and suitable for promoting anticipated traffic.

Wildlife

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Where feasible, locate parking, campgrounds, sanitation, and other recreation facilities outside the RMAs to avoid adverse effects on water quality and riparian function.

Cut trees shall be felled away from any Class I, II, III, or IV streams, and any cut trees or slash that inadvertently enter a stream shall be pulled back out of the stream course.

Any equipment crossings in a fish stream need to occur during species specific timing windows, and must receive concurrence with the State of Alaska. When considering blasting near fish streams consult a Fish Biologist for site-specific protections. Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.15, 12.16, 16.1, 16.4

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-4, Fac-5, Fac-6, Plan-2, Plan-3, Rec-1, Rec-2, Road-10, Veg-3

Hydrology

Take care when refueling equipment. Follow BMPs to avoid impacts to water quality. When possible locate shelters and related parking and sanitation facilities on high ground well away from water bodies. Construction should take place during low-flow/precipitation periods to minimize impacts.

National Core BMPs: Rec-2, Rec-3, Road-10

R10 BMPs: 12.8, 12.9, 14.5, 14.6

Soils/Wetlands

An on-site evaluation by a Tongass Soil Scientist will be needed to determine soil disturbance, potential landslide or erosion risk, and presence of wetlands upon implementation. A wetland delineation may be required. All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-1, Fac-2, Rec-1, Rec-2, and Rec-3 and R10 BMPs 12.4, 12.5, 12.13, 12.17, 14.25, and 16.1.

Botany

Prior to implementation a qualified Botanist/Ecologist must conduct a site-specific review to determine if the activity location has the potential to support any Region 10 Sensitive Plants or Tongass National Forest Rare Plants. Based on the review, a

botanical survey may be required during the appropriate growing season to identify individuals or supporting habitat. Complete a biological evaluation for plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Minimize transport and establishment of weeds on NFS lands. Treat weeds as needed at trailheads, boat launches, outfitter and public camps, airstrips, and roads leading to trailheads (Invasive Plant Management BMP 14.1).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs. Scenery specialists should be involved during design and project planning to ensure SIOs will be met.

When would we implement this activity?

Determining if and when the construction of a new cabin or shelter might be implemented would be based on whether there is a recognized need, it is a feasible recreation opportunity, and/or it addresses safety considerations. Currently the Forest Service maintains 20 cabins and three (3) three-sided shelters on Prince of Wales Island and its surrounding islands. These facilities have variable levels of use, relative to each other, and are in varying levels of physical condition; accessibility impacts both use and maintenance. The intent of the Forest Service on POW is to sustain and develop recreation facilities that meet the long-term needs of the public and are maintainable by district staff.

In regard to cabins, the Forest Service may implement a one-for-one exchange of cabins on the landscape. Cabin and cabin sites that could be decommissioned would be identified based on use, accessibility, and condition. In turn the Forest Service would identify proposed sites for replacement cabins and inform the public of proposed actions; consideration would be

based on prospective use, ease of accessibility, and maintainability. Public input would be a contributor in the process of site selection. Cabin sites will remain as fee sites.

Three-sided shelters would be developed to increase recreation opportunities on POW. Shelters could be built for: 1) coastal recreationists and would be accessible via kayak or boat, which could be sited to facilitate multi-day trips for kayakers; 2) on extended trail systems for overnight stays; or 3) for winter recreation at sub-alpine and alpine elevations. Not only could these structures expand recreation opportunities on POW, but they could serve as emergency shelters for recreationists caught by inclement weather; for example, kayakers and small craft operators, as well as snow oriented recreationists.

Funding will be an important consideration when developing proposals for the development of cabins and three-sided shelters. Cabins are pay sites, which may be at least partially funded through fee collection. Three-sided shelters have historically been non-fee first-come-first-served sites; therefore, there may be a need to gain funding from collaborative or outside sources.

Integration Opportunities: Development of recreation structures may be integrated with the development of proposed sea kayak routes and point-to-point island trails. In addition to trails and routes, structures may be associated with the development of boat launches and spur trails accessing median high tide for beach and kayak access.

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Card Number

45

Activity: Cabin Decommissioning

Description: Permanent removal of a cabin, and its ancillary structures, from the landscape.

Objectives: To remove recreation structures, and their ancillary buildings (outhouse, wood shed, etc.), that are difficult to maintain due to staffing, funding, accessibility, and/or are seldom used by the public. To sustain current levels of recreation opportunities on POW, analysis may be done to assess the viability of replacing decommissioned cabins with structures in locations that are easier to maintain and more accessible.

