Appendix 1 - Wrangell Island Project Unit Cards

Introduction

The purpose of the unit cards is to document site-specific resource concerns and mitigation measures regarding the timber harvest portion of the proposed project. The unit cards are intended to serve as an implementation and monitoring tool, as described in the Forest Service Handbook (1909.15-2015-1).

Each unit card represents a timber harvest unit in the Selected Alternative of the Wrangell Island Project. The unit cards are presented in numerical order by unit number and each includes a narrative page and a map page, which are described in more detail below.

Some adjustments to the prescription, logging system or changes to unit boundaries can be expected during implementation to better meet specific on-site resource management and protection objectives. Adjustments and changes are documented and analyzed in a change analysis prepared by an interdisciplinary team considering individual and cumulative effects to ensure that actual implementation remains within the scope of the original NEPA decision. The District Ranger will review and make a recommendation to the Responsible Official on whether the changes represent a substantial change, significant new circumstances, or new information relevant to environmental concerns. The Responsible Official will then determine necessary actions based on the Environmental Policy and Procedures Handbook (FSH 1909.15, chapter 10).
List of Units
The following is a list of harvest units by number that are included in the Selected Alternative. An acreage for each unit is also included.

Table 1. List of units and their acreages in the Selected Alternative

<table>
<thead>
<tr>
<th>Unit Number</th>
<th>Acres</th>
<th>Unit Number</th>
<th>Acres</th>
<th>Unit Number</th>
<th>Acres</th>
<th>Unit Number</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>503</td>
<td>15</td>
<td>556</td>
<td>20</td>
<td>616</td>
<td>19</td>
<td>807</td>
<td>23</td>
</tr>
<tr>
<td>504</td>
<td>5</td>
<td>557</td>
<td>8</td>
<td>619</td>
<td>30</td>
<td>808</td>
<td>67</td>
</tr>
<tr>
<td>509</td>
<td>9</td>
<td>569</td>
<td>24</td>
<td>620</td>
<td>5</td>
<td>811</td>
<td>9</td>
</tr>
<tr>
<td>515</td>
<td>11</td>
<td>572</td>
<td>5</td>
<td>623</td>
<td>5</td>
<td>827</td>
<td>13</td>
</tr>
<tr>
<td>519</td>
<td>24</td>
<td>580/581*</td>
<td>12</td>
<td>799</td>
<td>6</td>
<td>830</td>
<td>29</td>
</tr>
<tr>
<td>555</td>
<td>12</td>
<td>602</td>
<td>40</td>
<td>804</td>
<td>16</td>
<td>855</td>
<td>54</td>
</tr>
</tbody>
</table>

* Unit 581 was originally part of unit 580, but was split in order to better capture the layout needs.

Narrative Page
Each unit card narrative page contains information used to describe site-specific timber harvest activities, and resource concerns and mitigation measures. Each narrative page begins with the unit number, a unique three-digit number assigned to identify the unit.

Unit Card Header
Each unit card has a header block with general description information. Each header block contains the following information:

Total Unit Acres: An estimate of harvest acres for the unit, based on aerial photos and GIS information. Excludes areas within the overall unit boundary that have been set aside to meet standards and guides or for other resource concerns. The numbers have been rounded to the nearest whole acre.

Prescription: The prescription code for the proposed treatment. “CC” indicates clearcut, “UA33” indicates uneven-aged harvest with up to 33 percent retention; “CCR15” indicates clearcut with 15 percent of the acreage reserved. The Silviculture Resource Report provides further description of these terms, however, in the context of these unit cards, the terms “UA33” and “STS” are used somewhat interchangeably.

Net Harvest Vol (MBF): This is the estimated volume (in thousand board feet) available for harvest in the unit as determined from field estimates and stand examination plots.

Harvest System: The method by which the timber is planned to be removed from the unit.

Land Use Designation (LUD): From the Forest Plan, the LUD reflects the desired condition for which each area is being managed. In the case of the Wrangell Island Project, the proposed harvest units are located within Modified Landscape (ML), Scenic Viewshed (SV) and Timber Production (TM) LUDs.

Silvicultural Narrative
Units may be broken up into settings, the identifying number, acreage and prescription of each is listed in a table at the beginning of the Silviculture narrative.

Existing Condition: This is the developmental stage of the physical and temporal distribution of trees and other plants in a forested area. Culmination of mean annual increment (CMAI) describes the age in the growth cycle of a tree or stand at which the mean annual increment for height, diameter, basal area or volume, is at a maximum.
Prescriptions: This provides direction regarding the silvicultural system and method used to achieve management objectives. Basal Area is the cross-sectional area of a tree trunk measured in square inches, usually at the DBH (diameter at breast height). The silvicultural systems include even-aged (EA) and uneven-aged (UEA). The methods with the EA system include clearcut (CC) and clearcut with reserves (CCR15). The method for the UEA system is Single Tree Selection (STS).

**Justification for Clearcutting**

Even-aged systems (CC, CCR15) result in the conversion of mature stands to faster-growing stands of a single age by removing most merchantable trees in one entry.

Where this treatment is recommended, it has been determined that it is optimum for the site. Deferred areas between clearcut openings must be of sufficient size and composition to be managed as a separate stand, which has a minimum size requirement of 10 acres.

The following prescriptions can be used to achieve the desired results.

Clearcut: Essentially all trees in a harvest unit are removed in a single operation that regenerates into a single-aged stand. In the Wrangell Island Project area, clearcutting is prescribed to reduce levels of mistletoe infections, decay fungi, ensure regeneration of desired tree species, and/or to minimize losses to and risk of windthrow. Natural regeneration is expected to fully stock the stand with desirable trees by year 5. Regeneration monitoring will be done in the fourth year following harvest to certify the stocking level.

Clearcut with Reserves: Even-aged systems of clearcut with reserves results in most of the trees removed in a single operation with some trees retained for purposes other than regeneration. Reserve trees are scattered or clumped, and are normally retained throughout a rotation to serve a purpose. Depending on the individual unit prescription, 15 percent of the original stand acres will be reserved, or left un-cut. In the Wrangell Island Project area, reserve trees would be retained to reduce visual impact of timber harvest and/or to further enhance windfirmness of leave areas (i.e., reasonable assurance of windfirmness (RAWs), high-hazard soils, visual retention patches, etc.). Natural regeneration is expected to fully stock the stand with desirable trees by year 5. Regeneration monitoring will be done in the fourth year following harvest to certify the stocking level.

**Uneven-aged Systems**

An uneven-aged system is implemented to maintain high forest cover, regeneration of desirable species, and development of trees through a range of diameter or age classes. Prescriptions to obtain this structure include single-tree selection.

Single-tree selection (STS): This harvest method regenerates and maintains a multi-aged stand structure by removing single trees or groups of trees across age classes, either in clumps or scattered across the stand. The objective of single-tree selection (STS) is to maintain visual quality and provide wildlife habitat, as well as maintaining a multi-storied stand structure, while still achieving economic harvest of timber. Harvest trees are selected to meet the above objectives. Healthy, young trees in the intermediate crown class would be a priority for retention to promote economic future entries. Older trees with low timber value, but high wildlife value would also be a priority for retention. Canopy gaps and disturbance created by harvesting a portion of trees in the stand would promote new tree regeneration to facilitate future harvest entries, as well as promote the growth of understory plants important for wildlife.

Stands proposed for this treatment would remove up to 33 percent of the pre-treatment live basal area. Uneven-aged management would allow for selective timber harvest in stands where road construction is infeasible, where scenery restrictions apply, or where elevational corridors of old-growth structure for wildlife are desired. The objective of this system is to economically harvest a portion of the stand while
retaining trees that will be economical to harvest in the next entry, while mitigating other resource concerns. The silvicultural prescription would harvest a portion of the stand, while retaining a higher percentage of trees that have higher value for wildlife, or small diameter trees that would be more economically valuable in the future.

Natural regeneration is expected to fully stock the stand with desirable trees by year 5. Regeneration monitoring will be done in the fourth year following harvest to certify the stocking level.

