

**Big Thorne EIS
Record of Decision
Appendix 1**

Appendix 1

Unit Card Introduction

The unit cards are presented in numerical order and include maps and narratives describing site-specific information about each unit, activities proposed within each unit, the silvicultural prescription and any unit-specific resource concerns and protection or mitigation measures related to those concerns. Resource concerns are mitigated by unit design and adherence to Forest Plan standards and guidelines and best management practices (BMPs).

All GIS layers are not snapped to each other. There are “slivers” shown on the unit card maps. As stated in the FEIS, there will be no harvest in TTRA buffers, Old Growth Reserves or Inventoried Roadless Areas. So while some maps may show a sliver of harvest in one of these areas the layout crew will not place the unit in these areas.

The unit card narratives and maps in the ROD, in combination with Final EIS, the resource reports and GIS map layers, would be used during the implementation process to ensure that all aspects of the project are implemented within applicable standards and guidelines. Some adjustments to the prescription, logging system or changes to unit boundaries can be expected during implementation as needed to better meet specific on-site resource management and protection objectives. These adjustments and changes are documented and analyzed in a Change Analysis according to the direction in the Forest Service Handbook and Supplement 1909.15-2009-1, chapter 10. This direction establishes guidance on how to document and review adjustments made from the “as planned” NEPA decision or as other new information is introduced to the actual implementation design. This process applies to decisions for the Tongass National Forest at all decision levels (ROD, DN/FONSI and DM). The primary purpose of the process is to determine if actual implementation is still within the scope of the NEPA decision. The District Ranger will assign an ID team to consider and review proposed adjustments identified at the project implementation stage. This review will include both the individual and cumulative adjustments. The information will be analyzed in terms of how the differences of the final design relate to environmental effects of the Selected Alternative. The new information will be evaluated within the context of the overall NEPA project. The District Ranger will review this interdisciplinary analysis and information and will make a recommendation to the Responsible Official on whether or not these adjustments represent: a substantial change, significant new circumstances, or significant new information relevant to environmental concerns and bearing on the Selected Alternative. The Responsible Official will evaluate the District Ranger’s documentation and recommendation and will then determine if a correction, supplement, or revision to the NEPA Decision is necessary following the direction in Section 18 of the Environmental Policy and Procedures Handbook (FSH 1909.15). Change analyses commonly occur after timber sale layout. Any project that is subject to a change should follow the change analysis process outlined above. The Responsible Official will determine if the changes warrant additional analysis and a supplement to this EIS.

The following text describes the layout of the unit cards and provides general information on the harvest treatments and resource components of the unit cards. This information is

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important to consider in conjunction with the more specific information provided on the cards. Additionally, this introduction to the unit cards is designed to provide specific direction regarding the implementation of the project that pertains to certain circumstances that occur across multiple units. Rather than repeat this information on each individual unit card the direction for that circumstance is provided here. For example, under Even- aged Systems within the Harvest Systems and Silvicultural Systems section below, the direction for mitigating windthrow along harvest opening edges is provided once rather than being repeated in each individual unit card text. This direction applies to all units being proposed for even-aged management.

Unit Card Header Information

Each unit card has a header block with information used to generally describe the unit's size, location, and volume proposed for harvest. Each header block contains the following information:

Unit Number: This is the number assigned to identify the unit.

Alternatives: This identifies the alternative(s) in which the unit is proposed.

Total Unit Acres: This is an estimate of harvest acres within the unit using aerial photos and GIS information, by alternative. These numbers exclude 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.

Prescription: The prescription code for the proposed treatment.

VCU Number: The Value Comparison Unit (VCU) the proposed harvest area is within. VCUs in Phase 2 areas of the Timber Sale Program Adaptive Management Strategy are identified.

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

Net Harvest Volume (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.

Land Use Designation (LUD): The Land Use Designation(s) the proposed harvest unit is within: Recreation River (RR), Modified Landscape (ML), Scenic Viewshed (SV) and Timber Production (TM). The ROD includes modifications to Old Growth Habitat (OG) LUDs. Some portions of the small OGRs were relocated within the 2001 Roadless Rule inventoried roadless areas. The purpose is to allocate the portions of the OGRs that contain existing roads and harvest units to development LUDs where timber harvest is allowed. In other cases, where the current OGR exceed minimum acre requirements, the OGRs were reduced in size with no replacement acres.

Harvest Treatments and Silvicultural Systems

Silvicultural systems refer to a complete set of treatments used to manage forest stands and forest landscapes over long periods of time. This process includes the harvest or regeneration of the stand, intermediate cuttings, and other treatments necessary for the development and replacement of the forest stand. Silvicultural systems are applied through prescriptions: the written records of the examination, diagnosis, and treatment regimens prescribed for the stand. The final prescriptions, including detailed sale layout and marking instructions for any harvest units, will be completed at the time the Record of Decision is signed for the FEIS.

Each unit card contains a narrative summarizing any concerns, responses, BMPs, and mitigations. The silviculture section contains a brief synopsis of the existing condition and the planned prescription to move the stand from the existing to the desired condition and any specific mitigation measures that are needed. The existing condition text documents stand-specific information such as stand structure; insect, disease and defect ratings; and windthrow risk. These ratings are for the unit as a whole. Specific portions of the unit may vary from the overall ratings. In some instances, the windthrow discussion in the Fisheries section, which is specific to riparian management areas (RMAs), may differ from the overall unit rating. The additional detail provided for RMAs is necessary for determining reasonable assurance of wind firmness (RAW) requirements along certain streams.

Individual unit card maps display harvest plans. Three symbols denote what parts of the original planned unit are to be harvested and by what method. Within old-growth units light grey indicates helicopter yarding and dark grey indicates either cable or shovel yarding. Helicopter, shovel or cable yarding areas will either be harvested under an even-aged regeneration system utilizing the clear cut method, under a two-age system using patch clearcutting or by the uneven-aged regeneration system utilizing the single tree selection method. Areas planned for either two-aged or uneven-aged management are denoted on the unit card maps with a tree symbol which is indicated in the map legend as “partial cut”. Helicopter, shovel or cable yarding areas not indicated as “partial cut” are planned for clearcutting.

Young growth units are designated as either systematic strip thinning or as uniform thinning.

Sometimes portions of the original reconnaissance area are not scheduled for harvest. These areas are typically where standards and guidelines exclude timber harvest because of specific ground conditions. This assures the conservation of certain resources within what would otherwise be areas available for harvest. Unsuitable soils and riparian management areas are examples. These areas must be excluded from harvest regardless of alternative because they physically have been determined unsuitable for harvest. In other cases certain portions of units are excluded from harvest to achieve management objectives required by standards and guidelines although there are no specific physical conditions making the area unsuitable for harvest. Visual buffers and some legacy areas are examples.

Legacy and visual buffers depicted on the unit card maps are representations. The actual implementation may vary but must meet the same planned objectives. In these areas there are generally no physical circumstances that preclude harvest however they may be planned to coincide with or expand on such areas if the opportunity exists. Legacy and visual buffer areas are generally more flexible in how they are located within the unit as long as they achieve their design objectives.

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In some cases portions of originally planned units have been deferred from timber harvest although there are no restrictions to harvest noted on the unit card map. These areas are denoted by white or no shading. There are two common circumstances resulting in the deferral of these areas. First is where, during unit reconnaissance, portions of the original unit were found to have timber with volume and or value that obviously would not support the cost of logging. These areas are usually muskeg inclusions or low-volume-high-defect cedar areas where poor drainage restricts tree growth. These areas typically have a merchantable sawlog volume of less than 8 MBF per acre, which is considered as unsuitable timber. In other instances portions of units or entire units have been deferred from harvest in an alternative to meet the specific design criteria or mitigations.

Desired Future Condition for Timber Production Stands in the Project Area

The desired condition for stand growth for timber production purposes in the Project Area is that they be as productive, healthy and windfirm as possible while still retaining residual trees as needed to meet standards and guides or other objectives of the Forest Plan. The majority of old growth stands in the project area contain trees that are over-mature and unhealthy with decay and weather damage that exceeds new growth. These stands do not currently meet the desired condition.

Even-aged Systems (Clearcut)

An even-aged system produces stands that consist of trees of the same or nearly the same age. A stand is even-aged if the range in tree ages normally does not exceed 20 percent of the rotation age (the age at which the stand is harvested). Stands would not be reentered for a regeneration cut until the next rotation in approximately 100 years. The regeneration method chosen to achieve even-aged management is clearcutting. Where this treatment is recommended, it has been determined that it is optimal for the site.

Even though all or a majority of the merchantable trees within a unit would be harvested by clearcutting, some merchantable-sized trees are often retained within the unit for resource protection requirements. These may include stream buffers along unit boundaries or those that protrude into units and visual buffers. Reasonable assurance of windfirmness (RAW) buffers may also be applied to unit edges and stream or visual buffers that are determined to be at risk for wind damage after harvest. In addition, 30 percent of the proposed opening may be retained in patches or large groups of trees within the unit boundary for the purpose of retaining legacy forest structure in VCUs where legacy is required by the Forest Plan (see below).

Units that are proposed for even-aged management have conditions that do not currently meet nor are on a trajectory to meet the desired condition. Even-aged management using clearcutting is the optimum method to move these stands from the existing condition to the desired condition. Even-aged management minimizes defect and disease in the future stand to the greatest extent possible.

Justification for the use of even-aged systems are: (1) the control of disease such as hemlock dwarf mistletoe, (2) minimize the effects of windthrow and logging damage, and (3) the creation of conditions favorable for regeneration of Sitka spruce, Alaska yellow- cedar and western red cedar (Forest Plan, p 4-71 and 4-72).

General Direction Regarding the location of Even-aged Management Unit Boundaries:

Design units approximately as shown on the unit card map with adjustments as needed to make boundaries reasonably wind-firm. For example, bring unit boundaries to the edges of existing young-growth or muskeg and to the lee side of a ridgeline where possible. Avoid sharp points, dips or other deviations in the unit boundary in areas exposed to southerly winds particularly where high wind risk timber types occur. Review the planned unit design with the district Silviculturist prior to layout to help identify problem areas. Where wind-firm edges cannot be located and resources are at risk external to the unit boundary, review is needed for RAW. Interdisciplinary review of RAW zones as described in the fish/watershed section on the unit card or otherwise identified along boundaries should occur at the time of layout to determine the RAW zone prescriptions. The presale lead for the unit should notify the interdisciplinary team (IDT) when preliminary boundaries have been located. At that time the IDT will review boundary locations in the field and determine the appropriate RAW zones and harvest prescriptions.

NFMA regulations state that 100 acres is the maximum size of created openings allowed for the forest types of coastal Alaska, unless exempted under specific conditions. For the purpose of identifying a created opening size and what constitutes a break between even-aged openings the Forest Plan requires that leave strips between openings be of sufficient size to be managed as a separate stand or at least 10 acres. Where leave areas are required to reduce the size of an opening, avoid the isolation of suitable timber by leaving an economically operable setting where possible. Riparian management areas may also be used to constitute a break in unit size if they are at least 10 acres in size. Past even-aged harvest areas with adequately restocked regeneration approximately 5 feet tall are no longer considered openings for the purpose of determining the 100 acre size limit.

There are no individual units or combined openings planned that exceed 100 acres. If changes are made during implementation that result in an opening larger than 100 acres, the IDT must be consulted to determine if the change is allowable under the exemptions to the 100 acre rule established in the Forest Plan.

General Direction Regarding the Implementation of the Legacy Forest Structure Standard and Guideline:

The intent of the Legacy Standard and Guideline is to ensure that sufficient residual trees, snags, and clumps of trees remain in timber harvest units within value comparison units (VCUs) that have had concentrated past timber harvest activity and are at risk for not providing the full range of matrix functions in order to meet the intent of the conservation strategy while providing flexibility to address on-the-ground implementation issues.

In harvest units greater than 20 acres within Legacy VCUs, leave 30 percent of the entire unit (based on area) in legacy forest structure. Legacy forest structure should remain indefinitely after harvest and shall be tracked through the life of the next stand.

Legacy forest structure should be arranged primarily in clumps. The intent of leaving legacy is to provide structure within the opening; therefore, clumps should be left well inside the unit, compatible with logging system capabilities. Clumps may be placed along the external yarding boundaries within harvest units in situations where cable logging systems make leaving residual trees in other parts of the unit impractical due to operational or safety considerations. Structure left within units for other resources counts towards the 30 percent,

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provided it is representative of the existing old-growth stand characteristics, including age, size class, species composition, and structural components found within the original planned unit. Clumps and dispersed retention trees should include some of the largest, oldest live trees, decadent or leaning trees, and hard snags occurring in the unit.

For the Big Thorne Project the amount of legacy required by unit was determined based on the potential contiguous even-aged opening that might be created regardless of unit boundaries. The Forest Plan states to base legacy calculations on the original LSTA before field verification. In the Big Thorne Project this was problematic because many proposed even-age harvest units adjoined one another. This was intensified by the addition of units during field reconnaissance as well as during the early alternative design phase (OGR modification units). To address this concern the planning team elected to base legacy acreage requirements on the contiguous even-aged opening created by the combination of adjoining units including any areas that would qualify as legacy. The team did not feel that the intent of legacy would be met if legacy was not applied where multiple even-age units less than 20 acres adjoined and actually formed one connected harvest opening that exceeded 20 acres. The team determined the location of legacy could be placed anywhere within or adjacent to the combined opening including adjacent units or parts of units determined during field reconnaissance as unsuitable for harvest so long as they were consistent with the Forest Plan direction regarding the distribution and composition listed above. The planning team also faced issues with the interpretation of legacy requirements when units were split between even-aged and uneven-aged management. Uneven-aged units (partial cuts) do not require legacy because no opening greater than 20 acres is created. In cases where part of the original unit is partial cut, the other clearcut and the clearcut opening exceeded 20 acres, legacy would be applied in some fashion to be consistent with the Forest Plan. It was determined that even though the team was confident the uneven-age management areas would meet the requirements for legacy structure, the cleanest interpretation of the Forest Plan would be to set aside uncut legacy acreage rather than claim any partially cut areas as legacy.

The required and currently mapped legacy acreage is stated in the Silviculture section of each unit card. Direction is also provided regarding how legacy was placed. Legacy areas denoted on maps may be adjusted as needed so long as the objective of the placement is met. For example, if legacy is planned to coincide with areas of unsuitable soils and those areas are further refined during implementation, the legacy areas should be adjusted so they encompass the change so long as the new areas meet the requirements stated above.

Uneven-aged Management

Uneven-aged management maintains or creates a stand with trees of three or more distinct age (size) classes, either intimately mixed or in small groups. Trees may be removed individually, or in small groups or strips generally 2 acres or less in area. There is no final rotation age as in even-aged or two-aged systems, but are instead regular, periodic entries designed to maintain three or more distinct age classes and a range of diameter classes in a reasonably well dispersed manner across the stand. This maintains a stand with relatively consistent tree cover of high structural diversity due to the high variability in tree sizes and individual tree characteristics. This remaining structure generally provides more diverse wildlife habitat than other regeneration systems and also reduces the visual impacts of the harvest area. The timber production goal of uneven-aged management is to economically harvest a percentage of the stand while retaining timber for future economically viable and sustainable entries. The next harvest under uneven-aged management would likely be in 50 to 100 years.

Single-tree selection is used in units that have an uneven-aged management prescription and utilize a helicopter logging system. Helicopter yarding has been proposed to reduce road construction and associated costs, reduce the impact new roads harvest activities might have on watersheds and wildlife as well as facilitate the use of partial harvest methods needed to meet scenery objectives. In some cases uneven-aged management has been prescribed for areas adjacent to streams to facilitate a RAW buffer. Uneven-aged management would be achieved by leaving approximately 50 or 75 percent of the setting pretreatment basal area, based on standing live trees left uncut. Intermediate trees would also be retained and canopy gaps created would allow for increased understory regeneration. A retention level of 75 percent is used in units that were identified as having particular windthrow, wildlife, or visual concerns. A retention level of 50 percent was used in units with wildlife or visual concerns, but not requiring the higher level of retention. Future entries would continue the process of developing additional age classes.

Two-aged Management

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

In the Big Thorne project the objective of this prescription is to maintain and manage for two-aged stand structure primarily for wildlife by harvesting up to 40 percent of the unit area in this entry using the patch clearcutting prescription. Patch clearcuts will be limited to 5 acres in size and should be well distributed throughout the stand. Patches should be located so that the residual stand is not isolated from harvest in the future. The openings created will result in regeneration that will constitute a second age class within the stand. The second harvest entry into the stand would occur in about 40 years or at a time when the young growth from the first harvest has been precommercially thinned and the slash from that treatment does not limit wildlife movement.

Commercial Thinning in Young Growth

Commercial thinning is proposed for 50-year-old and older young-growth stands. The most important thing to consider is that contrary to old growth, young-growth stands are growing and changing rapidly. In most cases thinning treatments are not expected to be implemented for 5-10 years in order to allow these stands to continue to grow. Thinning is being proposed and evaluated now based on the analysis of current data projected forward in time to the expected thinning date using growth modeling. It is expected that additional timber inventory will occur in these stands prior to them being actually thinned. Marking guidelines covering the specifics of the treatment, such as tree spacing and species to favor for retention, will be refined at that time based on the most up-to-date stand data.

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Young-growth Silvicultural Objective/Desired Condition

Young-growth treatment objectives and desired conditions vary with regard to the position of a unit on the landscape. For example, greater emphasis would be given to improving forage production, in addition to improving stand growth/productivity, for a unit in deer winter range, compared to a unit located at higher elevation, above winter range. These treatment objectives and desired conditions are intended to influence treatment outcomes within the overarching LUD goals, objectives, and desired conditions defined by the Forest Plan.

The majority of the project area young-growth was categorized into landscape zones by the Prince of Wales Island Young Growth Thinning Treatment Options reports (Tetra Tech and Stuntzner Engineering/Forestry, 2011a and 2011b). Portions of the project area not categorized in that study were categorized under the Big Thorne Project.

The landscape zone(s) for each young-growth unit are identified on the unit cards along with a short statement of the management objective. More detailed descriptions of the management objectives are provided below.

Deer Winter Range: The management goal of young-growth treatments in this landscape zone is to manage for a sustained yield, supplying an even flow of industrial wood while improving wildlife habitat in treated stands during the suitable timber base rotation. Particular emphasis would be given to improving deer winter range conditions. Treatments would improve growth and productivity, improve forest health, and promote forest stand conditions that will provide a diverse array of marketable forest products. It is desired that at the end of the planned rotation, stands would be in a condition that regeneration harvests using even-aged, two-aged or uneven-aged silvicultural systems are feasible and appropriate. In addition, it is desired that the stands mature at different rates or have flexible rotation lengths so that harvests can be spread out and contribute to an even-flow, long-term sustained yield. This would also contribute to a greater mix of age classes and deer forage conditions across the landscape following the next rotation.

Uplands/Mountain Slopes: The management goal of young-growth treatments in this landscape zone is to manage for a sustained yield, even flow of an industrial wood supply, while meeting multiple resource objectives wherever possible. Treatments would improve growth and productivity, improve forest health, and promote forest stand conditions to provide a diverse array of marketable forest products. It is desired that at the end of the planned rotation, stands would be in a condition that regeneration harvests using even-aged, two-aged or uneven-aged silvicultural systems are feasible and appropriate. In addition, it is desired that the stands mature at different rates or have flexible rotation lengths so that harvests can be spread out and contribute to an even-flow, long-term sustained yield. This would also contribute to a greater mix of age classes and deer forage conditions following the next rotation.

Planned Treatments for Young Growth

The IDT has identified two different types of intermediate treatments to be conducted in project area young-growth units: a uniform crown thin and a systematic or “strip” thin. There is a range of treatments that can be utilized within each of these types of thinning prescriptions depending upon the stand conditions at the time of the treatment and the location of the unit with respect to the landscape zones.

Uniform Crown Thin: Young-growth units planned for this treatment will be at least 50 years of age at the time of the treatment. The objectives of these treatments are to:

- increase diameter-growth rate of remaining crop trees;
- create temporary canopy gaps to increase light to the forest floor and promote crown expansion, as well as understory plant diversity and abundance;
- improve tree characteristics that promote windfirmness possibly allowing future partial harvests;
- reduce the effects of stem exclusion stage on wildlife winter forage and habitat;
- remove poor quality trees from the upper and middle crown to favor the best codominant and dominant trees; and
- provide a volume of merchantable product in a manner which is operationally and economically feasible.

Logging systems used for this treatment will be shovel and cable systems. The majority of the cable thinning will be uphill yarding with narrow skyline corridors cut to a width between 12 and 16 feet.

Systematic Strip Thin: Young-growth units planned for this treatment will be at least 50 years of age at the time of the treatment. The objectives of these treatments are to:

- increase diameter-growth rate of remaining crop trees
- create side lighting and temporary canopy gaps in leave strips to increase light to the forest floor and promote crown expansion
- increase stand diversity by creating early seral conditions in cut strips
- provide a volume of merchantable product in a manner which is operationally and economically feasible
- remove poor quality codominant and dominant trees

Although uniform thinning is the preferred treatment, systematic or “strip” thinning may be used in some settings to reduce residual tree damage, allow operational feasibility, or reduce treatment costs. Strip thinning will remove all merchantable trees within a 20 to 60 foot wide corridor. The corridor width will depend on operational feasibility, visual concerns, and/or windthrow risk. Where visuals or windthrow are of concern, strips will be limited to a width of 20 feet. A 60 to 120 foot wide corridor will be retained between each harvested strip. The retention corridor will be thinned where operationally feasible. No more than 50 percent of the setting pretreatment basal area may be removed, including what occurs in the strips. Strip thinning will primarily be used in cable settings with downhill yarding that are unable to achieve full suspension.

Areas where uniform crown thinning and systematic strip thinning are proposed are shown on unit card maps. These areas will be refined in the future based on additional unit reconnaissance and timber inventory. Uniform crown thinning is the preferred treatment and should be applied wherever feasible at that time.

Timber/Yarding

This section of the unit card identifies the yarding system(s) proposed for the unit. It also identifies the roads to be used to access the unit. Roads to be used for helicopter landings

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are also identified, where appropriate. Proposed and existing system roads are identified by road numbers shown on the unit card maps.

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

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

Engineering/Roads

Detailed information on required road construction and reconstruction is provided in this section, including road lengths for all roads and road numbers for proposed and existing system roads. Road numbers are shown on the maps.

Road construction and reconstruction will follow applicable BMPs during layout and construction work. In particular adhere to the following BMPs: 12.17, 13.11, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.12, 14.17, and 14.18. The National Core BMPs will be implemented in this project. The crosswalk between the National Core BMPs and the Region 10 BMPs are in the project record.

Best Management Practices

The following BMPs would be applied in order to protect water quality in the project area as specified in the Forest Plan. These BMPs apply whenever the situation warrants them. For example, BMP 12.5 applies to any units or roads that involve wetlands; BMPs 12.6, 12.6a, and 13.16 apply to any units and road activities involving streams; BMPs 13.2, 13.9, 13.10 apply to all timber harvest units and log landings; BMPs 14.1, 14.2, 14.3, 14.5, 14.6, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, 14.15, 14.17, 14.18, 14.19, 14.20, 14.22, and 14.24 apply to road construction, maintenance, and other activities, including quarries (as appropriate); BMPs 14.26 and 14.27 apply to activities at existing LTFs; and BMPs 12.8, 12.17, 13.1, 13.3, 13.4, 13.5, 13.11, 13.12, 13.14, 13.17, and 13.18 apply in general to all timber sale planning and implementation activities. Many of the most relevant BMPs are cited on the unit cards or elsewhere in this introduction, as appropriate.

Watershed Management

BMP 12.5 (Wetland Identification, Evaluation, and Protection) – To identify wetland functions and value, and provide appropriate protection measures designed to avoid adverse hydrologic impacts.

BMP 12.6 (Riparian Area Designation and Protection) – To identify riparian areas and their associated management activities.

BMP 12.6a (Buffer Design and Layout) – To design streamside buffers to meet objectives defined during the implementation of BMP 12.6.

BMP 12.8 (Oil Pollution Prevention and Servicing/Refueling Operations) – To prevent contamination of surface and subsurface soil and water resources from spills of petroleum product.

BMP 12.17 (Revegetation of Disturbed Areas) – To provide ground cover to minimize soil erosion.

Timber Management

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

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

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

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

BMP 13.5 (Identification and Avoidance of Unstable Areas) – To avoid triggering mass movements and resultant erosion and sedimentation by excluding unstable areas from timber harvest.

BMP 13.9 (Determining Guidelines for Yarding Operations) – To select appropriate yarding systems and guidelines for protecting soil and water resources.

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

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

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

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

BMP 13.16 (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.

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

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

Transportation and Other Facilities Management

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

BMP 14.2 (Location of Transportation Facilities) – To assure water resources protection measures are considered when locating roads and trails.

BMP 14.3 (Design of Transportation Facilities) – To incorporate site-specific soil and water resource protection measures into the design of roads and trails.

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

BMP 14.6 (Timing Restrictions for Construction Activities) – Minimize erosion potential by restricting the operating schedule and conducting operations during lower risk periods.

BMP 14.7 (Measures to Minimize Mass Failures) – Minimize the chance and extent of road-related mass failures, including landslides and embankment slumps.

BMP 14.8 (Measures to Minimize Surface Erosion) – Minimize the erosion from cutslopes, fillslopes, and the road surface, and consequently reduce the risk of sediment production.

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

BMP 14.10 (Pioneer Road Construction) – Minimize sediment production associated with pioneer road construction.

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

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

BMP 14.14 (Control of In-channel Operations) – Minimize stream channel disturbances and related sediment production.

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

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

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

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

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

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

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

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

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

Botany

Sensitive or rare plant populations located either within units or within 50 meters (164 feet) of the unit are noted on the unit cards. Unit cards also include actions taken to avoid or mitigate effects to populations. The plant species potentially affected by one or more unit and listed on the cards include:

Sensitive Plants

Lesser Round-Leaved Orchid	<i>Platanthera orbiculata</i>
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Rare Plants

Whiteflower Rein Orchid	<i>Piperia candida</i>
Lance Leaf Grapefern	<i>Botrychium lanceolatum</i>

Appendix 1

Invasive Species

A number of specific invasive plant infestations along roads near or within specific units have been targeted for treatment (hand-pulling) and/or monitoring, based on their limited distribution in the project area, potential for spread, and feasibility for treatment. Species included in the text for treatment are Tongass high priority species and infestations recommended for monitoring include high priority species that the Tongass is committed to actively controlling where feasible. These infestations are identified on specific unit and road cards. Additional invasive species treatment, monitoring, and mitigation information for the project area is found in the Invasive Plant Risk Assessment and the Invasive Species Resource Report in the project record.

Fisheries

All known streams are discussed on the unit cards. These streams and any additional streams found during layout will be protected by the appropriate BMPs and Forest Plan Riparian Standards and Guidelines. Specific stream characteristics and related protections are summarized below. The type and level of stream protection and mitigation is based mainly on designated stream class and channel process group.

Various stream surveys were used for the effects analysis for the FEIS and ROD. These surveys consisted of unit surveys, upstream assessments, road condition surveys, watershed improvement tracking surveys, and Alaska Fish and Game Anadromous Catalog surveys. However, not all of these data have been updated in the Forest Service geographic information system (GIS) stream layer used to create the unit card maps. Therefore, the unit card maps may not always correspond to the unit card text. The text is based on the most up-to-date survey data while the map depicts GIS data which do not contain all survey data. Project-specific information (that has been field verified or obtained from the Forest Service GIS) has been included for all streams in or adjacent to the units or crossed by proposed access roads. Additional field reconnaissance continued while completing the DEIS and before the FEIS and has been included for units and related roads selected in the final EIS.

Riparian Management Areas

Forest Plan Standards and Guidelines direct the design of riparian management areas (RMAs) associated with each stream in the project area.

RMAs vary in width from the edge of the stream channel according to channel type (Table A1-1) and stream value class. All Class I and Class II streams are protected from commercial timber harvest within a minimum horizontal distance of 100 feet from the bankfull margins. Depending on the channel type, RMA widths can be up to 140 feet wide on either side of some Class I, Class II, and Class III streams. RMAs adjacent to Class III streams are protected from commercial timber harvest except along palustrine channel types. RMA widths on Class III streams are topographically delineated along channel types with steep side-slopes and are measured to set distances along other channel types.

Each unit card briefly lists the stream class, channel type, and corresponding buffer prescription for each Class I, II, and III stream found within 60 meters of the unit. Unit card maps show the location of all streams and the associated RMAs. RMA widths for each Class I, Class II, and Class III streams are prescribed in the unit card narratives.

Unit card narratives also identify those streams that will require a RAW buffer review during implementation; the RAW buffer will be identified by the ID Team during layout. A stream

number is used to assist the reader in locating the stream. Windthrow and/or erosion concerns are for the area adjacent to the stream.

Road crossings described on the unit cards are for temporary roads only. System road crossings are discussed in the road cards.

Specific concerns are also briefly listed such as blowdown or erosion occurring within the unit boundaries.

Process Groups and Channel Types

The Tongass National Forest defines stream channel types according to the Channel Type User Guide (Paustian et al.1992, Paustian and Kelliher 2010), the foundation upon which aquatic habitat management prescriptions are developed. Channel types are defined within the context of fluvial process groups that describe the interrelationship between watershed runoff, landform relief, geology, and glacial or tidal influences on fluvial erosion and deposition processes. Individual channel type classifications are defined by physical attributes such as channel gradient, channel width, channel pattern, stream bank incision and containment. Table A1-1 shows the Forest Plan codes used on the unit card narratives.

See the Forest Plan, Figure D-1 (page D-4) for a visual representation of the typical distribution of channel process groups. Each unit card summarizes the protection for a particular unit. Only the channel types found in proposed timber harvest units are listed.

