United States Department of Agriculture

Central Tongass Project

Draft Activity Cards

Forest Service Tongass National Forest Petersburg and Wrangell Ranger Districts August 2018

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Draft Activity Cards

Introduction

The purpose of the Central Tongass Project is to meet multiple resource goals and objectives identified in the 2016 Tongass Land and Resource Management Plan (Forest Plan) using an integrated approach. Some of the project area needs include improving forest ecosystem health, supporting community resilience through economic development opportunities within Southeast Alaska communities, providing sustainable recreation opportunities to local visitors and the tourism industry, and offering a variety of wood products to regional mills and local communities.

The Forest Service proposes a variety of management actions, presented as 13 activities each with its own Activity Card, to accomplish the project area need to bridge the gap between the existing and desired conditions over the next 15 years. The management actions are grouped into four broad categories (Watershed Restoration and Improvement, Vegetation Management, Access Management, and Sustainable Recreation Management). A number of ancillary activities support these actions. They are identified and discussed in each Activity Card in the Integration Opportunities section and further defined in Supporting Actions.

This Appendix describes the 13 activities and their supporting actions very generally and without regard to a specific location. Activities included are ones suggested in public comments, as well as those necessary to meet Forest Plan objectives, or are otherwise desirable and could result in effects to the environment. Information on each card describes the activity, its objectives, how it is typically implemented, implementation metrics, and possible integration opportunities with other activities.

Road Cards are developed for construction or reconstruction of individual National Forest System (NFS) roads on the Tongass National Forest and will be developed as site-specific access needs and routes are determined. Road Cards are developed to: describe site specific resource protection measures, provide a tracking tool for project implementation and monitoring, and provide road level management information. Unit cards will be developed for any timber sales once site-specific locations are determined. The final Road, Unit and Activity cards, in combination with the Record of Decision and Implementation Plan, will be used throughout the implementation process to ensure 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 review and/or survey field locations before implementing any activity.

Activity Card Sections

Currently each Activity Card includes 7 subheadings to provide information about the proposed activity. For resource specialists, the information is intended to guide their analysis for the Central Tongass EIS. Later, when the Draft Environmental Impact Statement is released for the CT Project, these cards will also include resource specific and general Forest Plan guidelines for each activity. These guidelines will ensure that resource protections are part of implementation.

Description

This section describes the ground-disturbing activity and identifies the objective(s) typically accomplished with the activity.

When would we implement

The need to implement is expressed in terms of existing conditions versus desired conditions, and what may trigger a need for change. There may not be specific indicators but rather conditions that lead to implementation.

Implementation Methods

This is how the activity is implemented to accomplish the objectives.

Equipment Used

This section lists the types of machinery, tools, or other equipment used to implement the activity.

Implementation Maximum

This section provides the maximum amount of treatment considered for the activity (for the Proposed Action) during the 15-year life of the project. Units of measure include metrics such as: acres of harvest, miles of stream to restore, miles trails to build, or number of facilities/structures to build or decommission. The maximum numbers provide an upper management limit for analysis and are not considered a target.

Maximum allowable treatments were developed to meet the CT Project's Purpose and Need move the project area toward Forest Plan's desired conditions, and be consistent with Forest Plan Standards and Guidelines

Treatment Rationale and Assumptions

This is the rationale behind the selected unit of measure, resource condition, management constraint or sideboards provided as the activity's maximum.

The assumptions are those made to arrive at the maximum numbers which are supported by the rationale.

Integration Opportunities

This section describes the potential 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. Two categories of related activities are considered for integration: management activities (those with activity cards) and Supporting Actions.

Related activities are possible interdependent activities that may occur when the primary activity is implemented. For example, timber harvest can require temporary road construction, therefore temporary road construction would be a related activity. Some of the related activities have their own activity card and are referenced.

Supporting Actions will be implemented, as needed, in support of the proposed management activities described in the Activity Cards, and are contingent upon the implementation of a proposed activity to occur.

Watershed Restoration and Improvement

Proposed watershed restoration and improvement activities on National Forest System land within the project area include: stream and floodplain restoration, fish habitat improvements, and invasive plant management.

Activity 01: Stream and Floodplain Restoration

Description

Install wood or boulder structures using heavy equipment, helicopter, and/or hand tools to improve habitat complexity, floodplain connectivity, and flood resilience of impaired streams. Activity aims to achieve channel process group objectives, support critical salmon life stages, increase flood resiliency and improve or restore aquatic habitat characteristics to more closely align with reference stream reaches.

When would we implement this activity?

When a Proper Functioning Condition (PFC) survey indicates a stream is degraded, stream and floodplain restoration could occur if it is a Class I (anadromous) or Class II (resident) fish stream harvested prior to the 1990 Tongass Timber Reform Act (TTRA). Projects could occur in any channel process group depending on need, but are most likely in the Floodplain (FP), Moderate gradient-Mixed containment (MM), or Alluvial Fan (AF) channel process groups.

Implementation Methods

Install wood or boulder structures. 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. Transport and stage trees and logs to specified work sites on existing roadways and constructed access trails. Stabilize and revegetate disturbed soils.

Equipment Used

Heavy equipment including excavator, loader, skidder, bulldozer, dump truck, low boy, helicopter, ATV, chainsaws and other hand tools.

Implementation Maximum

Maximum area of treatment by method

- Heavy Equipment – 700 acres; 13 miles of stream
- Hand Crew – 1,720 acres; 54 miles of stream

Estimated number trees / mile of stream restoration using heavy equipment

Old Growth Logs	Old Growth Rootwads	Young Growth Logs	Young Growth Rootwads
150	150	100	200

Estimated number of trees / mile of stream restoration using hand crews

Old Growth Logs	Old Growth Rootwads	Young Growth Logs	Young Growth Rootwads
0	0	50	20

Estimated acres of tree harvest / mile of restoration

- 1.6 acres/mile of old-growth harvest (assumes two 60 foot logs/tree; approximately 94 trees/acre)
- 2.3 acres/mile of young-growth harvest (assumes one 60-foot log/tree; approximately 130 trees/acre)

Estimated length of puncheon trail construction

- Heavy Equipment - Approximately 1,300 feet of heavy equipment access trails/mile of stream restoration
- Hand Tools – No trail construction required

Treatment Rationale and Assumptions

Potential acres and stream miles for restoration assumptions:

- Total potential acreage and miles represent Class I and Class II fish streams of FP, MM, and AF channel process groups harvested within the project area prior to the 1990 TTRA.
- Previously restored streams and floodplains where riparian thinning has occurred were not included in total acres and miles.
- Restoration projects are expected to occur on a small portion of the total potential acreage and stream miles identified.

Restoration method assumptions:

- The primary factor in determining restoration method is stream size (larger streams are more likely to require heavy equipment). Stream process group is also a factor. Heavy equipment work is most likely to occur on FP and AF channels with hand tools on MM channels.

Tree harvest and acres impacted assumptions:

- Tree harvest for restoration projects includes old and young growth and trees with rootwads still attached.
- The ratios provided above in the *Maximum Treatments* section are estimated based on previous projects and anticipated future needs and availability, and represent likely wood requirements per mile for restoration projects.

Integration Opportunities

Wood for instream placement (logs and trees with root wads attached) could be sourced from old- and young-growth timber harvest, and road activities such as road right-of-way clearing and log bridge decommissioning. Young-growth thinning projects such as riparian thinning, creation of wildlife gaps and corridors could also contribute wood to nearby stream restoration activities. Equipment access and material staging to streams from roads could be coordinated with other road uses, followed by appropriate road maintenance, storage, or decommissioning as applicable. Integration could also occur through maintenance activities resulting from stochastic events such landslides or blowdown events.

A trail may be created when stream restoration activities are implemented which may attract forest visitors and potentially lead to the development of a recreation site.

Related Activities:

- Activity 03: Invasive Treatments
- Activity 04: Recreation Facility Construction, Reconstruction, Decommissioning and Maintenance
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 07: Young-Growth Timber Harvest (Commercial)
- Activity 08: Silvicultural Intermediate Treatments (Pre-commercial)
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction

Supporting Actions:

- Road Decommissioning
- Road Maintenance and Reconditioning
- Sign Installation
- Soil Restoration

Activity 02: Fisheries Improvements

Description

To sustain the diversity and production of fish and other freshwater organisms, the Forest Service proposes fisheries improvements such as fish pass construction, natural instream barrier modifications, stocking, and lake fertilization. These practices increase access for spawning salmonids and benefit upland forests by providing marine-derived nutrients from spawning salmon.