Logging Systems/Transportation

This section of the unit card identifies the logging system(s) proposed for the unit. Log yarding practices are based on slope stability, soil disturbance, economics, scenic impact, silviculture prescriptions, channel type, and stream class. For further protection, harvest activities near Class I, Class II, and Class III streams require that trees be felled away from the stream buffer and if trees are yarded across Class III stream courses, they are fully suspended to minimize the exposure of mineral soil. Trees near Class IV streams are felled away from the stream whenever feasible and logging debris introduced into Class IV streams is removed. Suspension requirements are used to minimize soil erosion, mass movement, and formation of new channels.

The NFS and temporary roads used to access the unit are displayed on the unit card maps and are identified by road numbers. The miles and planned locations for the temporary roads to facilitate the yarding of each unit will be described in the unit card narratives.

Because they are designed for, and are not to exceed, the duration of harvest activities, temporary roads are described in the unit cards and maps. These roads are generally decommissioned after harvest, which involves removing any culverts that were installed, as well as performing other restoration techniques that encourage natural regeneration. While not drivable by motorized vehicles, they may be accessible to non-motorized users. The project will allow for short-term public access under permit to gather firewood from temporary roads after timber harvest activities are complete.

Resource Concerns and Requirements

The remainder of the unit card narrative page addresses unit-specific resource concerns and, where applicable, requirements for resource protection. Where a resource concern applies to a given unit, it is called out and described. In units where there are no concerns or requirements for protection for a particular resource, that resource is noted under “No Resource-Specific Requirements” at the end of the narrative page. More detail on each resource is provided below.

Aquatics & Fish

Streams within or adjacent to the units are named and described in the Aquatics & Fish section of the unit card narrative.

Streams requiring RAW buffers are noted under the Aquatics & Fish section of the unit cards under Protection Categories A, B and C. The exact marking guide for retention for the RAW buffer will be determined during layout. When establishing the RAW buffers, look for evidence of past wind events. If trees with windfirm characteristics are present, use a RAW buffer width of one site-potential tree height. If windfirm trees are not present or there is strong evidence of past stand-replacing wind events, then consider two site-potential tree heights as a maximum width. High-value trees susceptible to windthrow within the RAW buffer may be marked for removal if their removal is not expected to appreciably increase the windthrow risk of the remaining trees. For Alluvial Fan (AF), Floodplain (FP), High Gradient Contained (HC), Large Contained (LC), Moderate Gradient Contained (MC), Moderate Gradient/Mixed Control (MM), and Palustrine (PA) areas, manage an appropriate distance beyond the no-harvest zone to
provide for a reasonable assurance of windfirmness of the RMA. Site-potential tree heights vary according to the channel type (Table 2).

<table>
<thead>
<tr>
<th>Channel Type Abbreviation</th>
<th>Channel Type</th>
<th>Site-potential Tree Heights (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF</td>
<td>Alluvial Fan</td>
<td>140</td>
</tr>
<tr>
<td>FP</td>
<td>Floodplain</td>
<td>130</td>
</tr>
<tr>
<td>HC</td>
<td>High GradientContained</td>
<td>120</td>
</tr>
<tr>
<td>LC</td>
<td>Large Contained</td>
<td>100</td>
</tr>
<tr>
<td>MC</td>
<td>Moderate GradientContained</td>
<td>100</td>
</tr>
<tr>
<td>MM</td>
<td>Moderate Gradient/Mixed Control</td>
<td>120</td>
</tr>
<tr>
<td>PA</td>
<td>Palustrine Areas</td>
<td>85 or less</td>
</tr>
</tbody>
</table>

**Riparian Management Areas**
Forest Plan Riparian Management Area standards and guidelines and best management practice (BMP) 12.6 direct the design of riparian management areas (RMAs) associated with each stream in the project area. The standards and guidelines prohibit programmed commercial timber harvest in RMAs associated with all Class I, Class II, and Class III streams, except for right-of-way clearing for road construction. RMAs vary in width from the edge of the stream channel according to process group and stream value class.

Unit card narratives identify where RAW buffers will be required. All buffers will be reviewed to provide reasonable assurance of windfirmness during layout.

**Stream Classes and Protection Classes**
Stream classes are also used to define appropriate RMAs and protection measures. Stream classes are defined in Table 3.

**Table 3. Stream value classes**

<table>
<thead>
<tr>
<th>Stream Value Class</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Streams and lakes with anadromous or adfluvial fish or fish habitat; or high-quality resident fish waters, or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish.</td>
</tr>
<tr>
<td>Class II</td>
<td>Streams and lakes with resident fish or fish habitat and generally steep (6–25 percent or higher) gradient (can also include streams with a 0–6 percent gradient) where no anadromous fish occur, and otherwise not meeting Class I criteria.</td>
</tr>
<tr>
<td>Class III</td>
<td>Streams are perennial and intermittent streams that have no fish populations or fish habitat, but have sufficient flow or sediment and debris transport to directly influence downstream water quality or fish habitat capability. For streams less than 30 percent gradient, special care is needed to determine if resident fish are present.</td>
</tr>
<tr>
<td>Class IV</td>
<td>Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to have immediate influence on downstream water quality or fish habitat capability. Class IV streams do not have the characteristics of Class I, II, or III streams and have a bankfull width of at least 0.3 meter (1 foot).</td>
</tr>
</tbody>
</table>

The following protection measures are required in all units containing streams.
Categories A, B and C
All stream categories shall implement BMPs 12.6, 12.6a, 13.9, 13.14, 13.16, and Veg-3. In addition to road crossings, for all units with shovel logging, equipment crossing of streams must comply with BMP 13.9 13.16, and Road-7. RAW buffers should be established where appropriate. If trees with windfirm characteristics are present, use a RAW buffer width of one site-potential tree height. If windfirm trees are not present or there is strong evidence of past stand-replacing wind events, then consider two site-potential tree heights as a maximum width.

Category A Only
Class I and II streams are marked with blue and white striped flagging, and shall be protected by no-harvest buffers designated by process group and stream class in Forest Plan Riparian Management Area standards and guidelines, and identified RMAs in table 1 of the Aquatic Habitat Management Handbook. No commercial timber shall be removed from these buffers. Trees identified for harvest shall be felled to avoid no-harvest buffers. Prior to any operations within a buffer, a Stream Course Protection Plan shall be developed for that buffer (BMP 13.16).

Category B Only
Class III streams are marked with orange and white striped flagging. These streams shall be protected by no-harvest buffers within the v-notch. Class IV streams with unstable side-slopes may also be assigned Category B protection without buffers. The following are Category B protections:

- Split yard and directionally fall trees away from Class III and IV streams without buffers (RIP2-II).
- Felled trees that inadvertently enter or cross stream courses shall not be bucked or limbed until clear of stream courses, unless limbing or bucking would reduce damage to the riparian vegetation or stream banks.
- Debris in stream courses resulting from falling or yarding shall be removed immediately to a stable location above high-water mark.
- Existing natural stable debris shall be left undisturbed.
- When ground skidding systems are employed, logs shall be end-lined out of riparian areas.
- When yarding across streams or the full length of a stream or drainage, logs shall be fully suspended (BMP 13.16, RIP2-II).

Category C Only
Class IV streams and all other intermittent, ephemeral, and small perennial channels and v-notches designated for soil and water quality protection are marked with green and white striped flagging and shall be protected in the following manner:

- Where practicable, trees shall be felled and yarded away from stream courses.
- The trees that cannot be felled away from stream courses shall be felled to bridge the stream providing these trees will be yarded during the same operating season.
- Trees felled to bridge stream courses shall be bucked, limbed, and topped clear of the stream course and its banks.
- Debris which restrict natural water flow, adversely affect water quality or have potential for debris flow shall be removed to a stable location above high-water mark before the yarder leaves.
the unit or upon completion of seasonal logging activities in the unit, whichever comes first (BMP 13.16).