Table A1-1. Channel Types In or Adjacent to Proposed Harvest Units

Process Group	Channel Type (C-Type) Code	Channel Type Description
Alluvial Fan	AFM	Moderate Gradient Alluvial Fan
	AFH	High Gradient Alluvial Cone
Floodplain	FPS	Small Flood Plain
	FPM	Medium Flood Plain
	FPL	Large Flood Plain
High Gradient Contained	HCLw	High Gradient Low Incision, wetland phase
	HCL	High Gradient Low Incision
	HCV	High Gradient Upper Valley
	HCDw	High Gradient Deep Incision, wetland phase
	HCM	High Gradient Moderate Incision
	HCD	High Gradient Deep Incision
Moderate Gradient Contained	MCS	Small Moderate Gradient Contained
	MCM	Medium Moderate Gradient Contained
	MCL	Large Moderate Gradient Contained
Moderate Gradient Mixed Control	MMS	Small Moderate Gradient Mixed Control
	MMM	Medium Moderate Gradient Mixed Control
Low Gradient Contained	LCS	Small Low Gradient Contained
	LCM	Medium Low Gradient Contained
Palustrine	PAS	Small Palustrine
	PAM	Medium Palustrine
	PAB	Beaver Dam/Pond

Appendix 1

Stream Value Classes

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

Class I: Streams and lakes with anadromous or adfluvial fish or fish habitat; or high quality resident fish waters, or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish.

Class II: 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.

Class III: 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.

Class IV: 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).

Stream Protection and Mitigation Actions by Stream Category

The following protection and mitigation will be applied by stream category as defined in BMP 13.3 to all streams designated by each category by harvest unit.

Category A: These stream reaches are flagged with blue and white (B/W) candy striped flagging. Under the TTRA timber harvest shall not be within 100 feet of the stream channel and a Stream Course Protection Plan will be developed for that buffer. Additional Aquatic Habitat Management Handbook (AHMU) buffers and selective harvest buffers may apply as specified in the specific Unit Card. Total no cut buffer is the sum of the no commercial and no programmed commercial harvest buffers.

Category B: These stream reaches are flagged with orange and white (O/W) candy striped flagging. Trees shall be felled in such a manner so that the direction of fall is away from the stream course. Trees or products shall not be hauled or yarded across the stream course unless fully suspended. Debris entering streams from harvest activities shall be removed. Additional AHMU buffers and selective harvest buffers may apply as specified in the Unit Card. Total no cut buffer equals the no programmed commercial harvest buffers.

Category C: These stream reaches are flagged with green and white (G/W) candy striped flagging. In so far as practicable, trees will be felled and yarded away from the stream course. Debris that enters the stream channel that may affect water quality or have potential for debris flows will be removed from the stream course.

Category A, B and C: All stream categories will implement BMPs 12.6, 12.6a, 13.9, 13.14, and 13.16. In addition to road crossings, for all units with shovel logging, equipment crossing of streams must comply with BMP 13.9 and 13.16.

Scenery

The potential effects of timber harvest upon scenery within the Big Thorne project area were mitigated by design criteria recommended by the project landscape architects. Retention to meet the Forest Plan scenery objectives using uneven-aged management or visual buffers has been identified for a number of units, as specified in the Scenery concerns box on the unit card narratives. As noted in the Even-aged Systems (Clearcut) section, these buffers would be reviewed for windfirmness and a RAW buffer used, if necessary. During implementation, any units which may exceed the Scenic Integrity Objectives would be reviewed by the landscape architect and modified if necessary. The allowable seen opening size specific to each unit is stated within each unit card narrative for units that have concerns.

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.

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

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

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

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

Heritage Resources

Heritage resource concerns are not shown on unit card maps. The layout crew has been given the information which unit boundaries cannot be changed.

Soils/Wetlands

Unit design and road locations are heavily influenced by the project area's soil resources. For instance, factors such as RMA buffers protect riparian soils and efforts to avoid slopes greater than 72 percent often determine the location of unit boundaries, temporary roads, and landings.

Factors that can influence unit design are areas designated as unsuitable for harvest due to very high landslide potential, colluvial activity, MMI4 soils, slopes steeper than 72 percent, and unstable drainages. Slopes greater than 72 percent that remain within units have been determined to be suitable for harvest with a minimum of partial suspension or full suspension yarding. These factors that influence unit design and define whether slopes greater than 72 percent are suitable for harvest are addressed in the unit cards.

Appendix 1

Temporary roads crossing wetlands are noted in the unit cards. All road construction planned for this project is for silvicultural purposes and will be located and designed to meet 33 CFR 323 guidelines and State-approved BMPs.

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. Use care when approving shovel yarding on slopes over 25 percent gradient. Avoid track slippage and rutting.

All units have a minimum of partial suspension required unless otherwise stated within the unit card text. Some units have areas where full suspension is required. Consult the unit card text for details on locations (BMP 13.9).

Wildlife

All units comply with required Forest Plan Wildlife Standards and Guidelines. Any nests/animal dens discovered at any time will receive the necessary standard and guideline applications. See the description of legacy forest structure and direction in the General Direction Regarding the Implementation of the Legacy Forest Structure Standard and Guideline above.

Wolves: The Forest Plan requires a 1,200-foot buffer be applied to all known wolf den sites in the project area. Two known den site buffers overlapped three proposed harvest units; the portions of units overlapping the buffers were removed from the unit pool. Actual den locations and buffers are not displayed on unit cards maps at the request of ADF&G.

Black bears: The Forest Plan does not require buffers for black bear dens; however, in consultation with ADF&G for this project, to minimize den disturbance, a 300-foot buffer was applied to all known black bear den sites within the project area. Portions of units overlapping the 300-foot black bear den site buffers were removed from the unit pool. Actual den locations and buffers are not displayed on unit card maps at the request of ADF&G.

Goshawks: The Forest Plan requires a 100-acre buffer on all known active goshawk nests. The one unit in which a nest was located and an adjacent unit were eliminated from consideration by the buffer.

Sitka black-tailed deer: Uneven-aged harvest and commercial thinning will help maintain or enhance black-tailed deer habitat over the long-term. Reduction of habitat, especially winter habitat, and fragmentation were also an important component of maintaining deer habitat. Where practical, corridors are planned to facilitate movement of deer across the landscape.

Unit Number:	1	Alternatives: ROD	Total Unit Acres:	25.0	Prescription: Clearcut																																																
VCU Number:	595	Yarding System: Shovel	Net Harvest Volume (MBF):	576	LUD: Scenic Viewshed, Timber Production																																																
Summary of Concerns, Responses, BMPs and Mitigation																																																					
<p>SILVICULTURE: Existing Condition: This unit has old growth stand structure. The mistletoe rating for the stand is moderate to high. The primary defect is stem decay which ranges from moderate to high. The windthrow risk rating for the stand is moderate. All adjacent past harvest areas meet NFMA requirements for regeneration and no longer are considered openings.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is adjacent to the Klawock-Control Lake highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, requires limited visibility of harvest openings from this road (see Scenery comments). In order to meet this requirement a screen of trees is being prescribed to be maintained to block most of the harvest area from view, although the visible opening may be up to 5 acres in size (see Scenery). Design this screen approximately as shown on the unit card map. Utilize existing young growth between the road right-of-way and old-growth edge to provide screening. Evaluate the effectiveness and windthrow risk of the planned screen at the time of layout and adjust as needed.</p>																																																					
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary roads.</p>																																																					
<p>ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 1,800 feet.</p>																																																					
<p>BOTANY: No Concerns</p>																																																					
<p>INVASIVE SPECIES: Two bull thistle infestations are located just north of unit. Both have been treated in the past and are recommended for monitoring and follow-up treatments. One of these infestations is located at the rock pit between the unit and the existing 2030000 road. This rock pit will need to be inspected to determine the success of past treatments before it is approved for use.</p>																																																					
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: A</td> <td style="width: 25%;">Class: III, IV</td> <td style="width: 25%;">Flagging: O/W, G/W</td> <td style="width: 25%;">C-Type: HCL, MMO, HCO</td> </tr> <tr> <td>Concerns: none</td> <td>Buffer (RMA): Class III for HCL to the top of the side-slope break.</td> <td></td> <td></td> </tr> <tr> <td>Alternatives: 2, 3, 4, and 5</td> <td>Buffer (RAW): no review needed</td> <td></td> <td>Protection: Category B and C</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 1 (Steelhead Creek)</td> <td style="width: 25%;">Class: I</td> <td style="width: 25%;">Flagging: B/W</td> <td style="width: 25%;">C-Type: LCL, MCL</td> </tr> <tr> <td>Concerns: none known</td> <td>Buffer (RMA): Class I for MCL greater of 100 feet or to the top of the side-slope break.</td> <td></td> <td></td> </tr> <tr> <td>Alternatives: 2, 3, 4, and 5</td> <td>Buffer (RAW): no review needed</td> <td></td> <td>Protection: Category A</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 1.1L</td> <td style="width: 25%;">Class: I</td> <td style="width: 25%;">Flagging: B/W</td> <td style="width: 25%;">C-Type: MMM, HCV</td> </tr> <tr> <td>Concerns: none</td> <td>Buffer (RMA): Class I for MMM greater of 120 feet, flood plain, riparian vegetation or soils or riparian associated wetland fens. Class I for HCV for greater of 100 feet or to the top of the side-slope break.</td> <td></td> <td></td> </tr> <tr> <td>Alternatives: 2, 3, 4, and 5</td> <td>Buffer (RAW): no review needed</td> <td></td> <td>Protection: Category A</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 1.1L.1L</td> <td style="width: 25%;">Class: III</td> <td style="width: 25%;">Flagging: O/W</td> <td style="width: 25%;">C-Type: HCD, HCM</td> </tr> <tr> <td>Concerns: none</td> <td>Buffer (RMA): Class III for HCD and HCM to the top of side-slope break.</td> <td></td> <td></td> </tr> <tr> <td>Alternatives: 2, 3, 4, and 5</td> <td>Buffer (RAW): no review needed</td> <td></td> <td>Protection: Category B</td> </tr> </table> <p>Temporary roads for Unit 1: no known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction</p>						Stream#: A	Class: III, IV	Flagging: O/W, G/W	C-Type: HCL, MMO, HCO	Concerns: none	Buffer (RMA): Class III for HCL to the top of the side-slope break.			Alternatives: 2, 3, 4, and 5	Buffer (RAW): no review needed		Protection: Category B and C	Stream#: 1 (Steelhead Creek)	Class: I	Flagging: B/W	C-Type: LCL, MCL	Concerns: none known	Buffer (RMA): Class I for MCL greater of 100 feet or to the top of the side-slope break.			Alternatives: 2, 3, 4, and 5	Buffer (RAW): no review needed		Protection: Category A	Stream#: 1.1L	Class: I	Flagging: B/W	C-Type: MMM, HCV	Concerns: none	Buffer (RMA): Class I for MMM greater of 120 feet, flood plain, riparian vegetation or soils or riparian associated wetland fens. Class I for HCV for greater of 100 feet or to the top of the side-slope break.			Alternatives: 2, 3, 4, and 5	Buffer (RAW): no review needed		Protection: Category A	Stream#: 1.1L.1L	Class: III	Flagging: O/W	C-Type: HCD, HCM	Concerns: none	Buffer (RMA): Class III for HCD and HCM to the top of side-slope break.			Alternatives: 2, 3, 4, and 5	Buffer (RAW): no review needed		Protection: Category B
Stream#: A	Class: III, IV	Flagging: O/W, G/W	C-Type: HCL, MMO, HCO																																																		
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Appendix 1

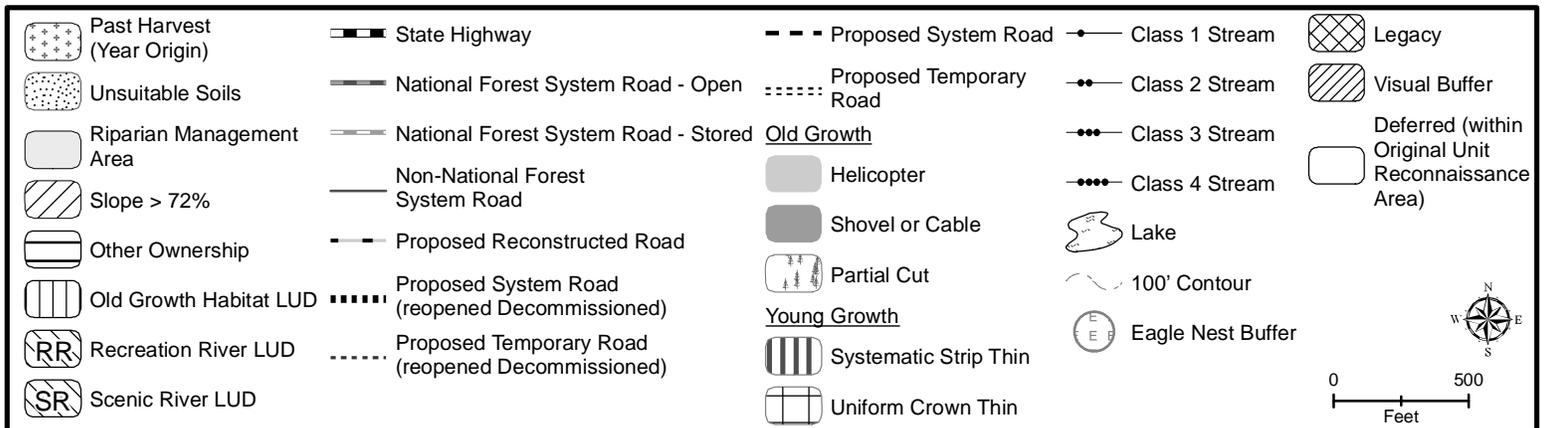
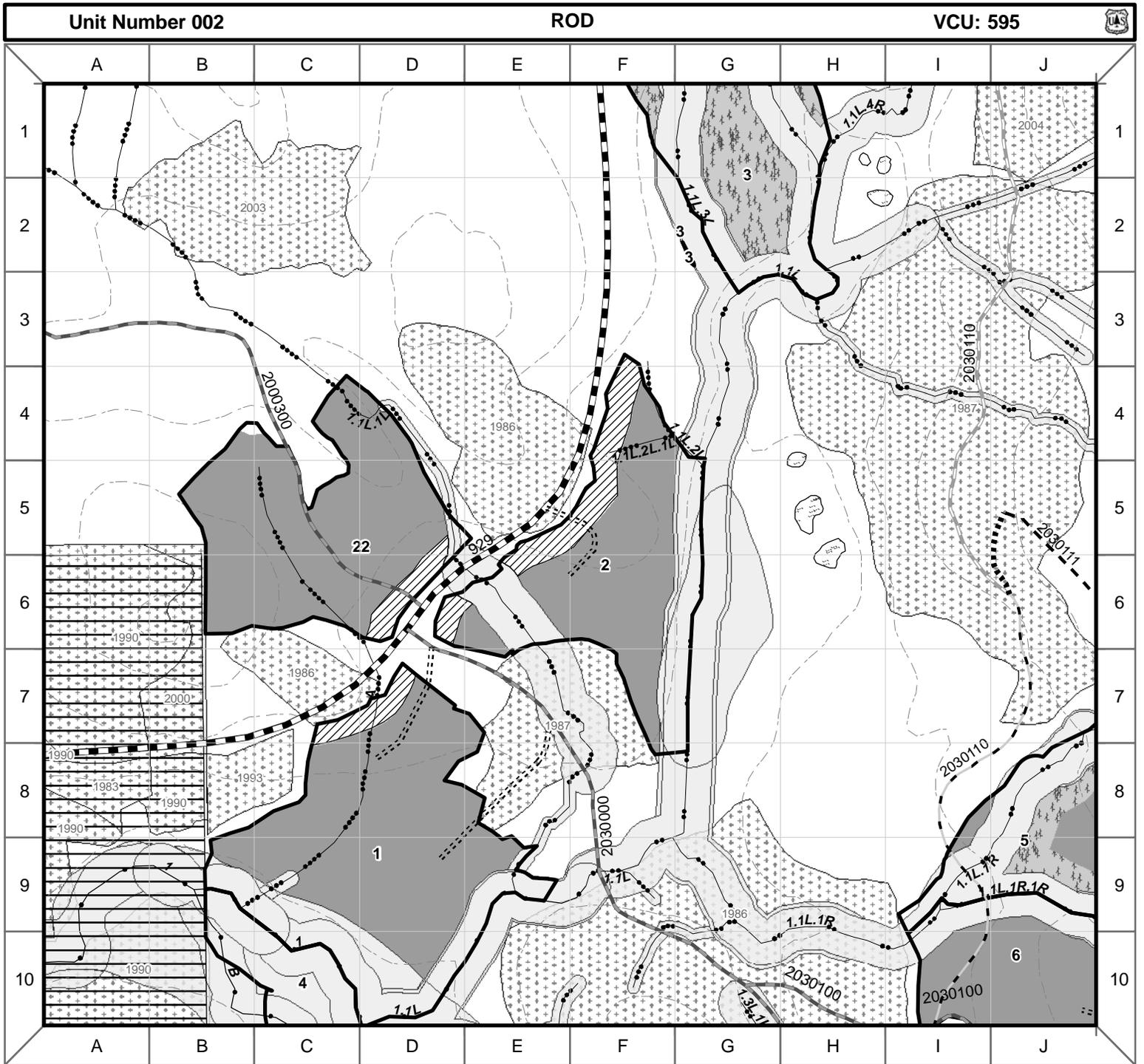
(BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is almost entirely Very Low because the unit is Seldom Seen. However, the original unit extended to within about 50-100 ft of the Klawock-Control Lake highway and this portion had a High SIO because it was in Scenic Viewshed and Foreground distance zone. Therefore, a visual buffer is established along the highway to screen views from this Visual Priority Route (as shown in unit card map and described in the silvicultural prescription). As a result, the harvested area would begin beyond the visual buffer, and is generally downslope of the highway. The unit is easily screened and, because of moderate VAC, the Forest Plan allows a 5+ acre opening. However, because of the proximity to the road, the visible opening should be 5 acres or less. As noted in the prescription, the visual buffer or screen will be designed for wind firmness.
RECREATION: The open log landing located adjacent to this unit serves as a parking area for a popular dispersed recreation use area: the 2030 road system, which provides access to the Steelhead River drainage and the Klawock Mountains. Many people use this area in the winter to park trucks and trailers and then snowmobile into the Klawock Mountains. Kids sled down the road here. People also hunt and fish from this road system. Parking here is likely to be reduced due to rock removal from the adjacent rock pit for road construction. Also, it is likely that logs would be decked at this site, which would further affect the useable recreation area.
SOILS/WETLANDS: Slopes range from 15 to 35 percent. Less than 50% of the unit consists of forested wetland and poorly drained soils (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The unit is dominantly upland. The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4). The proposed temporary roads will impact approximately 1 acre of forested wetland within the unit and 1 acre outside of the unit. Wetland avoidance is not feasible due to harvest on forested wetlands and the presence of many fish streams. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.

Appendix 1

Unit Number:	2	Alternatives: ROD	Total Unit Acres:	14.7	Prescription: Clearcut
VCU Number:	595	Yarding System: Shovel	Net Harvest Volume (MBF):	510	LUD: Scenic Viewshed, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation					
<p>SILVICULTURE: Existing Condition: This unit is in old-growth gap phase stand structure. The timber volume is above average with some high volume Sitka spruce in the northern portion of the unit. The western hemlock has moderate stem decay and mistletoe that is moderate to heavy. Defect for all other species is moderate. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is adjacent to the Klawock-Control Lake highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, requires limited visibility of harvest openings from this road (see Scenery comments). In order to meet this requirement a screen of trees is being prescribed to be maintained to block most of the harvest area from view, although the visible opening may be up to 5 acres in size (see Scenery). Design this screen approximately as shown on the unit card map. Utilize existing young growth between the road right-of-way and old-growth edge to provide screening. Evaluate the effectiveness and windthrow risk of the planned screen at the time of layout and adjust as needed.</p>					
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS road 2030000.</p>					
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 500 feet. Temporary road is accessed by state highway and will require a driveway permit to allow construction.</p>					
<p>BOTANY: No Concerns</p>					
<p>INVASIVE SPECIES: Two bull thistle infestations are located adjacent to the unit. Both have been treated in the past and are recommended for monitoring and follow-up treatments. Monitoring is recommended along the proposed temporary road to ensure that bull thistle is not spread into the new construction.</p>					
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1.1L Class: II Flagging: B/W C-Type: HCV, MCL, MMM Concerns: none known Buffer (RMA): Class II for HCV and MCL- 100 foot or to top of side-slope break; whichever is greatest. Class II for MMM-100 ft or to extent of flood plain, riparian vegetation or soils, or riparian associated wetland fens Alternatives: 2, 3, 4, and 5 Buffer (RAW): needs review on west side of stream. Protection: Category A</p> <p>Stream#: 1.1L.1L Class: III Flagging: O/W C-Type: MMS Concerns: none Buffer (RMA): Class III for MMS greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens Alternatives: 2, 3, 4, and 5 Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class IV Flagging: G/W C-Type: HCO Concerns: none Buffer (RMA): none Alternatives: 2, 3, 4, and 5 Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 2: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>					
<p>GEOLOGY/KARST: No Concerns</p>					

<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is primarily Low and Very Low. However, about 5 acres of the unit is in High SIO because it is in Scenic Viewshed and Foreground distance zones. The original unit extends to within about 50-100 ft of the Klawock-Control Lake highway; therefore, a visual buffer is established along the highway to screen views from this Visual Priority Route (as shown in unit card map and described in the silvicultural prescription). As a result, the harvested area would begin beyond the visual buffer, and is generally downslope of the highway. The unit is easily screened and, because of moderate VAC, the Forest Plan allows a 5+ acre opening. However, because of the proximity to the road, the visible opening should be 5 acres or less. As noted in the prescription, the visual buffer or screen will be designed for wind firmness.</p>
<p>RECREATION: No Concerns</p>
<p>SOILS/WETLANDS: Slopes range from 15 to 35 percent. Less than 50% of the unit consists of forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The unit is dominantly upland. The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p> <p>The proposed temporary road does not cross any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit, including visual buffer), most of which is also deep snow winter habitat (entire unit except north corner). Legacy standard and guideline does not apply in this VCU.</p>

Appendix 1

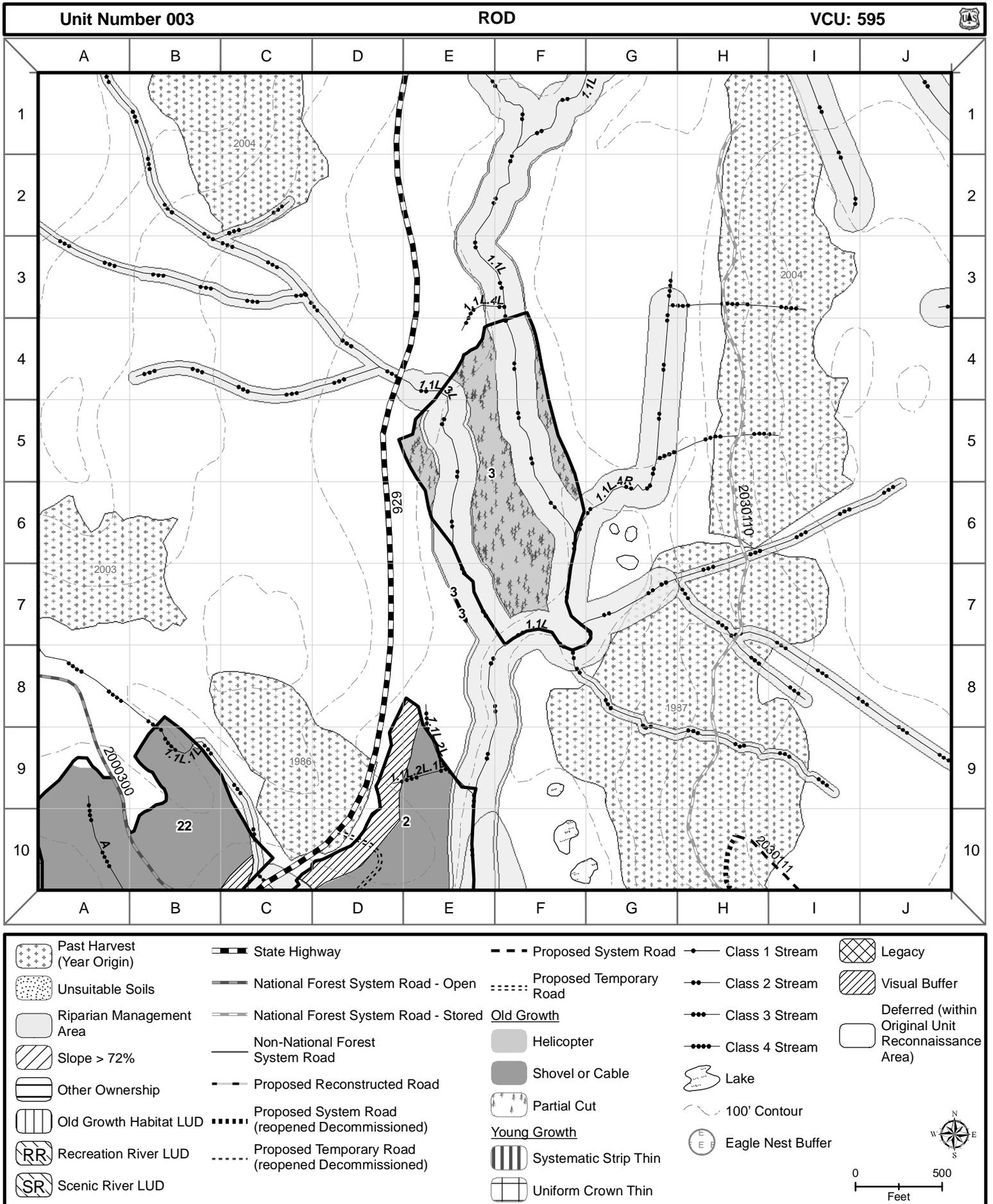


Unit Number:	3	Alternatives: ROD	Total Unit Acres:	12.1	Prescription: Clearcut
VCU Number:	595	Yarding System: Helicopter	Net Harvest Volume (MBF):	266	LUD: Scenic Viewshed, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation					
<p>SILVICULTURE: Existing Condition: The stand has old-growth stand structure. Stem decay is high and especially high in the larger trees. Mistletoe infection was moderate. Defect is high for all species, except in the Sitka spruce, which is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall, meeting NFMA requirements for no longer being considered an opening. Windthrow Risk is moderate.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>					
<p>TIMBER/YARDING: Helicopter yarding to the proposed temporary road accessing Unit 2.</p>					
<p>ENGINEERING/ROADS: This unit is accessed by the proposed temporary road located in Unit 2 to the south for a helicopter landing. See the unit card for Unit 2 for road description.</p>					
<p>BOTANY: No Concerns</p>					
<p>INVASIVE SPECIES: Scattered bull thistle has been known and treated along the State Highway adjacent to the unit. Follow up monitoring and treatments are recommended for this infestation. In addition, monitoring of the unit is recommended after harvest to ensure that the infestation has not spread.</p>					
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1.1L Class: II Flagging: B/W C-Type: MMM, MCM, HCV Concerns: active erosion Buffer (RMA): Class II for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Buffer (RMA): Class II for MCM and HCV- greater of 100 foot or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review needed on inside of stream. Protection: Category A</p> <p>Stream#: 1.1L.3L Class: II, III Flagging: B/W, O/W C-Type: HCV, MCS, MMS, HCM Concerns: High blowdown observed along MCS channel. Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCV, MCS, and HCM- greater of 100 feet or the side-slope break. Class III for HC- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review needed on inside of stream. Protection: Category A and B</p> <p>All other streams in unit: Class IV: Flagging: G/W C-Type: HCO Buffer (RMA): none Alternatives: ROD Buffer (RAW): no review needed. Protection: Category C</p>					
<p>GEOLOGY/KARST: No Concerns</p>					
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>					
<p>SCENERY: The Scenic Integrity Objective (SIO) for this three-polygon helicopter unit is primarily Low and Very Low. However, about 1 acre of the unit remains in High SIO because it is in Scenic Viewshed and Foreground distance zone. The unit is set back 50- 350 ft from the state highway; this setback functions as a visual buffer. In addition, the nearest polygon to the highway is only 1 acre; the remainder of the unit is at least 250 ft from the highway. Further, two 200+ ft riparian buffers extend the length of the unit, further breaking up the openings within the unit. Alternative 4, in particular, would have no concerns because the unit is prescribed for uneven-aged management in this alternative.</p>					
<p>RECREATION: No Concerns</p>					

Appendix 1

SOILS/WETLANDS: Slopes are gentle throughout the unit averaging less than 30%. Less than 15% of the unit is forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The majority of the unit contains upland soils. A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).

WILDLIFE: Includes average snow deer winter range (all settings), some of which is also deep snow marten habitat (western two settings). Legacy standard and guideline does not apply in this VCU.