When would we implement this activity?

- Fish pass construction is contingent on a positive assessment of the benefit of providing passage of salmonids to upstream habitat versus the cost of construction, anticipated benefit to commercial, subsistence, and sport fishing communities, and the environmental risk in a particular location.
- Fish stocking may be utilized to “seed” newly opened habitat upstream of instream barrier modifications so salmonids can imprint on that stream’s chemical markers.
- Natural barrier modifications occur in locations where upstream migration of salmonids to a significant amount of quality upstream habitat is impeded. The same factors considered for fish pass construction are applied.
- Fertilization could be implemented in lake ecosystems with natural sockeye runs that have low levels of nitrogen and phosphorus and where site-specific issues have been addressed with an interdisciplinary group of individuals.

Implementation Methods:

Construct and install an aluminum Alaska steep-pass or a concrete pool and weir fish pass. Create new jumping or resting pools in rock barriers by manually excavating or blasting. Fertilize lakes by evenly distributing granular nutrient and fertilizer additions to the lake’s surface. To stock a stream, transport and release young-of-year or smolt salmonids from a stream within the same or proximate watershed to the stream course, upstream of the modified barrier.

Equipment Used

On the road system, heavy equipment is used to haul materials to the job site. Remote projects use a helicopter to transport the necessary material to construct an aluminum steep pass or a pool and weir structure. Barrier modification is completed using hand tools and/or explosives to create pools and loosen and remove overburden. Lake fertilization projects use a manual dispenser to evenly disperse fertilizer around the lake from a small skiff platform.

Implementation Maximum

A maximum of 15 sites, to include up to 25 stream miles and 2 lakes, could be treated.

Treatment Rationale and Assumptions

Maximum fisheries improvement numbers were generated by considering several sources:

Fisheries improvement activities (constructing a fish pass, modifying an instream barrier) would be considered on project area Class I and Class II fish streams where significant quality habitat exists upstream, and barrier modifications would help meet fish habitat objectives outlined in the Forest Plan. The Tongass currently has 67 sites (44 structures; 23 blast modifications).

Two subsistence sockeye systems, Kutluku Lake on Kuiu Island and Kah Sheets Lake on Kupreanof Island, have been identified internally and through public outreach to have the most reported subsistence use in the project area.

Integration Opportunities

Road development for timber sales may increase access and allow for easier transport of materials/supplies to improvement sites.

Could integrate with any activity using heavy equipment if the project is accessible from the roadside. Could integrate with recreation projects for potential helicopter sling loads.

Related Activities:

- Activity 01: Stream and Floodplain Restoration
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 07: Young-Growth Timber Harvest (Commercial)
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 12: Aquatic Organism Passage Improvement

Supporting Actions:

- Sign Installation
- Road Maintenance and Reconditioning

Activity 03: Invasive Treatments

Description

This activity includes manual, mechanical and chemical invasive plant treatments on NFS lands, including Wilderness areas, as well as on lands of other ownership to reduce the 5,700 acres of recorded

infestations. Infestations predominantly occur along human disturbance features, i.e., rock pits, roads, trails, parking lots, campgrounds and would therefore be where most treatments occur. However, smaller infestations do occur in natural settings.

The objective is to manage the Forest in order to reduce, minimize, or eliminate the potential for introduction, establishment, and spread of invasive species, thereby controlling their impacts to the ecosystem.

When would we implement this activity?

Factors to evaluate when considering whether or not to treat an invasive plant include the Alaska Natural Heritage Program invasive species ranking and the infestation size, in addition to site conditions: presence of vulnerable habitat, likelihood of dispersal into natural systems, degree of isolation, and chance of success given the resources available.

Implementation would occur annually during the growing season. The specific timing would depend on the plant species and life stage targeted.

Implementation Methods

Treatment methods depend on the species (including life stage), infestation size and habitat. Manual, i.e., hand pulling and hand tools, and barriers (e.g., tarps) are typically used to treat small infestations. Mechanical means such as mowers may be used to treat larger infestations that are more homogeneous.

Three herbicides are being considered for use: 1) An aquatic-approved formulation with glyphosate (non-selective herbicide, frequently used to target grasses and knotweed among others), 2) aminopyralid (selective herbicide used to target aster, legume and nightshade family plants among others), and 3) an aquatic-approved formulation with imazapyr (used in combination with glyphosate or as a stand-alone for specific species). Herbicide treatment areas may include emergent vegetation (plants rooted in water with foliage above the water surface) in addition to terrestrial plants. Treating aquatic plants is not proposed.

The application method for herbicides depends on the site being treated and the size of the infestation. Foliar spot treatment may be the preferred application method (often in conjunction with manual/mechanical pre-treatments). In other situations, such as rock pits or roads, broadcast spraying may be the preferred tool. Aerial spraying is not being considered.

Equipment Used

The tools appropriate for the job may include (but are not limited to): ATV or UTV with sprayer, truck and trailer with sprayer, backpack sprayer, hand sprayer, stem injector, brush, sponge or cloth wick, hand tools, mower, propane torch and tarps.

Implementation Maximum

The number of infested acres the Forest Service treats will depend on the following factors: the target species' Alaska Natural Heritage Program invasiveness ranking, the location of the target species, its pathway of spread, and the management objective for the infestation.

Treatment Rationale and Assumptions

5,700 gross infestation acres are recorded in the NRIS TESP-IS database; however, this does not include all infestations that occur on NFS lands. Additionally, this acreage is cumulative, i.e., multiple species within the same acre of land are measured separately. For example, 0.1 acre white clover, 1 acre reed canary grass and 0.3 acre creeping buttercup that all occur intermixed are summed to 1.4 cumulative

acres. Note: this acreage is not the actual canopy acreage, as most infestations have less than 5 percent cover.

This gross acreage includes species we are likely to tolerate rather than treat, and does not account for new or unknown infestations that occur (Early Detection Rapid Response) on National Forest System lands, including Wilderness areas.

Integration Opportunities

Treatments can be integrated with almost any other project that has invasive plant infestations on site, for example, road maintenance and reconditioning, riparian restoration activities, and almost any recreation project.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- Quarry Development
- Road Maintenance and Reconditioning

Sustainable Recreation Management

Proposed recreation activities on National Forest System lands include maintenance of all existing recreation facilities (including cabins, shelters, picnic areas, campgrounds, dispersed camping sites, outhouses, wildlife viewing areas and platforms), as well as improvements to existing facilities and construction of new facilities. This section also includes the activity of decommissioning recreation facilities. Boat launches are addressed under Access Management in Activity 13: Marine Access Facility Construction, Reconstruction, Decommissioning and Maintenance. Road-to-trail conversions are addressed in the Supporting Action Road Decommissioning.

Activity 04: Recreation Facility Construction, Reconstruction, Improvement, Decommissioning and Maintenance

Description

The proposed recreation-based activities on National Forest System lands include maintaining, improving, reconstructing and decommissioning some existing recreation facilities, as well as constructing new ones. Recreation facilities include cabins, shelters, woodsheds, picnic areas, campgrounds, dispersed camping sites, vault or pit outhouses, viewing areas and platforms[1].

[1] Boat ramps and launches are addressed in Activity 13: Marine Access Facility Construction, Reconstruction, Decommissioning and Maintenance.

The goals of this activity include: develop recreation facilities that meet the long-term needs of the public and can be maintained by district staff; improve or expand recreation opportunities on the Petersburg and Wrangell Ranger Districts; provide shelter for both public safety and for public recreation; and provide safe and well-designed public facilities that integrate into the environment, meet scenic guidelines, and protect surrounding resources, such as outhouse facilities to keep human waste contained and durable surfaces for vehicles and tents.

When would we implement this activity?