**Protection Measures for Temporary Roads**
Temporary roads may introduce sediment and alter hydraulic conditions, particularly in the area of stream crossings. Temporary roads crossing streams must comply with the appropriate stream channel protection measures (Category A, B or C). In addition the following BMPs may apply:

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

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

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

BMP 13.14/Road-5 (Temporary Roads) – Decommission temporary roads to eliminate hydrologic connectivity, restore natural flow patterns, and minimize soil erosion with the following practices:

- Block the road to prevent motor vehicle access
- Remove temporary stream crossing structures and fill
- Restore natural drainage
- Stabilize fill
- Erosion control

**Cultural Resources**
No identified heritage resources are located in the vicinity of the timber harvest units and proposed roads. If any sites are discovered during implementation, activities in the area will cease immediately, and the Forest Service will fulfill its consultation requirements as described in chapter 3 of the EIS.

**Plants: Sensitive and Rare**
Forest Plan standards and guidelines directs that adverse impacts of management activities on sensitive and rare plant populations be avoided, minimized, or mitigated. When rare or sensitive plant species are identified in or near a harvest unit, a Forest Service botanist will assess the potential impacts on sensitive/rare plants and if necessary recommend mitigation measures to protect the population. Mitigation measures may include, but are not exclusive to, avoiding known sensitive/rare plant populations during project activities, directional falling and yarding of trees away from sensitive/rare plants, and partial retention of forest structure (25 to 50 percent of the basal area) in the area around sensitive/rare plants in forested habitats. Where it is necessary to protect sensitive/rare plant species or communities from a proposed harvest, a Monitoring and Evaluation Plan will be implemented, including a review of the implementation and effectiveness of conservation actions, and application of adaptive management principles.

**Plants: Invasive Species**
To reduce the spread of invasive plants into new areas, this project will implement specific mitigation measures described in the “Invasive Plants” section of the EIS. The only action that is specific to an
individual unit is construction and management of temporary roads. If temporary roads are constructed in a unit, the temporary roads will be surveyed for high-priority invasive plants and a treatment plan will be developed and implemented prior to road closure.

**Recreation**

Recreation resource-specific requirements are discussed in unit card narratives as necessary.

**Scenery**

The following Scenic Integrity Objectives (SIOs) from the Forest Plan provide standards for management based on the landscape’s scenic characteristics and public viewing concern. The units have been designed to meet the following conditions:

High: Changes in the landscape are not visually evident to the average forest visitor.

Moderate: Changes in the landscape may be evident to the casual observer but appear as natural occurrences when contrasted with the appearance of the surrounding landscape.

Low: Changes in the landscape appear very evident but incorporate natural patterns of form, line, color, and texture when contrasted with the appearance of the surrounding landscape.

Very Low: Changes in the landscape appear highly evident and may visually dominate the surrounding landscape, yet when viewed in the background distance these activities appear to be a natural occurrence.

**Soils and Wetlands**

Harvest units are designed to minimize resource impacts and to meet Forest Plan standards and guidelines. Specific practices include avoiding steep unstable terrain, using appropriate yarding systems, partial harvest prescriptions, and suspension requirements.

Factors influencing unit design are areas designated as unsuitable for harvest due to very high landslide potential, steep slopes, and unstable drainages. Some units include areas with slopes greater than 72 percent, these were determined to be suitable for harvest with a minimum of partial or full suspension yarding.

Shovel yarding should follow BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4. Specifically, shovel operators should avoid non-forested areas to prevent rutting. Slopes over 25 percent gradient may not be suitable for shovel yarding under some soil moisture conditions. Prior to shovels operating on land steeper than 35 percent, an on-site review should be conducted, identifying suitable trails; a site rehabilitation plan will be developed to immediately remediate soil impacts. Avoid track slippage and rutting. Ruts will not exceed 12 inches.

Temporary road crossing wetlands are noted in the unit cards. Where wetlands cannot be avoided the road footprint will be minimized, and roads will be constructed to meet 33 CFR 323 guidelines and State-approved BMPs.

**Wildlife**

Bald eagle nest protection requirements are now found in 50 CFR Part 22.26. Permits allowing “take” in accordance with the Bald and Golden Eagle Protection Act would have to be obtained if disturbance to nesting bald eagles would occur. The required distances to avoid disturbance to nesting eagles (March 1 through August 31) are as follows:

- Avoid clearcutting or removal of overstory trees within 330 feet (100 meters) of both active and alternate nests at any time (same as MOU).
- Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the nesting season within 660 feet (200 meters) of the nest.
- Avoid construction of log transfer facilities and in-water log storage areas within 330 feet (100 meters) of active and alternate nests.
- Avoid operating helicopters or fixed-wing aircraft within 1,000 feet (305 meters) of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.
- Avoid blasting and other activities that produce extremely loud noises within ½ mile of nests (or within 1 mile in open areas).

All units comply with required Forest Plan Wildlife standards and guidelines. Any nests/animals dens discovered at any time will be reported to the District Biologist and receive the necessary standards and guidelines applications.

**Goshawks**: The Forest Plan requires a 100-acre no-harvest buffer on known active goshawk nests. One goshawk nest was discovered in the project area in 2012, and the appropriate buffer has been applied.

**Sitka black-tailed deer**: Uneven-aged harvest will help maintain deer habitat, such as through provision of cover and travel corridors. Where practical, elevational corridors are planned to facilitate movement of deer across the landscape.

**Best Management Practices**

Some BMPs are implemented through the location and design of harvest units and temporary roads; others are translated into timber harvest and road contract provisions to ensure implementation. The final design criteria for all timber harvest units and associated logging methods will meet the National Core BMPs.

Table 4 lists the BMPs that shall be applied as necessary in the project area, as specified in the Forest Plan and in the National Core BMP Technical Guide (2012). Not all BMPs apply to every situation. They are provided here for general reference. Protections are noted for site-specific conditions in the unit cards where appropriate.