Connected Actions: Cabins and Three-sided Shelters (Activity Card 44)

Methods: Decommissioning of cabins, and their ancillary structures, could be done through one of three methods. The first method could be to disassemble and relocate structures. The second could be to relocate structures intact. The third may be the initiation of a controlled burn for on-site eradication of the structure and its ancillary buildings. The first two methods would require an array of construction equipment, logistical coordination, and possibly airlift resources to facilitate the relocation process.

Disassembly of structure(s) may entail the removal of all doors, windows, and building accessories (e.g., wood stove, heater), disassembly of the roof, walls, and floors, and pulling of any concrete footings or slabs. Removal of an outhouse vault or pit would also require the containment and removal of all black water waste. All components would need to be staged and removed from the site either by ground equipment such as a truck or by helicopter lift.

In some cases a structure could be relocated intact to a new site, which could involve special rigging for ground or air transport. Consideration would need to be given to whether timber would need to be pruned or felled to provide adequate clearance for the removal of the structure; particularly for vertical lifts. After the structure is removed from the site, concrete footings or slabs would need to be removed and hauled from the site. In some cases, ancillary buildings to the relocated structure may also be disassembled, or could be burned.

The third method of removal, by controlled burn, would require a burn plan and the presence of qualified fire personnel for burn management.

The end state of any of these three methods is to allow the site to return to its natural state after the removal of the structure. This may require hand or mechanized ground work to re-contour the site to its natural state.

Equipment Used: Use of equipment may be constrained by LUD Standards and Guidelines. Construction equipment may include the use of earth moving equipment (front-end loader, backhoe with bucket, excavator, "bobcat", etc.) in conjunction with chainsaws and other power, pneumatic, and/or hand tools for structure disassembly or eradication. Disassembly of the structures could require the use of a variety of hand tools and, if permitted in the LUD, power and or pneumatic tools, including the use of generators for power and compressors for pneumatics. Locations in proximity to direct road access may benefit from being able to directly load components on trucks. In the planning phase of the project, efforts would be made to minimize damage to immediate and adjacent resources. Materials would be transported off-site based on authorized available routes. Materials and debris could also be removed by helicopter airlift. Transportation of debris and components to and from the job site may require the use of short-haul equipment such as an OHV, or may need to be transported manually to vehicles (e.g., dump trucks, flatbed trucks) on authorized routes. Sites with direct road access may load directly onto dump trucks and or flatbed trucks to remove material. In cases of structure eradication by controlled burn, equipment will be defined in the burn plan and may include any of the aforementioned considerations.

What are the general guidelines constraining this activity?

LUD and Forest-wide Standards and Guidelines provide general outlines on the permissible types of activities within a specific use area. LUD-specific Standards and Guidelines are found in Chapter 3 of the 2016 Forest Plan. Forest-wide Standards and Guidelines are listed in Chapter 4 of the 2016 Forest Plan.

Consideration should be given to directly impacted and adjacent resources due to the ground disturbing activities inherent to the decommissioning of a cabin and its ancillary structures.

Within wilderness areas, notification of the intent to remove a cabin will need to be given to the House Committee on Interior and Insular Affairs and Senate Committee on Energy and Natural Resources; per Section 1315 of ANILCA.

What are the resource-specific guidelines?

Silviculture

This activity would generally not require a silvicultural prescription or the input from the District Silviculturist. If the activity is expected to require the cutting of trees or vegetative disturbance, the District Silviculturist should be consulted to determine if a prescription is necessary. If the removal is to be accomplished by burning, review the burning plan with the District Silviculturist prior to implementation.

Timber

None

Transportation

Cabins are often accessed by roads. Decommissioning the structure may negate the access needs. Ensure road maintenance objectives are current and suitable for anticipated traffic.

Wildlife

Where feasible locate activities outside of required nest/den buffers.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.

All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.

Fisheries

Prohibit equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspect equipment for leaks. Store fuel for ignition devices away from water bodies.

R10 BMPs: 12.3, 12.4, 12.5, 12.6, 12.6a, 12.8, 12.9, 12.16, 12.17, 14.24, 14.7, 14.8, 19.1, 19.2

National Core BMPs: AqEco-2, AqEco-3, AqEco-4, Fac-5, Fac-6, Fac-10, Fire-2, Plan-2, Plan-3, Rec-1, Rec-2, Road-6, Road-10

Hydrology

Take care when refueling equipment. Conduct operations during times of low precipitation to minimize impacts.