New recreation facilities may be considered if there are financial and staffing resources available, and

- There is an identified need supported by known use, partnerships for long-term maintenance, or provides for the health and safety for all users;
- Resource conditions show detrimental effects from human use such as vegetation trampling, site hardening, soil erosion, increase in human waste and litter;
- A recreation facility requires changes that alter the footprint or type of use;
- There is an opportunity to increase public involvement and awareness (e.g., wildlife viewing platform);
- Facilities not specifically designed for recreation purposes are planned on the landscape and may be utilized for recreation purposes if activity meets LUD objectives (e.g., marine access facilities used as public boat launches and/or camping sites; log landings and rock pits used for parking areas and picnic sites).

Conversely, recreation facilities may be removed or decommissioned facility use is low, or costs to maintain a facility are not affordable.

Implementation Methods

Cabin and shelter construction includes: site layout and preparation, select tree removal, grubbing, and leveling; establishment of structural foundation, which may include ground boring or excavation for concrete footings; constructing the structure, which includes building elevated or grade floor systems, 3 to 4 sheathed walls, and a roof.

Decommissioning cabins, and their associated structures, can be completed through one of three methods: 1. disassemble and relocate structures; 2. relocate structures intact; and 3. initiate a controlled burn for on-site removal of the structure and its associated buildings. The first two methods require an array of construction equipment, logistical coordination, and possibly airlift resources to facilitate the relocation process. The controlled burn method requires a burn plan and qualified fire personnel for burn management.

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 concrete footings or slabs. Removing an outhouse vault or pit requires containment and removal of all black water waste. All components would be staged and removed from the site either by ground equipment, such as a truck, or by helicopter lift.

Outhouse construction includes: site layout and preparation, 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 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 may call for the use of pre-cast synthetic or concrete components. Construction may include installation of doors or windows, and other specified finish components dependent on the type and design of the structure.

Picnic area, viewing platform, campground or dispersed campsite construction or improvements include: 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; parking; sign installation (e.g., interpretive and or informative); fire ring installation; picnic table placement. Campgrounds could include RV pads, which may include laying concrete pads and establishing infrastructure (e.g., power and water). These improvements may require ground trenching, boring, and drilling.

All waste construction materials will be removed from the site and hauled away when construction activities are completed.

Equipment Used

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, dump truck, OHV with dump trailer, wheelbarrows, generators, compressors and crane.

Implementation Maximum

The Forest Service proposes constructing up to 6 new cabins, 30 day use/picnic areas, 6 platforms for interpretative or wildlife viewing use, and 10 dispersed camp sites (including tent platforms). The Forest Service also proposes decommissioning up to 15 cabins, constructing up to 10 new shelters and/or converting cabins to shelters, and constructing or replacing up to 75 outhouses.

Treatment Rationale and Assumptions

Maximum recreation facility numbers were generated with the consideration of several sources:

- Input obtained from the Central Tongass public meetings and pre-scoping efforts in Petersburg, Wrangell and Kake
- Data collected from past recreation efforts and public involvement
- 2005 Tongass Recreation Facility Master Plan
- Tongass National Forest Sustainable Cabin Management Environmental Assessment and Decision Notice

Currently, the Tongass is developing a strategy to sustainably manage cabins to fit the interests and needs of the public for recreation at cost the public can afford. Once available, this strategy will inform the prioritization of cabin projects in the project area.

Integration Opportunities

Development of cabins and three-sided shelters 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. Cabins on the road system are popular with users because they are easier and less expensive to access. Therefore, cabin and shelter activities may be integrated with road projects and maintenance.

Development of new campgrounds and campsites may be integrated with improvements on existing sites, or associated with the Petersburg and Wrangell infrastructure improvements such as road paving, building or resurfacing that could create reasonable accessibility for campground access.

Felled timber may be sold, left on site as future firewood for the campground.

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.) and may be integrated with the development of proposed sea kayak routes and point-to-point island trails.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 02: Fisheries Improvements
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 07: Young-Growth Timber Harvest (Commercial)
- Activity 08: Silvicultural Intermediate Treatments (Pre-commercial)
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- Quarry Development
- Road Maintenance and Reconditioning
- Sign Installation

Activity 05: Trail Construction, Reconstruction, Improvement, Decommissioning and Maintenance

Description

Trail construction for activities such as walking, hiking, biking, OHV use (less than 50 inches wide) and winter recreation (e.g., snowmobile, snowshoe, and cross-country skiing). Also includes interpretive trails, spur trails for kayak and canoe water access, and trails built cooperatively on lands not managed by the Forest Service.

When would we implement this activity?

New trail construction outside of Wilderness may be considered if there are financial and staffing resources available through partnerships and grants, and

- Trail user demand has been identified and/or resource conditions show detrimental effects from human use (such as vegetation trampling, user-made trails, soil erosion, and litter); and
- The site conditions (such as topography) of the proposed trail corridor is adequate for sustained, long-term use (30-year lifespan).

Implementation Methods

Construction of a trail may include: select tree removal, brushing and grubbing, boulder removal, etc. 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 with local resources.

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.

Equipment Used

Heavy equipment (excavator, bull dozer, dump truck), small-scale earth moving equipment ("bobcat" with attachments, OHV with dump, etc.) in conjunction with chainsaws and other power, pneumatic, and/or hand tools and explosives.

Implementation Maximum

The Forest Service proposes up to 300 miles of pedestrian trail construction (this includes new construction, and/or converting existing boardwalk trail to gravel trail), up to 60 miles of new motorized trail and up to 105 miles of winter trail.

Treatment Rationale and Assumptions

Maximum recreation facility numbers were generated with the consideration of several sources:

- Input obtained from the Petersburg, Wrangell and Kake Central Tongass public meetings and pre-scoping efforts
- Data collected from past recreation efforts and public involvement

Integration Opportunities:

Development of trails may be integrated with the development 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 road network for public access to points of interest. Additional features of a trail may include installing interpretive signs at points of interest, informative signs that indicate the trailhead, and directional signs at trail junctions.

Additionally, recreation and trail opportunities may be integrated with other resource activities on the district, per 2016 Forest Plan REC2 (II). Examples include providing winter travel opportunities at higher elevation harvest areas, or identifying new trail segments in old- or young-growth stands in conjunction with non-recreation resource activities.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 02: Fisheries Improvements
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- NFS Road Storage
- Quarry Development
- Road Decommissioning
- Road Maintenance and Reconditioning
- Sign Installation
- Soil Restoration

Vegetation Management

Vegetation management activities include: Old-growth commercial harvest, young-growth commercial harvest, and silvicultural intermediate treatments (young-growth pre-commercial thinning treatments, timber stand establishment (e.g., tree seedling planting), and wildlife habitat improvement treatments).

Old-growth and young-growth activities may occur in up to 10 timber analysis areas (TAAs) within the project area. These analysis areas have developed road systems and encompass the majority of the suitable lands for timber harvest, as defined under the Forest Plan. Consequently, TAAs are a primary factor in determining where to plan timber harvest for this project. The TAAs are located on Mitkof, Kupreanof, Kuiu, Wrangell, Zarembo and Etolin islands, and at Thomas Bay and Frosty Bay on the U.S. mainland.

A project-specific Forest Plan amendment may be proposed to relax the Scenic Integrity Objectives (Forest Plan, p. 4-54) on portions of the TAAs on Mitkof, Zaremebo and Wrangell islands and Portage Bay located on Kupreanof Island to allow for enough economic timber volume to meet the Purpose and Need while being consistent with the Plan.

Activity 06: Old-Growth Timber Harvest (Commercial)

Description

This activity provides timber for sale to meet timber industry needs and regenerates existing stands of timber by harvesting over-mature timber stands where growth is being offset or exceeded by decay.

The four types of old-growth silvicultural treatments proposed include:

- Even-aged management (clearcut harvest) - Harvest of old-growth trees that creates a new stand of trees composed of a single age class. This method of harvest minimizes the risk of post-harvest windthrow, promotes natural regeneration of desirable species, and minimizes defect and disease in future stands and is the most economic method of harvest.
- Two-aged management - Harvest of old-growth trees that creates a stand of trees with two distinct age classes. Prescribed primarily for increased scenery and wildlife benefit while maintaining as much of the operational and economic feasibility of even-aged management as possible.
- Uneven-aged management (partial harvest) - Harvest of old-growth trees that follows a planned sequence of harvest treatments designed to result in a stand with three or more distinct age classes. The harvest may be by individual tree or in small groups of trees up to 2 acres. This treatment may be used to increase the diversity of young-growth age classes to address age class imbalances and favor wildlife.
- Salvage cutting - The removal of dead trees or trees damaged or dying because of injurious agents, rather than competition, to recover economic value that would otherwise be lost.