**Table 4. Region 10 BMP and National Core BMP Crosswalk**

<table>
<thead>
<tr>
<th>R10 Soil and Water Conservation Handbook</th>
<th>National Core</th>
<th>Best Management Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMP 12.5</td>
<td>Plan-2 and 3, AqEco-2 and 4 (Wetland Identification, Evaluation and Protection)</td>
<td>To identify wetland functions and value, and provide appropriate protection measures designed to avoid adverse hydrologic impacts.</td>
</tr>
<tr>
<td>BMP 12.6</td>
<td>Plan-2 and 3, AqEco-2 and 4, Road-7, Veg-3 (Riparian Area Designation and Protection)</td>
<td>To identify riparian areas and their associated management activities.</td>
</tr>
<tr>
<td>BMP 12.6a</td>
<td>Plan-3, Veg-3 (Buffer Design and Layout)</td>
<td>To design streamside buffers to meet objectives defined during the implementation of BMP 12.6.</td>
</tr>
<tr>
<td>BMP 12.17</td>
<td>AqEco-4, Veg-2 (Revegetation of Disturbed Areas)</td>
<td>To provide ground cover to minimize soil erosion.</td>
</tr>
<tr>
<td>BMP 13.2</td>
<td>Veg-1 and 8 (Timber Harvest Unit Design)</td>
<td>To incorporate site-specific soil and water resource considerations into integrated timber harvest unit design criteria.</td>
</tr>
<tr>
<td>R10 Soil and Water Conservation Handbook</td>
<td>National Core</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>BMP 13.5</td>
<td>Veg-1, 2, and 5 (Identification and Avoidance of Unstable Areas)</td>
<td>To avoid triggering mass movements and resultant erosion and sedimentation by excluding unstable areas from timber harvest.</td>
</tr>
<tr>
<td>BMP 13.9</td>
<td>Veg-2, 4, 5, and 7 (Determining Guidelines for Yarding Operations)</td>
<td>To select appropriate yarding systems and guidelines for protecting soil and water resources.</td>
</tr>
<tr>
<td>BMP 13.14</td>
<td>Veg-2 (Erosion Prevention and Control)</td>
<td>To assure that the required erosion control work is completed before unit acceptance.</td>
</tr>
<tr>
<td>BMP 13.16</td>
<td>Veg-3 (Stream Channel Protection – Implementation and Enforcement)</td>
<td>To provide the site-specific stream protection prescriptions consistent with objectives identified under BMPs 12.6 and 12.6a. Objectives may include the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maintain the natural flow regime.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provide for unobstructed passage of storm flows.</td>
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<tr>
<td></td>
<td></td>
<td>• Maintain integrity of the riparian buffer to filter sediment and other pollutants.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Restore the natural course of any stream that has been diverted as soon as practicable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maintain natural channel integrity to protect aquatic habitat and other beneficial uses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Prevent adverse changes to the natural stream temperature regime.</td>
</tr>
<tr>
<td>BMP 14.1</td>
<td>Road-1 (Transportation Planning)</td>
<td>To assure soil and water resources are considered in transportation planning activities.</td>
</tr>
<tr>
<td>BMP 14.2</td>
<td>Road-2, 4, and 11 (Location of Transportation Facilities)</td>
<td>To assure water resources protection measures are considered when locating roads and trails.</td>
</tr>
<tr>
<td>BMP 14.3</td>
<td>Road-2 and 3 (Design of Transportation Facilities)</td>
<td>To incorporate site-specific soil and water resource protection measures into the design of roads and trails.</td>
</tr>
<tr>
<td>BMP 14.5</td>
<td>Road-3, AqEco-2 (Road and Trail Erosion Control Plan)</td>
<td>Develop erosion control plans for road or trail projects to minimize or mitigate erosion sedimentation and resulting water quality degradation prior to the initiation of construction and maintenance activities. Ensure compliance through effective contract administration and timely implementation of erosion control measures.</td>
</tr>
<tr>
<td>BMP 14.6</td>
<td>AqEco-2, Road-3 (Timing Restrictions for Construction Activities)</td>
<td>Minimize erosion potential by restricting the operating schedule and conducting operations during lower risk periods.</td>
</tr>
<tr>
<td>BMP 14.7</td>
<td>Road-3 (Measures to Minimize Mass Failures)</td>
<td>Minimize the chance and extent of road-related mass failures, including landslides and embankment slumps.</td>
</tr>
<tr>
<td><strong>R10 Soil and Water Conservation Handbook</strong></td>
<td><strong>National Core</strong></td>
<td><strong>Best Management Practice</strong></td>
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<td>---------------------------------------------</td>
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</tr>
<tr>
<td><strong>BMP 14.8</strong></td>
<td>Road-3, 6, and 10 (Measures to Minimize Surface Erosion)</td>
<td>Minimize the erosion from cut slopes, fillslopes, and the road surface, and consequently reduce the risk of sediment production.</td>
</tr>
<tr>
<td><strong>BMP 14.9</strong></td>
<td>Road-3, 6, and 10 (Drainage Control to Minimize Erosion and Sedimentation)</td>
<td>Minimize the erosive effects of concentrated water flows from transportation facilities and the resulting degradation of water quality through proper design and construction of drainage control systems.</td>
</tr>
<tr>
<td><strong>BMP 14.10</strong></td>
<td>Road-3 and 7 (Pioneer Road Construction)</td>
<td>Minimize sediment production associated with pioneer road construction.</td>
</tr>
<tr>
<td><strong>BMP 14.11</strong></td>
<td>AqEco-2, Road-3 and 7 (Timely Erosion Control Measures for Incomplete Projects)</td>
<td>Minimize erosion of and sedimentation from disturbed ground on incomplete projects by completing erosion control work prior to seasonal or extended shutdowns.</td>
</tr>
<tr>
<td><strong>BMP 14.12</strong></td>
<td>Road-3 and 7 (Control of Excavation and Sidecast Material)</td>
<td>Minimize sedimentation from unconsolidated excavated and sidecast material caused by road construction, reconstruction, or maintenance.</td>
</tr>
<tr>
<td><strong>BMP 14.14</strong></td>
<td>AqEco-2, Road-7 (Control of In-channel Operations)</td>
<td>Minimize stream channel disturbances and related sediment production.</td>
</tr>
<tr>
<td><strong>BMP 14.15</strong></td>
<td>AqEco-2, Road-7 (Diversion of Flows Around Construction Sites)</td>
<td>Identify and implement diversion and de-watering requirements at construction sites to protect water quality and downstream uses.</td>
</tr>
<tr>
<td><strong>BMP 14.17</strong></td>
<td>AqEco-2, Road-7 (Bridge and Culvert Design and Installation)</td>
<td>Minimize adverse impacts on water quality, stream courses, and fisheries resources from the installation of bridges, culverts, or other stream crossings.</td>
</tr>
<tr>
<td><strong>BMP 14.18</strong></td>
<td>Min-8 (Minerals Site Reclamation)</td>
<td>To minimize sediment from borrow pits, gravel sources, and quarries, and to limit channel disturbance from gravel sources permitted for development within floodplains.</td>
</tr>
<tr>
<td><strong>BMP 14.20</strong></td>
<td>Road-6 (Road Maintenance)</td>
<td>Maintain all roads in a manner which provides for soil and water resources protection by minimizing rutting, road prism failures, sidecasting, and blockage of drainage facilities.</td>
</tr>
<tr>
<td><strong>BMP 14.22</strong></td>
<td>Road-6 (Access and Travel Management)</td>
<td>Control access and manage road use to reduce the risk of erosion and sedimentation from road surface disturbance especially during the higher risk periods associated with high runoff and spring thaw conditions.</td>
</tr>
<tr>
<td>---</td>
<td>Road-5 (Temporary Roads)</td>
<td>Reduce sediment generated from temporary or short-term roads and return the land to production by obliterating roads at the completion of their intended use.</td>
</tr>
</tbody>
</table>
More on Best Management Practices
Log yarding practices are based on slope stability, soil disturbance, and stream class. Additional measures are taken to protect streams from possible disturbance associated with tree falling and yarding according to BMP 13.16. Timber contract provisions guide tree falling and yarding near stream courses. Trees near Class IV streams are felled away from the stream whenever feasible and logging debris introduced into Class IV streams is removed. Suspension requirements are used to minimize soil erosion, mass movement, and formation of new channels (BMP 13.9).

Temporary roads and associated erosion control, including decommissioning practices, are subject to timber sale contract provisions (BMP 13.14, 13.16, 14.7, 14.18).

Map Page
Each unit card map page uses legend items to provide a visual reference for narrative descriptions of timber harvest activities, unit configurations, and resource concerns and mitigation measures. Descriptions of the legend items used are as follows:

Proposed Harvest: The displayed unit represents the maximum size of the unit. Each unit is divided into unit settings where a unique logging method or silvicultural prescription is identified. The locations of unit boundaries are estimated and some unit settings are geographically separate.

Previous Harvest: These units are predominantly even-aged young-growth tree stands that were initiated following the year of harvest, which is labeled. A few previously harvested units were helicopter yarded and mature trees remained for uneven-aged management. These units are included for landscape context.

Riparian Management Areas: These are displayed as no-harvest buffers surrounding streams and other waterbodies. Except for identified stream crossings, all project activities are designed to avoid these areas. Locations are estimated using a GIS corporate data based on field-gathered information and Forest Plan direction.

Non-NFS Land: Wherever this project proposes the use of roads or other facilities that are under State of Alaska jurisdiction, legally documented rights-of-way agreements and permits will be procured in cooperation with the appropriate agencies, such as the Department of Natural Resources or Division of Forestry prior to harvest implementation.

Stream Classes I-IV: These four stream class designations are used by the Forest Plan to describe stream course protections and minimal no-harvest buffers. These are primarily based on presence or absence of fish, fish type, and stream morphology.

100-foot Contours: Useful for estimating 100-foot elevations and can be used in conjunction with scale bar to estimate slope (100-foot contour/100-foot horizontal distance = 100 percent slope).

Nests: One symbol is used to reference the location of bird nesting concerns and mitigation described on the narrative page. Birds of concern may include eagle, goshawk, murrelet, hawk, and heron.

Plants: One symbol is used to reference the location of plant concerns and mitigation described on the narrative page. Plants of concern may include rare, threatened, endangered, and invasive species.

Roads: Existing NFS and temporary roads are displayed to show the maximum length. Each road is divided into segments where design configurations varied during alternative design. The locations of all newly constructed roads are estimated using corporate geographic data based on field-gathered information and Forest Plan direction. Note that road cards, which describe the NFS roads proposed as part of the project, are a separate set of cards.
Unit Cards
This legend applies to all of the Wrangell Island Project unit card maps. Not all symbols will necessarily appear on all unit card maps.