Appendix 1

Unit Number:	4	Alternatives: ROD	Total Unit Acres:	44.7	Prescription: Clearcut
VCU Number:	595	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF):	836	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation					
<p>SILVICULTURE: Existing Condition: This unit has old growth stand structure. Some areas of marginal volume are found in association with windthrow areas in the western portion of the unit adjacent to past harvests on private land. In the western hemlock mistletoe is moderate to heavy with most trees showing infection. Stem decay also appears to be heavy especially in larger western hemlock. Defect is moderate for all other species. Windthrow risk is high. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall and meet NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-aged Management – Clearcut This stand is over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>					
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary road. Shovel settings yard to the proposed temporary road and NFS road 2030000.</p>					
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,900 feet.</p>					
<p>BOTANY: No Concerns</p>					
<p>INVASIVE SPECIES: No Concerns</p>					
<p>FISHERIES: Streams are tributaries to Steelhead Creek. Characteristics for Stream B do not include project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream #: 1 (Steelhead Creek) Class: I, II Flagging: B/W C-Type: MCL, LCL, LCM. Concerns: none known Buffer (RMA): Class I for MCL and LCL. Class II for LCM- greater of 100 feet or to top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on north/northeast edge of unit. Protection: Category A</p> <p>Stream #: 1.1R Class: II Flagging: B/W C-Type: HCO, MMO, HCM Concerns: none known Buffer (RMA): Class II for HCO and HCM- greater of 100 feet or to top of the side-slope break. Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1R.1R Class: II, IV Flagging: B/W, G/W C-Type: HCO, MMO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.3L Class: I, II, IV Flagging: B/W, G/W C-Type: MMS, MMO, HCO Concerns: none Buffer (RMA): Class I and II for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and C</p> <p>Stream#: B Class: I Flagging: B/W C-Type: MCS Concerns: none Buffer (RMA): Class I for MCS greater of 100 feet or to top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1R.2R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of the side-slope break.</p>					

<p>Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A</p> <p>Stream#: 1.1R.1L Class: III, IV Flagging: O/W, G/W C-Type: HCM, MMO Concerns: none Buffer (RMA): Class III for HCM- top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category B and C</p> <p>Two Class II and one Class IV stream crossings. Stream#: 1.1R, Class: II, C-Type: MMO. A log culvert is recommended. Stream#: 1.1R.2R Class: II C-Type: MMO. A log culvert is recommended. Dolly Varden char were identified at the proposed Class II crossings and will require a timing window of June 15 to September 1. If any additional crossings are found they will be approved by the USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). The Class II crossings will be designed to provide fish passage using a log culvert or bridge, will be installed under current timing constrictions, and concurrence from the State will be solicited prior to starting the work. During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.14, 14.3, and 14.5, 14.20, and 14.8.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>
<p>RECREATION: No Concerns</p>
<p>SOILS/WETLANDS: Slopes generally range from nearly level to 50% with many small knobs throughout the western block. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>A temporary road will impact less than ¾ of an acre of forested wetland inside the unit and approximately ¾ of an acre of forested wetland outside the unit. Wetland avoidance is not feasible due to the dominance of forested wetlands located within the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (northern ¾ of unit). Legacy standard and guideline does not apply in this VCU.</p>

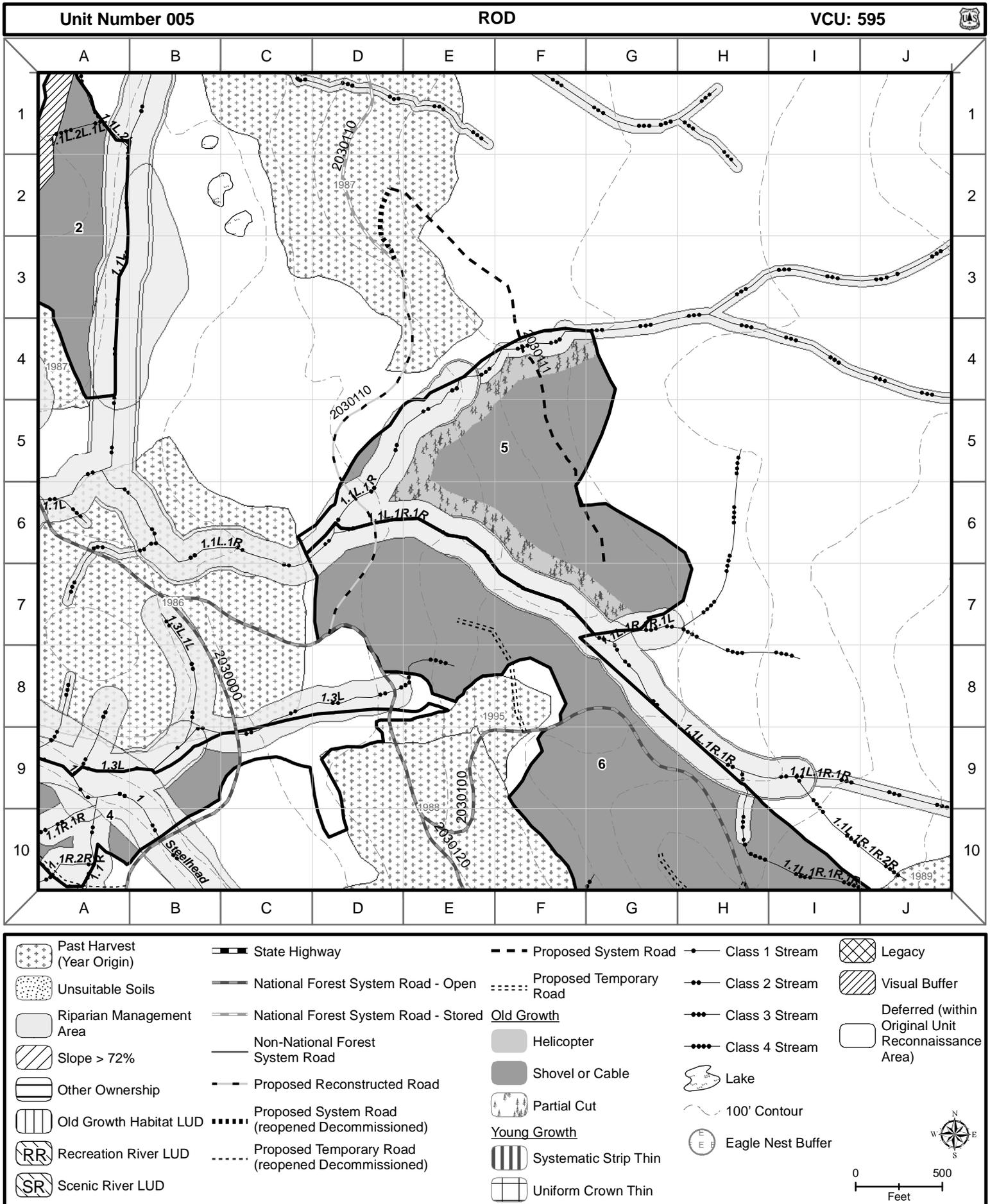
Unit Number:	5	Alternatives: ROD	Total Unit Acres:	30.5	Prescription: Clearcut and
VCU Number:	595	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF):	617	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation					
<p>SILVICULTURE: Existing Condition: Unit 5 has old-growth stand structure. In the hemlock stem decay is heavy and mistletoe is moderate. Alaska-cedar decline is occurring in the stand. Windthrow risk is moderate.</p> <p>Silvicultural Prescription: Even-aged Management – Clearcut Trees are over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as designated on the unit card maps) Maintain at least 75 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. It is prescribed to achieve RAW along streams. This system is not optimum for promoting timber production but is being prescribed to mitigate the overall effects of the project on wildlife or to achieve RAW along stream buffers.</p>					
TIMBER/YARDING: Cable settings yard to proposed NFS road 2030111. Shovel settings yard to proposed NFS road 2030111 and NFS road 2030110. Helicopter settings yard to NFS road 2030110.					
ENGINEERING/ROADS: Unit is accessed by proposed NFS road 2030111, totaling 2,600 feet; approximately 400 feet will be constructed over decommissioned road bed. Unit is also accessed by reconstruction of NFS road 2030110 for 2,500 feet. See road card for information on NFS roads.					
BOTANY: No Concerns					
INVASIVE SPECIES: No Concerns					
<p>FISHERIES: Streams are tributaries to Steelhead Creek. Characteristics for Stream 1.1L.1R do not include project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: 1.1L.1R Class: II, III Flagging: B/W, O/W C-Type: HCM, HCL, HCV, HCD Concerns: steep side-slopes with exposed bedrock. Buffer (RMA): Class II for HCM, HCL, and HCV- greater of 100 feet or to the top of the side-slope break. Class III for HCD and HCV- to the side-slope break. Alternatives: ROD Buffer (RAW): requires review on north side of unit. Protection: Category A and B</p> <p>Stream#: 1.1L.1R.1R Class: II Flagging: B/W C-Type: HCL, HCV Concerns: Blowdown, active erosion, steep side-slopes and exposed bedrock. Buffer (RMA): Class II for HCL and HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A</p> <p>Stream#: 1.1L.1R.1R.1L Class: III, IV Flagging: O/W, G/W C-Type: HCD, HCL Concerns: Blowdown and active erosion in HCD segment. Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>					
GEOLOGY/KARST: No Concerns					
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.					
SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.					

Appendix 1

RECREATION: No concerns; however, note that this unit is adjacent to the Karta inventoried roadless area to the east.

SOILS/WETLANDS: Slopes are gentle throughout unit. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).

WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (along western and southern edges). Legacy standard and guideline does not apply in this VCU.

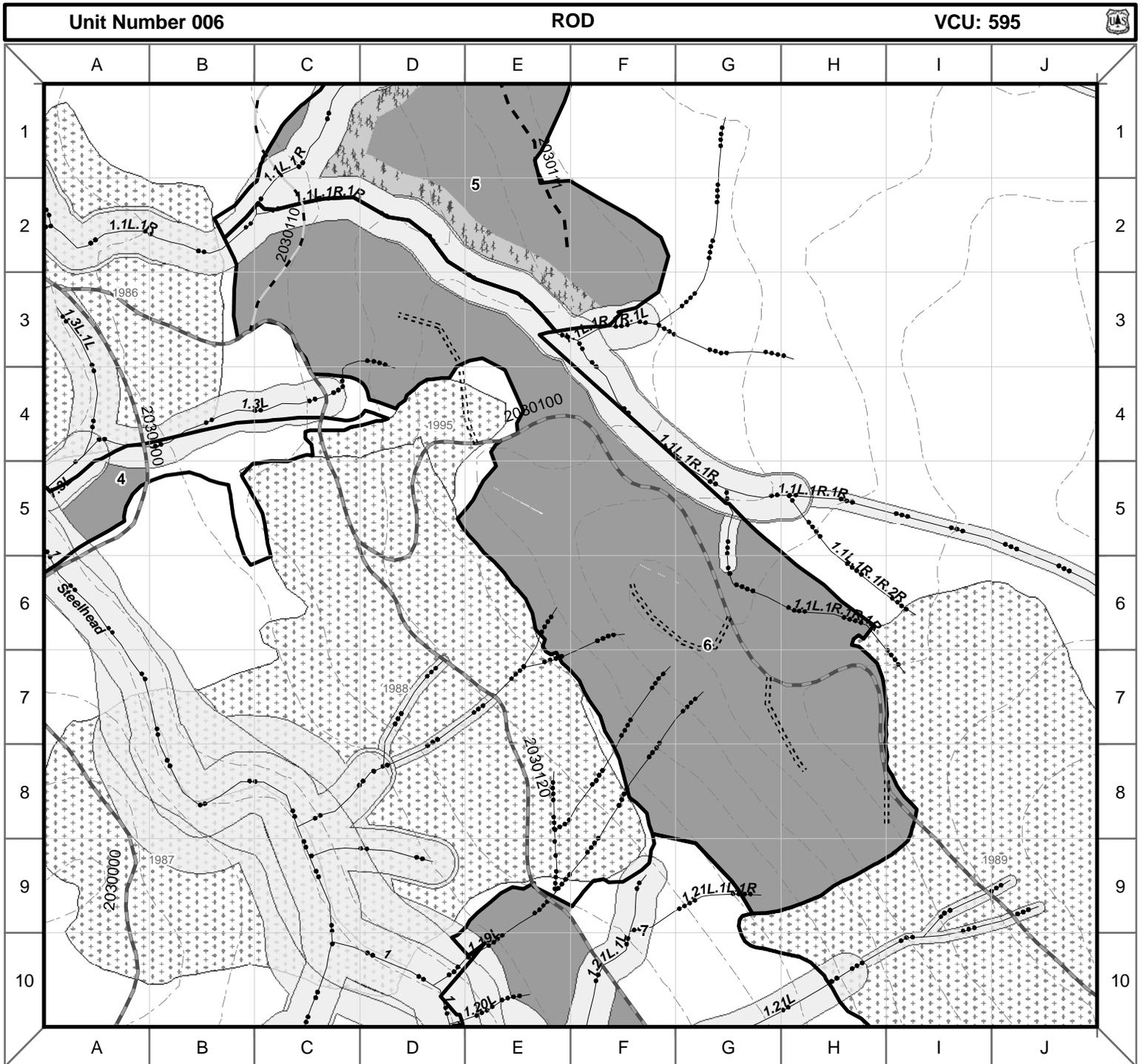


Appendix 1

Unit Number: 6	Alternatives: ROD	Total Unit Acres: 89.2	Prescription: Clearcut
VCU Number: 595	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 2,358	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 6 has old-growth stand structure. Hemlock mistletoe is moderate overall with some areas having high occurrence. Hemlock stem decay is very prevalent with high overall rates. Defect is average in other species. Patchy blowdown is prevalent throughout the unit. The windthrow risk rating for the unit is high.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary roads. Shovel settings yard to the proposed temporary roads, and NFS roads 2030100 and 2030110.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by four proposed temporary roads, totaling 2,300 feet and reconstruction of NFS road 2030110 for 600 feet. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: An infestation of narrowleaf hawksbeard is located along the NFS road 2030100 accessing the unit. Treatment and monitoring is recommended for this infestation.</p>			
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1.1L.1R Class: II Flagging: B/W C-Type: HCM, HCL Concerns: none known Buffer (RMA): Class II for HCM and HCL greater of 100 feet or to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A</p> <p>Stream#: 1.1L.1R.1R Class: II, III Flagging: B/W, O/W C-Type: HCL, HCV, HCD Concerns: blowdown, active erosion, steep side-slopes and exposed bedrock. Buffer (RMA): Class II for HCL and HCV- greater of 100 feet or to the top of the side-slope break. Buffer (RMA): Class III for HCD- to top of side-slope break. Alternatives: ROD Buffer (RAW): review required on NE border. Protection: Category A and B</p> <p>Stream#: 1.1L.1R.1R.1R Class: III, IV Flagging: O/W, G/W C-Type: HCD, MMO Concerns: blowdown, active erosion Buffer (RMA): Class III for HCD to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required, short O/W segment in central N boundary. Protection: Category B and C</p> <p>Stream#: 1.3L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p> <p>Temporary roads for Unit 6: No known stream crossings. If any stream crossings are found, crossing structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			

<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering 45 to 49 acres depending on the alternative. The Low SIO area is in Modified Landscape LUD and Middleground distance zone, while the Very Low is in Timber Production LUD. The Low SIO area is primarily from 3/4 to 1-1/4 miles from the Klawock-Control Lake highway, which is a Visual Priority Travel Route.</p>
<p>RECREATION: No Concerns</p>
<p>SOILS/WETLANDS: Slopes average from 20 to 70%, with the higher slopes prevalent in the southern portion of the unit. Forested wetlands are dominant where the slopes are less than 35% (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes an average snow deer winter range (entire unit), some of which is also deep snow marten habitat (western ¾ of unit). Legacy standard and guideline does not apply in this VCU.</p>

Appendix 1

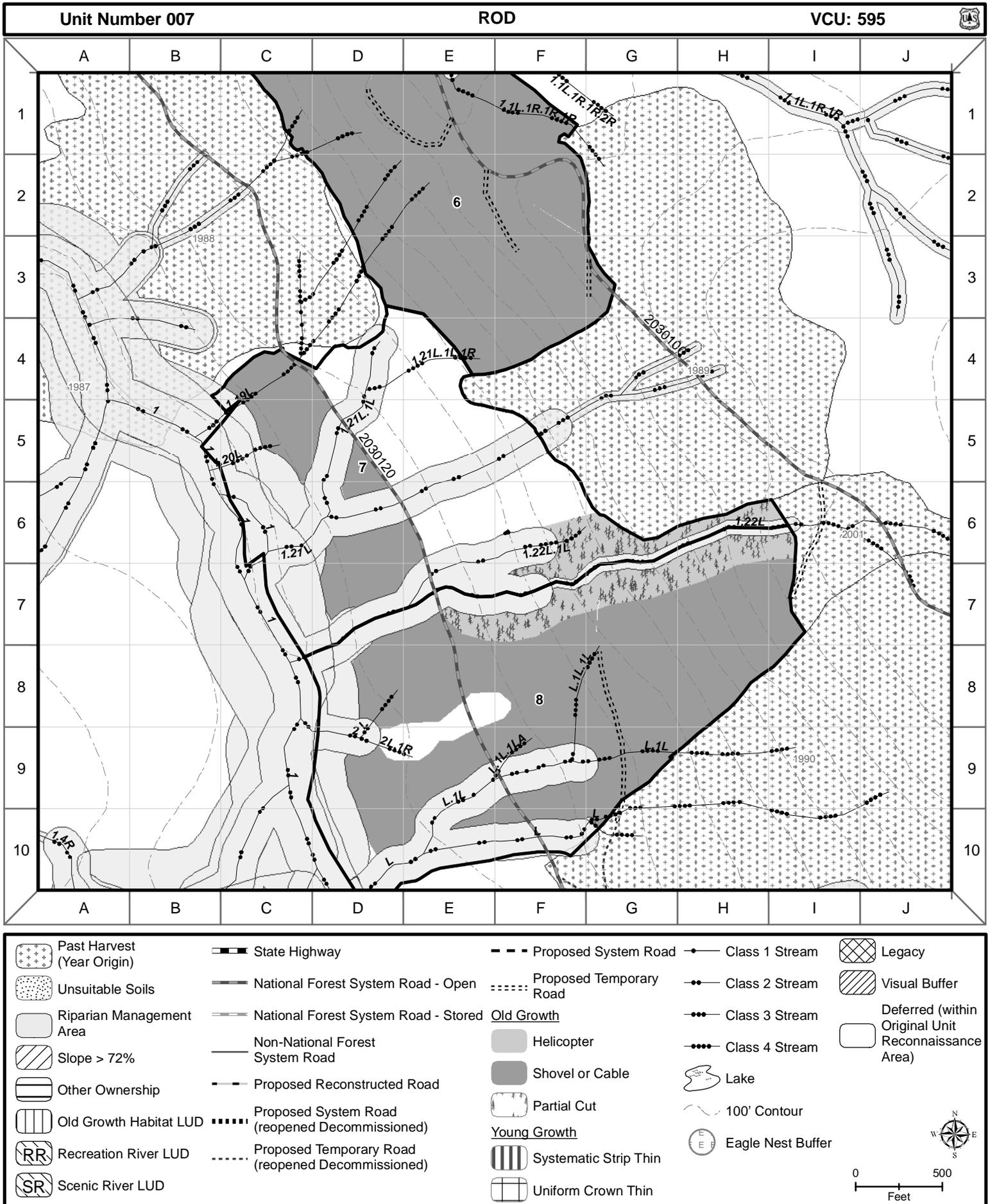


Past Harvest (Year Origin)	State Highway	Proposed System Road	Class 1 Stream	Legacy
Unsuitable Soils	National Forest System Road - Open	Proposed Temporary Road	Class 2 Stream	Visual Buffer
Riparian Management Area	National Forest System Road - Stored	Old Growth	Class 3 Stream	Deferred (within Original Unit Reconnaissance Area)
Slope > 72%	Non-National Forest System Road	Helicopter	Class 4 Stream	Lake
Other Ownership	Proposed Reconstructed Road	Shovel or Cable	100' Contour	Eagle Nest Buffer
Old Growth Habitat LUD	Proposed System Road (reopened Decommissioned)	Partial Cut		
Recreation River LUD	Proposed Temporary Road (reopened Decommissioned)	Young Growth		
Scenic River LUD		Systematic Strip Thin		
		Uniform Crown Thin		

Unit Number:	7	Alternatives: ROD	Total Unit Acres: 16.4	Prescription: Clearcut
VCU Number:	595	Yarding System: Shovel, cable, helicopter	Net Harvest Volume (MBF): 229	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 7 is an old-growth structured stand of predominantly western hemlock with scattered Sitka spruce and areas of western redcedar. Defect in the western hemlock is generally moderate to high. The occurrence of mistletoe is moderate with most overstory western hemlock infected. Past wind damage has affected available volume in this unit. Windthrow risk is moderate to high overall. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy, improve site productivity through increased soil temperature and minimize defect and disease in the future stand to the maximum extent possible. A large portion of the original planned unit was deferred in order to maintain an uncut logical setting between units 6, 7 and 8. The combination of these units as originally planned would have exceeded the allowable NFMA opening size. Any unit adjustments during presale should maintain this logical setting.</p>				
TIMBER/YARDING: Shovel, cable and helicopter yarding to NFS road 2030120.				
ENGINEERING/ROADS: No proposed road construction or reconstruction.				
BOTANY: No Concerns				
INVASIVE SPECIES: No Concerns				
FISHERIES: Streams are tributaries to Steelhead Creek.				
<p>Stream#: 1 (Steelhead Creek) Class: II Flagging: B/W C-Type: FPL Concerns: none Buffer (RMA): Class II- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required on east side of Steelhead. Protection: Category A</p> <p>Stream#: 1.19L Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: Steep side-slopes with shallow soils and exposed bedrock, active erosion, and debris dams in Class III portion of stream. Buffer (RMA): Class III for HCM to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.21L Class: II Flagging: B/W C-Type: MMS, HCM Concerns: none Buffer (RMA): Class II for MMS - greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on south side of unit. Protection: Category A</p> <p>Stream#: 1.21L.1L Class: II Flagging: B/W C-Type: HCO, MMO Concerns: none Buffer (RMA): Class II for MMO greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A</p> <p>Stream#: 1.22L Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: MMS, HCL, HCM, HCD Concerns: high blowdown, active erosion Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCL- greater of 100 feet or to the top of the side-slope break. Class III for HCM and HCD to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A, B, and C</p>				

Appendix 1

<p>Stream#: 1.22L.1L Class: II, IV Flagging: B/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class II for HCM greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Alternatives: ROD Buffer (RAW): no review needed Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years). No treatment is planned under Alternative 5.</p>
<p>SOILS/WETLANDS: Slopes range from nearly level to 55%. Forested wetlands are dominant where the slopes are less than 35% (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter, and shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.</p>



Appendix 1

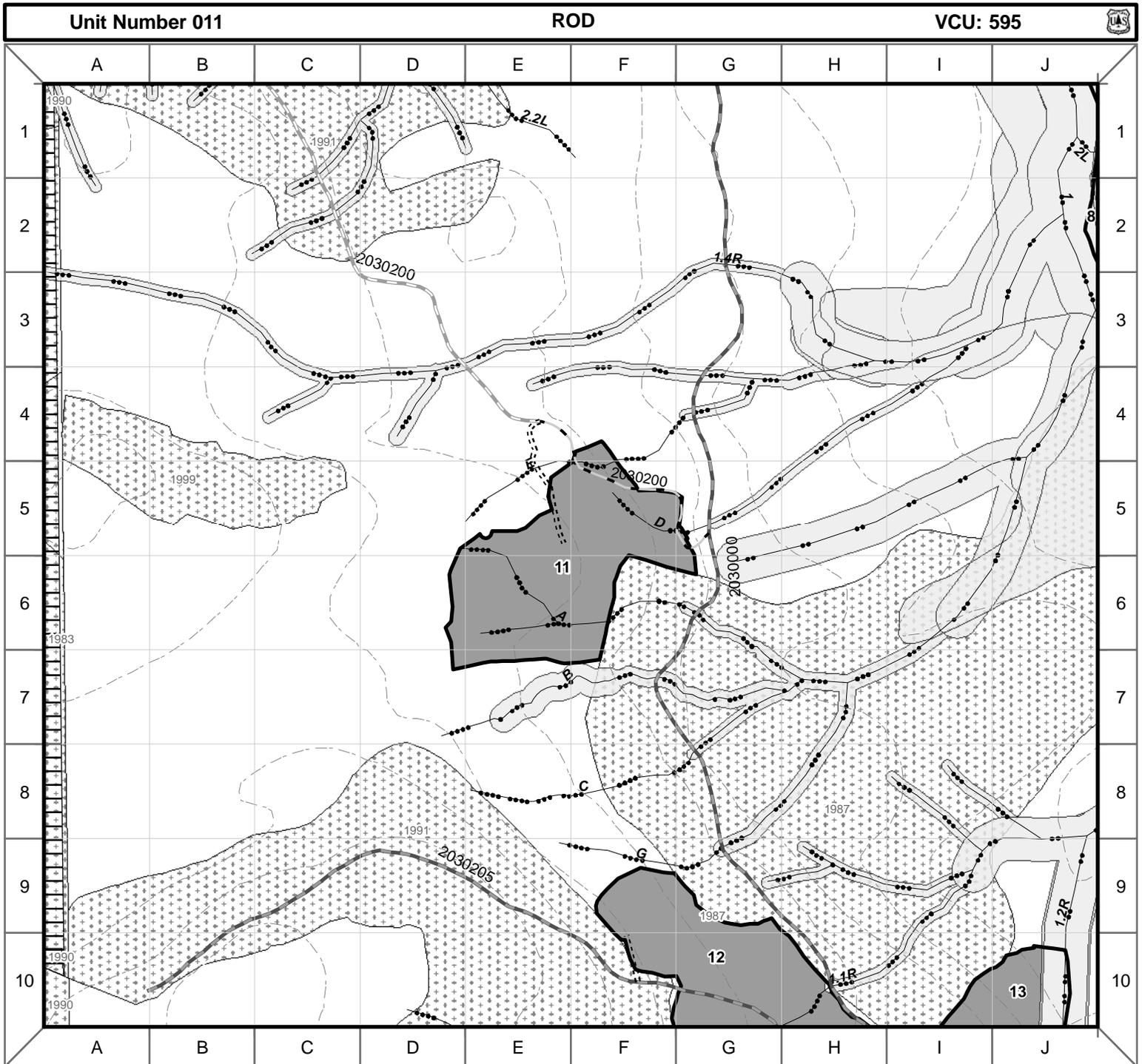
Unit Number: 8	Alternatives: ROD	Total Unit Acres: 59.0	Prescription: Clearcut and 25% Removal
VCU Number: 595	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 1,352	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 8 is a mosaic of old growth and two-aged stand structure due to repeated wind damage dating back approximately 50 years. Defect in the western hemlock is generally moderate to high in the stand overall and greatest below the road. The occurrence of mistletoe is moderate with most overstory western hemlock infected. Past wind damage has affected available volume in this stand. Windthrow risk is high across the stand. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is high wind risk with moderate stem decay and defect resulting in a situation where stand growth is being offset by weather damage and decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as designated on the unit card maps) Maintain at least 75 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for parts of this unit to provide RAW along streams or other additional protection. This system is not optimum for promoting timber production.</p>			
TIMBER/YARDING: Cable settings yard to the eastern proposed temporary road and NFS road 2030120. Shovel settings yard to the western proposed temporary road and NFS road 2030120.			
ENGINEERING/ROADS: Unit is accessed by an eastern proposed temporary road of 700 feet. Unit is accessed by a southern proposed temporary road of 1,800 feet. Approximately 800 feet of this temporary road will be constructed over decommissioned road bed.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Steelhead Creek.			
<p>Stream#: 1 (Steelhead Creek) Class: II Flagging: B/W C-Type: FPL, MMM Concerns: blowdown Buffer (RMA): Class II for FPL- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required on east side of stream. Protection: Category A</p> <p>Stream#: 1.22L Class: II, III, IV Flagging: B/W, O/W, GW C-Type: MMS, HCL, HCM, HCD Concerns: blowdown, active erosion Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated fens. Class II for HCL and HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM and HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on south side of stream. Protection: Category A, B, and C</p> <p>Stream#: 2L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and C</p>			

<p>Stream#: L Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCL, HCM, HCO Concerns: slowdown Buffer (RMA): Class II for HCL- greater of 100 feet or the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A, B, and C</p>
<p>Stream#: L.1L Class: II, IV Flagging: B/W, G/W C- Type: MMO, HCO Concerns: none Buffer (RMA): Class II for MMO greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCL greater of 100 feet or the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for south side of stream Protection: Category A and C</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>Temporary roads (new and reopened decommissioned) for Unit 8: Four class IV stream crossings. One crossing would occur for a reopened Decommissioned temporary road. If any additional stream crossings are found, crossing structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering about 30 acres. The Low SIO area is in Modified Landscape LUD and Middleground distance zone, while the Very Low is in Timber Production LUD. The Low SIO area is mostly from 1-3/4 to 2 miles from the Klawock-Control Lake highway, which is a Visual Priority Travel Route.</p>
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUDs (Timber Production and Modified Landscape) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>
<p>SOILS/WETLANDS: Slopes range from 10% to 55%. Forested wetlands are dominant where the slopes are less than 35% (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding and a minimum of partial suspension cable or helicopter yarding (R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road crosses about ¾ of an acre of forested wetland. Wetland avoidance is not feasible due to the dominance of forested wetlands located within the unit on the gentler slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (interspersed throughout unit), some of which is also deep snow marten habitat. Legacy standard and guideline does not apply in this VCU. Possible goshawk sighting during 2010 surveys; active nest discovered nearby in 2010.</p>

Unit Number:	11	Alternatives: ROD	Total Unit Acres: 18.0	Prescription: Clearcut
VCU Number:	595	Yarding System: Shovel	Net Harvest Volume (MBF): 401	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 11 has old-growth stand structure. Mistletoe was heavy across the area with most hemlock having a high mistletoe rating. Overall, stand defect was moderate to high. Windthrow has affected stand structure in the eastern point. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall and meet NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut Trees are over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>				
TIMBER/YARDING: Shovel yarding to the proposed temporary road.				
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 700 feet. Unit is also accessed by reconstruction of NFS road 2030200. See road cards for information on NFS road.				
BOTANY: No Concerns				
INVASIVE SPECIES: No Concerns				
<p>FISHERIES: Streams are tributaries to Steelhead Creek</p> <p>Stream#: B Class: III, IV Flagging: O/W, G/W C-Type: HCL, HCV, and HCO Concerns: blowdown, active erosion. Buffer (RMA): Class III for HCL and HCV- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Alternatives: ROD Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary road for Unit 11: There is one class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>				
GEOLOGY/KARST: No Concerns				
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.				
SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.				
RECREATION: No concerns				
<p>SOILS/WETLANDS: Slopes are gentle on broken ground. Forested wetlands are dominant (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding and a minimum of partial suspension cable (R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>				
WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (eastern half of unit). Legacy standard and guideline does not apply in this VCU. Possible goshawk sighting during				

Appendix 1

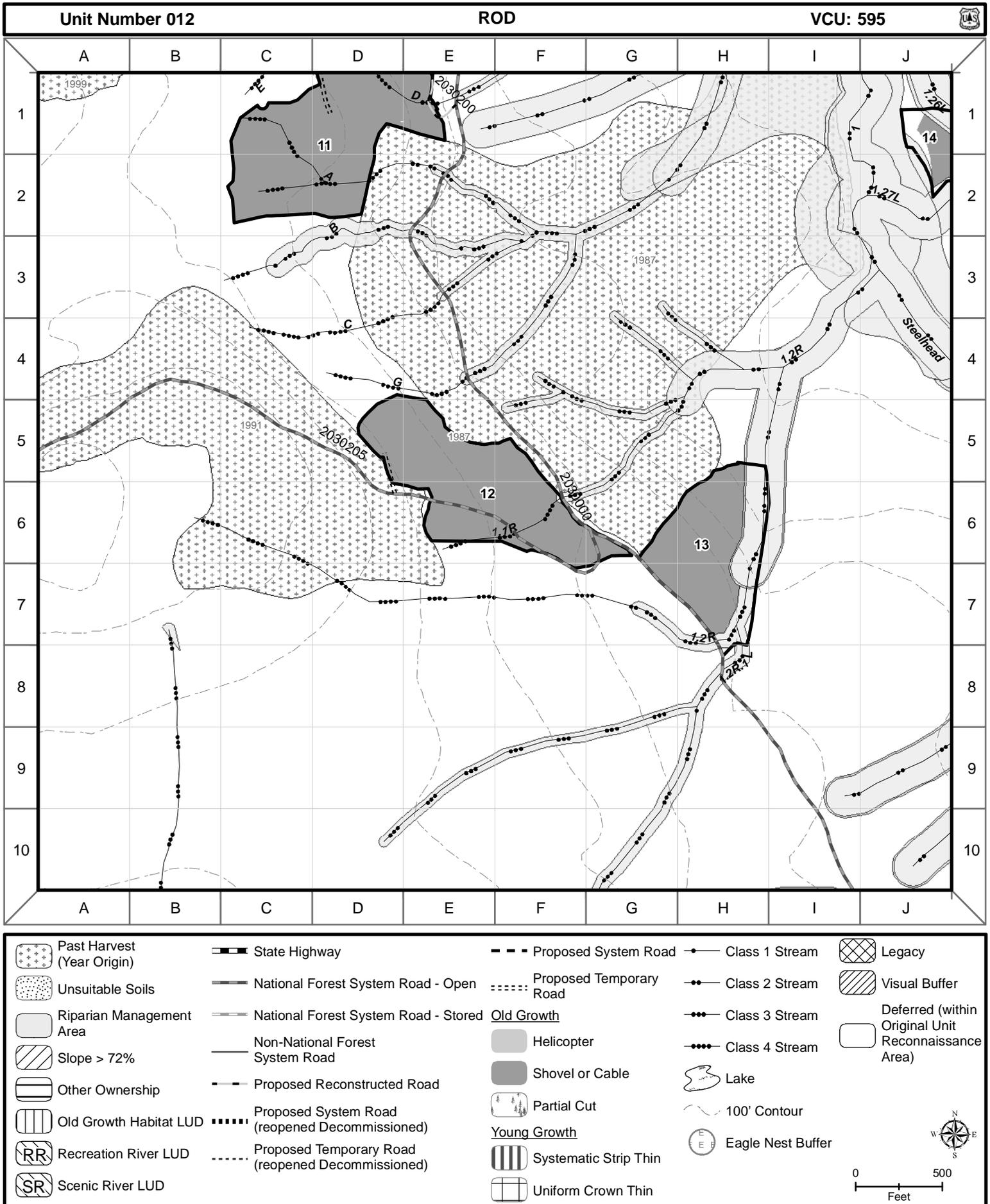
2010 surveys. Active nest was discovered across from this unit during 2010 surveys.