When would we implement this activity?

This activity would be considered primarily for the purpose of contributing old-growth timber volume to the large and small timber sale programs through contract offerings.

Harvest old-growth timber through even-aged management or two-aged management if

- The harvest of these stands comply with all Forest Plan standards and guidelines,
- Stands of commercially viable species and quality are on suitable lands and are feasibly accessible for standard logging systems (conventional and helicopter),
- There is a risk of dwarf-mistletoe infection, or there is a high risk of windthrow, and

- The proposed harvest opening size is compatible with the SIO.

Harvest old-growth timber through uneven-aged management (partial harvest) if

- Stands of commercially viable species and quality are on suitable lands and are feasibly accessible for standard logging systems (conventional and helicopter), and
- The interdisciplinary process determines partial harvest is necessary to meet the goals, objectives, and requirements of the LUD, including concerns regarding excessively steep or unstable soils, scenery, wildlife and fish habitat, recreation, timber supply and economics.

Salvage harvest of old-growth trees to recover value that would otherwise be lost if

- Stands of commercially viable species and quality are on suitable lands and are feasibly accessible for standard logging systems (conventional and helicopter), and
- Commercially viable old growth trees are dead, damaged, or dying due to injurious agents.

Implementation Methods

Even-aged management – clearcutting and clearcutting with reserves using cable or tracked shovel yarding systems.

Two-aged management - Clearcutting with reserves, seed tree with reserves, shelterwood with reserves using cable, tracked shovel or helicopter yarding.

Uneven-aged management - Single tree selection, group selection, group selection with reserves using cable, tracked shovel or helicopter yarding.

Equipment Used

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. Chainsaws, log loaders and log trucks are also used.

Implementation Maximum

Up to 9,500 acres (about 150 million board feet [MMBF]) of old-growth timber harvest.

Treatment Rationale and Assumptions

Forest Plan harvest projections estimate roughly 150 MMBF of old-growth timber can be harvested from the Petersburg and Wrangell Ranger Districts combined, during the first three, 5-year periods beginning in 2016. This volume is based on the timber demand analysis for the Forest Plan.

The maximum acreage is derived from the project area's logging system and transportation analysis (LSTA). About 70 percent of the LSTA acreage is operable with conventional logging systems where even-aged and two-aged methods are implementable. Partial harvest methods are assumed for the remaining 30 percent of the LSTA.

It is assumed that conventional harvest acres using even-aged management will yield an average of at least 20 MBF per acre and partial harvest stands will yield 5 MBF per acre (25 percent of 20 MBF/acre).

Rationale for even-aged management for the forest types found in the project area include the compatibility with standard logging systems, viable harvest economics, minimizes the risk of post-harvest windthrow, excellent regeneration of desired species, and effective dwarf mistletoe control.

Integration Opportunities

Old-growth timber harvest may require road construction and/or road reconstruction and normally requires road maintenance for safe and efficient haul. This creates an opportunity to coordinate with area or adjacent road maintenance needs including red pipe replacement. Harvest activities also offer an opportunity to leverage mobilization of heavy equipment so other roads important for subsistence use, recreation and other activities can be maintained.

Landings may be constructed or reconstructed as part of the transportation system and used to facilitate the yarding and loading of harvested timber for transportation. Landings generally are about 0.05 acres in size.

Clearcut timber harvest results in some trees being cut that are non-merchantable as sawtimber; this creates an opportunity for it to be used for other purposes like personal use or commercial use firewood, biomass, or stream restoration material.

Road construction requires quarry development which creates an opportunity for personal use rock sources.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 12: Aquatic Organism Passage Improvement
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- Cone Collection
- Quarry Development
- Road Maintenance and Reconditioning
- Soil Restoration
- Timber Stand Establishment – Planting and Interplanting

Activity 07: Young-Growth Timber Harvest (Commercial)

Description

This activity is the harvest of young growth timber stands (generally less than 150 years old) where growth may or may not have reached culmination of mean annual increment (CMAI). This activity is used to provide young-growth timber for sale to meet timber industry needs.

This activity is also used to promote improved wildlife habitat in older young growth while producing a commercial timber product. Multi-aged stand structure (uneven-aged harvest) is used primarily for increased wildlife benefit over even-aged or two-aged management. Harvest may be used to increase the diversity of young-growth age classes across certain landscapes to address age class imbalances.

The four types of young-growth silvicultural treatments proposed:

- Even-aged young-growth timber harvest - Harvest of young-growth trees that results in a new stand of trees composed of a single age class.

- Two-aged harvest – Harvest of young-growth timber that results in a stand with trees of two distinct age classes.
- Uneven-aged harvest - Harvest of young-growth trees following a planned sequence of treatments designed to result in a stand with three or more distinct age classes. The harvest may be by individual tree or in small groups of trees up to 2 acres.
- Salvage cutting – The removal of dead trees or trees damaged or dying because of injurious agents other than competition to recover economic value that would otherwise be lost.

When would we implement this activity?

Explore opportunities for young-growth 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. Harvest young-growth timber through even-aged management (clear cut) or two-aged management if

- The harvest of these stands comply with all Forest Plan standards and guidelines,
- Stands of commercially viable species and quality are on suitable lands and are feasibly accessible for standard logging systems (conventional and helicopter), and
- There is a concern for insect and disease, windthrow, logging damage, or other factors affecting forest health.

Harvest young-growth timber through uneven-aged management (partial harvest) if

- Stands of commercially viable species and quality are on suitable lands and are feasibly accessible for standard logging systems (conventional and helicopter), and
- The interdisciplinary process determines partial harvest is necessary to meet the goals, objectives, and requirements of the LUD, including concerns regarding excessively steep or unstable soils, scenery, wildlife and fish habitat, recreation, timber supply and economics.

Salvage harvest young-growth trees to recover value that would otherwise be lost if

- Stands of commercially viable species and quality are on suitable lands and are feasibly accessible for standard logging systems (conventional and helicopter), and
- Commercially viable young-growth trees are dead, damaged, or dying due to injurious agents.

Implementation Methods

Even-aged management - Clearcutting and clearcutting with reserves using cable or shovel yarding.

Two-aged management - Clearcutting with reserves, seed tree with reserves, shelterwood with reserves using cable, shovel or helicopter yarding.

Uneven-aged management - Single tree selection, group selection, group selection with reserves using cable, shovel or helicopter yarding.

Equipment Used

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. Chainsaws, log loaders and log trucks are also used.

Implementation Maximum

In the Proposed Action, the Forest Service proposes up to 4,000 acres (approximately 80 MMBF) of young-growth timber harvest.

Treatment Rationale and Assumptions

Forest Plan harvest projections estimate roughly 80 MMBF of young-growth timber can be harvested from the Petersburg and Wrangell Ranger Districts combined, during the first three, 5-year periods beginning in 2016. This volume is based on a combination of the timber demand analysis and the suitable land base.

The maximum acreage is derived from the project area's mapped suitability in GIS for stands harvested prior to 1976. This assumes an average harvest volume of 25 MBF per acre for even-aged managed stands and 8.75 MBF per acre (35 percent of 25 MBF/acre) for partial harvested stands. These volumes are associated with suitable lands in the Old-growth Habitat LUD, beach buffers and RMAs outside of TTRA buffers. Further detailed reconnaissance, logging plan development, and an appraisal would be completed prior to offering timber for bid during the implementation phase of this project

Rationale for even-aged management for the forest types found in the project area include compatibility with standard logging systems, viable harvest economics, excellent regeneration of desired species and effective dwarf mistletoe control.

Integration Opportunities:

Young-growth harvests could be planned in the beach and estuary buffer when boat launches, kayak launches, shelters and other recreation development projects occur. 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 wads attached.

Young-growth timber harvest may require road construction and/or road reconstruction and normally requires road maintenance for safe and efficient haul. This creates an opportunity to coordinate with area or adjacent road maintenance needs including red pipe replacement. Harvest activities also offer an opportunity to leverage mobilization of heavy equipment so other roads important for subsistence use and other activities can be maintained.