<table>
<thead>
<tr>
<th>Legend Item</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest Unit of Interest</td>
<td>![ ]</td>
</tr>
<tr>
<td>Proposed Harvest Units</td>
<td>![ ]</td>
</tr>
<tr>
<td>Riparian Management Area</td>
<td>![ ]</td>
</tr>
<tr>
<td>Young Growth</td>
<td>![ ]</td>
</tr>
<tr>
<td>Non NF Lands</td>
<td>![ ]</td>
</tr>
<tr>
<td>Goshawk Nest Territory Buffer</td>
<td>![ ]</td>
</tr>
<tr>
<td>Goshawk No Disturbance Buffer</td>
<td>![ ]</td>
</tr>
<tr>
<td>Salt Water</td>
<td>![ ]</td>
</tr>
<tr>
<td>Open Roads</td>
<td>![ ]</td>
</tr>
<tr>
<td>Closed Roads</td>
<td>![ ]</td>
</tr>
<tr>
<td>Reconditioned Roads</td>
<td>![ ]</td>
</tr>
<tr>
<td>Proposed NFS Roads</td>
<td>![ ]</td>
</tr>
<tr>
<td>Proposed Temporary Roads</td>
<td>![ ]</td>
</tr>
<tr>
<td>Other Public Roads</td>
<td>![ ]</td>
</tr>
<tr>
<td>Stream Class I</td>
<td>![ ]</td>
</tr>
<tr>
<td>Stream Class II</td>
<td>![ ]</td>
</tr>
<tr>
<td>Stream Class III</td>
<td>![ ]</td>
</tr>
<tr>
<td>Stream Class IV</td>
<td>![ ]</td>
</tr>
<tr>
<td>100ft Contour</td>
<td>![ ]</td>
</tr>
<tr>
<td>Eagle Nests</td>
<td>![ ]</td>
</tr>
<tr>
<td>Goshawk Nests</td>
<td>![ ]</td>
</tr>
<tr>
<td>Sensitive Plants</td>
<td>![ ]</td>
</tr>
<tr>
<td>Rare Plants</td>
<td>![ ]</td>
</tr>
</tbody>
</table>

Map Disclaimer
The unit card maps are intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the national forest may be subject to restrictions on motor vehicle use. Obtain a motor vehicle use map, or inquire at the local Forest Service office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. These maps are not suitable for navigational use.

Data Disclaimer
The USDA Forest Service makes no warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose, nor assumes any legal liability or responsibility for the accuracy, reliability, completeness or utility of these geospatial data, or for the improper or incorrect use of these geospatial data. These geospatial data and related maps or graphics are not legal documents and are not intended to be used as such. The data and maps may not be used to determine title, ownership, legal descriptions or boundaries, legal jurisdiction, or restrictions that may be in place on either public or private land. Natural hazards may or may not be depicted on the data and maps, and land users should exercise due caution. The data are dynamic and may change over time. The user is responsible to verify the limitations of the geospatial data and to use the data accordingly.
Unit 503


**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>503-3</td>
<td>4</td>
<td>STS</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Uneven-aged system (UA) by single-tree selection (STS) method. STS removes up to 33 percent of existing live basal area.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>503-3</td>
<td>15</td>
<td>SSC</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 50051 and 50052 will facilitate harvest of setting 3.

**RAW:** All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 889, 1892 and 1894 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1892</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1894</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**PLANTS: SENSITIVE & RARE:** No resource concerns.

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**SOILS:** Steep slopes in unit (GT 72%), bedrock dipping parallel to slope overlain by till; limit shovel operation to areas with low gradient slope (< 25%).

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:** Ensure property boundaries between NFS lands and non-NFS lands are accurately marked. Surveyors may be needed to establish or refresh boundaries.

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Recreation, Scenery, Wetlands.
Unit 504

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>CC</td>
<td>68</td>
<td>Short Span Cable</td>
<td>SV</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>504-3</td>
<td>5</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** Moderate levels of wood decay, wind hazard and yellow-cedar decline.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>504-3</td>
<td>5</td>
<td>SSC</td>
<td>68</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5</strong></td>
<td></td>
<td><strong>68</strong></td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 50052 will facilitate harvest of setting 3.

**SOILS:** Bedrock dipping parallel to slope overlain by till; limit shovel operation to areas with low gradient slope (< 25%)

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Aquatics and Fish, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Soils, Wetlands, Wildlife.
### Unit 509

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>CC</td>
<td>128</td>
<td>Short Span Cable</td>
<td>ML</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>509-2</td>
<td>9</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** Moderate levels of dwarf mistletoe and wood decay; and high level of wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>509-2</td>
<td>9</td>
<td>SSC</td>
<td>128</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
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<td>128</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 50054 will facilitate harvest of the unit.

**RAW:** All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 728 and 856 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>728</td>
<td>III</td>
<td>AFH</td>
<td>AF</td>
<td>B</td>
</tr>
<tr>
<td>856</td>
<td>III</td>
<td>HCD</td>
<td>HC</td>
<td>B</td>
</tr>
</tbody>
</table>

**SOILS:** Recommend partial suspension for cable yarding.

**OTHER:** Ensure property boundaries between NFS lands and non-NFS lands are accurately marked. Surveyors may be needed to establish or refresh boundaries.

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Invasive Species, Recreation, Scenery, Wetlands, Wildlife.
Unit 515

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>CC</td>
<td>166</td>
<td>Shovel</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>515-2</td>
<td>2</td>
<td>CC</td>
</tr>
<tr>
<td>515-3</td>
<td>3</td>
<td>CC</td>
</tr>
<tr>
<td>515-4</td>
<td>6</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** High level of wind hazard and moderate level of wood decay.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>515-2</td>
<td>2</td>
<td>SH</td>
<td>30</td>
</tr>
<tr>
<td>515-3</td>
<td>5</td>
<td>SH</td>
<td>45</td>
</tr>
<tr>
<td>515-4</td>
<td>6</td>
<td>SH</td>
<td>91</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td></td>
<td>166</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 50050 will facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reach 1264 is located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1264</td>
<td>III</td>
<td>HCLw</td>
<td>HC</td>
<td>B</td>
</tr>
</tbody>
</table>

**SOILS:** If shovel settings include areas with slopes >35 percent, limit shovel operation to approved trails.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Soils, Wetlands, Wildlife.
**Unit 519**

| Total Unit Acres: | 24 |
| Prescription: | CC |
| Net Harvest Vol. (MBF): | 369 |
| Harvest System: | Shovel, Short Span Cable |
| LUD: | SV |

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>519-1</td>
<td>3</td>
<td>CC</td>
</tr>
<tr>
<td>519-2</td>
<td>10</td>
<td>CC</td>
</tr>
<tr>
<td>519-3</td>
<td>11</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** Moderate levels of dwarf mistletoe and wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>519-1</td>
<td>3</td>
<td>SH</td>
<td>46</td>
</tr>
<tr>
<td>519-2</td>
<td>10</td>
<td>SH, SSC</td>
<td>154</td>
</tr>
<tr>
<td>519-3</td>
<td>11</td>
<td>SH, SSC</td>
<td>169</td>
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<tr>
<td>Total</td>
<td>24</td>
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<td>369</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing 50051 will facilitate harvest of the unit.

**RAW:** All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 957, 1149, 1833, 1836, 1837, 1839, 1841, 1845, 1848, 1853, 1854 and 1855 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>957</td>
<td>III</td>
<td>HCL</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1149</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1833</td>
<td>1845</td>
<td>IV</td>
<td>HCO</td>
<td>C</td>
</tr>
<tr>
<td>1836</td>
<td>1848</td>
<td>IV</td>
<td>HCO</td>
<td>C</td>
</tr>
<tr>
<td>1837</td>
<td>1853</td>
<td>IV</td>
<td>HCO</td>
<td>C</td>
</tr>
<tr>
<td>1839</td>
<td>1854</td>
<td>IV</td>
<td>HCO</td>
<td>C</td>
</tr>
<tr>
<td>1841</td>
<td>1855</td>
<td>IV</td>
<td>HCO</td>
<td>C</td>
</tr>
</tbody>
</table>

**SOILS:** In areas with slopes >35 percent, limit shovel operation to approved trails. Hillslope in setting 519-2 has landslide history; not suited for shovel logging due to slope steepness.