Past Harvest (Year Origin)	State Highway	Proposed System Road	Class 1 Stream	Legacy
Unsuitable Soils	National Forest System Road - Open	Proposed Temporary Road	Class 2 Stream	Visual Buffer
Riparian Management Area	National Forest System Road - Stored	Old Growth	Class 3 Stream	Deferred (within Original Unit Reconnaissance Area)
Slope > 72%	Non-National Forest System Road	Helicopter	Class 4 Stream	Lake
Other Ownership	Proposed Reconstructed Road	Shovel or Cable	100' Contour	Eagle Nest Buffer
Old Growth Habitat LUD	Proposed System Road (reopened Decommissioned)	Partial Cut		
Recreation River LUD	Proposed Temporary Road (reopened Decommissioned)	Young Growth		
Scenic River LUD		Systematic Strip Thin		
		Uniform Crown Thin		

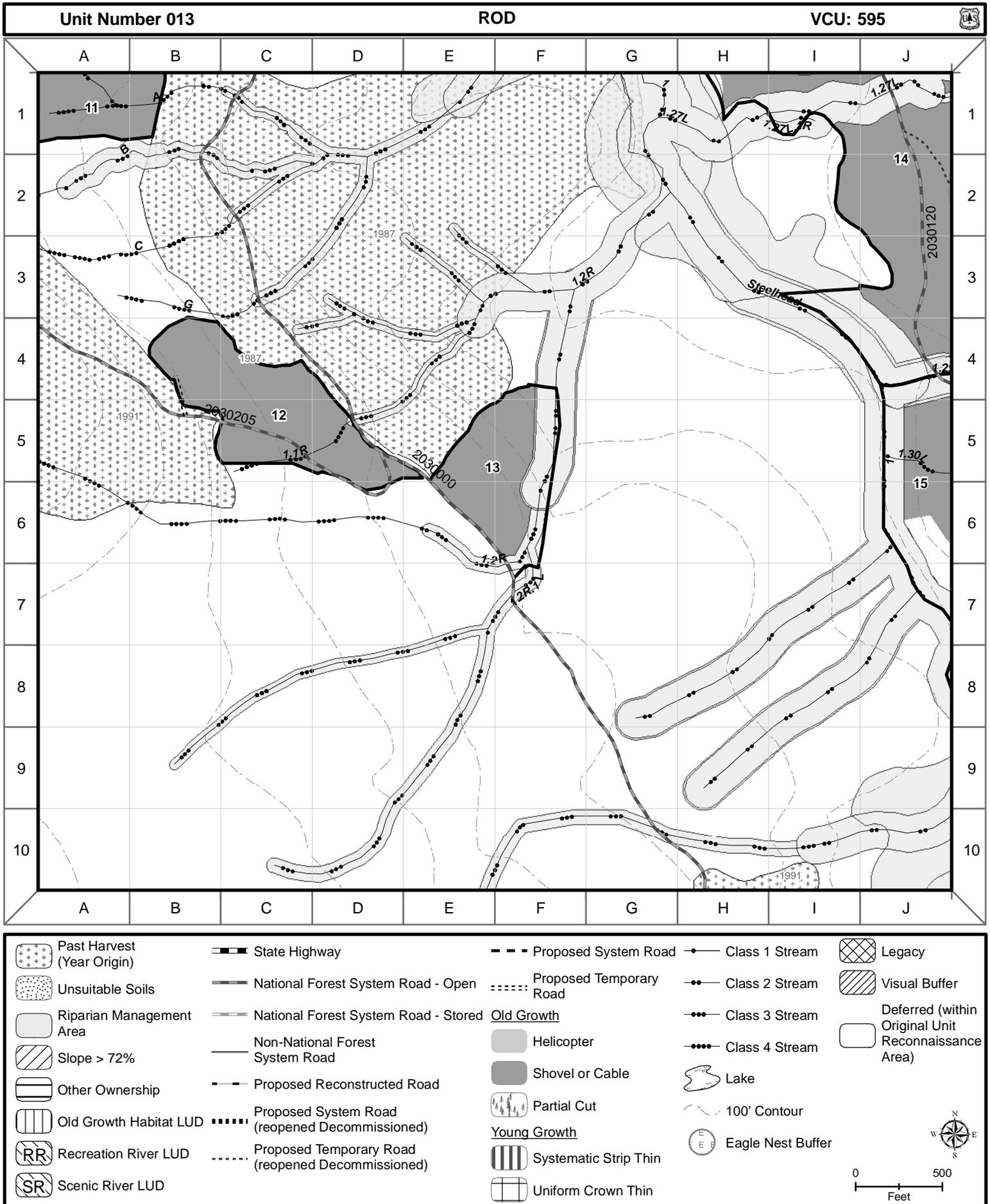
Appendix 1

Unit Number: 12	Alternatives: ROD	Total Unit Acres: 15.4	Prescription: Clearcut
VCU Number: 595	Yarding System: Cable, Shovel	Net Harvest Volume (MBF): 322	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 12 has old growth stand structure. In the hemlock, mistletoe infection is moderate. Physical defects and stem decays are high in occurrence for all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the reforestation requirements of NFMA.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible..</p>			
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary road. Shovel settings yard to NFS roads 2030000 and 2030205.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 300 feet.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1.1R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p> <p>Temporary road for Unit 12: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes are gentle in the unit. Forested wetlands are intermixed with uplands (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding and a minimum of partial suspension cable (R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>			
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (eastern 2/3 of unit). Legacy standard and guideline does not apply in this VCU..</p>			



Appendix 1

Unit Number: 13	Alternatives: ROD	Total Unit Acres: 8.0	Prescription: Clearcut
VCU Number: 595	Yarding System: Cable	Net Harvest Volume (MBF): 141	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 13 has old growth stand structure. In the hemlock mistletoe and stem decay are moderate. Alaska-cedar decline is present but light. Physical defects and stem decays are moderate in occurrence for all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the reforestation requirements of NFMA.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Cable yarding to NFS road 2030000.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1.2R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCV, HCD, HCL, HCO Concerns: channel erosion and stored sediment in Class III sections. Buffer (RMA): Class II for HCV- greater of 100 feet or to the top of the side-slope break. Class III for HCD and HCL- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for west side of stream. Protection: Category A, B, and C</p> <p>Stream#: 1.2R.1L Class: III Flagging: O/W C-Type: HCD Concerns: steep side-slopes, active erosion. Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from about 15% to 70%. The steepest portion is a small rock outcrop above the Class 3 stream on the south side. The unit is generally well drained and no wetlands have been mapped in the unit. A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).			
WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.			



Appendix 1

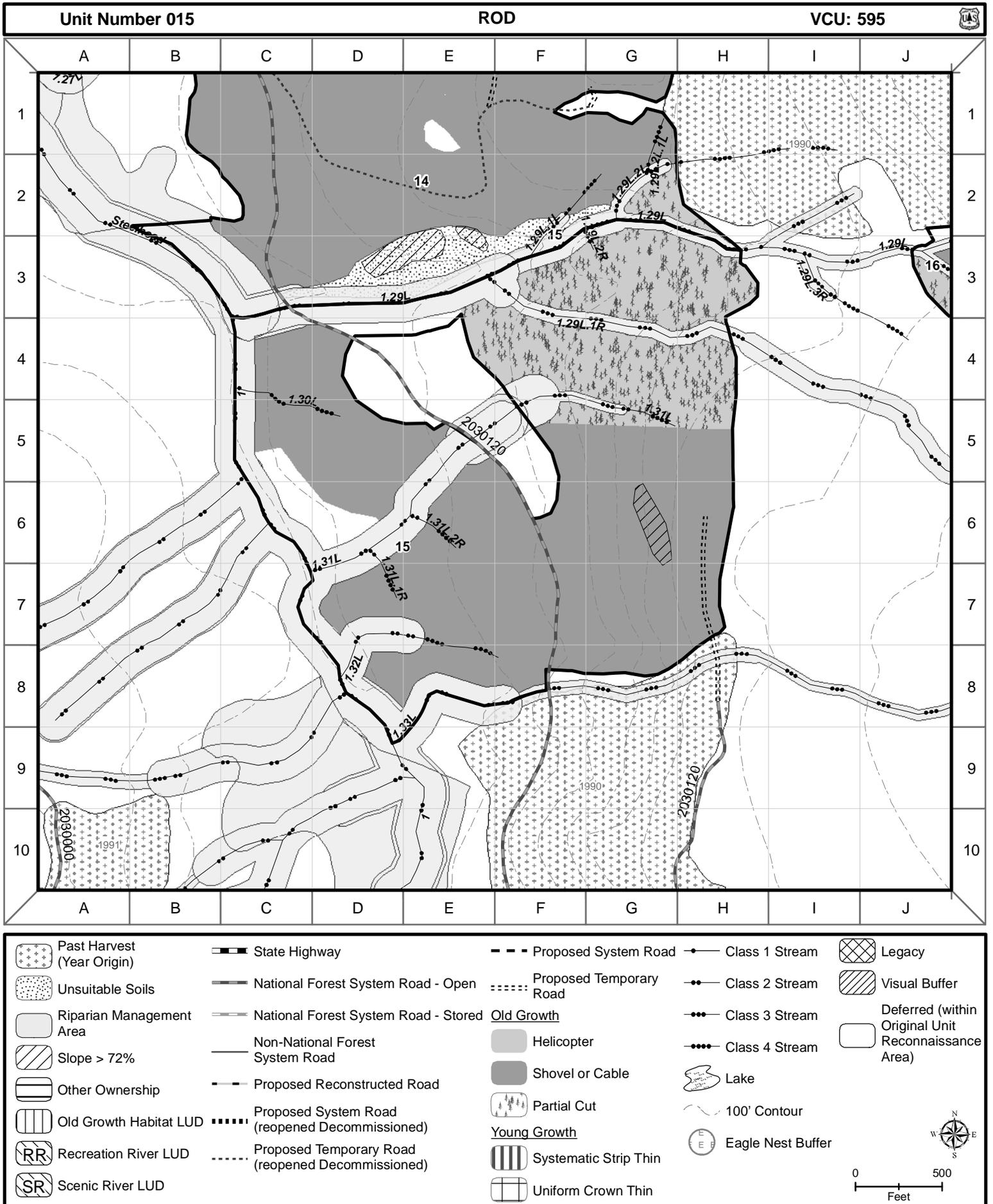
Unit Number: 14	Alternatives: ROD	Total Unit Acres: 80.4	Prescription: Clearcut
VCU Number: 595	Yarding System: Cable, Shovel	Net Harvest Volume (MBF): 1,906	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: Unit 14 is an old-growth structured mixed species stand. In the hemlock, the mistletoe rating and occurrence is high and stem decay moderate. Defect appears to be moderate for all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary road. Shovel settings yard to the proposed temporary road and NFS road 2030120.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 3,200 feet. Approximately 2,800 feet of the proposed temporary roads will be constructed over decommissioned road beds.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Steelhead Creek. Characteristics for Streams 1 and 1.29L.2L do not include project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: 1 (Steelhead Creek) Class: II Flagging: B/W C- Type: MMM, MCM Concerns: none Buffer (RMA): Class II for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for MCM- greater of 100 feet or the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.26L Class: II Flagging: B/W C- Type: MMS, HCM, HCV Concerns: Blowdown, steep side-slopes, active erosion Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A</p> <p>Stream#: 1.26L.2R Class: III Flagging: O/W C- Type: HCD, HCM, MMS Concerns: Blowdown and active erosion Buffer (RMA): Class III for HCD and HCM- to the top of the side-slope break. Class III for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category B</p> <p>Stream#: 1.27L Class: II, III, IV Flagging: B/W, O/W, G/W C- Type: PAB, HCDw, HCOw Concerns: Debris deposits, steep side-slopes Buffer (RMA): Class II for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCDw- greater of 100 feet or the top of the side-slope break. Class III for HCDw- to the top of the side-slope break. Class IV for HCDw- none. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A, B, and C</p> <p>Stream#: 1.29L Class: II, III Flagging: B/W, O/W C- Type: MMS, HCM, HCV, HCD Concerns: Blowdown, active erosion, steep side-slopes with mobile fine sediments</p>			

<p>Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCV and HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A and B</p> <p>Stream#: 1.29L.1L Class: III, IV Flagging: O/W, G/W C- Type: HCM, HCL Concerns: Blowdown, active erosion, steep side-slopes Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCL- none. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category B and C</p> <p>Stream#: 1.29L.2L Class: III, IV Flagging: O/W, G/W C- Type: HCL, HCO Concerns: steep side-slopes Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C- Type: HC Buffer (RMA): none Buffer (RAW): no review needed Alternatives: 2, 3, 4, and 5 Protection: Category C</p> <p>Temporary roads (both new and constructed over decommissioned road bed) for Unit 14: No known stream crossings. If any additional stream crossings are found, crossing structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering about 39 acres. The Low SIO area is in Modified Landscape LUD and Middleground distance zone, while the Very Low is in Timber Production LUD. The Low SIO area is mostly from 2-1/4 to 2-1/2 miles from the Klawock-Control Lake highway, which is a Visual Priority Travel Route.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes are gentle to the north of road line that intersects the proposed unit, ranging from 5 to 30%. To the south of the road line, the slopes are steeper and average 50 to 60%. Forested wetlands are located sparsely in the northern portion of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The unit was modified following soil reconnaissance to defer approximately 6 acres of unsuitable landslide prone soils and slopes greater than 72% next to the stream near the southern unit boundary. As modified, the soils and wetlands are suitable for minimum partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The temporary roads will impact about 1/10 of an acre of forested wetland. Wetland avoidance is not feasible due to the logistical location of temporary roads and existing system roads. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (all but south central portion). Legacy standard and guideline does not apply in this VCU.</p>

Unit Number:	15	Alternatives: ROD	Total Unit Acres: 102.1	Prescription: Clearcut and 25% removal
VCU Number:	595	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 2,114	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 15 is predominantly a western hemlock stand that transitions to western hemlock/Alaska yellow-cedar in the upper elevations. Generally old growth structure is present with heavy past wind damage in lower elevations and along the northern boundary creating areas with two age structure. High windthrow risk, heavy defect, and high incidence of mistletoe defines the stand. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut Trees are over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as designated on the unit card maps) Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Individual trees selected for harvest may occur in small groups but will generally be evenly distributed across the stand. Any small groups will usually be less than one acre but may occasionally go up to two acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Trees selected for harvest will generally be well distributed and no large openings will occur as a result of the harvest. Review the marking guides and silvicultural prescription for more detailed information and direction for how to implement this prescription. The uneven-aged single tree selection regeneration method is being prescribed for this unit to reduce the combined size of even-aged openings and provide RAW along streams. This system is not optimum for promoting timber production.</p>				
TIMBER/YARDING: Cable settings yard to the proposed temporary road and NFS road 2030120. Shovel settings yard to NFS road 2030120. Helicopter settings yard to NFS road 2030120.				
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,100 feet.				
BOTANY: No Concerns				
INVASIVE SPECIES: No Concerns				
FISHERIES: Streams are tributaries to Steelhead Creek.				
<p>Stream#: 1 (Steelhead) Class: II Flagging: B/W C-Type: MMM, MCM Concerns: active erosion, moderate blowdown Buffer (RMA): Class II for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for MCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Will be identified during layout. Protection: Category A</p> <p>Stream#: 1.29L Class: II, III Flagging: B/W, O/W C-Type: MMS, HCM, HCV, HCD Concerns: blowdown, active erosion, steep side-slopes with mobile fine sediments Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCV and HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A and B</p> <p>Stream#: 1.29L.1R Class: II, III Flagging: B/W, O/W C-Type: HCM, HCD Concerns: blowdown Buffer (RMA): Class II for HCM- greater of 100 feet or the top of the side-slope break. Class III for HCD- to the top of the side-slope break.</p>				

Appendix 1

<p>Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A and B</p> <p>Stream#: 1.31L Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCO, AFH, HCM</p> <p>Concerns: Blowdown, active erosion</p> <p>Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class II and III for AFH- greater of 140 feet or active portion of the alluvial fan. Class III for HCM- to the top of the top of the side-slope break. Class IV for HCO- none.</p> <p>Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A, B, and C</p> <p>Stream#: 1.32L Class: II, IV Flagging: B/W, G/W C-Type: MMO, HCO</p> <p>Concerns: none</p> <p>Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none.</p> <p>Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A and C</p> <p>Stream#: 1.33L Class: II, III Flagging: B/W, O/W C-Type: HCM, HCD, HCL</p> <p>Concerns: Abundant debris jams and sediment wedges in bedrock channel</p> <p>Buffer (RMA): Class II for HCM and HCD- greater of 100 feet or to the top of the side-slope break. Class III for HCL- to the top of the side-slope break.</p> <p>Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM</p> <p>Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p> <p>Temporary road for Unit 15: There is one class III stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering about 57 acres. The Low SIO area is in Modified Landscape LUD and Middleground distance zone, while the Very Low is in Timber Production LUD. The Low SIO area is mostly from 2-1/2 to 2-3/4 miles from the Klawock-Control Lake highway, which is a Visual Priority Travel Route.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from 10 to 92%. About 1 acre of slopes greater than 72% is located in the center east portion of the unit. These slopes are suitable for harvest with partial suspension. Forested wetlands are dominant on slopes less than 45% (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for minimum partial suspension helicopter, cable yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p> <p>The proposed temporary road will impact about ½ an acre of forested wetlands. Wetland avoidance was not feasible due to engineering constraints on steep slopes and risk of erosion to downstream resources. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (all but east central portion). Legacy standard and guideline does not apply in this VCU.</p>

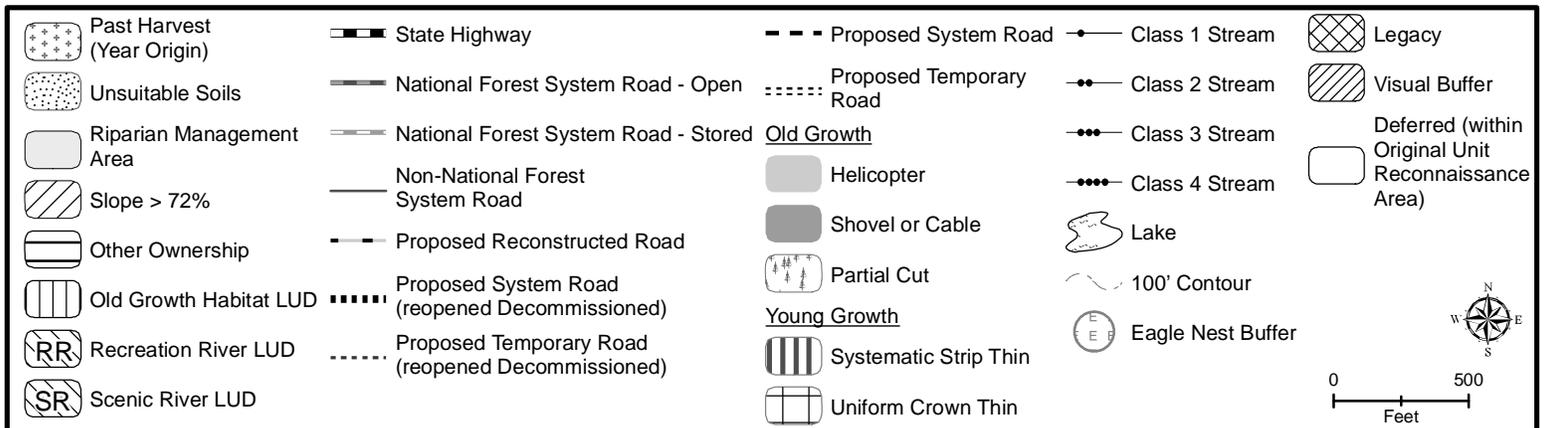
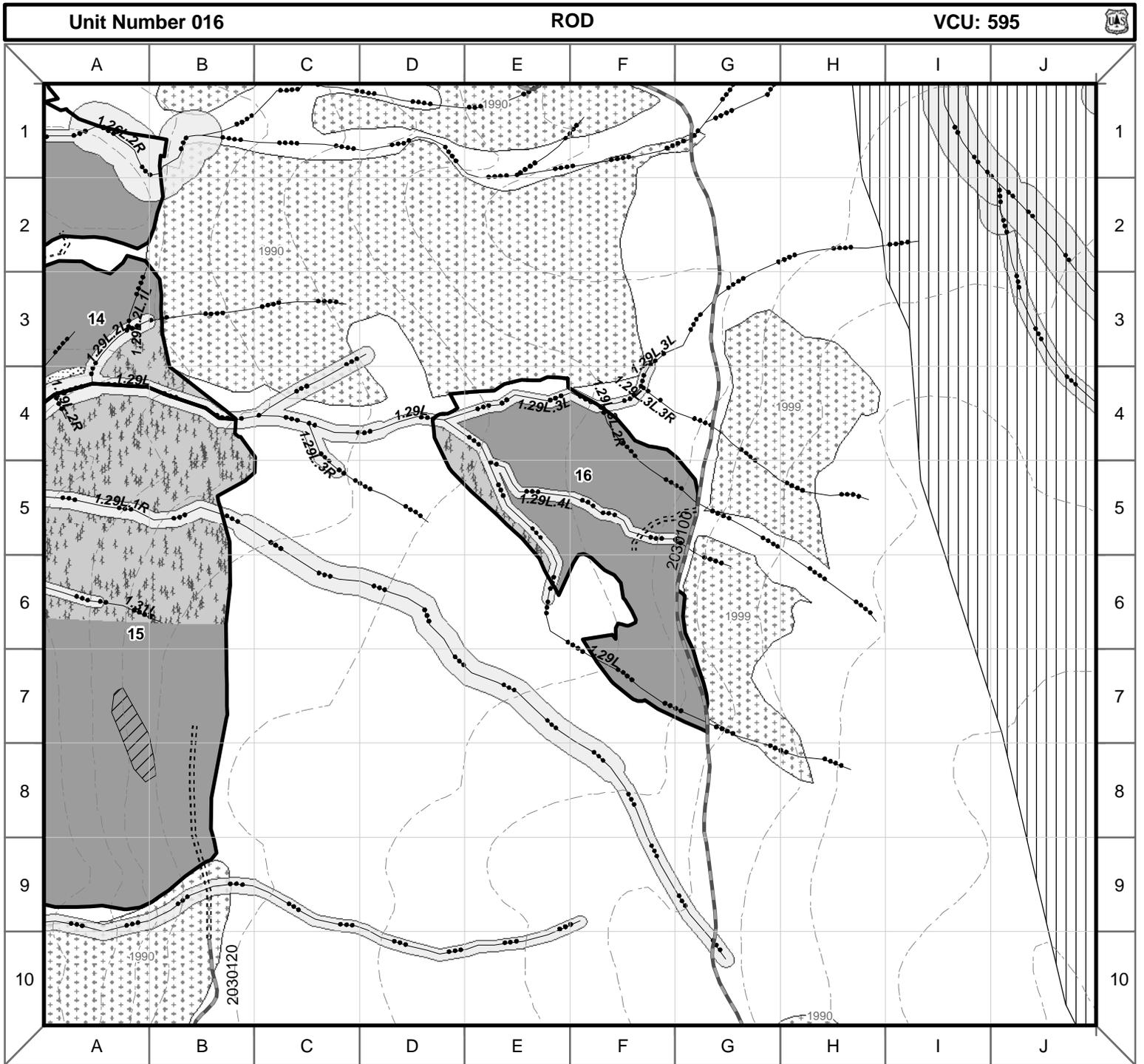


Appendix 1

Unit Number: 16	Alternatives: ROD	Total Unit Acres: 21.8	Prescription: Clearcut and 50% removal
VCU Number: 595	Yarding System: Helicopter, Shovel, Cable	Net Harvest Volume (MBF): 533	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 16 has old growth stand structure. In the western hemlock stem decay is moderate and mistletoe infection is light. Alaska-cedar decline is occurring in the stand. Average defect is high for all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate stem decay and overall high defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as designated on the unit card maps) Maintain at least 50 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for parts of this unit to provide RAW along stream buffers or other additional protection. This system is not optimum for promoting timber production.</p>			
<p>TIMBER/YARDING: Shovel settings yard to the proposed temporary road. Cable settings yard to the proposed temporary road and NFS 2030100. Helicopter settings yard to NFS road 2030100</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 400 feet.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 29 Class: III, IV Flagging: O/W, G/W C-Type: HCM, MMO Concerns: blowdown Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for MMO- none. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category B and C</p> <p>Stream#: 29.3L Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCL Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCL- none. Alternatives: ROD Buffer (RAW): none required Protection: Category B and C</p> <p>Stream#: 29.4L Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCL Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCL- none. Alternatives: ROD Buffer (RAW): none required Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p> <p>Temporary roads for Unit 16: One Class III stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was</p>			

<p>mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit is Low. The unit is in Modified Landscape LUD and Middleground distance zone. The lies about 3 miles from the Klawock-Control Lake highway, which is a Visual Priority Travel Route.</p>
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Modified Landscape) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>
<p>SOILS/WETLANDS: Slopes are mostly gentle throughout the unit. Small areas of approximately 55% slopes occur along knobs near the 2030100 road in the southern finger of the unit. These pitches are short (less than 100 feet) lengths. Forested wetlands are dominant on the gentle slopes in the northern section of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>Approximately 1 acre of forested wetlands would be impacted by temporary roads. Wetland avoidance is not feasible due to the dominance of forested wetlands on gentle slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.</p>