R10 BMPs: 12.8,12.9,14.6

National BMPs: Road-10

Soils/Wetlands

Consult with a Tongass Soil Scientist on all potential cabin burn sites. By burning in low fire danger and on mineral soils, the risk of spreading the fire on the soil surface should be low. In areas of dry organic soils over rock, use a barrier between the duff layer and the fire while burning. In the event of ground disturbance and exposing bare mineral soils, use slash, native mosses, and seeding with Tongass approved seed mix to rehabilitate the site to prevent erosion and sedimentation. Avoid disturbing and filling on wetlands. A Tongass Soil Scientist may be needed for site rehabilitation on sloping wetlands and burnt areas. Apply R10 BMPs 12.5, 12.8, 12.9, 12.13, 12.17, 14.6, 14.8, 14.11, 14.14, 14.25, 16.1, 16.5, and 19.1 and National Core BMPs AquEco-2, Fac-2, Fac-6, Fac-10, Rec-2, and Veg-2.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

None

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Existing recreation infrastructure may be present within proposed activity areas. Cultural resources 50 years and older will be evaluated for their eligibility to the National Register by the District Archaeologist.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities.

Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

SIOs for area must be met (2016 Forest Plan, Chapters 3 and 4). SIOs depend on LUDs and distance from VPRs.

When would we implement this activity?

Due to their remoteness, there are cabins on POW that are seldom used and/or are difficult to maintain. Determining when a structure would be decommissioned would be based on safety, maintenance, use, and accessibility. The intent of the Forest Service on POW is to sustain or enhance recreation resources that meet the long-term needs of the public, and are maintainable by district staff. A proposal for a new cabin may initiate an analysis of existing cabins for decommissioning.

Integration Opportunities: The Forest Service would work with the public to identify proposed sites for replacement cabins; consideration would be based on prospective use, ease of accessibility, and maintainability.

Card Number 46	Activity: Telecommunication Sites
Description: Installation of communication sites, which may include antennas, electronic transmitters, equipment shelters, and or other electronic communication support equipment	
Objectives: To expand or enhance communication systems within and adjacent to NFS lands; installation of these facilities may serve local, state, and federal agencies, as well as private communication services.	
Connected Actions: Undefined	
Methods: Communication sites are often placed at high elevation sites and are of limited spatial extent. Sites often include tower(s) and or antenna(e), sheds to protect or store equipment, and auxiliary equipment (e.g., battery storage, solar panels, fuel tanks). Some sites may be accessible from roads or trails, but often require the use of helicopters for installation and maintenance. Installations will be built to specifications and designs approved by the Forest Service. Site clearing will be limited to the immediate area of the facility and will protect sensitive resources and minimize damage to vegetation. Cast-off material from grading will be reused or distributed on site. Structures, to include towers, will require concrete piers, footings, or slabs. Building components may be transported in modularly or built on-site and could include: floor, walls, partitions, and roof. All waste and hazardous material will be removed from the site during and after construction.	
Equipment Used: May include the use of helicopters and associated lift equipment, and in the case of road-accessible sites the use of trucks or OHV vehicles. Power and or pneumatic tools may be used in all aspects of site installation, if permitted in the LUD, which would include the use of generators and compressors; otherwise, hand tools will be used in all phases of construction. Site preparation and excavation may include the use of earth moving equipment ("bobcat", excavator, backhoe, etc.) if permitted in the LUD and if the site area is large enough for safe use.	
What are the general guidelines constraining this activity?	
Forest Service authority to authorize and manage communications uses on National Forest System lands derives from the Federal Land Policy and Management Act of 1976 (43 U.S. C. 1761-1771); Title 36, Code of Federal Regulations, Part 251, Subpart B (36 CFR 251, Subpart B); Forest Service Manual (FSM) 2700 and FSM 6600; Forest Service Handbook (FSH) 2709.11, Chapter 90, and FSH 6609.14.	
The Forest Service has jurisdiction over the use and occupancy of National Forest System (NFS) lands for communications purposes under the National Forest Management Act (NFMA) of 1976 (16 U.S.C. 1600 <i>et seq.</i>); the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 <i>et seq.</i>), and Title 36, Code of Federal Regulations, Part 251, Subpart B (36 CFR Part 251, Subpart B).	
What are the resource-specific guidelines?	
<u>Silviculture</u>	
This activity would generally not require a silvicultural prescription or the input from the District Silviculturist. If the activity is expected to require the cutting of trees or other vegetative disturbance, the District Silviculturist should be consulted to determine if a prescription is necessary.	
<u>Timber</u>	

<u>Transportation</u>	

<u>Wildlife</u>	
Where feasible locate activities outside of required nest/den buffers.	
Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area.	
All applicable laws, BMPs, and Forest-wide Standards and Guidelines must be followed.	