**WILDLIFE:** Nest buffer, red-tailed hawk observed with fledgling.

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wetlands.
Unit 555

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>CC</td>
<td>185</td>
<td>Short Span Cable</td>
<td>ML</td>
</tr>
</tbody>
</table>

SILVICULTURE:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>555-2</td>
<td>12</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** High level of wood decay and moderate level of wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>555-2</td>
<td>12</td>
<td>SSC</td>
<td>185</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td></td>
<td>185</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 50060 will facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reach 1113 is located within or adjacent to the harvest area.

**STREAM FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1113</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
</tbody>
</table>

**SOILS:** Slopes steeper than 72 percent; require full suspension to mitigate soil impacts.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wetlands, Wildlife.


Unit 556

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>UA33</td>
<td>59</td>
<td>Shovel</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>556-2</td>
<td>7</td>
<td>STS</td>
</tr>
<tr>
<td>556-6</td>
<td>2</td>
<td>STS</td>
</tr>
<tr>
<td>556-7</td>
<td>3</td>
<td>STS</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Uneven-aged system (UA) by single-tree selection (STS) method. STS removes up to 33 percent of existing live basal area.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>556-2</td>
<td>12</td>
<td>SH</td>
<td>34</td>
</tr>
<tr>
<td>556-6</td>
<td>4</td>
<td>SH</td>
<td>10</td>
</tr>
<tr>
<td>556-7</td>
<td>4</td>
<td>SH</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td><strong>Total</strong></td>
<td>59</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along the NFS road 50060 will facilitate harvest of the settings 2, 6, and 7.

**SOILS:** In areas with slopes steeper than 72 percent; require at least partial suspension to mitigate soil impacts.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Aquatics and Fish, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wetlands, Wildlife.
**Unit 557**

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
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<tbody>
<tr>
<td>8</td>
<td>STS</td>
<td>41</td>
<td>Shovel</td>
<td>ML</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>557-3</td>
<td>3</td>
<td>STS</td>
</tr>
<tr>
<td>557-5</td>
<td>3</td>
<td>STS</td>
</tr>
<tr>
<td>557-6</td>
<td>2</td>
<td>STS</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Uneven-aged system (UA) by single-tree selection (STS) method. STS removes up to 33 percent of existing live basal area.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>557-3</td>
<td>3</td>
<td>SH</td>
<td>15</td>
</tr>
<tr>
<td>557-5</td>
<td>3</td>
<td>SH</td>
<td>15</td>
</tr>
<tr>
<td>557-6</td>
<td>2</td>
<td>SH</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td></td>
<td>41</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landing along existing NFS road 50060 will facilitate harvest of the unit.

**RAW:** All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 1077 and 1694 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1077</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1694</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Soils, Wetlands, Wildlife.
Unit 569

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescription:</td>
<td>CC</td>
</tr>
<tr>
<td>Net Harvest Vol.</td>
<td>(MBF): 362</td>
</tr>
<tr>
<td>Harvest System:</td>
<td>Short Span Cable, Shovel</td>
</tr>
<tr>
<td>LUD:</td>
<td>ML</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>569-2</td>
<td>7</td>
<td>CC</td>
</tr>
<tr>
<td>569-3</td>
<td>10</td>
<td>CC</td>
</tr>
<tr>
<td>569-17</td>
<td>7</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** High levels of wood decay and yellow-cedar decline, and a moderate level of wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>569-2</td>
<td>7</td>
<td>SSC</td>
<td>106</td>
</tr>
<tr>
<td>569-3</td>
<td>10</td>
<td>SH</td>
<td>150</td>
</tr>
<tr>
<td>569-17</td>
<td>7</td>
<td>SSC</td>
<td>106</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td></td>
<td>362</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along the proposed new extension of NFS road 50030 will facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 1056 and 1610 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1056</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1610</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**SOILS:** Southern lobe of setting 569-2 has slopes steeper than 90 percent, require full suspension.

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wetlands.
Unit 572

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>CC</td>
<td>83</td>
<td>Shovel, Short Span Cable</td>
<td>ML</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>572-1</td>
<td>2</td>
<td>CC</td>
</tr>
<tr>
<td>572-2</td>
<td>3</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** High level of wood decay and moderate level of wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>572-1</td>
<td>2</td>
<td>SH</td>
<td>33</td>
</tr>
<tr>
<td>572-2</td>
<td>3</td>
<td>SSC</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td></td>
<td>83</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landing on existing NFS road 6267 will facilitate harvest of the unit.

**AQUATICS & FISH:** Stream reach 1620 is located within or adjacent to the harvest area.

**STREAM FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1620</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**WILDLIFE:** Eagle nest buffer to the west and great blue heron rookery. Consult with District Wildlife Biologist prior to beginning activities.

**OTHER:** Ensure property boundaries between NFS lands and non-NFS lands are accurately marked. Surveyors may be needed to establish or refresh boundaries.

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Soils, Wetlands.
Units 580 and 581

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>UA33, CC</td>
<td>166</td>
<td>Shovel</td>
<td>ML, SV</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>580</td>
<td>2</td>
<td>STS</td>
</tr>
<tr>
<td>581</td>
<td>10</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method. Uneven-aged system (UA) by single-tree selection (STS) method. STS removes up to 33 percent of existing live basal area.

**Justification for clearcutting:** Moderate levels of wood decay, wind hazard and yellow-cedar decline.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>580</td>
<td>2</td>
<td>SSC</td>
<td>11</td>
</tr>
<tr>
<td>581</td>
<td>10</td>
<td>SH</td>
<td>155</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td></td>
<td>166</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landing off new temporary road at end of NFS road 50033 will facilitate harvest of setting 4 (unit 581). Planned landing off new temporary road that branches off NFS road 6267 will facilitate harvest of setting 2.

**AQUATICS & FISH:** Stream reach 1533 is located within or adjacent to the harvest area of unit 581.

**STREAM FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1533</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**SOILS:** In areas where shovel ground has slopes that exceed 35 percent, limit shovel operation to approved trails.

**WETLANDS:** Temporary roads are located in wetlands-minimize foot print to the extent possible; avoid side casting into wetlands, follow BMP 12.5.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery.
Unit 602

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>CC</td>
<td>603</td>
<td></td>
<td></td>
</tr>
</tbody>
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**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>602-1</td>
<td>40</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** Moderate levels of dwarf mistletoe, wood decay and wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>602-1</td>
<td>40</td>
<td>SSC and SH</td>
<td>603</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td></td>
<td>603</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landing on new temporary road off NFS road 50050 will facilitate harvest of the unit.

**AQUATICS & FISH:** Stream reaches 951, 1129, 1133, 1337, 1338, 1340, 1341, 1342, 1811, 1814, 1816 and 1817 are located within or adjacent to the harvest area. Proposed temporary road crosses stream reaches 1340, 1342 and 1343.

**STREAMS FOUND WITHIN OR ADJACENT TO HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>951</td>
<td>III</td>
<td>HCL</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1119</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1129</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1133</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1337</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1338</td>
<td>IV</td>
<td>HCM</td>
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<td>C</td>
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<tr>
<td>1340</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1341</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1342</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1343</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1811</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1814</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1816</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1817</td>
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</tr>
<tr>
<td>Stream #</td>
<td>Stream Class</td>
<td>Channel Type</td>
<td>Process Group</td>
<td>Category Level of Stream Protection</td>
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<td>----------</td>
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<td>---------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>1340</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1342</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1343</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**SOILS:** Multiple slope failures have occurred on hillslope; limit shovel yarding to slopes less than 25 percent (BMP 13.9); avoid weighting slopes with fill, logging debris or equipment (BMP 14.7). Provide adequate cross drains on the road to prevent diverting hillslope runoff and concentrating it in one area contributing to slope failure.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery, Wetlands.
Unit 616

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>CC</td>
<td>289</td>
<td>Shovel</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>616-1</td>
<td>8</td>
<td>CC</td>
</tr>
<tr>
<td>616-2</td>
<td>11</td>
<td>CC</td>
</tr>
</tbody>
</table>

*Existing Condition:* Stand is mature old-growth structure beyond CMAI.