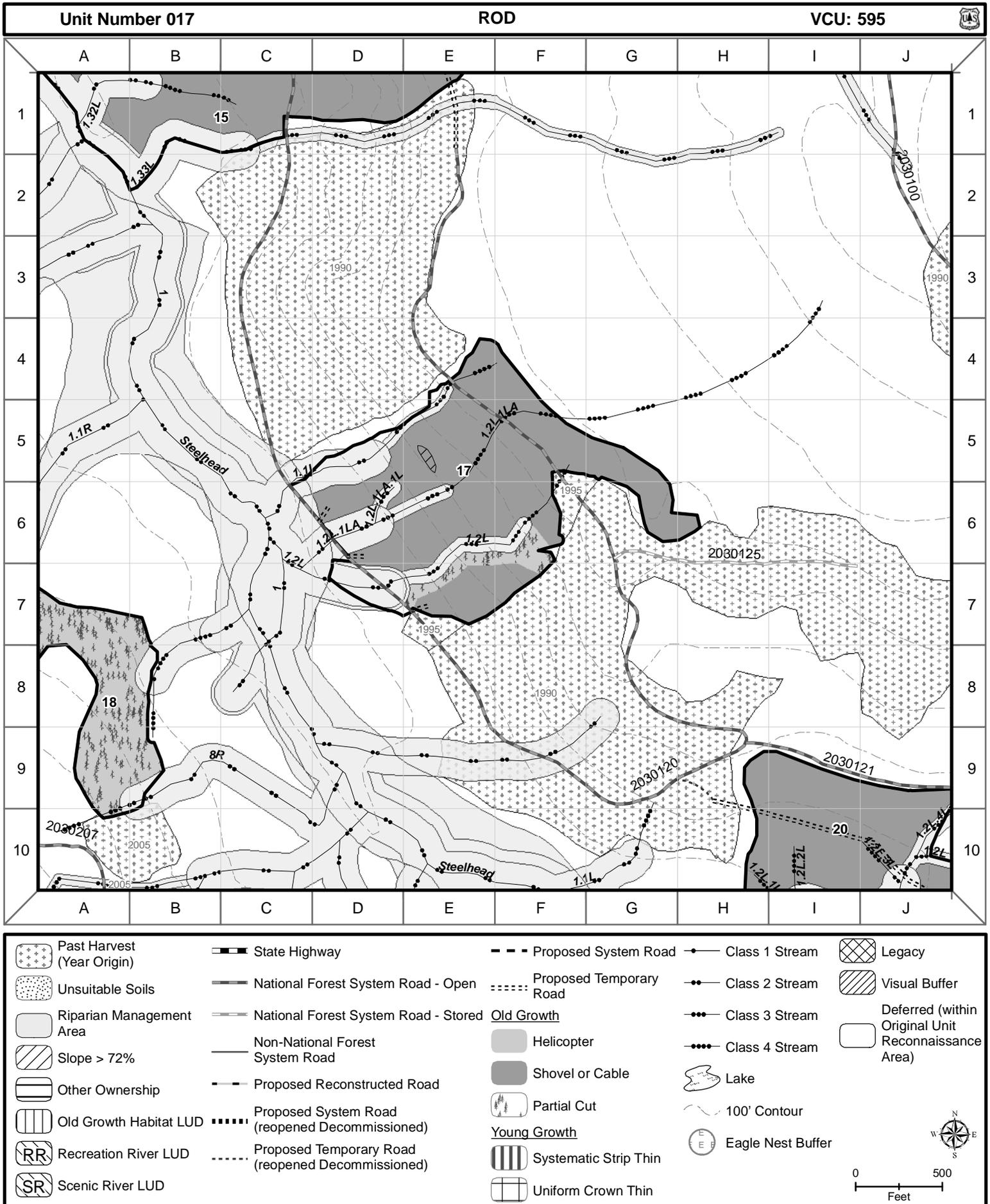
Appendix 1



Unit Number:	17	Alternatives: ROD	Total Unit Acres: 31.2	Prescription: Clearcut and 25% removal
VCU Number:	595	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 796	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 17 has old-growth stand structure. The unit has significant blowdown along the adjacent clearcut to the south and along the roadway to the southwest. Western hemlock mistletoe is moderate to low. Stem decays are moderate occurrence. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Objective/Desired Condition: The desired condition for this stand is a highly productive, healthy, windfirm stand grown for timber management that retains residual trees as needed to meet standards and guides or other objectives.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is static or being somewhat exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as designated on the unit card maps) Maintain at least 75 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for parts of this unit to provide RAW along stream buffers or other additional protection. This system is not optimum for promoting timber production.</p>				
TIMBER/YARDING: Shovel and helicopter settings yard to NFS road 2030120. Cable settings yard to proposed temporary roads and NFS road 2030120.				
ENGINEERING/ROADS: Unit is accessed by 3 proposed temporary roads, totaling 300 feet.				
BOTANY: No Concerns				
INVASIVE SPECIES: No Concerns				
FISHERIES: Streams are tributaries to Steelhead Creek.				
<p>Stream#: 1 (Steelhead Creek) Class: II Flagging: B/W C-Type: FPM, MMM Concerns: none Buffer (RMA): Class II- greater of 130 feet (FPM) and 120 feet (MMM), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCM, HCO Concerns: blowdown Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p> <p>Stream#: 1.2L Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: MMS, HCD, HCO Concerns: blowdown Buffer (RMA): Class II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCD- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p>				

Appendix 1

<p>Stream#: 1.2L.1LA Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCL Concerns: slowdown Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Class III for HCL- to the top of the side-slope break. Class IV for HCL- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B and C</p>
<p>Stream#: 1.2L.1LA.1L Class: III, IV Flagging: O/W, G/W C-Type: HCL Concerns: slowdown Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV- for HCL none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>
<p>Temporary road for Unit 17: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>
<p>SOILS/WETLANDS: Slopes range from 35 to 75%. There is a small cliff area that has slopes greater than 72%. This area is about ¼ acre and has a slope length of 200 feet with exposed rock. All slopes greater than 72% are suitable with partial suspension requirements. There are many benches throughout the unit. Forested wetlands are located near both existing roadlines where the slopes are less than 35% (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for minimum partial suspension helicopter, cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p> <p>The proposed temporary roads do not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (western half of unit). Legacy standard and guideline does not apply in this VCU. Unit 15 dropped in Alternative 4 to maintain travel route through the area.</p>



Appendix 1

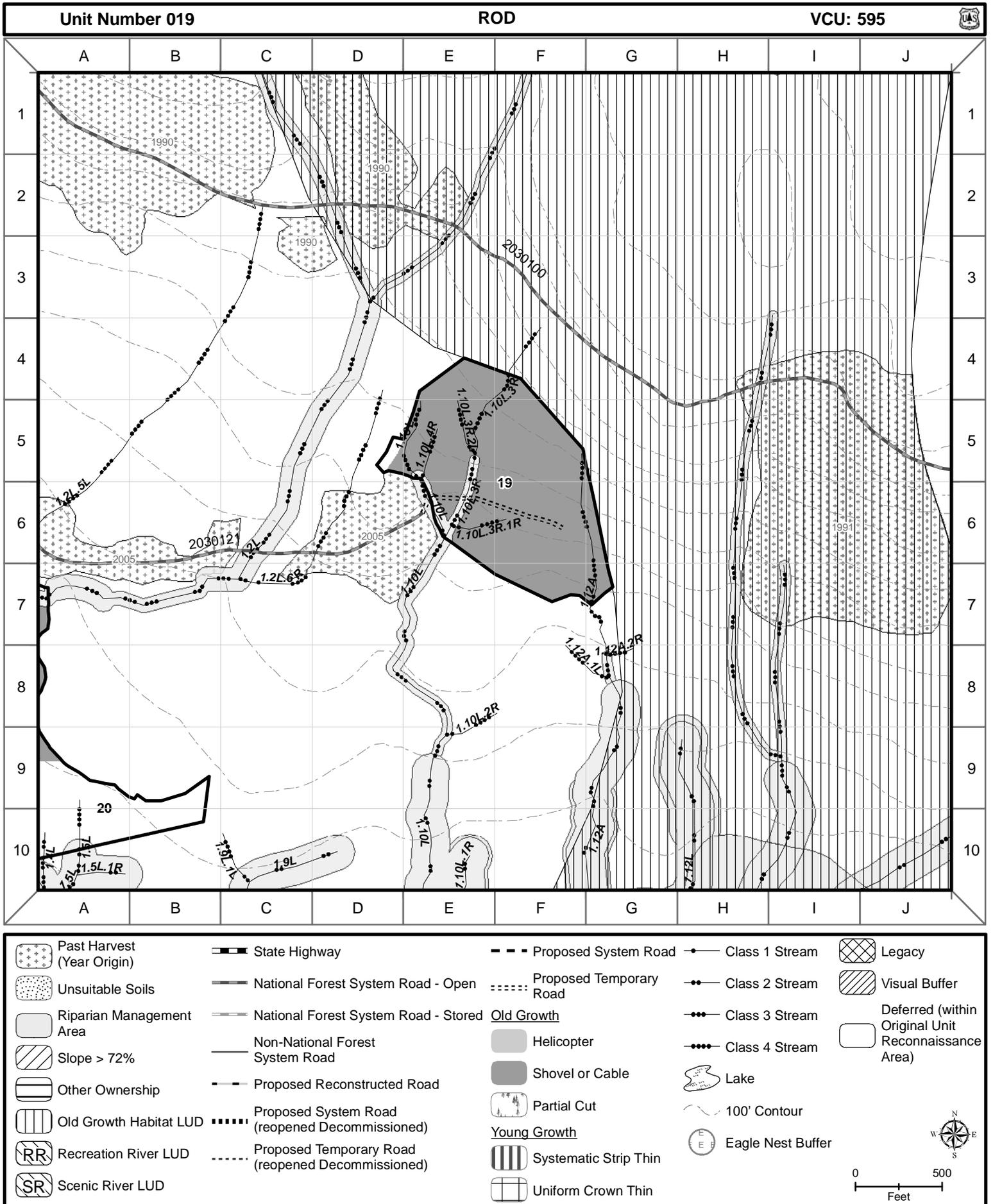
Unit Number: 18	Alternatives: ROD	Total Unit Acres: 19.4	Prescription: Clearcut
VCU Number: 595	Yarding System: Helicopter	Net Harvest Volume (MBF): 434	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 18 is a mixed species stand with old-growth structure. Windthrow risk is moderate across the unit. The adjacent 2005 even-age harvest to the south does not currently meet the requirements of NFMA to no longer be considered an opening. This requires that the combined acreage of Unit 18 and this past harvest not exceed 100 acres. Unit 18 as planned meets this criteria.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS roads 2030000 and 2030120.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1.1R Class: II, III Flagging: B/W, O/W C-Type: MCS, HCM, HCD Concerns: Blowdown, active erosion, and steep side slopes with mobile fine sediment Buffer (RMA): Class II for MCS and HCM- greater of 100 feet or the top of the side-slope break. Class III for HCD and MCS- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A and B</p> <p>Stream#: 1.1R.1R Class: II Flagging: B/W C-Type: HCL Concerns: none Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1R.1L Class: II, III Flagging: B/W, O/W C-Type: HCL, HCD Concerns: blowdown, active erosion, large alluvial deposits Buffer (RMA): Class II for HCL and HCD- greater of 100 feet or the top of the side-slope break. Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A and B</p> <p>Stream#: 1.1R.1L.1L Class: II, IV Flagging: B/W, G/W C-Type: HCL, HCD, HCM Concerns: blowdown Buffer (RMA): Class II for HCL and HCD- greater of 100 feet or to the top of the side-slope break. Class IV for HCM- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B</p> <p>Stream#: 1.1R.1L.1L.1R Class: III Flagging: O/W C-Type: HCL Concerns: none Buffer (RMA): Class III for HCL- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>			

<p>RECREATION: No concerns; however, note this unit is adjacent to the Karta inventoried roadless area to the south.</p>
<p>SOILS/WETLANDS: Slopes range from nearly level to 70%. Slopes greater than 50% occur only in the western portion of the unit. Slopes average 40% in the easternmost portion. Forested wetlands are dominant on slopes less than 40% and are intermixed with upland vegetation (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). There is an emergent sedge muskeg in the north end of the eastern polygon that is approximately 1/8 of an acre in size. The soils and wetlands are suitable for a minimum of partial suspension cable yarding, and helicopter yarding should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-5, and Veg-6.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat (western half of unit). Wolf sign documented in unit. Legacy standard and guideline does not apply in this VCU.</p>

Unit Number:	19	Alternatives: ROD	Total Unit Acres: 24.3	Prescription: Clearcut
VCU Number:	595	Yarding System: Cable	Net Harvest Volume (MBF): 586	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 19 is an over mature, mixed species stand of old-growth timber. In the hemlock, mistletoe is light and scattered throughout the unit, while stem rot is moderate and patchy. Defect is moderate to high for all species, except for the Sitka spruce, which was light. Alaska-cedar decline is occurring in the stand. Windthrow risk is moderate. The adjacent 2005 even-age harvest to the west does not currently meet the requirements of NFMA to no longer be considered an opening. This requires that the combined acreage of unit 19 and this past harvest not exceed 100 acres. Unit 19 as planned meets this criteria.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>				
<p>TIMBER/YARDING: Cable yarding to the proposed temporary road.</p>				
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 900 feet.</p>				
<p>BOTANY: No Concerns</p>				
<p>INVASIVE SPECIES: No Concerns</p>				
<p>FISHERIES:</p> <p>Stream#: 1.10L Class: III, IV Flagging: O/W, G/W C-Type: HCL, HCD Concerns: blowdown, steep side-slopes and action erosion Buffer (RMA): Class III for HCL and HCD- to the side-slope break. Class IV for HCD- none. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category B and C.</p> <p>Stream#: 1.10L.3R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category B and C.</p> <p>Stream#: 1.12A Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: MMS, HCL, HCD, HCM, HCO Concerns: none Buffer (RMA): Class II for MMS- greater of 120 feet (MMS) / 100 feet (HCL & HCD), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCM- to the side-slope break. Class IV for HCO (B&C)- none. Alternatives: ROD Buffer (RAW): Will be identified by IDT during layout. Protection: Category A, B, and C.</p> <p>Stream#: 1.12L Class: II Flagging: B/W C-Type: HCL, AFM, AFH Concerns: none Buffer (RMA): Class II for HCL- to extent of riparian zone. Class II for AFM, AFH- greater of 140 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): none Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Alternatives: ROD Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 19: Two Class III stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>				
<p>GEOLOGY/KARST: No Concerns</p>				

Appendix 1

<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns; however, note that this unit is adjacent to the Karta inventoried roadless area to the south.</p>
<p>SOILS/WETLANDS: Slopes range from 30 to 65%. There are several rocky knobs throughout the unit. Forested wetlands are intermixed with the knobs throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).</p> <p>The proposed temporary road will impact approximately 1/2 acre of forested wetland within the unit. Wetlands avoidance is not feasible due to the dominance on forested wetlands on gentle slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (all except northern edge of unit). East boundary of unit abuts OGR boundary. Legacy standard and guideline does not apply in this VCU.</p>



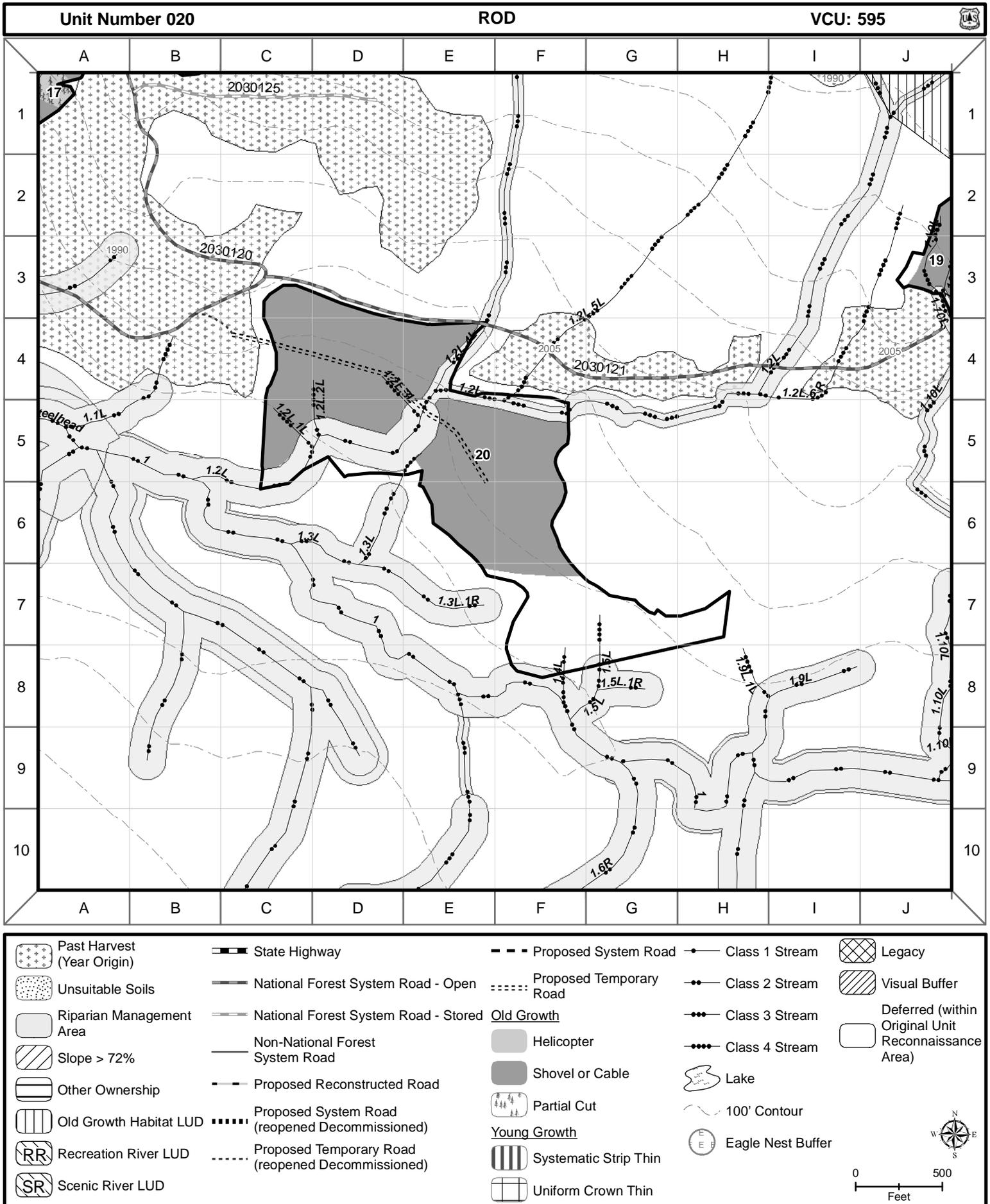
Appendix 1

Unit Number: 20	Alternatives: ROD	Total Unit Acres: 31.9	Prescription: Clearcut
VCU Number: 595	Yarding System: Shovel	Net Harvest Volume (MBF): 905	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 20 is an over mature, mixed species stand of old-growth timber. Western hemlock stem decay is high and mistletoe is light to moderate across the stand. Alaska-cedar decline is occurring across the stand. Defect is high throughout the stand for all species. Windthrow risk is moderate. Unit 20 is separated from a 2005 even-aged harvest to the northeast by two class III streams. This past harvest area does not currently meet the requirements of NFMA to no longer be considered an opening. This requires that the combined acreage of unit 20 and this past harvest not exceed 100 acres. Unit 20 as planned meets this criteria. The southern portion of Unit 20 was removed due to roadless.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS road 2030121.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,100 feet.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES:</p> <p>Stream#: 1 (Steelhead Creek) Class: II Flagging: B/W C-Type: MMM, MCM, MMS, PAB Concerns: none Buffer (RMA): Class II for MMM and MMS- greater of 120 feet or to the top of the side-slope break. Class II for MCM and PAB- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: II, IV Flagging: B/W, G/W C-Type: HCM, HCO Concerns: blowdown Buffer (RMA): Class II for HCM and HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): none Protection: Category A and C</p> <p>Stream#: 1.2L Class: II, III Flagging: B/W, O/W C-Type: HCM, HCD, HCL, HCV Concerns: blowdown, steep side-slopes, and active erosion. Buffer (RMA): Class II for HCM and HCD- greater of 100 feet or to the top of the side-slope break. Class III for HCL, HCD, and HCV- to the side-slope break. Alternatives: ROD Buffer (RAW): Review required for south side. Protection: Category A and B</p> <p>Stream#: 1.2L.4L Class: III Flagging: O/W C-Type: HCD Concerns: blowdown, and steep side-slopes with exposed bedrock Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 1.3L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.3L.1R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			

Stream#: 1.5L	Class: II, IV	Flagging: B/W, G/W	C-Type: HCO	Concerns: none.
Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break.	Class IV for HCO- none			
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A and C	
Stream#: 1.5L.1R	Class: II	Flagging: B/W	C-Type: HCO	Concerns: none.
Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
Stream#: 1.6R	Class: II	Flagging: B/W	C-Type: MCS	Concerns: none.
Buffer (RMA): Class II for MCS- greater of 100 feet or to the top of the side-slope break.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
Stream#: 1.9L	Class: II	Flagging: B/W	C-Type: HCO	Concerns: none.
Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
Stream#: 1.10L	Class: II, III	Flagging: B/W, O/W	C-Type: HCL, HCM	Concerns: none.
Buffer (RMA): Class II for HCO and HCM- greater of 100 feet or to the top of the side-slope break.				
Class III for HCM and HCL- to top of side-slope break.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
Stream#: 1.10L.1R	Class: II	Flagging: B/W	C-Type: MMS	Concerns: none.
Buffer (RMA): Class II for MMS- greater of 120 feet or to the top of the side-slope break.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC or MM	
Buffer (RMA): none	Buffer (RAW): no review needed		Protection: Category C	
<p>Temporary road for Unit 20: One Class II stream crossing. Stream#: 1.2L, Class: II, C-Type: HCD. A bridge is recommended. Dolly Varden char and cutthroat trout were identified at the proposed Class II crossings and will require a timing window of June 25 to September 1. If any additional crossings are found they will be approved by the USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). The Class II crossing will be designed to provide fish passage using a log culvert or bridge, will be installed under current timing constrictions, and concurrence from the State will be solicited prior to starting the work. During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.14, 14.3, and 14.5, 14.20, and 14.8.</p>				
GEOLOGY/KARST: No Concerns				
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>				
<p>SCENERY: The Scenic Integrity Objective for this unit is Very Low. The unit is Not Seen from any Visual Priority Travel Route or Use Area and is in Timber Production LUD. There are no scenery resource concerns.</p>				
<p>RECREATION: No concerns; but note that the southern edge of the deferred portion of unit abuts the Karta roadless area.</p>				
<p>SOILS/WETLANDS: Slopes range from nearly level to 45% throughout the unit. Forested wetlands are intermixed with upland soils throughout the unit. Forested wetland occupies approximately 45 to 50% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p>				
<p>The proposed temporary road will impact about 1 acre of forested wetland and about ¼ of an acre of forested wetland outside of the unit. Wetland avoidance was not feasible due to the intermixed forested wetlands in the unit and the stream crossing. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>				

Appendix 1

WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.



Appendix 1

Unit Number: 22	Alternatives: ROD	Total Unit Acres: 24.1	Prescription: Clearcut
VCU Number: 595	Yarding System: Shovel	Net Harvest Volume (MBF): 629	LUD: Scenic Viewshed
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 22 has old-growth stand structure with a mixed western hemlock and western redcedar overstory. In the western hemlock the mistletoe rating is moderate with areas west of the forest road having a higher rate of infection. Defect is moderate for all species, except near the road where remaining trees are high defect. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is adjacent to the Klawock-Control Lake highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, requires limited visibility of harvest openings from this road (see Scenery comments). In order to meet this requirement a screen of trees is being prescribed to be maintained to block most of the harvest area from view, although the visible opening may be from 5 to 15 acres in size (see Scenery). Design this screen approximately as shown on the unit card map. Avoid leaving defective old growth trees in the screen due to concerns for windthrow. Evaluate the effectiveness and windthrow risk of the planned screen at the time of layout and adjust as needed.</p>			
TIMBER/YARDING: Shovel yarding to NFS road 2000300.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: An infestation of bull thistle is located along the existing road adjacent to the unit. This infestation has been manually treated previously and is recommended for monitoring and follow-up treatments.			
FISHERIES: Streams are tributaries to Steelhead Creek.			
<p>Stream#: 1.1L.1L Class: III, IV Flagging: O/W, G/W C-Type: HCM, MMS Concerns: blowdown Buffer (RMA): Class III for HCM- to the top of side-slope break. Class IV for MMS- none. Alternatives: ROD Buffer (RAW): review required on west side. Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is 2/3 High and 1/3 Very Low. The High SIO is due to Scenic Viewshed and Foreground along the Klawock-Control Lake highway. However, the original unit extended to within about 50 ft of the highway. Therefore, a visual buffer is established along the highway to screen views from this Visual Priority Route (as shown in unit card map and described in the silvicultural prescription); a stream buffer along the northeast side also helps screen the unit. As a result, the harvested area would begin beyond the visual buffer. Much of the unit can be screened and, because of intermediate VAC, the Forest Plan allows 5-15 acre openings. As noted in the prescription, the visual buffer or screen will be designed for wind firmness.			
RECREATION: No concerns; however, note that this unit touches the Kogish inventoried roadless area along its northwest border.			

SOILS/WETLANDS: Slopes average 10%. Less than 50% of the unit consists of forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The unit is dominant upland. The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).

WILDLIFE: Unit includes average snow deer winter range (all except northern edge of unit); very western lobe is also deep snow marten habitat/deer winter range. Legacy standard and guideline does not apply in this VCU.

Unit Number:	24	Alternatives: ROD	Total Unit Acres: 67.6	Prescription: 50% Removal
VCU Number:	595	Yarding System: Helicopter	Net Harvest Volume (MBF): 753	LUD: Modified Landscape, Scenic Viewshed
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 24 has old-growth stand structure. Overall defect is high in the western hemlock, and moderate in Sitka spruce and western redcedar. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection This unit is adjacent to the Klawock-Control Lake highway and due to the combination of Scenic Viewshed/Modified Landscape LUD and foreground distance zone, requires visual mitigation (see Scenery comments). In order to meet this requirement uneven-aged management is being prescribed. Maintain at least 50 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for this unit specifically to meet the scenery standard and guidelines, but will also provide for wildlife habitat connectivity.</p>				
TIMBER/YARDING: Helicopter yarding to NFS road 2000400.				
ENGINEERING/ROADS: No proposed road construction or reconstruction.				
BOTANY: No Concerns				
INVASIVE SPECIES: Scattered bull thistle has been known and treated along the mainline road south of the unit. Follow up monitoring and treatments are recommended for this infestation. In addition, monitoring of the unit is recommended after harvest to ensure that the infestation has not spread.				
FISHERIES: Streams are tributaries to Steelhead Creek.				
<p>Stream#: 1.1L.10L.1R Class: II, IV Flagging: B/W, G/W C-Type: PAB, HCL, HCM Concerns: none Buffer (RMA): Class II for PAB greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCL- greater of 100 feet or the side-slope break. Class IV for HCM- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>				
GEOLOGY/KARST: No Concerns				
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.				
SCENERY: The Scenic Integrity Objective (SIO) for this unit is a combination of High, Moderate, and Low, due to its visibility from the Klawock-Control Lake highway. The western 15 acres of the unit are in Scenic Viewshed LUD and the remainder is in Modified Landscape. Almost the entire unit is in Foreground and because of its visibility, size, and intermediate to low VAC, the prescription for the unit was changed to helicopter partial harvest with 75% basal area retention in the western most visible portions of the unit, and 50% retention in the eastern portion. A landscape architect is to be consulted during implementation to ensure proper visual mitigation during harvest.				
RECREATION: Harvest in this unit would be heard and partly seen from the Control Lake Cabin. Sound travels across the lake but these units are across the highway and there is already a significant amount of sound at the cabin from the road.				
SOILS/WETLANDS: Slopes range from 25 to 80%. Forested wetlands are interspersed throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). Approximately 1 acre of slopes greater than 72% is located on rocky outcrops and cliffs. These slopes are suitable for harvest with minimum partial suspension. A				

Appendix 1

minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).

WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU. Prescription is 50 percent basal area removal primarily for scenery concerns, but also to maintain connectivity in the Steelhead Drainage and between Honker large OGR complex and small OGR in VCU 5950 to west.