Fisheries

Consult a Fisheries Biologist or Hydrologist for site-specific protections for any streams identified in the affected area. Protect headwater streams encountered at the high-elevation sites by prohibiting equipment storage, maintenance, and re-fueling within riparian areas (see the Aquatics section in the Introduction to Activity Cards for riparian area definitions), and frequently inspecting equipment for leaks.

R10 BMPs: 12.4, 12.5, 12.6, 12.8, 12.9, 12.13, 12.14, 12.17

National Core BMPs: AqEco-2, AqEco-3, Fac-2, Fac-10, Plan-2, Plan-3, Road-7, Veg-2, Veg-4

Hydrology

Soils/Wetlands

The proposed areas will need a review by a Tongass Soil Scientist to determine extent of proposed soil disturbance and presence of wetlands upon implementation. A wetland delineation may be required. All applicable laws, R10 Soil Quality Standards, and Forest-wide Standards and Guidelines must be followed. Apply National Core BMPs AqEco-2, Fac-1, Fac-2, Fac-6, and Veg-2 and R10 BMPs 12.5, 12.13, 12.17, 14.7, 14.8, and 14.25.

Botany

Prior to implementation a qualified Botanist/Ecologist must review the activity location to determine if the habitat requires botanical surveys. Based on the review, a field survey may be required during the appropriate growing season to identify any suspected Region 10 Sensitive Plants or Tongass National Forest Rare Plant. Complete a short form Biological Evaluation or letter to file to document presence/absence of sensitive or rare plants. If a Region 10 Sensitive or a Tongass National Forest Rare plant population is affected by the activity, consider protections around the population that minimize impacts and meet the habitat needs of the species.

Invasive Plants

A qualified Botanist/Ecologist will conduct a site-specific risk assessment to determine the proximity of known infestations, potential vectors, and the habitat vulnerability to invasive species introduction and spread (Invasive Plant Management BMP 1). Additional site-specific design features may be recommended to reduce the spread and introduction of invasive plants.

Incorporate weed prevention in all special use permits, road use permits and easements (Invasive Plant Management BMP 23).

See Introduction for additional BMPs that apply to all activities.

Geology/Karst

Heritage

All Federal Undertakings, defined in 36 CFR 800.16(y), whether ground disturbing or non-ground disturbing, that have the potential to cause effects to historic properties, require compliance with procedures defined at 36 CFR 800 (see Heritage Intro). The District Archaeologist will be consulted during the scoping and implementation processes and shall review proposed activities to determine whether historic resources will be affected. If unanticipated historic resources are found during project implementation and ground disturbance is planned, all work shall stop in the area that could adversely affect the site(s). The District Archaeologist will be contacted immediately and work will not proceed in the area without his/her approval. The Forest Service shall protect known sensitive traditional tribal use areas. The District Archaeologist will be called to mitigate historic resources on a case-by-case basis in consultation with the Alaska SHPO and potentially the ACHP.

Recreation

Activities should consider the Recreation Opportunity Spectrum (ROS) inventory of the activity area and how the actions may impact proposed and established recreation activities on the landscape. Buffers could be provided in areas where resource activities may disrupt the integrity of the recreation experience, or may negatively impact the value of a recreation resource. There is an association between ROS and land use designation (LUD); therefore, reference should be made to the recreation

and trails sections of Chapter 3, in addition to the Forest-wide Standards and Guidelines in Chapter 4, and Appendix I of the 2016 Forest Plan regarding the Standards and Guidelines for recreation and trails.

Recreation and non-recreation resource planners should consider opportunities to integrate their respective activities through coordinated planning. Planners should consider opportunities to enhance or develop recreation resources in conjunction with proposed activities, or identify substitutes for recreation resources that could be altered by non-recreation activities. Reference REC2 (II) in Chapter 4 of the 2016 Forest Plan regarding the Standards and Guidelines for integrated resource planning.

Scenery

When would we implement this activity?

Use of the site requires permitting and will comply with all Federal, State, and local laws, regulations, and ordinances. Permit requests will be reviewed by the Forest Service, with consideration given to immediate and adjacent resources, and visual impacts. Proposed projects would not be implemented until approved by the Forest Service.

Integration Opportunities: ---

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