Landings may be constructed or reconstructed as part of the transportation system and used to facilitate the yarding and loading of harvested timber for transportation. Landings generally are about 0.05 acres in size. Clearcut timber harvest results in some trees being cut that are non-merchantable as sawtimber; this creates an opportunity for it to be used for other purposes like personal use or commercial use firewood, biomass, or stream restoration material.

Road construction requires quarry development which creates an opportunity for personal use rock sources.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 12: Aquatic Organism Passage Improvement
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- Cone Collection
- Quarry Development
- Road Maintenance and Reconditioning

- Soil Restoration
- Timber Stand Establishment – Planting and Interplanting

Activity 08: Silvicultural Intermediate Treatments (Pre-commercial)

Description

This activity is the silvicultural treatment of young growth stands to achieve various management objectives such as promoting timber production, altering wildlife habitats and patterns of use, or improving riparian area health. Depending on the existing stand characteristics, site conditions, and management objectives, treatment of a stand may include various combinations of the following: pre-commercial thinning; creating or maintaining wildlife gaps or clumps; creating or maintaining wildlife movement corridors; creating wildlife trees; girdling; pruning; or slash treatment.

Pre-commercial thinning - Selective cutting or girdling of young-growth trees in regenerated stands to a pre-determined density, spacing, and species composition. Depending on the management objectives in a young growth stand, thinning can promote timber production, improve wildlife habitat and patterns of use, or improve riparian area conditions. Changing the tree density and spacing can improve tree growth and vigor, promote certain tree species and trees with certain characteristics, increase stand heterogeneity, or maintain or improve understory forb and shrub production.

Riparian thinning - Selective cutting of young-growth trees in Riparian Management Areas (RMA) in stands harvested prior to the 1990 Tongass Timber Reform Act (TTRA).) It is utilized to 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.

Wildlife gaps - Openings created in the forest canopy to increase stand heterogeneity, and simulate the conditions of naturally occurring periodic gaps in forested stands. Considerations include stand structural stage, size, spacing, position on the landscape and the impacts of slash on wildlife movement and understory growth. Gaps can provide stand heterogeneity and increase understory cover, forb biomass and shrub growth. The size and number of gaps would be determined from existing site condition and stand characteristics.

Wildlife trees - Trees killed or damaged through various ways such as girdling, blasting, or fungal inoculation to improve wildlife habitat characteristics in a young growth stand. Snags or trees with damage (broken top) or decay improve stand decadence and features such as cavity-nesting habitat for various species.

Wildlife corridors - Areas left untreated or lightly treated within a treated stand (i.e. where thinning would otherwise create abundant slash) to facilitate wildlife movement and provide connection between habitats.

Girdling - A strip of bark and cambium layer are cut away from the circumference of a tree to cause mortality while leaving the tree standing. Girdling can achieve the same objectives of pre-commercial thinning but without creating an immediate influx of abundant slash. Girdling can also be used as a technique to provide wildlife trees.

Pruning - Limbs are removed on the lower bole of all or a portion of trees in a young-growth stand. The purpose of pruning is to increase the amount of light reaching the ground in order to promote understory vegetation health and vigor. Pruning is typically used in conjunction with pre-commercial thinning and other silvicultural prescriptions such as gaps and slash treatment.

Slash treatment - Removal or redistribution of small diameter woody material that is created during pre-commercial thinning. Treatments may include bucking, limbing, mastication, chipping, or burning. Treating slash facilitates wildlife movement, and increases ground-contact and surface area of slash to speed decomposition and increase forage for wildlife.

When would we implement this activity?

Prescribe silvicultural intermediate treatments to thin trees to the desired number of trees per acre, distribution and species composition to meet the objectives when

- Young-growth stands are approaching or have reached the stem-exclusion stage of stand development (generally around age 20 to 30 depending on site productivity) and are reasonably accessible;
- Young-growth stands have not attained, or will not attain within the next 20 years, volumes of economically viable timber on lands suitable for timber production;
- The treatment of these stands complies with all Forest Plan standards and guidelines; and
- There is a desire to:
    - Improve the growth rate, quality, vigor and composition, to maintain or improve habitat for wildlife;
    - Maintain or increase bio-diversity;
    - Accelerate forest succession to achieve old-growth forest structural features;
    - Maintain the productivity of the karst landscape;
    - Support a wide range of natural resource employment opportunities within Southeast Alaska's communities; or
    - Accelerate a transition to primarily young-growth harvest.

Riparian thinning activities could occur in stands between 15 to 50 years old. The time of treatment depends on the need for restoration and management objectives.

Wildlife trees would be created, as needed, in areas determined at risk of providing too little cavity-nesting habitat.

Girdling and pruning are likely a one-time treatment that could occur alone or with other young-growth treatments in stands that have reached the stem-exclusion stage. Girdling may be used when a stand is too old for traditional thinning due to the abundance of slash that would be created.

Slash treatments may be prescribed when there is a need to reduce the contiguous layer of heavy slash in thinned units to facilitate wildlife movement; increase ground-contact and surface area of slash to enhance decomposition and increase forage for wildlife.

Implementation Methods

Pre-commercial thinning - Includes thinning from below, mechanical thinning, crown thinning, free thinning, traditional girdling or slab girdling.

Riparian thinning - Remove trees from the lower crown classes to favor those in the upper crown classes (thinning from below); thinning includes single tree selection, group selection and variable density thinning.

Girdling - Traditional girdling or slab girdling (preferred) using hand tools.

Pruning - Remove limbs on the lower bole, up to 17 feet from the ground, of all or a portion of trees in a young-growth stand.

Slash treatment - Limb and buck small diameter logs to a determined length. Slash treatment may include masticating, chipping or burning the slash.

Wildlife gaps - Felling of trees to opening sizes determined from site condition and stand characteristics. Generally these openings are approximately 1/20 to 1/10 acre in size.

Wildlife corridors - Clear wildlife trails and treat slash to facilitate wildlife movement and provide connection between habitats.

Wildlife trees - Blast, inoculate with a fungus, girdle or inject herbicide into a tree to kill it and create wildlife habitat.

Equipment Used

Pre-commercial thinning – Hand crews with chainsaws and chainsaw pole-saws

Riparian thinning - Hand crews with chainsaws and mechanical equipment

Girdling and pruning - Chainsaws or other specialized hand tools

Wildlife gaps and corridors - Hand crews with chainsaws, tracked shovel, helicopter, and cable yarding systems

Wildlife trees - Chainsaw, explosives and native fungal inoculants

Implementation Maximum

In the Proposed Action, the Forest Service, proposes to treat up to 45,000 acres within the project area with roughly 3,000 acres of treatment a year.

Treatment Rationale and Assumptions

Precommercial treatment prescriptions would be developed on a site-specific basis utilizing variable spacing techniques, desirable tree characteristics, and species preferences. A combination of treatments would be used to achieve site-specific objectives. By treating young-growth stands before the stem exclusion stage begins, understory vegetation persists and the trees respond quickly.

In general, productive stands in an overstocked state will be prioritized for treatments. The pre-commercial thinning 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.

Integration Opportunities

A combination of treatments will be used to achieve site-specific objectives. Individual stand objectives may include timber, riparian, and/or wildlife emphases, precommercial thinning.

Riparian thinning may be integrated withStream and Floodplain Restoration activities. Integration may also include harvesting rootwad trees for instream restoration.

Commercial timber or personal use wood resulting from this activity should be made available for sale or for use if it is feasible and consistent with Forest Plan direction.

Related Activities

- Activity 01: Stream and Floodplain Restoration

Supporting Actions

- Cone Collection

Access Management

Access management activities include new National Forest System road construction and reconstruction, temporary road construction, aquatic organism passage and fish habitat connectivity, and construction, reconstruction, decommissioning and maintenance of marine access facilities, such as log transfer facilities, docks, mooring buoys, boat ramps and boat launches.

Activity 09: NFS Road Construction

Description

National Forest System (NFS) roads are considered permanent and are maintained as such (although may be in a stored condition that does not allow motorized traffic). These roads are mostly open for public and administrative use although seasonal or emergency closures may occur for safety, wildlife protection, or other reasons. These roads are displayed on the Motor Vehicle Use Maps (MVUM) if open for public use.