Appendix 1

Unit Number: 25	Alternatives: ROD	Total Unit Acres: 16.6	Prescription: Clearcut
VCU Number: 595	Yarding System: Cable	Net Harvest Volume (MBF): 361	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 25 has highly defective, large diameter western hemlock and Sitka spruce in the west and small diameter, defective western hemlock, Alaska-cedar and western redcedar in the east as well as above the road. The stand structure is old-growth. The mistletoe rating is moderate. Alaska cedar decline is occurring in the eastern half of the unit. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut Trees are over-mature with heavy stem decay and defect resulting in a situation where stand growth is being exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Cable yarding to NFS road 2000400.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Steelhead Creek.</p> <p>Stream#: 1 Class: II Flagging: B/W C- Type: PAB, PAS Concerns: none Buffer (RMA): Class II for PAB and PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.11R Class: II, IV Flagging: B/W, G/W C- Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.12R Class: II, IV Flagging: B/W, G/W C- Type: HCL, HCO Concerns: none Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape, due to its visibility from the Control Lake- Naukati highway. However, the unit is set back at least 2/3 mile from the highway and the unit is only 14 acres in size, which is smaller than the permissible opening size under any VAC category.</p>			
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Modified Landscape) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p> <p>Harvest in this unit would be heard and partly seen from the Control Lake Cabin. Sound travels across the lake but these units are across the highway and there is already a significant amount of sound at the cabin from the road.</p>			
<p>SOILS/WETLANDS: Slopes range between 45 and 70%. Forested wetlands are interspersed throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs</p>			

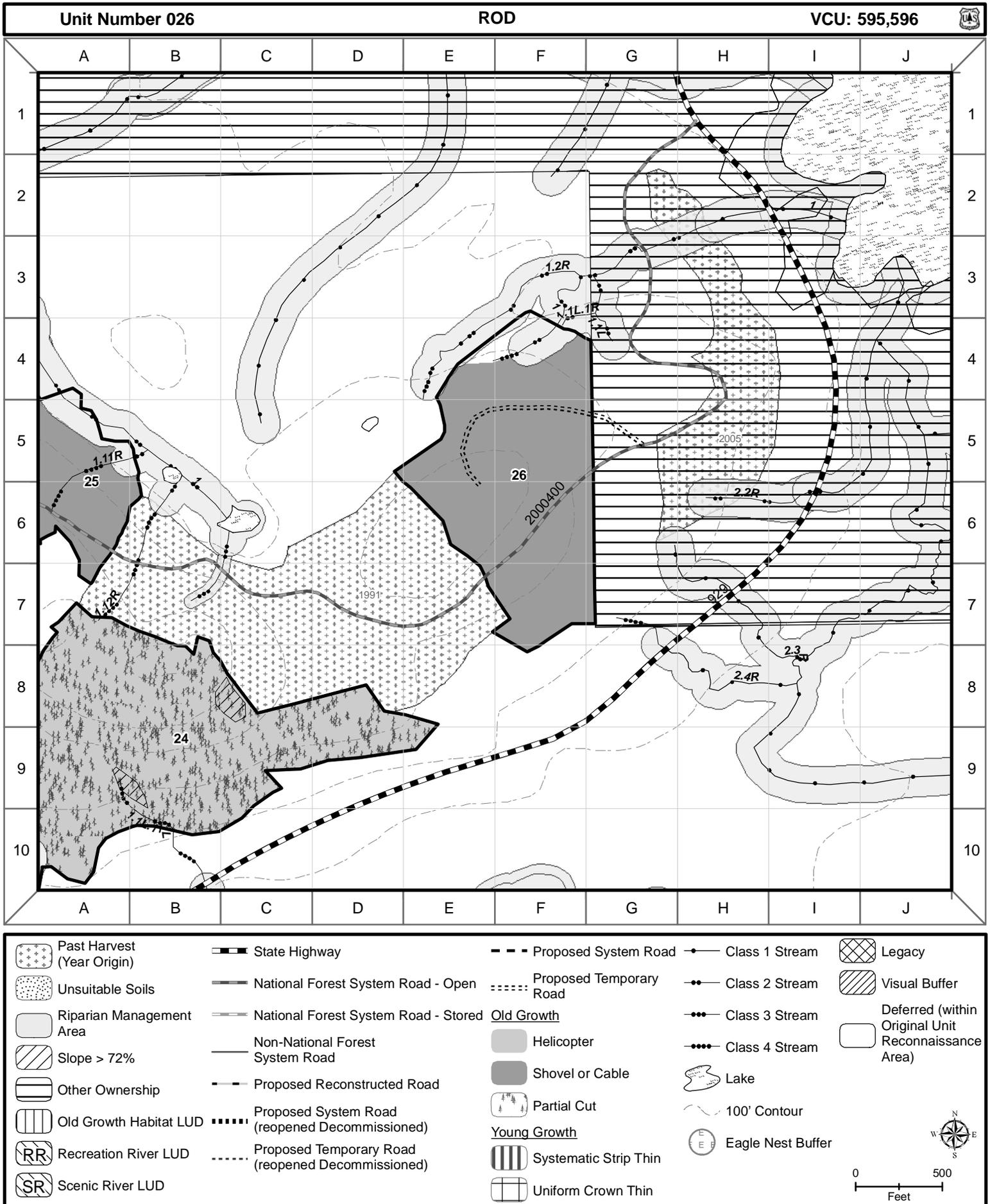
Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).
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WILDLIFE: Unit includes average snow deer winter range (entire unit); western lobe is also deep snow marten habitat/deer winter range. Legacy standard and guideline does not apply in this VCU.
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Unit Number:	26	Alternatives: ROD	Total Unit Acres: 30.5	Prescription: Clearcut
VCU Number:	595	Yarding System: Cable, Shovel	Net Harvest Volume (MBF): 683	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Heavy stem decay is found in the western hemlock. Mistletoe is light to moderate. Defect is high for all species. A high number of dead redcedar are present. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>				
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary road. Shovel settings yard to the proposed temporary road and NFS road 2000400. During field reconnaissance an approximately 11 acre area adjacent to the east side of the unit was identified that appears to be National Forest land that is currently identified as State of Alaska land. Investigation for this discrepancy is on-going. If this land is National Forest land it may be suitable for management.</p>				
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,500 feet. The first 300 feet of the road will be constructed over State of Alaska lands.</p>				
<p>BOTANY: No Concerns</p>				
<p>INVASIVE SPECIES: Canada thistle infestation located east of unit along state highway. Infestation has been treated in the past and is recommended for monitoring and follow-up treatment.</p>				
<p>FISHERIES: Streams are tributaries to Control Lake.</p> <p>Stream#: 1 Class: I, II, IV Flagging: B/W, G/W C-Type: PAS, HCO Concerns: blowdown Buffer (RMA): Class I for PAS and HCO- greater of 100 feet or the top of the side-slope break. Class II for HCO- greater of 100 feet or to the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.1L Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L.1R Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.2R Class: II, IV Flagging: B/W, G/W C-Type: MMO, HCO Concerns: blowdown Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 26: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>				
<p>GEOLOGY/KARST: No Concerns</p>				

Appendix 1

<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is divided between Moderate and Very Low. The unit is in Modified Landscape and about half is in Foreground and half is Not Seen. The unit is set back from 350 to 1,400 ft. from the Klawock- Control Lake Junction highway, has a buffer of trees around it, and about 14 acres are not seen. Therefore, clearcutting is permissible.</p>
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Modified Landscape) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>
<p>Harvest in this unit would be heard and partly seen from the Control Lake Cabin. Sound travels across the lake but these units are across the highway and there is already a significant amount of sound at the cabin from the road.</p>
<p>SOILS/WETLANDS: Slopes range from nearly level to 40%. A benchy, exposed bedrock cliff is located between the existing road and the proposed temporary road near the center of the unit. Forested wetlands occupy less than 50% of the unit and are concentrated in the northern part of the unit, between knobs (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for minimum partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p>
<p>The proposed temporary road will impact about 1 acre of forested wetland. Wetland avoidance is not feasible due to access requirements to the northern portion of the unit, nearly all of which is forested wetland and avoidance of the bedrock cliff. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (southern 2/3 of unit). Legacy standard and guideline does not apply in this VCU.</p>

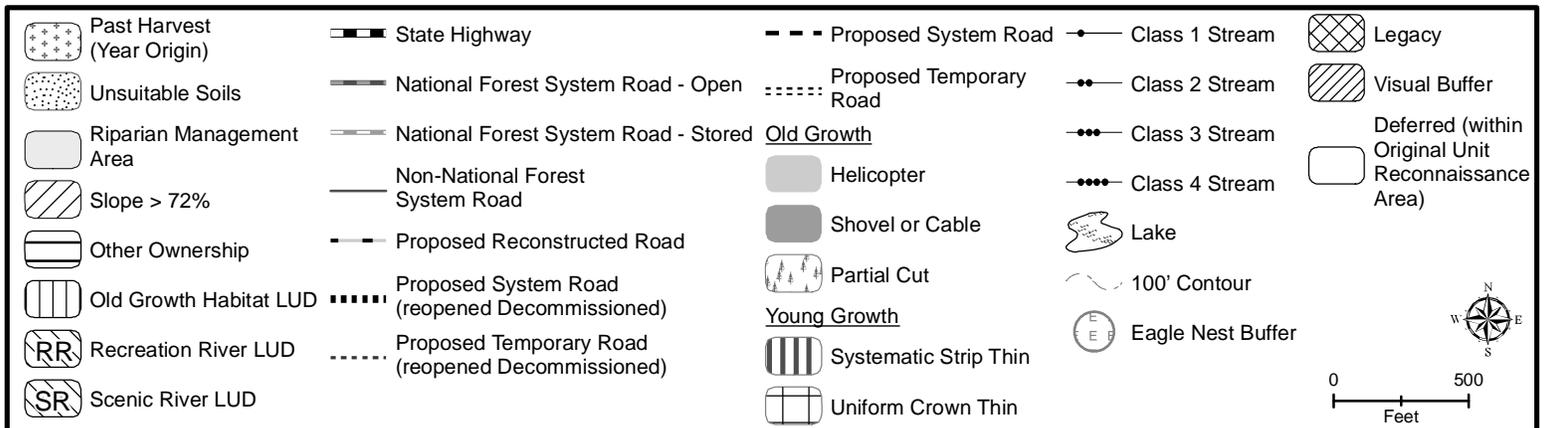
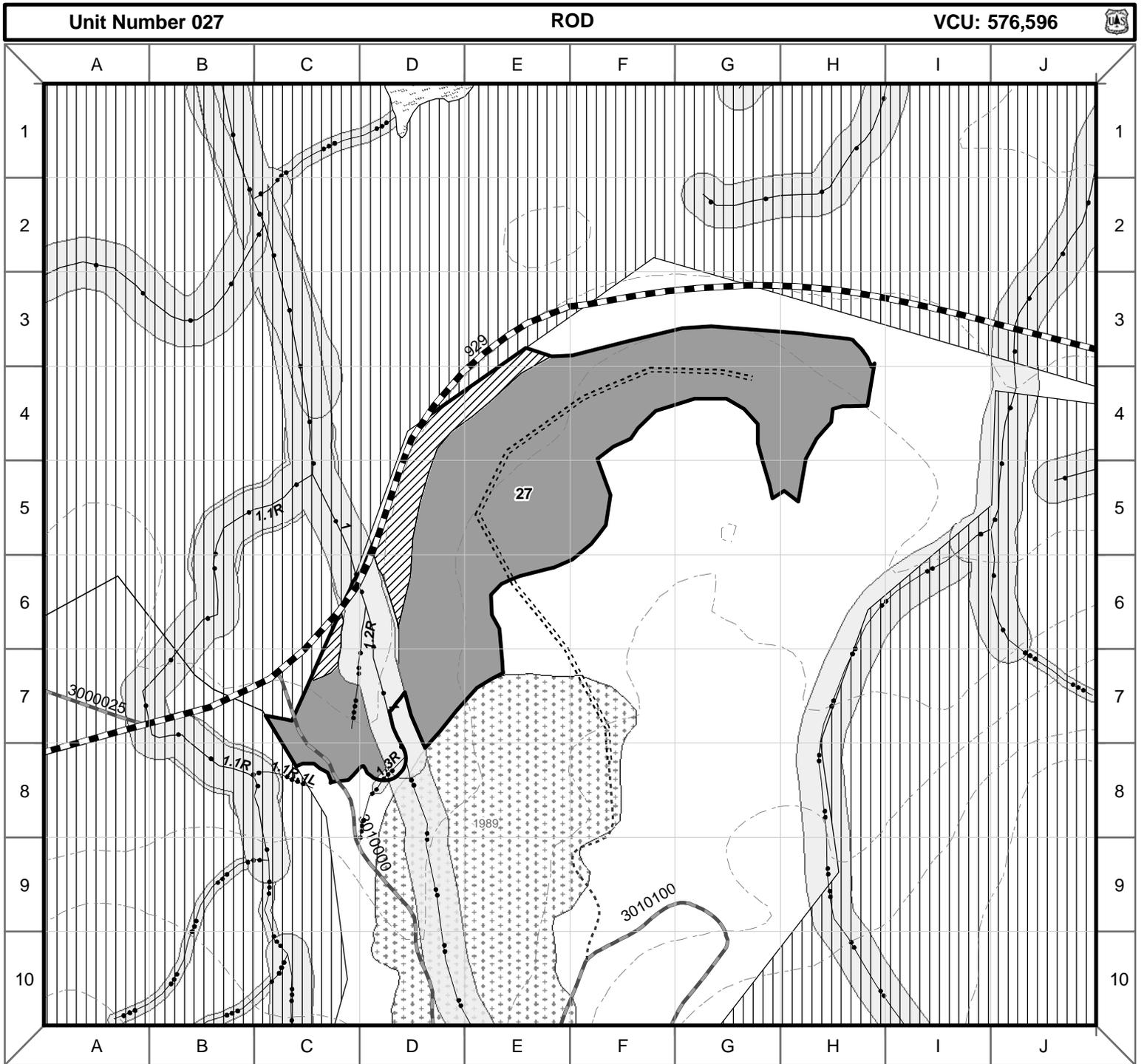


Appendix 1

Unit Number: 27	Alternatives: ROD	Total Unit Acres: 44.5	Prescription: Clearcut
VCU Number: 596, 576 Phase 2	Yarding System: Shovel	Net Harvest Volume (MBF): 1,091	LUD: Scenic Viewshed
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. In the western hemlock stem decay is moderate to high and mistletoe is light. Alaska-cedar decline is heavy along muskeg edges and poorly drained areas. Defect for all species is high. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible. Portions of the unit along the southern and western boundaries were dropped due to poor timber volumes/values.</p> <p>This unit is adjacent to the Control Lake-Thorne Bay highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, requires visual mitigation (see Scenery comments). In order to meet this requirement a screen of trees is being prescribed to be maintained to block most of the harvest area from view, although the visible opening may be from 15 -40 acres in size (see Scenery). Design this screen approximately as shown on the unit card map. Utilize the topography of the road cut and existing young growth between the road right-of-way and the old-growth edge to provide screening. Evaluate the effectiveness and windthrow risk of the planned screen at the time of layout and adjust as needed. Avoid leaving defective old growth trees that could fall into the road or across power lines.</p>			
TIMBER/YARDING: Shovel yarding to NFS road 3010000 and the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 4,300 feet; approximately 1,200 feet of that road will be constructed over decommissioned road bed.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Control Creek			
<p>Stream#: 1 Class: I Flagging: B/W C- Type: MMS, HCL Concerns: active erosion Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCL- greater of 100 feet or the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1R Class: I Flagging: B/W C- Type: PAS, MMS Concerns: blowdown Buffer (RMA): Class I for PAS- greater of 100 feet or to slide-slope break. Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.2R Class: I, IV Flagging: B/W, G/W C- Type: MMO, HCO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.3R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCL Concerns: none Buffer (RMA): Class III for HCM- greater of 100 feet or to the top of side-slope break. Class IV for HCL- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			

<p>Temporary roads for Unit 27: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.7, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is mostly High with 7 acres of Very Low. The majority of the unit is in Scenic Viewshed LUD and is in Foreground along the Control Lake-Thorne Bay highway. The original unit extended to the edge of the highway in some areas and was set back up to 250 ft in other areas; because of this, a visual buffer was established along the highway to screen views from this Visual Priority Route (as shown on unit card map and described in the silvicultural prescription). Because most of the unit has an Intermediate VAC, allowable opening size is 15 to 40 acres under the Forest Plan. As noted in the prescription, the visual buffer or screen will be designed for wind firmness.</p>
<p>RECREATION: Harvest in this unit would be heard from Eagle's Nest Campground and Balls Lake Picnic Area. This would have short-term adverse impacts on the experience of recreationists using these areas.</p>
<p>SOILS/WETLANDS: Slopes are gentle throughout the unit. Forested wetland is dominant near the southeastern boundary of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p> <p>The proposed temporary road will impact about 1/10 of an acre of forested wetland. Wetland avoidance is not feasible due to location of forested wetlands between existing road and unit, minimizing temporary road length, and visual screening. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (all but eastern and western lobes of unit). Legacy standard and guideline does not apply in this VCU. Northern and western edges of unit abuts Honker large OGR complex.</p>

Appendix 1

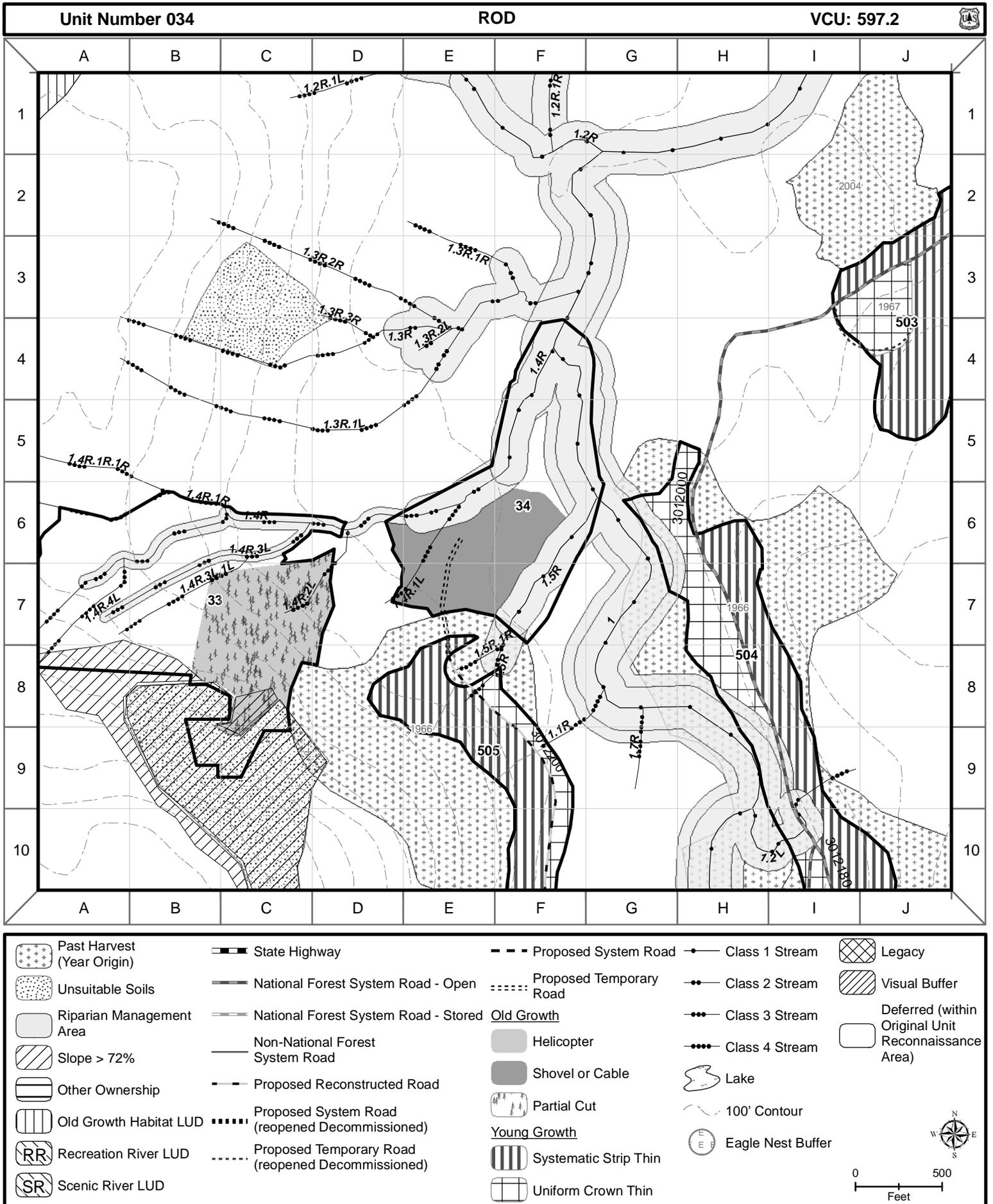


Unit Number:	33	Alternatives: ROD	Total Unit Acres: 12.6	Prescription: Clearcut
VCU Number: 597.2		Yarding System: Helicopter	Net Harvest Volume (MBF): 300	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: Unit 33 is an old-growth stand. Stem decay & stem breakage are moderate occurrence and the most common damage agents affecting volume in the unit. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is static. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 44 acres which requires 13 acres of legacy set-aside. Approximately 31 acres of legacy are already planned for unsuitable soil and Inventoried Roadless Areas adjacent to the planned harvest opening. No additional legacy set-aside is required.</p>				
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3012200.</p>				
<p>ENGINEERING/ROADS: Unit is accessed by reconstructing NFS road 3012200, totaling 4,400 feet. See road card for information on NFS road. This road is also used to access Units 34 and 505.</p>				
<p>BOTANY: No Concerns</p>				
<p>INVASIVE SPECIES: No Concerns</p>				
<p>FISHERIES: Streams are tributaries to Rio Beaver Creek.</p> <p>Stream#: 1.4R.3L Class: III Flagging: O/W C-Type: HCM Concerns: extreme blowdown, active erosion. Buffer (RMA): Class III for HCM- to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>				
<p>GEOLOGY/KARST: No Concerns</p>				
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>				
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape, due to its visibility from the Control Lake- Thorne Bay highway and is in Middleground. However, the unit is set back over 1-1/2 mile from the highway and the unit is less than 12 acres in size. Therefore, clearcutting is permissible.</p>				
<p>RECREATION: No concerns; however, the unit is adjacent to the Karta inventoried roadless area on the west and north.</p>				
<p>SOILS/WETLANDS: Slopes range from 70 to 95% in the original unit. About 21 acres were excluded due to very high landslide potential, colluvial activity, steep slopes, and unstable drainages. Only 1 acre of slopes greater than 72% is suitable for harvest with full suspension requirements. The remainders of slopes greater than 72% are excluded from harvest. In the remainder of the unit, a minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). No wetlands were identified in the unit.</p>				
<p>WILDLIFE: Includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Wolf sign documented in unit. Legacy standard and guideline applies in this VCU; legacy acres met with unsuitable soils and IRA acres.</p>				

Unit Number: 34	Alternatives: ROD	Total Unit Acres: 10.3	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 245	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 34 has old-growth stand structure. The incidence of mistletoe in the western hemlock is high to very high, while stem rot is moderate to high. In the Alaska-cedar decline is high. Defect for the stand is moderate to high for all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 14 acres. No legacy set-aside is required.</p>			
TIMBER/YARDING: Shovel and cable yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road, totaling 700 feet. Unit is also accessed by reconstructing NFS road 3012200, totaling 4,400 feet. See road card for information on NFS road. This road is also used to access Units 33 and 505.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Rio Beaver Creek.			
<p>Stream#: 1 (Rio Beaver Creek) Class: I Flagging: B/W C-Type: FPM Concerns: none known Buffer (RMA): Class I for FPM- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.3R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class I for FPO- greater of 100 feet or the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.4R Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCM Concerns: slowdown, active erosion. Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or the top of side-slope break. Class III for HCM- to the side-slope break. Alternatives: ROD Buffer (RAW): review required on south side of stream. Protection: Category A and B</p> <p>Stream#: 1.5R Class: I, II, IV Flagging: B/W, G/W C-Type: FPO, HCO, MMO Concerns: none Buffer (RMA): Class I for FPO- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			

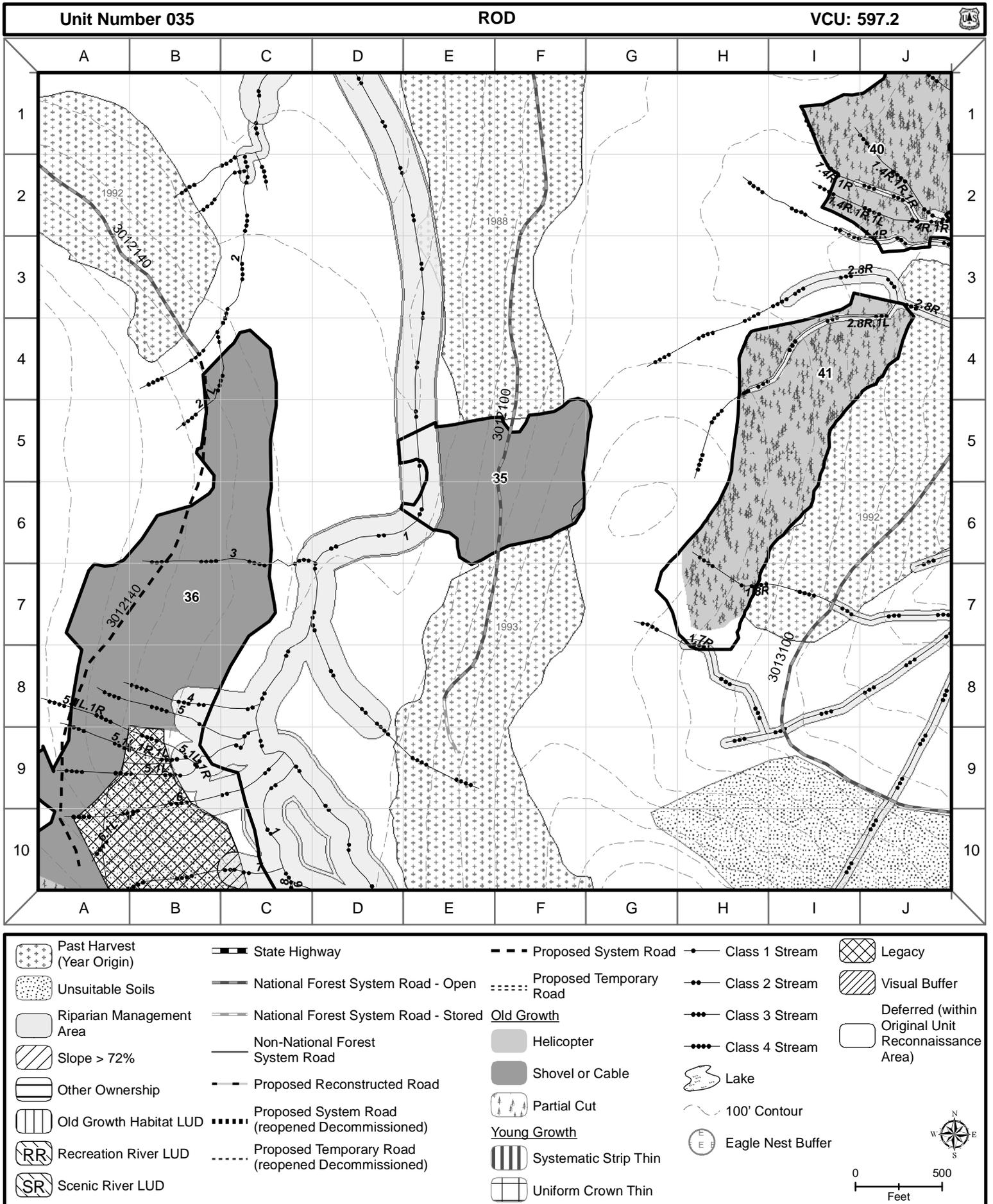
Appendix 1

Temporary roads for Unit 34: If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: No Concerns; however, this unit is across a stream buffer or adjacent to (at one point) the Karta inventoried roadless area.
SOILS/WETLANDS: Slopes average 35% or less in this unit. There are intermittent areas of forested wetland throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4). The proposed temporary road will impact about 1/2 acre of forested wetland within the unit and about 1/4 acre of forested wetland outside of the unit. Wetland avoidance is not feasible due to the existing road location and abundance of streams. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (western lobe). Wolf sign documented in unit. Legacy standard and guideline applies in this VCU; however there are no requirements for this unit because the original planned unit was less than 20 acres.



Appendix 1

Unit Number: 35	Alternatives: ROD	Total Unit Acres: 13.9	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable	Net Harvest Volume (MBF): 597	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 35 has old-growth stand structure that transitions to more even-age appearing structure as you move up in elevation. Stem form defects were the dominant damage affecting volume, with crooks, sweeps, and splits being of concern. Windthrow risk is high. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 14 acres. No legacy set-aside is required.</p>			
TIMBER/YARDING: Cable yarding to NFS road 3012100			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Rio Beaver Creek.			
<p>Stream#: 1 Class: II Flagging: B/W C-Type: HCV Concerns: none Buffer (RMA): Class II for HCV- greater of 100 feet or the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).			
SOILS/WETLANDS: Slopes in the unit range from 47% to greater than 72%. Less than 1/8th an acre of steep slopes are located to the east of the 3012100 road near the southeast boundary. Slopes average 47% west of the 3012100 road and 65 to 70% east of the road. All slopes in the unit are suitable for harvest. Forested wetlands border the western boundary of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).			
WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres.			