*Prescriptions:* Even-aged system by clearcut (CC) method.

*Justification for clearcutting:* Moderate levels of wood decay, wind hazard and yellow-cedar decline.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>616-1</td>
<td>8</td>
<td>SH</td>
<td>122</td>
</tr>
<tr>
<td>616-2</td>
<td>11</td>
<td>SH</td>
<td>167</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td></td>
<td>289</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings on existing NFS road 6263 will facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 1655 and 1656 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1655</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1656</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**SOILS:** Limit shovel operation to areas with slopes less than 35 percent. Require partial suspension for cable settings.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery, Wetlands.
Unit 619

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>CC</td>
<td>457</td>
<td>Short Span Cable</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>619-1</td>
<td>30</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** High levels of wood decay and yellow-cedar decline; moderate levels of dwarf mistletoe and wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>619-1</td>
<td>30</td>
<td>SSC</td>
<td>457</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td></td>
<td>457</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings on a new temporary road off the end of NFS road 50024 will facilitate yarding of unit.

**SOILS:** Steep slopes with colluvial soils in northern part of unit; require at least partial suspension. Southern and eastern part of the unit is underlain by glacial till; not suited for shovel yarding.

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Aquatics and Fish, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery, Wetlands.
Wrangell Island Project Selected Alternative: **Unit 619**
**Unit 620**


**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>620-1</td>
<td>5</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** High levels of wood decay and yellow-cedar decline. Moderate level of wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>620-1</td>
<td>5</td>
<td>SH</td>
<td>69</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td></td>
<td>69</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings to existing NFS road 6267 will facilitate yarding of unit.

**AQUATICS & FISH:** Stream reach 1967 is located within or adjacent to the harvest area.

**STREAM FOUND WITHIN OR ADJACENT TO HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>IV</td>
<td>MMO</td>
<td>MM</td>
<td>C</td>
</tr>
</tbody>
</table>

**WETLANDS:** Temporary road partially located in wetlands-minimize footprint to the extent possible; avoid side casting into wetlands, follow BMP 12.5.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Soils, Wildlife.
### Unit 623

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>CC</td>
<td>74</td>
<td>Shovel</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>623-1</td>
<td>5</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by clearcut (CC) method.

**Justification for clearcutting:** Moderate levels of wood decay and wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>623-1</td>
<td>5</td>
<td>SH</td>
<td>74</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5</strong></td>
<td></td>
<td><strong>74</strong></td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings to existing NFS road 6267 will facilitate yarding of unit.

**SOILS:** Shovel setting includes areas with slopes >35 percent; limit shovel operation to approved trails; disperse deep slash piles.

**WETLANDS:** Wetland unit; minimize footprint of roads and landings to the extent feasible (BMP 12.5).

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Aquatics and Fish, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wildlife.
**Unit 799**

| Total Unit Acres: | 6 |
| Prescription: | CC |
| Net Harvest Vol. (MBF): | 96 |
| Harvest System: | Short Span Cable |
| LUD: | TM |

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>799-2</td>
<td>6</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system by the clearcut (CC) method.

**Justification for clearcutting:** High level of yellow-cedar decline. Moderate levels of wind hazard, wood decay and dwarf mistletoe.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>799-2</td>
<td>6</td>
<td>SSC</td>
<td>96</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td></td>
<td>96</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landing on existing NFS road 6277 will facilitate harvest of the unit.

**Soils:** Slopes are steeper than 72 percent in northwest part of the unit; require full suspension to minimize ground disturbance.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Aquatics and Fish, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wetlands, Wildlife.
Unit 804

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>CC</td>
<td>241</td>
<td>Short Span Cable</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>804-5</td>
<td>16</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system using the clearcut (CC) method.

**Justification for clearcutting:** High level of wind hazard. Moderate levels of wood decay, dwarf mistletoe and yellow-cedar decline.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>804-5</td>
<td>16</td>
<td>SSC</td>
<td>241</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td></td>
<td>241</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along proposed new temporary road located at the end of NFS road 6273 to facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 591, 597, 1234, 1281, 1562 and 1564 are located within or adjacent to the harvest area. Proposed temporary road crosses stream reaches 1234 and 1281.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>591</td>
<td>II</td>
<td>MCM</td>
<td>MC</td>
<td>A</td>
</tr>
<tr>
<td>597</td>
<td>II</td>
<td>MCS</td>
<td>MC</td>
<td>A</td>
</tr>
<tr>
<td>1234</td>
<td>IV</td>
<td>HCDw</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1281</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1562</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1564</td>
<td>IV</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TEMPORARY ROAD CROSSINGS:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1234</td>
<td>IV</td>
<td>HCDw</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1281</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**SOILS:** Slopes are steeper than 72 percent above 1,100 feet elevation require full suspension.

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Wetlands, Wildlife.
Unit 807

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>UA33, CC</td>
<td>112</td>
<td>Short Span Cable</td>
<td>TM</td>
</tr>
</tbody>
</table>

SILVICULTURE:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>807-1</td>
<td>6</td>
<td>CC</td>
</tr>
<tr>
<td>807-4</td>
<td>2</td>
<td>STS</td>
</tr>
<tr>
<td>807-6</td>
<td>2</td>
<td>STS</td>
</tr>
</tbody>
</table>

Existing Condition: Stand is mature old-growth structure beyond CMAI.

Prescriptions: Even-aged system using the clearcut (CC) method. Uneven-aged system (UA) by single-tree selection (STS) method. STS removes up to 33 percent of existing live basal area.

Justification for clearcutting: High levels of dwarf mistletoe and wood decay. Moderate level of wind hazard.

LOGGING SYSTEMS/TRANSPORTATION:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>807-1</td>
<td>6</td>
<td>SSC</td>
<td>88</td>
</tr>
<tr>
<td>807-4</td>
<td>2</td>
<td>SSC</td>
<td>12</td>
</tr>
<tr>
<td>807-6</td>
<td>2</td>
<td>SSC</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td></td>
<td>112</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 6273 will facilitate harvest of setting 1. Planned landings on existing NFS road 6270 will facilitate harvest of settings 4 and 6.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

AQUATICS & FISH: Stream reaches 397, 398, 930, 1280, 1518, 1549, 1552, 1553, 1554 and 1555 are located within or adjacent to the harvest area.

STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>397</td>
<td>II</td>
<td>HCL</td>
<td>HC</td>
<td>A</td>
</tr>
<tr>
<td>398</td>
<td>II</td>
<td>HCL</td>
<td>HC</td>
<td></td>
</tr>
<tr>
<td>930</td>
<td>III</td>
<td>HCL</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1280</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1518</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1553</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1549</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1552</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

OTHER:

NO RESOURCE-SPECIFIC REQUIREMENTS: Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery, Soils, Wetlands, Wildlife.
Unit 808

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td>CC</td>
<td>998</td>
<td>Short Span Cable</td>
<td>TM</td>
</tr>
</tbody>
</table>

SILVICULTURE:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>808-2</td>
<td>30</td>
<td>CC</td>
</tr>
<tr>
<td>808-4</td>
<td>30</td>
<td>CC</td>
</tr>
<tr>
<td>808-7</td>
<td>1</td>
<td>CC</td>
</tr>
<tr>
<td>808-8</td>
<td>6</td>
<td>CC</td>
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</tbody>
</table>

Existing Condition: Stand is mature old-growth structure beyond CMAI.

Prescriptions: Even-aged system using the clearcut (CC) method. Uneven-aged system (UA) by single-tree selection (STS) method. STS removes up to 33 percent of existing live basal area.

Justification for clearcutting: High level of wood decay. Moderate level of wind hazard.