NewNFS roads provide local communities and visitors long-term access onto National Forest System lands previously not accessible by motorized vehicles for “multiple use” activities including, but not limited to, resource management, access for recreation, subsistence food gathering, firewood and Alaska Free Use forest products, and traditional and cultural uses.

When would we implement this activity?

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

Implementation Methods

Typically an excavator is used to clear stumps, rock, and other material to establish a pioneer road following a planned route. An overlay of blasted quarry rock is spread with a bulldozer. Ditches, culverts and bridges are installed for drainage and stream crossing requirements. Rock is developed from quarries and hauled in dump trucks to the construction site.

Equipment Used

Heavy equipment – excavator, loader, bull dozer, rock drill, dump truck, grader, rock crusher. Chainsaws for initial clearing of timber. Support vehicles for equipment maintenance and refueling.

Implementation Maximum

The Forest Service proposes up to 24 miles of NFS road construction for implementation of the CT Project.

Treatment Rationale and Assumptions

The Forest Service applied historic trends of new NFS road construction for past timber sale projects to develop a reasonable upper limit. It is assumed the maximum amount of suitable young-growth and the conventional suitable old-growth acres would be harvested from the Gross Unit Pool.

Integration Opportunities

Rock quarries are needed for road construction; these quarries can also provide rock for road, trail, and facility maintenance and construction projects, and personal use. Integration with other activities in the vicinity that require heavy machinery will offset the cost of mobilization.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 03: Invasive Treatments
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 10: NFS Road Reconstruction
- Activity 12: Aquatic Organism Passage Improvement
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- Cone Collection
- Quarry Development
- Road Maintenance and Reconditioning
- Sign Installation
- Soil Restoration

Activity 10: NFS Road Reconstruction

Description:

Reconstruction improves a road above its originally constructed level of service. This action rebuilds a road to allow vehicular access that otherwise would not be passable or increases the efficiency of an existing road.

When would we implement this activity?

NFS road reconstruction would be implemented when vehicular access is needed for the protection, administration, or use of National Forest System lands.

Implementation Methods

The method of road reconstruction depends on the existing road condition. Typical work entails clearing vegetation from the roadway, removing berms and other vehicular blockages, installing/reinstalling drainage structures (ditches, culverts and bridges), and re-surfacing with new rock. Road widening may be appropriate to improve operating efficiency or raise the level of service. Rock is developed from quarries and hauled in trucks to the reconstruction site.

Equipment Used

Heavy equipment (excavators, loaders, bull dozers, rock drills, dump trucks, graders, and rock crushers) and chainsaw. Support vehicles for equipment maintenance and refueling.

Implementation Maximum

The Forest Service proposes up to 63 miles of NFS road reconstruction for access needs.

Treatment Rationale and Assumptions

Historic trends of road reconstruction for past timber sale projects were applied to develop a reasonable upper limit. It is assumed that the maximum amount of suitable young-growth and the suitable conventional old-growth acres will be harvested from the Gross Unit Pool.

Integration Opportunities

Improved motorized access can provide opportunities for multiple use and restoration activities. Rock quarries are needed for road reconstruction; these quarries can also provide rock for road, trail, and facility maintenance and construction projects, and personal use. Integration with other activities in the vicinity that require heavy machinery will offset the cost of mobilization.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 03: Invasive Treatments
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 07: Young-Growth Timber Harvest (Commercial)
- Activity 08: Silvicultural Intermediate Treatments (Pre-commercial)
- Activity 09: NFS Road Construction
- Activity 11: Temporary Road Construction
- Activity 12: Aquatic Organism Passage Improvement
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- NFS Road Storage
- Quarry Development
- Road Maintenance and Reconditioning
- Sign Installation
- Soil Restoration

Activity 11: Temporary Road Construction

Description

Temporary roads are not intended to be part of the National Forest transportation system and are not necessary for long-term resource management. They are not included in a Forest transportation atlas. Temporary roads are authorized by contract, permit, lease, or other written authorization. These roads are decommissioned after their designated use period is over.

When would we implement this activity?

Temporary road construction could occur for emergency operations or when short-term access to resources is needed.

Implementation Methods

Typically an excavator is used to clear stumps, rock, and other material to establish a pioneer road following a planned route. An overlay of blasted quarry rock is spread with a bulldozer. Ditches, culverts

and bridges are installed for drainage and stream crossing requirements. Rock is developed from quarries and hauled in dump trucks to the construction site.

Equipment Used

Heavy equipment (excavators, loaders, bull dozers, rock drills, dump trucks, graders, and rock crushers) and chainsaw. Support vehicles for maintenance and refueling.

Implementation Maximum

The Forest Service proposed up to 88 miles of temporary road construction for short-term access to resources.

Treatment Rationale and Assumption

Historic trends of new temporary road construction for past timber harvest were applied to develop a reasonable upper temporary road mileage limit. It is assumed that the maximum amount of suitable young-growth and conventional suitable old-growth acres will be harvested from the suitable timber harvest acres considered within the Proposed Action.

Integration Opportunities

Temporary road construction can provide motorized access to areas not previously accessible. This access can provide opportunities for multiple use and restoration activities. Rock quarries are needed for road construction; these quarries can also provide rock for road, trail, and facility maintenance and construction projects, and personal use. Integration with activities requiring heavy machinery in the vicinity will reduce mobilization costs.

Related Activities:

- Activity 01: Stream and Floodplain Restoration
- Activity 03: Invasive Treatments
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 07: Young-Growth Timber Harvest (Commercial)
- Activity 08: Silvicultural Intermediate Treatments (Pre-commercial)
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 12: Aquatic Organism Passage Improvement
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- Quarry Development
- Road Decommissioning
- Road Maintenance and Reconditioning
- Soil Restoration

Activity 12: Aquatic Organism Passage

Description

Aquatic organism passage (AOP) includes the installation of new bridges, culverts, or other stream crossings, as needed when building roads or trails, to minimize adverse impacts on water quality, stream

courses and fisheries resources (Soil and Water Conservation Handbook, BMP 14.17). Aquatic organism passage activities also include replacing, removing, or improving stream crossing structures, where fish passage is inhibited.

The goal of this activity is to maintain the natural stream form and processes from the inlet, through the crossing, and into the downstream channel.

When would we implement this activity?

Aquatic organism passage activities could occur if existing culverts on NFS lands inhibit the passage of aquatic organisms (culverts often referred to as "red pipes"), and if the culvert is a priority based on biological and habitat surveys and assessments.

During new road or trail construction or reconstruction activities, aquatic organism passage installation, to allow for the crossing of vehicles and pedestrian traffic, would occur on streams where aquatic organism migration or movement is present and a stream crossing cannot be avoided.

Stream crossing structures may be removed if a road is identified for decommissioning through a travel analysis and the Responsible Official has determined the road is not needed for safe and efficient travel and for administration, utilization, and protection of NFS lands.

Implementation Methods

Install appropriate structures based on site conditions. Bridges, open-bottom culverts, and stream-simulated culverts are designed and installed to applicable BMPs and design standards for new construction activities and when replacing existing structures.

Equipment Used

Heavy equipment (excavator, loader, skidder, bulldozer, dump truck), explosives and/or hand tools are equipment options installing, replacing or removing structures to ensure drainage features are functional.

Implementation Maximum

The Forest Service proposes installing up to 33 new AOP structures to support transportation corridor development in the CT project area.

The Forest Service proposes replacing up to 150 red pipes in the project area.

Treatment Rationale and Assumptions

Historical trends of past timber sale projects for new road construction that cross Class I and II streams were applied to develop an upper limit estimate of future AOP crossings. It is assumed that the maximum amount of suitable young-growth and conventional suitable old-growth acres will be harvested from the Gross Unit Pool; therefore, it is assumed that the maximum number of stream crossing structures will be placed.

The Central Tongass project area has 454 red pipes with 339 on the Petersburg Ranger District and 115 on the Wrangell Ranger District. The maximum number of proposed red pipe replacements is based on the culverts' remediation scores, which range from 2,590 to 0 with an average of 111. The scores are based on field survey observations of habitat. Culverts with more quality upstream habitat have a higher remediation score. These scores help prioritize culverts for replacement, but its location within the land management landscape is also considered, such as:

- Is it within a priority watershed, watersheds with generally greater traditional subsistence use?
- Is it within one of the Tongass 77 Watersheds or The Nature Conservancy/Audubon Conservation Priority Areas?
- Is it located within a LUD with special designations?
- Is it within a watershed with high amounts of recent harvest?
- Or, is it located on a road system where heavy equipment has been mobilized for another project?