Appendix 1

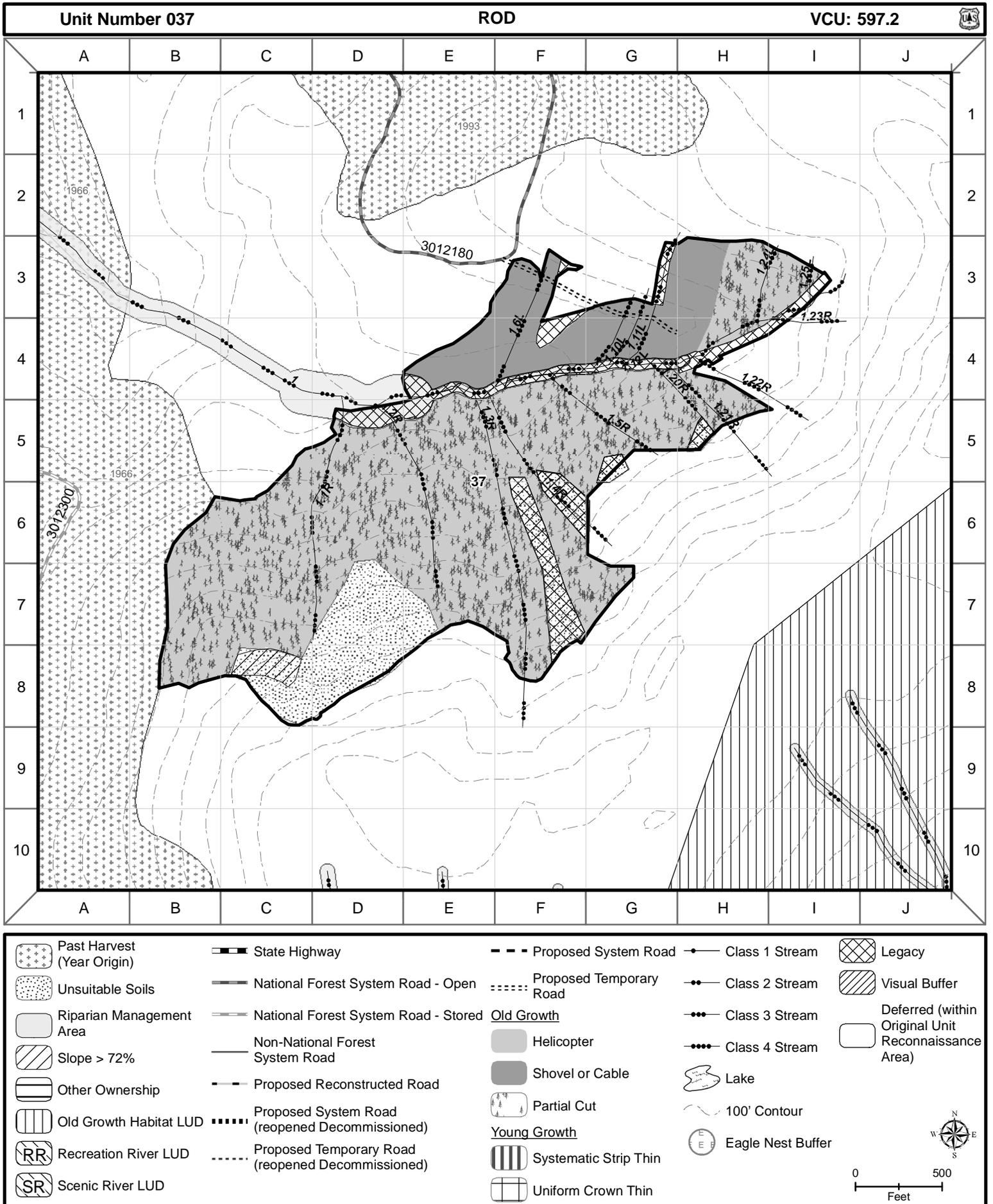
Unit Number: 36	Alternatives: ROD	Total Unit Acres: 56.1	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 1,639	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 36 has old-growth stand structure. Defect and damages are high for all species especially the western hemlock. In the western hemlock the incidence of mistletoe is light while stem/heart rot and defect are high to very high. The Alaska-cedar within the stand have a high incidence of cedar decline with numerous dead stems present. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-aged Management - Clearcut This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 107 acres which requires 32 acres of legacy set-aside. Approximately 51 acres of legacy are already planned for unsuitable soil areas adjacent to the planned harvest opening. No additional legacy set-aside is required.</p>			
TIMBER/YARDING: Helicopter and cable yarding to proposed NFS road 3012140.			
ENGINEERING/ROADS: Unit is accessed by proposed NFS road 3012140, totaling 3,200 feet.			
BOTANY: One rare plant population, whiteflower rein orchid, with eleven known plants, is located just to the east of the proposed harvest, within the indirect effects area.			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Rio Beaver Creek.</p> <p>Stream#: 1 Class: II Flagging: B/W C-Type: MCS, MMS, PAB Concerns: active erosion Buffer (RMA): Class II for MCS- greater of 100 feet or to the top of side-slope break. Class II greater of 100 feet for PAB and 120 feet for MMS, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 4 Class: II, IV Flagging: **, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 5 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 5.1L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 5.1L.1R Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 6 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 7 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none</p>			

<p>Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 8 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 9 Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>Stream#: 10 Class: II, IV Flagging: B/W, G/W C-Type: PAB, HCO Concerns: none Buffer (RMA): Class II for PAB- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 11 Class: II Flagging: B/W C-Type: PAS Concerns: none Buffer (RMA): Class II for PAS- greater of 100 feet, floodplain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>Stream#: 12 Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>Stream#: 13 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 14 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No Concerns</p>
<p>SOILS/WETLANDS: About 53 acres of steep slopes and unstable soils were removed from original unit with slopes up to 100%. All slopes exceeding 70% are excluded from harvest. In the existing unit, slopes are generally 50 to 60% with the exception of gentler slopes in the northern part of the unit above the proposed system road line at about 1,300 feet. Gentle slopes can also be found at the lowest elevations of the unit on the eastern boundary. Forested wetlands are dominant in the lower elevations of the eastern boundaries (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). Emerging subalpine muskegs and a moss muskeg were removed from the unit. A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>
<p>WILDLIFE: Includes average snow deer winter range (northern 2/3 of unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range.</p>

Unit Number: 37	Alternatives: ROD	Total Unit Acres: 79.5	Prescription: Clearcut and 50% Removal
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 2,259	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: This unit has old-growth stand structure. The dominant damage/defect is stem form and stem rot. Windthrow risk is low. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 86 acres (there are 29 acres planned for partial cutting not included in the potential opening) this requires 26 acres of legacy set-aside. Approximately 23 acres of legacy are already planned for unsuitable areas adjacent to the planned harvest opening. Additional legacy is required. There is currently 13 acres of legacy mapped to coincide with difficult yarding areas primarily in the western corner of the unit.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (as designated on the unit card maps) Maintain at least 50 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for this unit to improve harvest economics. This system is not optimum for promoting timber production.</p>			
TIMBER/YARDING: Cable settings yard to the proposed temporary road. Helicopter settings yard to NFS road 3012180 and the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,100 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Rio Beaver Creek. Characteristics for Stream 1.23R do not include project-specific, field verified information. This information will be collected prior to implementation.</p> <p>Stream#: 1 Class: III, IV Flagging: O/W, G/W C-Type: MMS, HCM, HCL Concerns: blowdown Buffer (RMA): Class III for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCM- to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): none Protection: Category C</p> <p>Temporary roads for Unit 37: Four Class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			

Appendix 1

SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: No Concerns
SOILS/WETLANDS: Slopes average 25 to 70%. About 17 acres were excluded from the unit unsuitable soils, very high landslide potential, active and historic landslides, colluvial activity, avalanche chutes, steep slopes, and unstable drainage. All slopes greater than 72%, about 2 acres, are located in the excluded area. Approximately 27 acres on the southern portion of the unit are only suitable for full suspension and partial harvest. In the remainder of the unit, a minimum of partial suspension helicopter and cable yarding would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6). Sub-alpine muskegs are located on the southern fringe of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The proposed temporary road will impact less than ¼ of an acre of subalpine muskeg. Wetland avoidance is not feasible due to location of location of the existing road, the interspersed muskegs adjacent to the road, steep ground, and engineering constraints. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Includes average snow deer winter range (all except northern lobe of unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range.

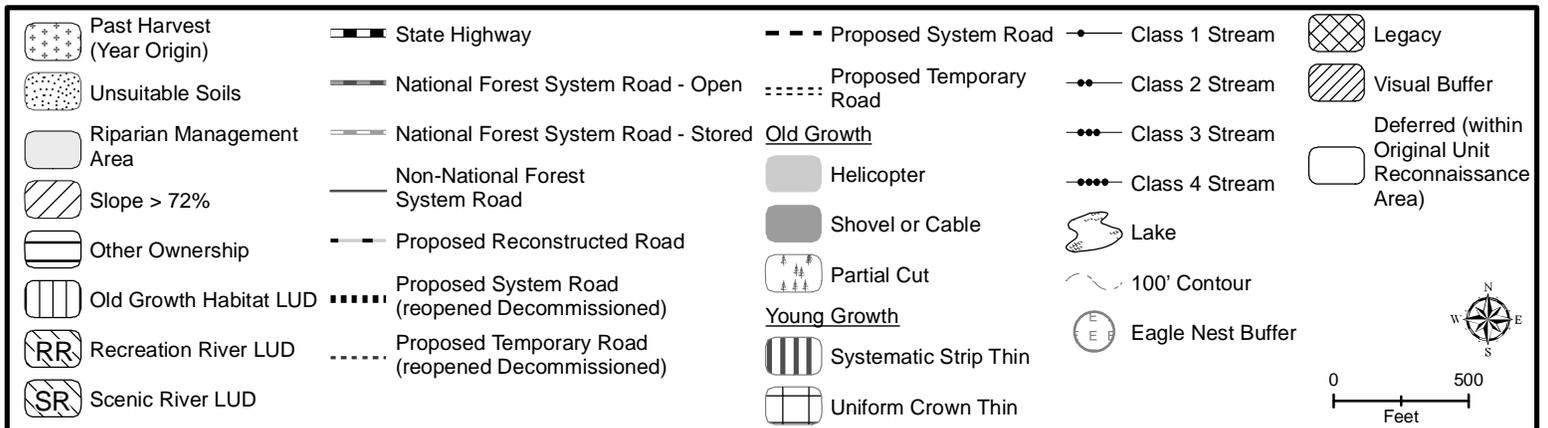
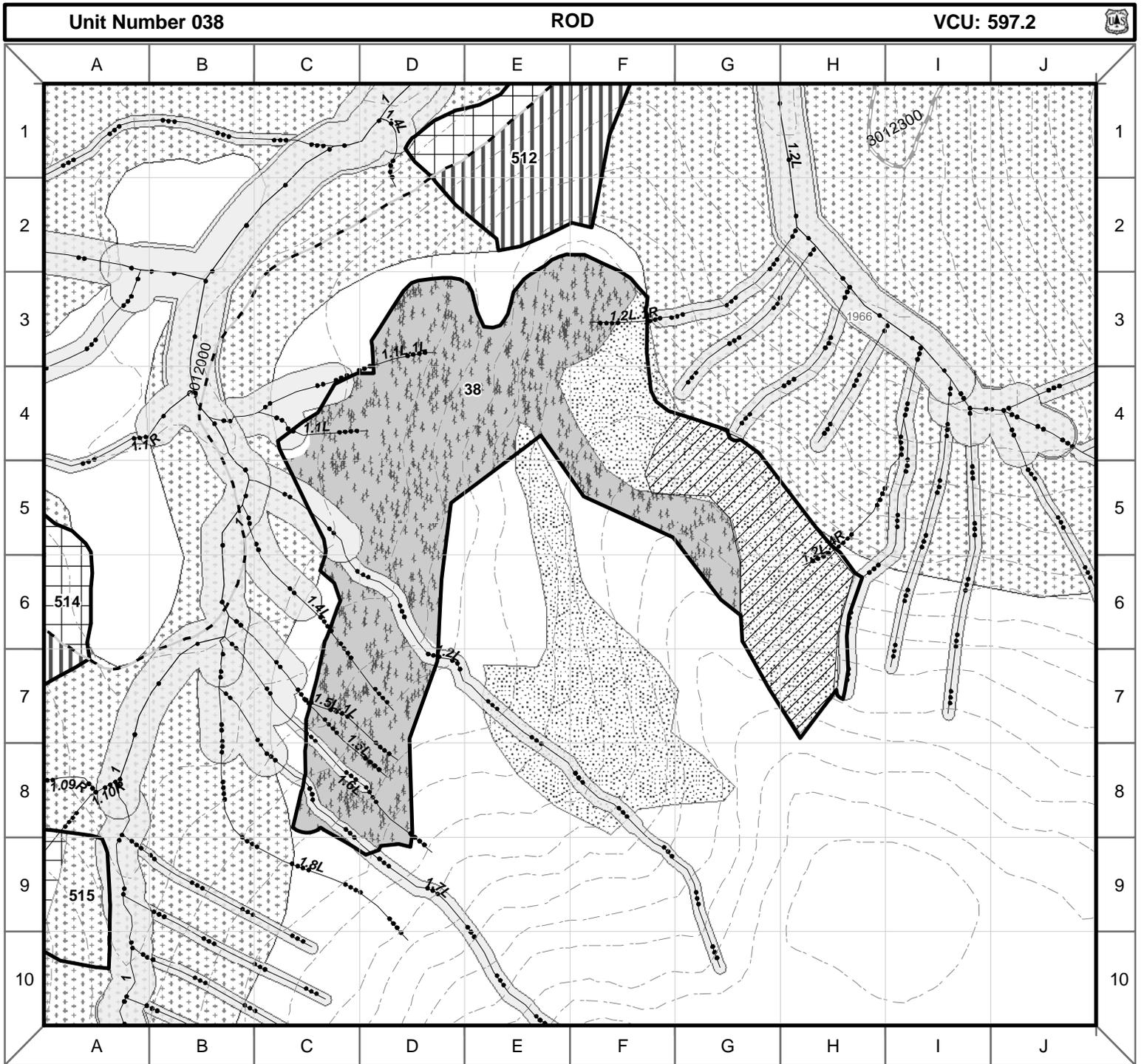


Appendix 1

Unit Number: 38	Alternatives: ROD	Total Unit Acres: 52.1	Prescription: 25% Removal
VCU Number: 597.2	Yarding System: Helicopter	Net Harvest Volume (MBF): 244	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 38 has old growth structure with characteristics typical of a high elevation stand. Along the western and northwestern boundary, even-age stand structure is apparent. Average defect for the entire unit is moderate. Windthrow risk is high. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening. A Tongass Wide Young Growth Study site (POW Rio Beaver Experiment #4) is along the southwestern boundary. Protection of this site is required. Contact the Forestry Sciences Lab in Juneau for additional information.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is prescribed for this unit because partial harvest and full suspension yarding is required to meet soil protection objectives. This system is not optimum for promoting timber production. No legacy is required for this unit since no harvest opening greater than 20 acres is being created.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3012000</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3012000, totaling 7,100 feet. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Rio Beaver Creek. Characteristics for Streams 1.2L, 4R, 1.6L, and 1.7L do not contain project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: MCS, HCL Concerns: none Buffer (RMA): Class I for MCS and HCL- greater of 100 feet or to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.1L.1L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.2L Class: II, III Flagging: B/W, O/W C-Type: HCL, HCD Concerns: none Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of side-slope break. Class III for HCD- to the top of side-slope break. Alternatives: ROD Buffer (RAW): review required on SW and NE side of Class III and NE side for Class II. Protection: Category A and B</p> <p>Stream#: 1.6L Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCL Concerns: active erosion Buffer (RMA): Class III for HCM- to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.7L Class: III Flagging: O/W C-Type: HCL Concerns: blowdown and active erosion. Buffer (RMA): Class III for HCL- to the top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC</p>			

Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C
GEOLOGY/KARST: No Concerns		
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.		
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.		
RECREATION: No Concerns		
SOILS/WETLANDS: Slopes range from 50 to 85%. All slopes greater than 70% are excluded from harvest considerations. Approximately 56 acres were excluded from the original reconnaissance area (some of this area is in inventoried roadless area and was dropped for that reason also) due to high landslide potential, active and historic landslides, colluvial activity, about 16 acres of steep slopes, and unstable drainages. No wetlands have been identified in the unit. Full suspension with partial harvest is required in about 23 acres of modified unit. In the remainder of the unit, a minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).		
WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range.		

Appendix 1

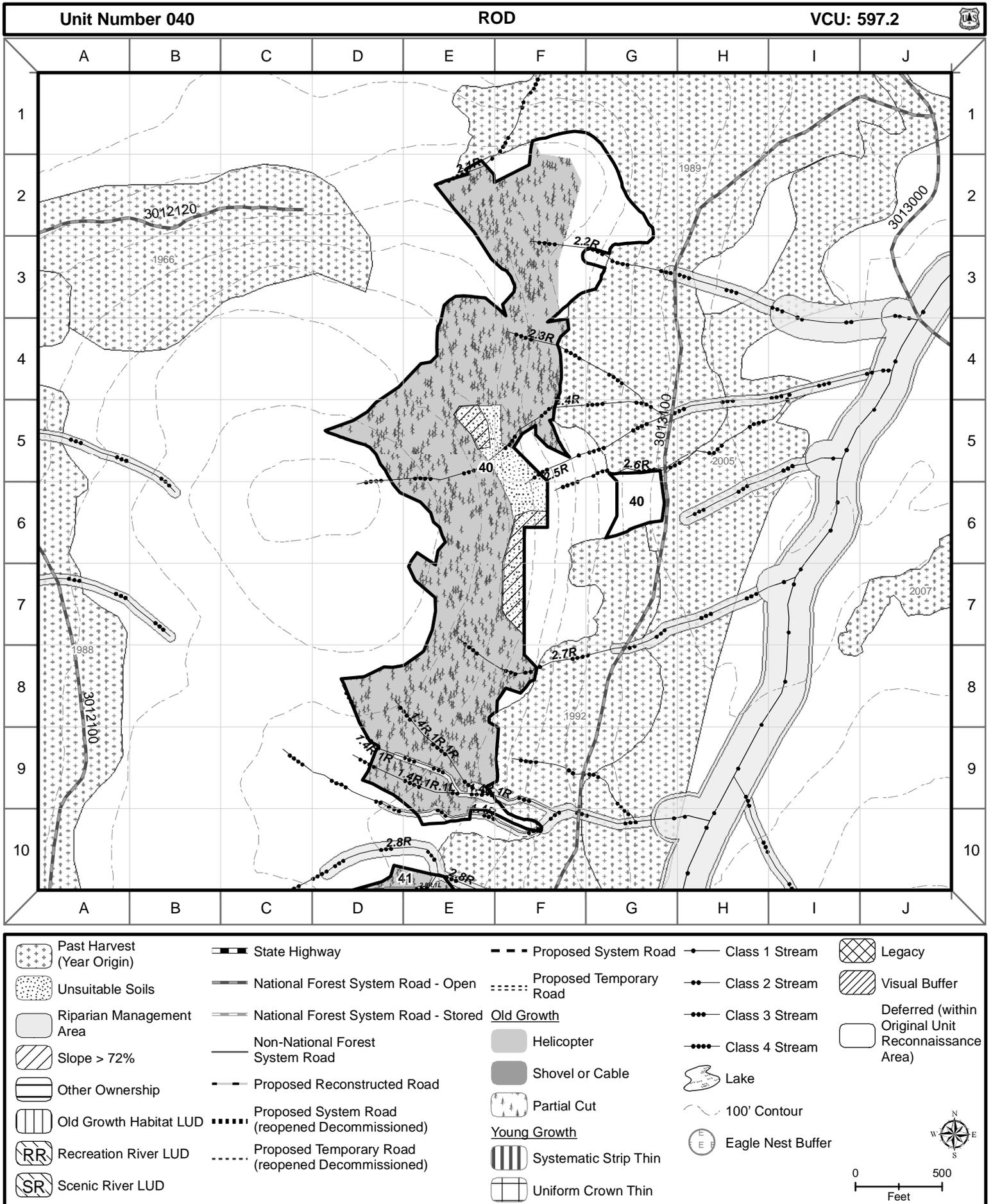


Unit Number: 40	Alternatives: ROD	Total Unit Acres: 43.9	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Helicopter	Net Harvest Volume (MBF): 939	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 40 is characterized by over-mature high defect old growth timber. In the western hemlock mistletoe is very light, while stem decay is moderate. In the Alaska-cedar, decline is high. Defect for all species is moderate to high. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall and meet NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 68 acres which requires 20 acres of legacy set-aside. Approximately 13 acres of legacy are already planned for unsuitable soil areas and RMAs adjacent to the planned harvest opening. There are 11 acres of additional legacy mapped. These areas are designed to divide the harvest into two smaller openings, provide RAW along the southern streams and coincide with the lowest value timber.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3013100.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Goose Creek.			
<p>Stream#: 1.4R Class: III, IV Flagging: O/W, G/W C-Type: HCD, HCO Concerns: none Buffer (RMA): Class III for HCD and HCO- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.4R.1R Class: IV Flagging: O/W C-Type: HCO Concerns: none Buffer (RMA): Class IV for HCO- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for south side of unit. Protection: Category B</p> <p>Stream#: 1.4R.1R.1R Class: IV Flagging: O/W, G/W C-Type: HCD, HCO Concerns: none Buffer (RMA): Class IV for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Concerns: extreme blowdown Buffer (RMA): none known Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape LUD, due to its potential visibility from the Control Lake-Thorne Bay highway and is in Middleground. However, the majority of the unit is 1 mile or more from the highway, and generally runs perpendicular to the highway. Therefore, clearcutting is permissible.			
RECREATION: No Concerns			

Appendix 1

SOILS/WETLANDS: Slopes range from 40 to 75%. Small areas of forested wetland occur in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). All slopes greater than 72% (about 5 acres) are omitted from harvest due to very high landslide potential, MMI4 soils, historic landslides, and very steep slopes. In the remainder of the unit, a minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).

WILDLIFE: Includes average snow deer winter range (entire unit); very eastern lobe is also deep snow marten habitat/deer winter range. Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range and deep snow marten habitat/deer winter range.



Appendix 1

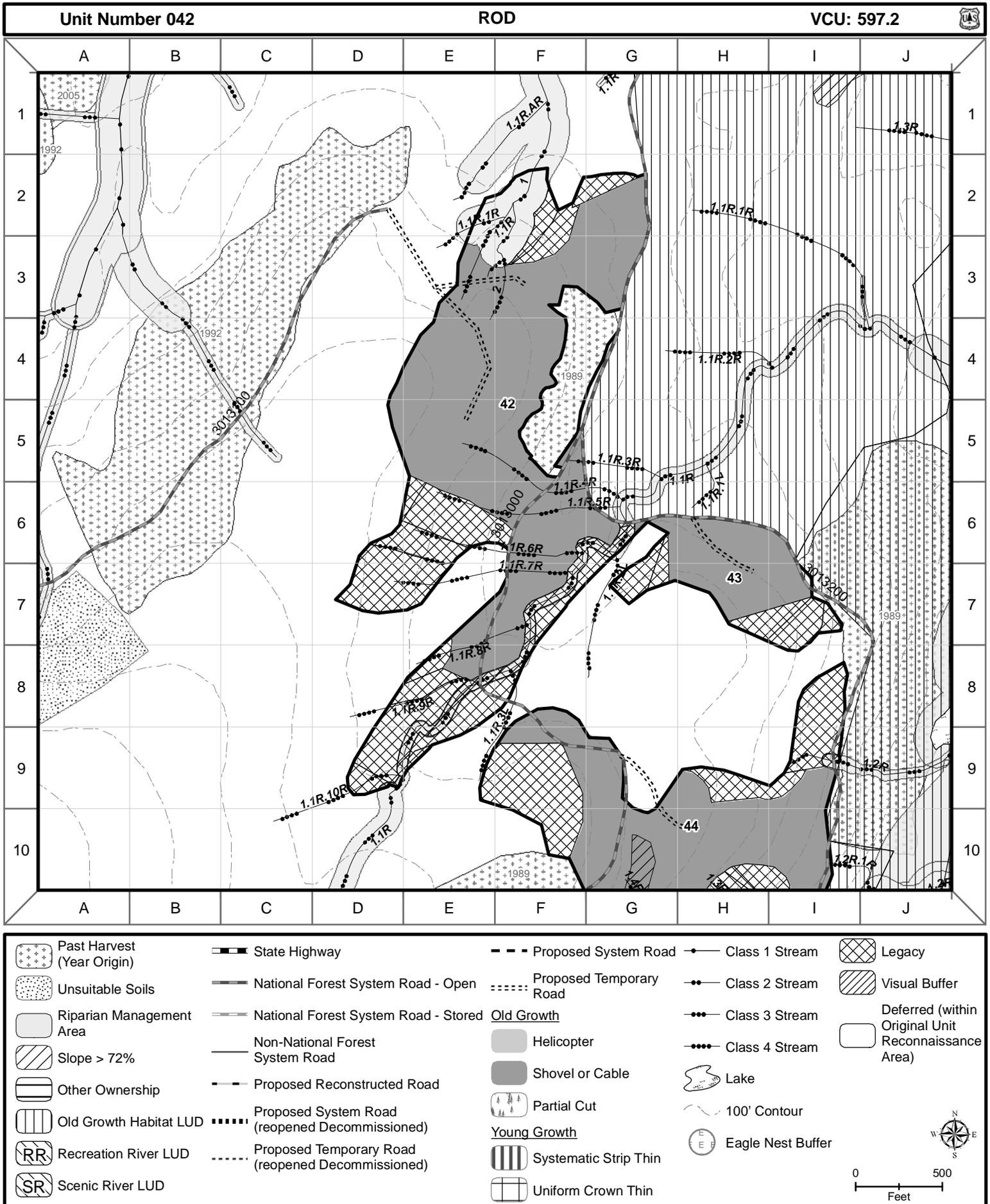
Unit Number: 41	Alternatives: ROD	Total Unit Acres: 18.9	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Helicopter	Net Harvest Volume (MBF): 437	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: Unit 41 is old growth timber with average defect. In the western hemlock the incidence of mistletoe is light to very light, while stem rot is moderate. Defect for the stand is moderate to high for all species. Windthrow risk is moderate. A previous harvest area is located to the east. It is adequately restocked with trees at least 5 feet tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 27 acres which requires 8 acres of legacy set-aside. Approximately 3 acres of legacy are already mapped in RMA and low value timber areas adjacent to the planned harvest opening. There are 5 acres of additional legacy set-aside planned at the northern and southern ends of the unit to supplement riparian corridors and provide for RAW.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3013100.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Goose Creek.</p> <p>Stream#: 2.8R Class: III, IV Flagging: O/W, G/W C-Type: HCD, HCO Concerns: active erosion, blowdown Buffer (RMA): Class III for HCM and HCD to the top of the side-slope break. Class IV HCO none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 2.8R.1L Class: IV Flagging: O/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class IV for HCO to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for south side. Protection: Category B and C</p> <p>Stream#: 1.7R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape LUD, due to its potential visibility from the Control Lake-Thorne Bay highway and is in Middleground. However, the majority of the unit is 1-1/2 miles or more from the highway. The unit generally runs perpendicular to the highway. Therefore, clearcutting is permissible.			
RECREATION: No Concerns			
SOILS/WETLANDS: Slopes range from 40 to 65%. Small areas of forested wetland occur in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4,			

Veg-1, Veg-2, and Veg-5).
WILDLIFE: Includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range and deep snow marten habitat/deer winter range.

Unit Number: 42	Alternatives: ROD	Total Unit Acres: 43.1	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 1,147	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 42 has an open canopy, old growth stand structure. In the western hemlock mistletoe is light. In the Alaska-cedar, decline is heavy. Windthrow risk is moderate overall, with more exposed knobs in the north being high risk. A previous harvest area is located in the central eastern portion of the unit. It is adequately restocked with trees at least 5 feet tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy Alaska cedar decline and moderate to high defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy, improve site productivity through increased soil temperature and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening encompasses Units 42, 43, 421, 422 and 423. The total potential opening acreage is 120. This requires 36 acres of legacy set-aside. Approximately 7 acres of legacy are already planned for RMAs within the potential harvest opening. An additional legacy set-aside of 31 acres is mapped to coincide with isolated areas expected to be difficult to yard. This also reduces required road length.</p>			
TIMBER/YARDING: Cable and shovel yarding to the proposed temporary roads and NFS roads 3013000 and 3013200.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,000 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Goose Creek. Two streams named 1.1R: northwest end and southeast end.			
<p>Stream#: 1 Class: II, IV Flagging: B/W, G/W C-Type: HCL Concerns: none Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class II section of stream Protection: Category A and C</p> <p>Stream#: 1.1R <i>North end of unit</i> Class: II, IV Flagging: B/W, G/W C-Type: HCL Concerns: none Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class II section. Protection: Category A and C</p> <p>Stream#: 1.1R.1R Class: II, IV Flagging: B/W, G/W C-Type: HCL Concerns: none Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Class IV for HCL none. Alternatives: ROD Buffer (RAW): review required for Class II section. Protection: Category A and C</p> <p>Stream#: 1.1R.AR Class: II, IV Flagging: B/W, G/W C-Type: HCL Concerns: w/in 60meters of unit. Buffer (RMA): Class II for HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class II section. Protection: Category A and C</p> <p>Stream#: 1.1R Class: III Flagging: O/W C-Type: HCD, HCM Concerns: Active erosion, high blowdown (western edge of unit), slope instability. Buffer (RMA): Class III for HCD and HCM- to the top of the side-slope break.</p>			

Appendix 1

Alternatives: ROD	Buffer (RAW): no review needed.	Protection: Category B
Stream#: 87-1.1R	Class: III	Flagging: O/W
Concerns: blowdown and active erosion		
Buffer (RMA): Class III for HCD, HCM, and HCV to the top of the side-slope break.		
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category B
All other streams in unit:	Class: IV	Flagging: G/W
Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C
<p>Temporary roads for Unit 42: Three Class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>		
GEOLOGY/KARST: No Concerns		
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>		
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>		
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>		
<p>SOILS/WETLANDS: Slopes range from 25 to 80%. Less than ½ acre of slopes greater than 72% (small rock outcrop) were identified north part of the unit and is suitable for harvest with partial suspension. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road will impact less than ¾ of an acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands within the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>		
<p>WILDLIFE: Includes average snow deer winter range (entire unit except eastern edge). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range.</p>		
<p><u>Old-growth Reserve (OGR) Boundary</u> Small OGR boundary moved to the east.</p>		



Appendix 1

Unit Number: 43	Alternatives: ROD	Total Unit Acres: 7.2	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Shovel	Net Harvest Volume (MBF): 130	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit is primarily low to moderate volume old growth with high defect and low grade. Mistletoe is light and stem decay moderate in the western hemlock across the unit. Defect for all species is moderate to high. Windthrow risk is moderate. A previous harvest area is located adjacent to the eastern corner of the unit. It is adequately restocked with trees at least 5 feet tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management -Clearcut This stand is over-mature with high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening encompasses Units 42, 43, 421, 422 and 423. The total potential opening acreage is 120. This requires 36 acres of legacy set-aside. Approximately 7 acres of legacy are already planned for RMAs within the potential harvest opening. An additional legacy set-aside of 31 acres is mapped to coincide with isolated areas expected to be difficult to yard. This also reduces required road length.</p>			
TIMBER/YARDING: Shovel and cable yarding to the proposed temporary road and NFS road 3013200.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 500 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Goose Creek.			
<p>Stream#: 1.1R Class: III Flagging: O/W C-Type: HCM Concerns: active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Concerns: active erosion Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 43: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).			
SOILS/WETLANDS: Slopes range from 25 to 60%. The steeper ground is along a rock outcrops in the southern portion of the unit and along the existing road. Forested wetlands are interspersed in the northwest portion of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).			