LOGGING SYSTEMS/TRANSPORTATION:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>808-2</td>
<td>30</td>
<td>SSC</td>
<td></td>
</tr>
<tr>
<td>808-4</td>
<td>30</td>
<td>SSC</td>
<td></td>
</tr>
<tr>
<td>808-7</td>
<td>1</td>
<td>SSC</td>
<td></td>
</tr>
<tr>
<td>808-8</td>
<td>6</td>
<td>SSC</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td></td>
<td>998</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings on a new temporary road that takes off NFS road 6273 and on 6273 will facilitate harvest of settings 2, 4, 7, and 8.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

AQUATICS & FISH: Stream reaches 91, 103, 615, 923, 925, 926, 1031, 1040, 1500, 1502, 1506, 1510 and 1512 are located within or adjacent to the harvest area.
**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>I</td>
<td>FPM</td>
<td>FP</td>
<td>A</td>
</tr>
<tr>
<td>103</td>
<td>I</td>
<td>FPS</td>
<td>FP</td>
<td>A</td>
</tr>
<tr>
<td>615</td>
<td>II</td>
<td>MMO</td>
<td>MM</td>
<td>A</td>
</tr>
<tr>
<td>923</td>
<td>III</td>
<td>HCL</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>925</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>926</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1031</td>
<td>III</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1040</td>
<td>III</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
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<td>1500</td>
<td>IV</td>
<td>HCM</td>
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<td>C</td>
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<td>1502</td>
<td>IV</td>
<td>HCM</td>
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<td>1506</td>
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<td>HCM</td>
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<td>C</td>
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<td>1510</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1512</td>
<td>IV</td>
<td>HCM</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**SOILS:** Slopes steeper than 72 percent in setting 808-1; require full suspension.

**WETLANDS:** Temporary road is located in wetlands - minimize foot print to the extent possible, follow BMP 12.5.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery, Wildlife.
Unit 811

Total Unit Acres: 9
Prescription: CC
Net Harvest Vol. (MBF): 133
Harvest System: Short Span Cable, Shovel
LUD: TM

SILVICULTURE:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>811-1</td>
<td>4</td>
<td>CC</td>
</tr>
<tr>
<td>811-3</td>
<td>1</td>
<td>CC</td>
</tr>
<tr>
<td>811-5</td>
<td>4</td>
<td>CC</td>
</tr>
</tbody>
</table>

Existing Condition: Stand is mature old-growth structure beyond CMAI.

Prescriptions: Even-aged system using the clearcut (CC) method.

Justification for clearcutting: High level of wind hazard. Moderate levels of wood decay, dwarf mistletoe and yellow-cedar decline.

LOGGING SYSTEMS/TRANSPORTATION:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>811-1</td>
<td>4</td>
<td>SSC</td>
<td>59</td>
</tr>
<tr>
<td>811-3</td>
<td>1</td>
<td>SSC</td>
<td>15</td>
</tr>
<tr>
<td>811-5</td>
<td>4</td>
<td>SH</td>
<td>59</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td></td>
<td>133</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings on new temporary road the takes off existing NFS road 6277 will facilitate harvest of setting 4. Planned landings along existing NFS road 6270 will facilitate harvest of settings 3 and 5.

AQUATICS & FISH: Stream reach1518 is located within or adjacent to the harvest area.

STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1518</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

INVASIVE SPECIES: Eradicate all newly introduced invasive plants prior to closing out temporary roads.

WETLANDS: Temporary road is located in wetlands - minimize footprint to the extent possible, follow BMP 12.5.

OTHER:

NO RESOURCE-SPECIFIC REQUIREMENTS: Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery, Soils, Wildlife.
Unit 827


**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>827-2</td>
<td>13</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system using the clearcut (CC) method.

**Justification for clearcutting:** High levels of dwarf mistletoe and wood decay. Moderate level of wind hazard.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>827-2</td>
<td>13</td>
<td>SH</td>
<td>196</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td></td>
<td>196</td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned landings along existing NFS road 6296 will facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 358, 610, 1450, 1454 are located within or adjacent to the harvest area.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>358</td>
<td>II</td>
<td>HCL</td>
<td>HC</td>
<td>A</td>
</tr>
<tr>
<td>610</td>
<td>II</td>
<td>MMO</td>
<td>MM</td>
<td>A</td>
</tr>
<tr>
<td>1450</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
<tr>
<td>1454</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOILS:** Setting below the road has the potential to generate a high amount sediment next to Class II stream with shovel logging. Use slash to support equipment and avoid rutting.

**WETLANDS:** Shovel yarding in wetlands adjacent to Class II stream buffer; use slash to support equipment and avoid rutting, follow BMP 12.5.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Invasive Species, Plants, Recreation, Scenery.
Unit 830

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>CC</td>
<td>438</td>
<td>Short Span Cable</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>830-2</td>
<td>29</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** The stand consists of old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system using the clearcut (CC) method.

**Justification for clearcutting:** High level of wood decay. Moderate level of wind hazard and yellow-cedar decline.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>830-2</td>
<td>29</td>
<td>SSC</td>
<td>438</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29</strong></td>
<td></td>
<td><strong>438</strong></td>
</tr>
</tbody>
</table>

Logging System: SH=Shovel; SSC=Short Span Cable; LSC=Long Span Cable

Planned Landings on a new temporary road that comes off existing NFS road 6275 will facilitate harvest of the unit.

**SOILS:** Steep slope below the landing, require at least partial suspension.

**INVASIVE SPECIES:** Eradicate all newly introduced invasive plants prior to closing out temporary roads.

**WETLANDS:** Temporary road located in wetland - minimize footprint to the extent possible, follow BMP 12.5.

**WILDLIFE:** Wildlife corridor - retain elevational structure for corridor where possible.

**OTHER:**

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Aquatics and Fish, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery.
Unit 855

<table>
<thead>
<tr>
<th>Total Unit Acres:</th>
<th>Prescription:</th>
<th>Net Harvest Vol. (MBF):</th>
<th>Harvest System:</th>
<th>LUD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>CC</td>
<td>804</td>
<td>Shovel, Short Span Cable</td>
<td>TM</td>
</tr>
</tbody>
</table>

**SILVICULTURE:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Harvest Acres</th>
<th>Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>855-3</td>
<td>54</td>
<td>CC</td>
</tr>
</tbody>
</table>

**Existing Condition:** Stand is mature old-growth structure beyond CMAI.

**Prescriptions:** Even-aged system using the clearcut (CC) method.

**Justification for clearcutting:** Moderate level of dwarf mistletoe, wood decay, wind hazard and yellow-cedar decline.

**LOGGING SYSTEMS/TRANSPORTATION:**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Acres</th>
<th>Logging System</th>
<th>Net MBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>855-3</td>
<td>54</td>
<td>SH and SSC</td>
<td>804</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td></td>
<td>804</td>
</tr>
</tbody>
</table>

Approximately 0.5 mile of new temporary road and 0.3 mile of new NFS road will access landing locations to facilitate harvest of the unit.

RAW: All buffers to be reviewed to provide reasonable assurance of windfirmness during layout.

**AQUATICS & FISH:** Stream reaches 737, 985, 1356, 1357, 1358, 1359 and 1362 are located within or adjacent to the harvest area. Proposed temporary road crosses stream reach 1356.

**STREAMS FOUND WITHIN OR ADJACENT TO THE HARVEST AREA:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>737</td>
<td>III</td>
<td>HCD</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>985</td>
<td>III</td>
<td>HCM</td>
<td>HC</td>
<td>B</td>
</tr>
<tr>
<td>1356</td>
<td>1359</td>
<td>IV</td>
<td>HCO</td>
<td>C</td>
</tr>
<tr>
<td>1357</td>
<td>1360</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1358</td>
<td>1362</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TEMPORARY ROAD CROSSING:**

<table>
<thead>
<tr>
<th>Stream #</th>
<th>Stream Class</th>
<th>Channel Type</th>
<th>Process Group</th>
<th>Category Level of Stream Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1356</td>
<td>IV</td>
<td>HCO</td>
<td>HC</td>
<td>C</td>
</tr>
</tbody>
</table>

**INVASIVE SPECIES:** Eradicate newly introduced invasive plants prior to closing out temporary road.

**NO RESOURCE-SPECIFIC REQUIREMENTS:** Air Quality and Climate Change, Cultural Resources, Environmental Justice, Plants, Recreation, Scenery, Soils, Wetlands, Wildlife.
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