The proposed maximum implementation for culvert replacement is 150 culverts, 33 percent of the total project area red pipes. During the last 15 years, 65 red pipes were replaced across the project area (37 on the Petersburg Ranger District and 28 on Wrangell Ranger District), an average of 4 to 5 per year. Assuming a similar average over the next 15 years, 75 culverts could be replaced. However, with increased traffic and mobilization of resources around the project area during implementation, an increase in red pipe replacements is possible.

Integration Opportunities

New culvert installation or improvements are commonly implemented in conjunction with routine road maintenance and construction activities, due to the availability of heavy equipment. AOP improvements are also often integrated into a watershed restoration action plan (WRAP), which combines activities such as stream restoration, riparian thinning, wildlife habitat improvements, invasive weed treatments, and silvicultural treatments of timber stands with the purpose of watershed improvement. AOP culvert replacements are contingent upon available funding.

Related Activities

- Activity 01: Stream and Floodplain Restoration
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 13: Marine Access Facility Construction, Reconstruction and Maintenance

Supporting Actions

- NFS Road Storage
- Road Decommissioning
- Road Maintenance and Reconditioning

Activity 13: Marine Access Facility Construction, Reconstruction, Decommissioning and Maintenance

Description

Activity includes: mooring buoys, docks, log transfer facilities, boat ramps and boat launches; constructing new, or improving existing boat launches (potentially combined with MAFs); and providing access from roads and trails to saltwater or lakes.

When would we implement this activity?

Maintain or reconstruct existing MAFs and LTFs and collateral facilities or construct new facilities if there is a need to safely and efficiently transfer and transport log, machinery, people and cargo (if combining with other MAF sites) or other items from saltwater to land or vice versa.

Implementation Methods

Uplands are cleared and overlaid with rock. Bulkheads and ramps are constructed to facilitate the movement of logs and machinery from water transport to land and vice versa. Collateral facilities such as log raft make-up areas, airplane and boat docks and contiguous upland log storage and sort yards are constructed immediately adjacent.

(Could add more language here for the other component to this card, which could include recreation facilities, and improving access for trailheads, cabins, and upland waterway.)

Equipment Used

Heavy equipment (excavator, loaders, bull dozer, dump truck, rock drills, piling driver, tug boat, barge and/or support vehicles for equipment maintenance and refueling), small tools, fuel and/or hand tools.

Implementation Maximum

Maintain or improve up to 14 existing marine access facilities, and construct up to 4 identified MAF sites for log transfer and public access within the CT project area. These marine access facility sites are associated with a road system.

Additionally, up to 69 marine access sites, such as docks, boat ramps and floats, may be maintained, constructed or improved for public access. These sites are not typically associated with a road system, but used to access shoreline or inland water facilities such a cabin, shelter, or trailhead.

Treatment Rationale and Assumptions

Marine access facilities throughout the project area were identified in supporting documentation from the memorandum of understanding (MOU) between the USDA Forest Service Alaska Region and the State of Alaska through the Department of Natural Resources and Department of Transportation and Public Facilities (September 2006).

Additionally, proposed MAF site numbers were generated following Tongass Advisory Committee Final Recommendations, December 2015:

- Establish adequate docks and log transfer facilities within five logistic “working circle” areas: Hoonah, Kake, Wrangell, Klawock, and Ketchikan.
- Establish adequate land- and water-based log storage facilities within these five “working circles.”

Integration Opportunities

Use of heavy equipment is required for LTF maintenance, reconstruction, and construction. Tug boats and barges are often required to transport machinery and material to perform work. Other work in the same vicinity requiring heavy equipment or material transfer may benefit from shared mobilization costs. Some LTFs are used as boat launches when not in use by log sorting and transport purposes. Integration of ramps and float facilities in the design of new MAF construction where feasible would provide increased multiple use access point opportunities. The incorporation of additional recreation facilities, such as a day use site, outhouse, dispersed camping site or public use cabin may be appropriate improvements in these areas during periods of LTF inactivity.

Consider stream-related integration benefits, such as upgrading existing culverts located near the entrance/exit of the site that may not be passing fish.

Boat launches could be implemented in combination with trail, recreation facility maintenance and improvement.

Boat launch and parking facility maintenance could be integrated with road maintenance.

Related Activities:

- Activity 03: Invasive Treatments
- Activity 04: Recreation Facility Construction, Maintenance and Decommission
- Activity 05: Trail Construction, Reconstruction, Decommissioning and Maintenance
- Activity 06: Old-Growth Timber Harvest (Commercial)
- Activity 07: Young-Growth Timber Harvest (Commercial)
- Activity 09: NFS Road Construction
- Activity 10: NFS Road Reconstruction
- Activity 11: Temporary Road Construction
- Activity 12: Aquatic Organism Passage Improvement

Supporting Actions:

- Quarry Development
- Road Maintenance and Reconditioning
- Sign Installation
- Soil Restoration

Supporting Actions

Supporting Actions are contingent upon the implementation of 1 of the 13 proposed activities and are a component of the implementation. For example, the Supporting Action *sign installation* may accompany NFS Road Construction (Activity 09), Trail Construction (Activity 05) or Recreation Facility Construction (Activity 06). Additionally, Supporting Action *quarry development* could occur in support of NFS Road Construction, NFS Road Reconstruction or Temporary Road Construction. The activity cards identify which Supporting Actions are associated with the management activity and will be analyzed and possibly implemented as part of that activity.

The Supporting Actions include: cone collection, road storage, road maintenance and reconditioning, road decommissioning, sign installation, quarry development, soil restoration, and timber stand establishment (planting and interplanting).

Cone Collection

Description

Harvest mature cones to obtain native seed for reforestation. Collect and maintain a viable seed cache sufficient to support current and future reforestation efforts.

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 or when necessary, to maintain the Region's seed cache or a permit is issued under a TIMS product plan.

Implementation Methods

Prune or fell select trees and collect cones by hand.

Equipment Used

Hand crew with chainsaws or pole saws and seed bags.

Integration Opportunities

There may be opportunities to integrate with timber sale activities or tree removal activities, such as a hazard tree removal at a recreation site.

NFS Road Storage

Description

Roads identified as needed for the use and management of NFS lands can be placed in storage when not in use for periods exceeding 1 year. A road placed in storage is reduced to the lowest road management level or Maintenance Level (ML) 1 status. Roads identified as candidates for road storage are made during travel analysis at the district and project level. The decision to store a road is based on the future need including consideration for: travel safety, recreation, subsistence, forest management, resource concerns, and available road maintenance funding.

Basic custodial maintenance is performed on stored roads to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level.

A road receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other (higher) maintenance level during the time they are open for traffic.

Stored roads are not designated for motor vehicles as a road and are not shown as a road on the MVUM. When appropriate, however, stored roads may be managed and designated as motorized trails for off-highway vehicles (OHV) < 50 inches wide and are shown on the MVUM as a motorized trail.

When would we implement this activity?

Existing and proposed new NFS road candidates for road storage are identified during travel analysis activities at the District or project level.

When road storage is authorized, combining road storage activities within a small geographic area with other work requiring the use of road construction equipment can provide cost savings in mobilization and implementation.

Implementation Methods

Remove drainage structures in locations that present an unacceptable risk of failure or diversion, construct waterbars, barricades/obstacles as needed; implement traffic control measures as needed. Continue basic custodial maintenance as needed. Planned road deterioration can occur.

Equipment Used

Heavy equipment – excavator, bulldozer, dump truck, support vehicles for equipment maintenance and refueling.

Hand tools and fencing may be used in ecologically sensitive areas.

Integration Opportunities

Integrate with activities requiring heavy machinery to offset the costs of mobilization. Off-highway vehicle access through development of motorized trails on stored roads can provide access for subsistence and recreation uses. Sign installation could be integrated to provide information.

Quarry Development

Description

Quarry development provides rock source for construction and maintenance of roads, log transfer facilities, boat launches, trails, recreation site pads, and other facilities requiring rock to stabilize and provide a solid base for construction.

Quarry development involves clearing vegetation and blasting rock. Quarries in the project area will be located adjacent to open roads and 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. Where possible, quarries are sized so additional rock will be available to support future activities.

When would we implement this activity?

New and existing quarry development occurs as needed to facilitate the construction of roads and facilities. Rock can be developed for both Forest Service use and as a commercial product.

Implementation Methods

Quarry site is stripped of vegetation and overburden, rock drills produce holes to pack with explosives and detonated to produce useable material. In existing quarries, material can be developed without blasting by "ripping" exposed rock with an excavator where site conditions allow.

Equipment Used

Heavy equipment – excavators, crawler tractors (bull dozers), rock drills, dump trucks, explosives, and support vehicles for equipment maintenance and refueling

Integration Opportunities

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

Road Decommissioning

Description

Road decommissioning occurs on roads no longer needed for the use and management of NFS lands.

For existing NFS and new NFS roads added to the transportation system, use travel analysis to identify roads that may not be needed; to identify roads that could be converted to trails; to identify restoration needs; and to establish decommissioning priorities.

Roads identified for decommissioning may be converted to motorized trails (OHV < 50 inches wide) or non-motorized trails where appropriate and identified in the travel analysis plan.

When would we implement this activity?

Removal of a NFS road through decommissioning is considered a travel management decision. Candidates for decommissioning are identified at the District, watershed, or project level. When road decommissioning is authorized, combining road decommissioning activities within a small geographic area with other work requiring the use of road construction equipment can provide cost savings in mobilization and implementation. All temporary roads are to be decommissioned upon the completion of their use.

Implementation Methods

Road decommissioning includes the stabilization and restoration of unneeded NFS roads to a more natural state to protect NFS lands. Road decommissioning includes a variety of treatments to block the road, revegetate the road surface, restore surface drainage, remove crossing structures and fills, , re-establish drainage ways, remove unstable road embankments, and re-contour the surface to restore natural slopes. One or more treatments are applied depending on resource objectives and cost.

Equipment Used

Heavy equipment – excavator, bull dozers, dump truck and support vehicles for equipment maintenance and refueling.

Integration Opportunities

Opportunity for watershed rehabilitation within the same area as road decommissioning; similar equipment is used. Hiking access and/or off-highway vehicle < 50 inches access through development of trails on decommissioned and old temp roads can provide access for subsistence and recreation uses.

Road Maintenance and Reconditioning

Description

Road maintenance and reconditioning includes the repair or upkeep of a road necessary to perpetuate the road and provide for its safe use. Work items may include surface rock replacement, culvert repair and replacement, bridge replacement, slide removal, reconditioning ditches, shoulders, roadbeds, brushing, and other items that contribute to the preservation of the existing road. Opening a stored road is normally considered maintenance. Maintenance and reconditioning of existing NFS roads is an ongoing process that occurs on a periodic basis.

Road maintenance is not intended to substantially improve conditions above those originally constructed; however, there may be a need for adding to or modifying the original conditions without increasing service provided. Opening a stored road is normally considered maintenance.

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.

When would we implement this activity?

Roads and drainage systems normally deteriorate because of traffic, weather, and age. Road maintenance and reconditioning of existing NFS roads is an ongoing process that occurs on a periodic basis, annual or cyclic depending on need.

Emergency repairs may be required due to storms or other catastrophic events.

Implementation Methods

Typical road maintenance include brushing, blading, drainage structure maintenance, surface rock replacement, and installing and replacing signs.

Equipment Used

Heavy equipment – mechanical brushers, graders, rollers, excavator, dump trucks, and support vehicles for equipment maintenance and refueling.

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.

Sign Installation

Description

Sign posts may be secured either by earth tamping or with concrete, or with post fasteners attached to concrete foundations. Some site clearing may be required. Signs are informative or interpretive and connect visitors to points of interest, areas of cultural, natural, and geographic significance, or provide a better understanding of management activities.

When would we implement this activity?

Sign installation would be implemented based on need as expressed by the public or defined through agency assessments. Consideration will also be given to public safety.

Implementation Methods

Signs would be placed along trails and/or roads, or points of interest and secured to posts using mechanical fasteners (e.g., nuts and bolts, lag bolts, etc.). Installation may require 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 to place signs at locations that result in minimal disturbance to the natural setting.

Equipment Used

Earth moving equipment (e.g., backhoe with bucket or “bobcat”), chainsaws, generators, compressors, pneumatic and/or hand tools, wheelbarrows or small-scale hauling equipment (e.g., OHV with dump bed) and dump trucks.

Integration Opportunities

Sign installation, whether informative interpretive, or regulatory, may be associated with many recreation and road activities and could be integrated into 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 maintenance, and forestry activities, as well as with features and activities associated with hydrology, fisheries, geology, cultural history and archaeology, landforms, etc.

Soil Restoration

Description

Soil restoration is designed to restore soil productivity, and to some extent soil processes and functions and to minimize soil erosion as stated in BMPs (FSH2509.22 and National Core BMPs).

When would we implement this activity?

Restore soil productivity in areas where detrimental soil conditions approach or exceed 15 percent of an activity area, where an IDT has determined that soil productivity can be restored, and when it is beneficial to do so considering site and stand factors.

Detrimental soil conditions found in the project area may include detrimental displacements, detrimental soil erosion (including landslides), detrimental puddling, and detrimentally altered soil wetness. A need for soil restoration may exist in older young-growth stands that were logged with spar tree corridors or tractors.

Conduct immediately after harvest operations are complete and before the equipment leaves the area where soil erosion is occurring.

Implementation Methods

For restoring soil productivity where soil erosion is occurring, whether it is a non-ground or ground disturbing activity, the following techniques could be used:

- Vegetation establishment, grass seeding, tree planting
- Coir logs, silt fences, sediment traps, waterbars, rock walls, and other structural techniques.

For restoring soils buried under road prisms

- Soils under temporary roads may be restored by obliterating the road and reshaping to match natural contours or in some cases subsoiling to destroy compacted soil layers.

For improving soil productivity from ground disturbing activities (e.g., recently harvested stands) the following methods could be used:

- Moving the topsoil from one part of the stand to a detrimentally displaced area
- Importing topsoil and/or organic matter from another area to the detrimentally displaced area
- Covering detrimentally displaced areas with slash
- Fertilization with or without seeding may be used to offset the effects of soil displacement

For restoring soil productivity in areas of detrimentally altered wetness

- Microsites may be formed by importing woody debris or mounding soil, or
- Removing the drainage obstruction (road prism removal).

For areas where soil paludification is identified, the following methods may be used:

- Breaking up the subsoil cemented horizons to improve soil drainage, or
- Root wad removal or tree/stump tipping to help break up the cemented layers.

Equipment Used

Heavy equipment (e.g., excavators, dump trucks, bulldozers) hand tools, helicopters with seeders, hand seeders, waddles or coir matting or logs, silt fences, chain saws, ATV, fertilizer, and Tongass-approved grass seed mix.

Integration Opportunities

Soil restoration can be included with other restoration plan or vegetation treatment activities, or as a stand-alone project. If using heavy machinery, integrate with other activities requiring heavy machinery when feasible to defray the costs of mobilization.

Timber Stand Establishment – Planting and Interplanting

Description

Planting or inter-planting of tree seedlings in stands where a reforestation or other need has been identified to meet desired future conditions.

When would we implement this activity?

Planting: 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.

Inter-planting of yellow cedar: 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 to enhance species composition if post-harvest evaluation determines that artificial reforestation is beneficial or helps meet desired future conditions of a harvested stand.

Implementation Methods

Seedlings will be manually planted (no mechanized equipment) in the harvested area at a pre-determined spacing, generally at 300 trees planted/acre, or inter-planted on forested sites at a lower intensity if regeneration surveys indicate that stocking levels are below certification standards (< 300 trees planted/acre) within the 5-year timeframe following harvest, or a need, or desire is identified to artificially regenerate a species, such as yellow-cedar as a conservation strategy measure.

Equipment Used

Hoe-dad or shovel.

Integration Opportunities

If watershed restoration or wildlife habitat projects needs require tree planting, coordinate with timber establishment activities.