The proposed temporary road does not traverse any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (eastern lobe of unit). Legacy standard and guideline applies in this VCU.

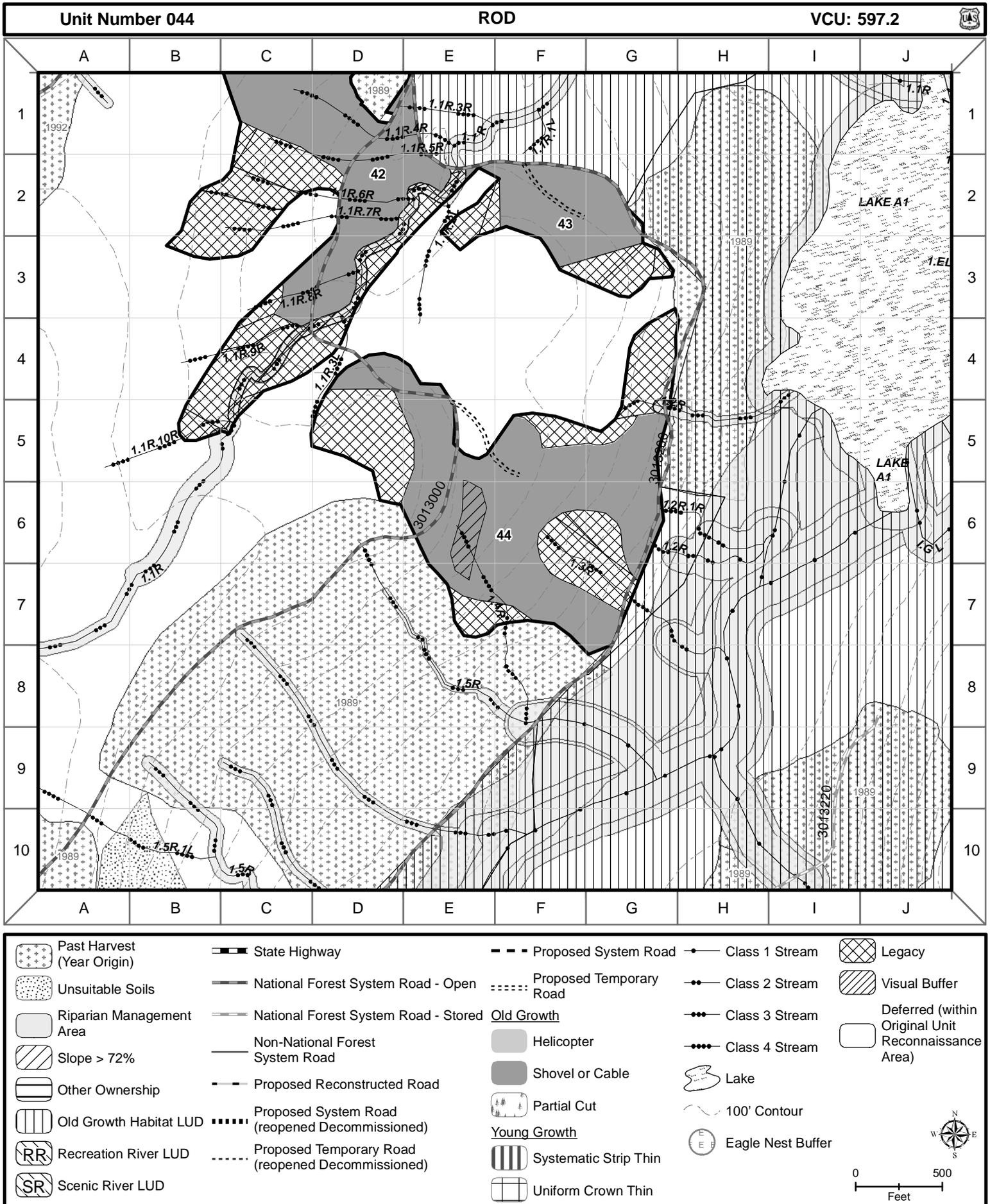
Old-growth Reserve (OGR) Boundary

OGR boundary moved to the east, but is still adjacent to northeast corner of unit.

Unit Number: 44	Alternatives: ROD	Total Unit Acres: 30.9	Prescription: Clearcut																																								
VCU Number: 597.2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 915	LUD: Timber Production																																								
Summary of Concerns, Responses, BMPs and Mitigation																																											
<p>SILVICULTURE: Existing Condition: Unit 44 has old growth stand structure. In the western hemlock mistletoe varies from light to heavy with the heavy concentrations in the central portions of the unit. The overstory is generally over-mature with moderate to high stem decay in all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening encompasses units 44 and 419. The total potential opening acreage is 52. This requires about 15.5 acres of legacy set-aside. Approximately 10 acres of legacy are already planned for areas of unsuitable timber. An additional legacy set-aside of 9 acres is planned as blocks that coincide with areas of full suspension yarding or poor economics.</p>																																											
<p>TIMBER/YARDING: Shovel settings yard to NFS road 3013000. Cable yard to NFS roads 3013000 and 3013200 and the proposed temporary road. Soils concerns require the area between NFS roads 3013000 and 3013200 to have full suspension yarding. Based on field review, it appears that full suspension is feasible for cable yarding. NFS road 3013220 is located to the east from the unit and could be used to place equipment to be used as a tailhold. There is also a possibility of utilizing tailholds near Unit 418. Evaluate at implementation to check feasibility. If field evaluation determines that full suspension is unlikely, this area should be switched to helicopter yarding in all alternatives.</p>																																											
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 600 feet.																																											
BOTANY: No Concerns																																											
INVASIVE SPECIES: No Concerns																																											
FISHERIES: Streams are tributaries to Goose Creek.																																											
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 1.2R</td> <td style="width: 25%;">Class: III, IV</td> <td style="width: 25%;">Flagging: O/W, G/W</td> <td style="width: 25%;">C-Type: HCM, HCO</td> </tr> <tr> <td colspan="4">Concerns: none</td> </tr> <tr> <td colspan="4">Buffer (RMA): Class III for HCM- to the side-slope break.</td> </tr> <tr> <td>Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category B and C</td> </tr> <tr> <td>Stream#: 1.3R</td> <td>Class: II</td> <td>Flagging: B/W</td> <td>C-Type: MMS</td> </tr> <tr> <td colspan="4">Concerns: ~60 meters from unit.</td> </tr> <tr> <td colspan="4">Buffer (RMA): Class II for MMS- greater of 120 feet or to the extent of riparian zone.</td> </tr> <tr> <td>Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A</td> </tr> <tr> <td>All streams in unit:</td> <td>Class: IV</td> <td>Flagging: G/W</td> <td>C-Type: HC</td> </tr> <tr> <td>Buffer (RMA): none</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category C</td> </tr> </table>				Stream#: 1.2R	Class: III, IV	Flagging: O/W, G/W	C-Type: HCM, HCO	Concerns: none				Buffer (RMA): Class III for HCM- to the side-slope break.				Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category B and C		Stream#: 1.3R	Class: II	Flagging: B/W	C-Type: MMS	Concerns: ~60 meters from unit.				Buffer (RMA): Class II for MMS- greater of 120 feet or to the extent of riparian zone.				Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A		All streams in unit:	Class: IV	Flagging: G/W	C-Type: HC	Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C	
Stream#: 1.2R	Class: III, IV	Flagging: O/W, G/W	C-Type: HCM, HCO																																								
Concerns: none																																											
Buffer (RMA): Class III for HCM- to the side-slope break.																																											
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category B and C																																									
Stream#: 1.3R	Class: II	Flagging: B/W	C-Type: MMS																																								
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Buffer (RMA): Class II for MMS- greater of 120 feet or to the extent of riparian zone.																																											
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A																																									
All streams in unit:	Class: IV	Flagging: G/W	C-Type: HC																																								
Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C																																									
Temporary road for Unit 44: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.																																											
GEOLOGY/KARST: No Concerns																																											
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during																																											

Appendix 1

and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).
SOILS/WETLANDS: Slopes range from 65 to greater than 90% below the 3013000 road to about half way down the slope. Slopes average 65% on the lower portion of the hill on the eastern portion of the unit. Slopes above the 3013000 road are gentler. The only forested wetland area observed is located below the existing road line. Above the existing road line, forested wetland and emergent short sedge complexes occur (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The entire unit below the 3013000 road is only suitable for harvest with full suspension. A minimum of partial suspension or shovel yarding will meet soil and wetland resource concerns in the remainder of the unit on the western side of the road. All yarding systems should follow R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-4, Veg-5, and Veg-6). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4). The proposed temporary road does not traverse any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Includes average snow deer winter range (northern half of unit), some of which is also deep snow marten habitat/deer winter range (northeastern lobe of unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range. <u>Old-growth Reserve (OGR) Boundary</u> OGR boundary moved to the east.



Appendix 1

Unit Number: 46	Alternatives: ROD	Total Unit Acres: 27.7	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 741	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Conditions: Unit 46 is old growth Sitka spruce and western hemlock with gap phase stand development. The western hemlock and the mountain hemlock in the stand have high to very high defect and damages. Mistletoe is light. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening encompasses units 45, 46, 47, 413 and 414. The total potential opening acreage is 159. This group of units requires about 48 acres of legacy set-aside. Approximately 66 acres of legacy are already planned for areas of unsuitable soils and RMAs. An additional legacy set-aside of 6 acres is planned to coincide with areas of difficult yarding.</p>			
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary road and NFS road 3013000. Helicopter setting yard to NFS road 3013000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,000 feet.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Goose Creek. Stream 1 is more than 60 m away from harvest unit.</p> <p>Stream#: 1 Class: III Flagging: O/W C-Type: HCM Concerns: none Buffer (RMA): Class III for HCM to the top of side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 46: Two Class IV stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>			
<p>SOILS/WETLANDS: Slopes range between 45 and 95%. All slopes greater than 72% are located within the soil exclusion areas. About 10 acres were excluded because they are unsuitable for harvest due to very high landslide potential, colluvial activity, MMI4 soils, steep slopes, and unstable drainages. A debris torrent initiates within the</p>			

unit and travels downslope to the southeast. The soils and wetlands are suitable for a minimum of partial suspension cable yarding, and helicopter yarding should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-5, and Veg-6. No wetlands were identified in the unit.

The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Includes average snow deer winter range (portion of unit east of road). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range.

Old-growth Reserve (OGR) Boundary

OGR boundary moved to the east.

Unit Number: 47	Alternatives: ROD	Total Unit Acres: 46.7	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 1,251	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 47 is old-growth timber. In the hemlock, mistletoe is light and stem decay is moderate to high with heavy defect in the larger stems. Moderate to high defect and damage are present in all species except the medium sized Alaska-cedar where they are low. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening. Old growth LUD borders the southern boundary.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy, and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. See the unit card text for Unit 46.</p>			
TIMBER/YARDING: Cable and helicopter yarding to proposed extension of NFS road 3013000.			
ENGINEERING/ROADS: Unit is accessed by proposed extension of NFS road 3013000 of 2,000 feet. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Goose Creek. Characteristics for Stream A2 do not include project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: 4 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: A2 Class: III Flagging: O/W C-Type: HCM Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 5 Class: IV Flagging: G/W C-Type: HCO Concerns: high substrate load Buffer (RMA): Class IV for HCO- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No Concerns			
SOILS/WETLANDS: Slopes range between 45 and 95%. All slopes greater than 72% are located within the soil exclusion areas. About 9 acres were excluded due to very high landslide potential, colluvial activity, MMI4 soils, steep slopes, and unstable drainages. A 1/2 acre debris avalanche is located outside of but adjoining the soil exclusion area; it is not part of the unit to be harvested. The soils and wetlands are suitable for a minimum of partial suspension cable yarding, and helicopter yarding should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core			

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BMPs Plan-2, Veg-2, Veg-5, and Veg-6. No wetlands were identified in the unit.
WILDLIFE: Includes average snow deer winter range (southern end of unit). Legacy standard and guideline applies in this VCU; Legacy acres do not cover deer winter range. Wolf sign observed in unit.
<u>Old-growth Reserve (OGR) Boundary</u> OGR boundary moved to the east.

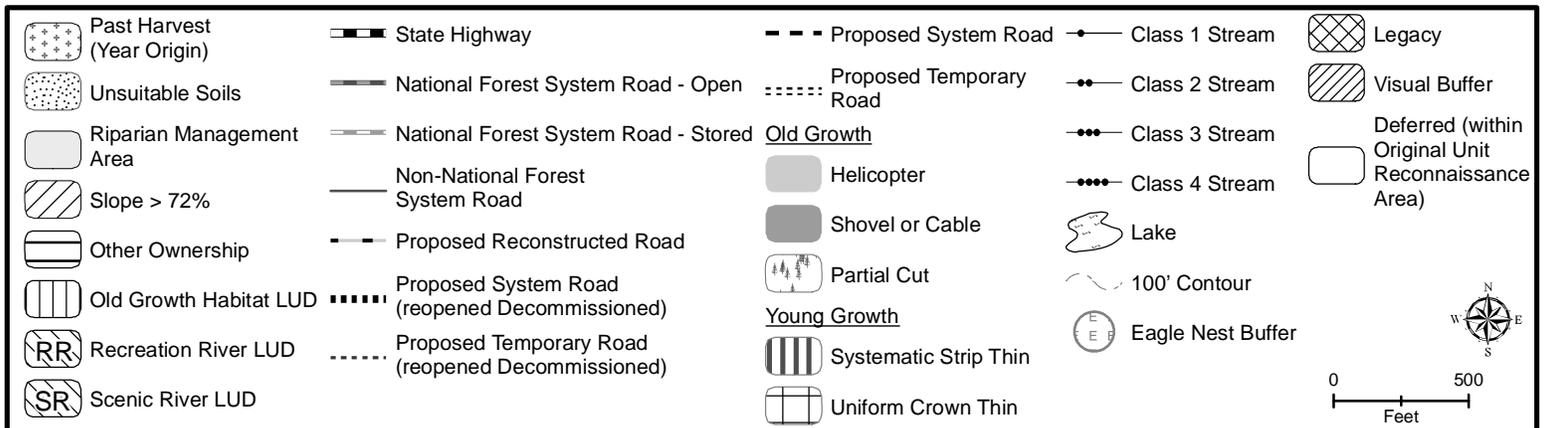
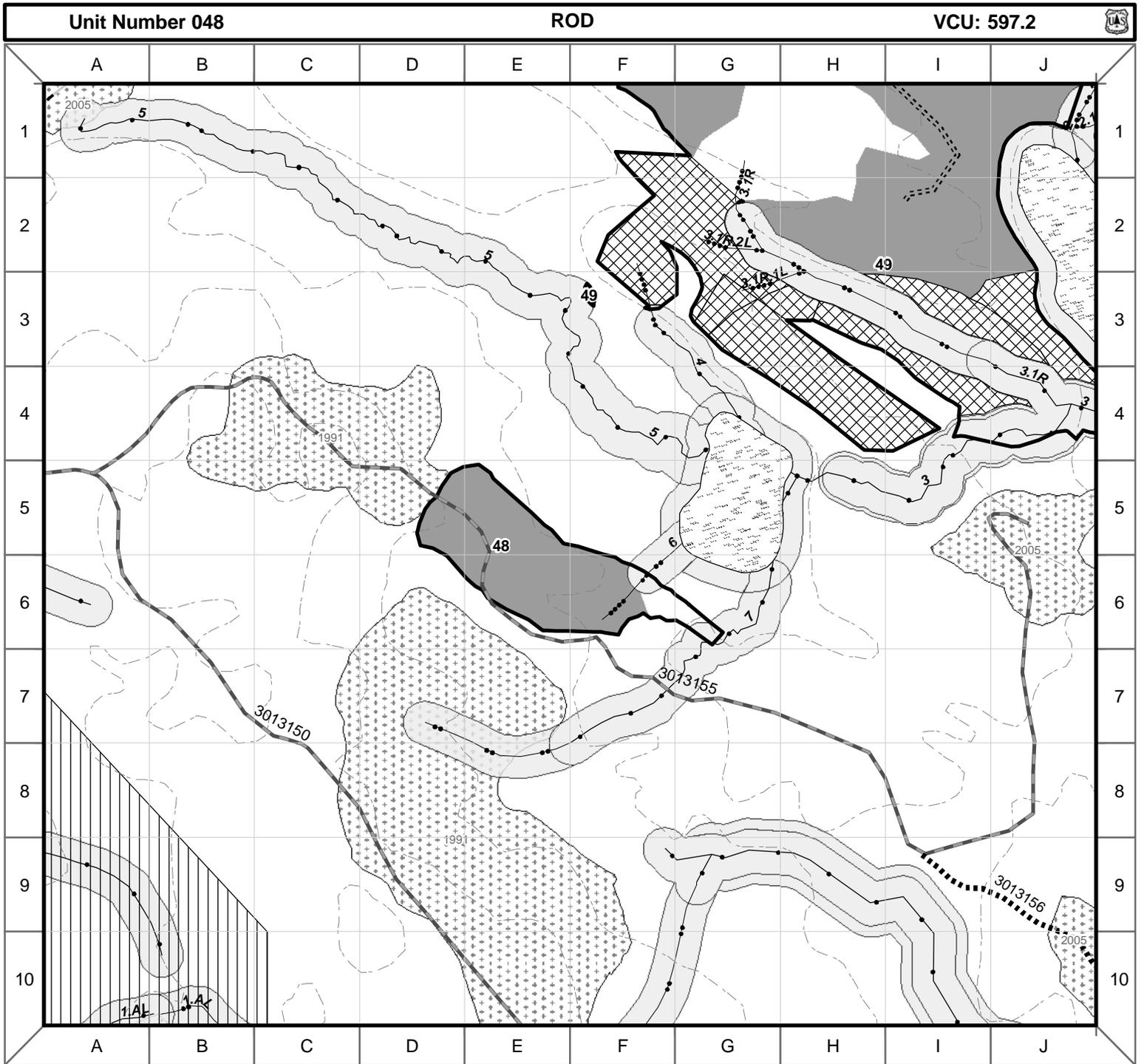
Appendix 1

Unit Number: 48	Alternatives: ROD	Total Unit Acres: 11.5	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Shovel	Net Harvest Volume (MBF): 167	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Conditions: Unit 48 has old-growth stand structure with a western hemlock and western redcedar overstory. In the hemlock, stem rot is moderate to high and mistletoe infection is light. Alaska-cedar decline is moderate to high. Defect for all species is moderate to high. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is static or being exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU; however, the potential harvest opening is less than 20 acres. No legacy set-aside is required.</p>			
TIMBER/YARDING: Shovel yarding to NFS road 3013155.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: Two lesser round-leaved orchid populations are entirely within the proposed unit, totaling 22 known plants. An additional lesser round-leaved orchid population, of two known plants, is located south of the unit within the indirect effects area.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Goose Creek.			
<p>Stream#: Lake-1 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake-1 - greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 6 Class: II, IV Flagging: B/W, G/W C-Type: HCOw Concerns: none Buffer (RMA): Class II for HCO - greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 7 Class: I Flagging: B/W C-Type: HCL, MMO Concerns: none Buffer (RMA): Class I for HCL- greater of 100 feet or to top of side-slope break. Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).			
SOILS/WETLANDS: Slopes range from 5 to 30%. There are intermittent wetlands throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding.			

Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).

WILDLIFE: Includes average snow deer winter range (southern 2/3 of unit). Legacy standard and guideline applies in this VCU; however there are no requirements for this unit because it is less than 20 acres. Wolf sign observed in unit.

Appendix 1



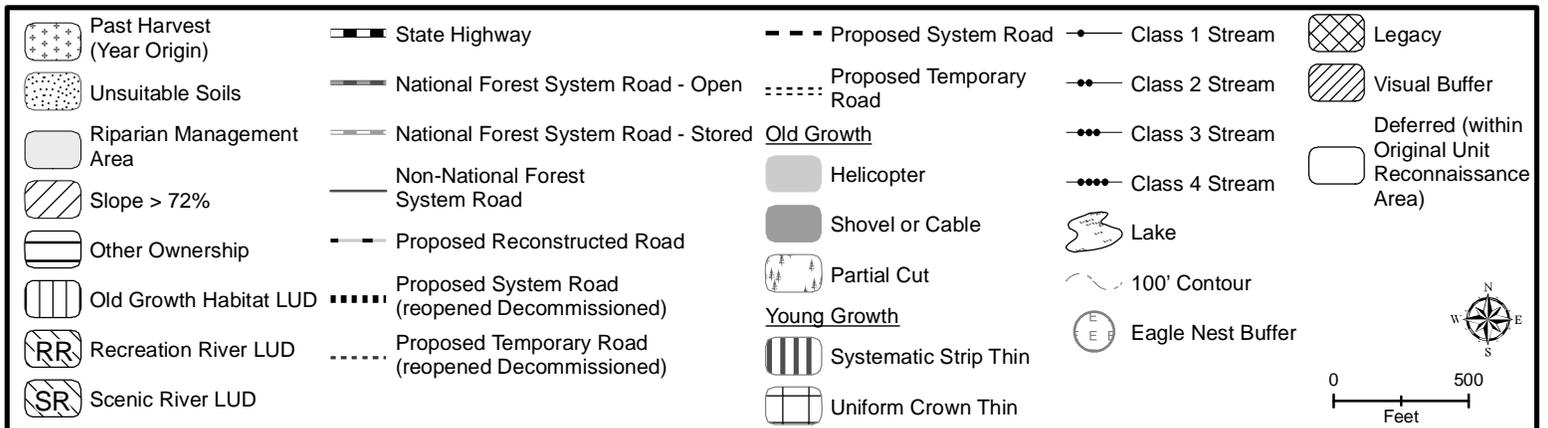
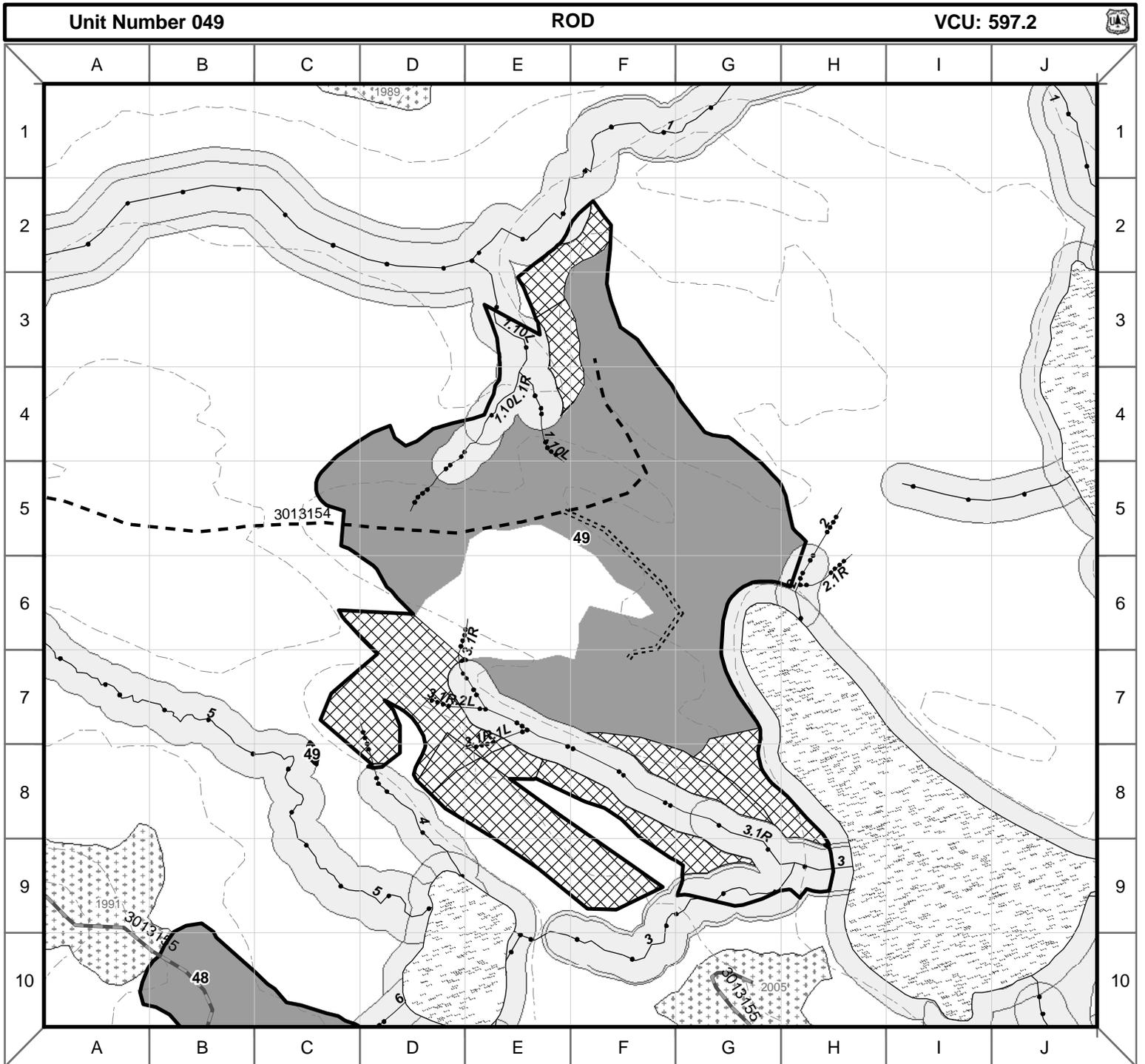
Unit Number: 49	Alternatives: ROD	Total Unit Acres: 56.0	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 1,088	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Conditions: Unit 49 is an over-mature moderate to high defect old-growth stand. Damages and defects are moderate for all species but higher in the western hemlock. Windthrow risk is moderate. No past harvest areas are adjacent to this unit.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 86 acres. This requires 26 acres of legacy set-aside. Approximately 8 acres of legacy are already deferred. An additional legacy set-aside of 21 acres is mapped. The required legacy structure is planned to coincide with areas along and between riparian corridors to consolidate POG around specific wildlife habitat. Any proposals to adjust legacy from planned locations should be reviewed with the wildlife biologist.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road and proposed NFS road 3013154.			
ENGINEERING/ROADS: Unit is accessed by reconstructing NFS road 3013154 for 2,800 feet, a proposed extension of NFS road 3013154 of 4,700 feet, and a proposed temporary road of 1,200 feet. See road card for information on NFS road.			
BOTANY: One lesser round-leaved orchid population, of six known plants, is within the proposed unit.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Goose Creek and Angel Lake.			
<p>Stream#: Lake-1 (Angel Lake) Class: I Flagging: B/W C-Type: L Concerns: blowdown and steep side-slopes Buffer (RMA): Class I for Lake-1 greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): review required along lake Protection: Category A</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: LCL, MMM, and LCM Concerns: blowdown Buffer (RMA): Class I- greater of 100 feet (LCL) and 120 feet (MMM), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for LCM- greater of 100 feet or top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.10L Class: I, IV Flagging: B/W, G/W C-Type: PAO and PAB Concerns: blowdown Buffer (RMA): Class I for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required along eastern exposures. Protection: Category A and C</p> <p>Stream#: 1.10L.1R Class: I, II, IV Flagging: B/W, G/W C-Type: PAO, MMO Concerns: blowdown Buffer (RMA): Class I- greater of 100 feet (PAO) and 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required along eastern exposures. Protection: Category A and C</p> <p>Stream#: 2 Class: II, IV Flagging: B/W, G/W C-Type: MMO Concerns: none</p>			

Appendix 1

<p>Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			
Stream#: 3	Class: I	Flagging: B/W	C-Type: MMS, HCV
<p>Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
Stream#: 3.1R	Class: I, II, IV	Flagging: B/W, G/W	C-Type: MMO
<p>Concerns: blowdown Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			
Stream#: 4	Class: I, IV	Flagging: B/W, G/W	C-Type: PAS, PAO
<p>Concerns: none Buffer (RMA): Class I for PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			
Stream#: 5	Class: I	Flagging: B/W	C-Type: PAM, PAS, and PAB
<p>Concerns: none Buffer (RMA): Class I for PAM, PAS, & PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC or MM
Buffer (RMA): none	Buffer (RAW): no review needed.		Protection: Category C
<p>Temporary roads for Unit 49: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Unit is adjacent to Angel Lake, which is an area that has received some, very limited outfitter/guide use in the past (3 clients from 2004 to 2008). Dispersed fishing also takes place at Angel Lake. Although Not Seen (see Scenery above), harvest in this area could be visible to outfitter/guide clients at Angel Lake. The Forest Service has not developed an access trail to the lake and it is unlikely that the user developed trail would be affected by the harvest activities.</p>			
<p>SOILS/WETLANDS: Slopes range from 5 to 50%. There is a small rock outcrop located in the middle of the northern section that has slopes of 35% to 50% that can be operated around with a shovel. There are intermittent forested wetlands throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p>			
<p>The proposed temporary road crosses about 1 acre of forested wetlands. Wetland avoidance is not feasible due to the presence of forested wetlands throughout the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>			

WILDLIFE: Includes average snow deer winter range (all of unit except northern lobe), some of which is also deep snow marten habitat/deer winter range (central portion of unit and southwestern lobe). Legacy standard and guideline applies in this VCU; Legacy acres cover some average snow deer winter range and deep snow marten habitat/deer winter range. Wolf sign observed in unit. No legacy is required for this unit in Alternative 5 since no harvest opening greater than 20 acres is being created.

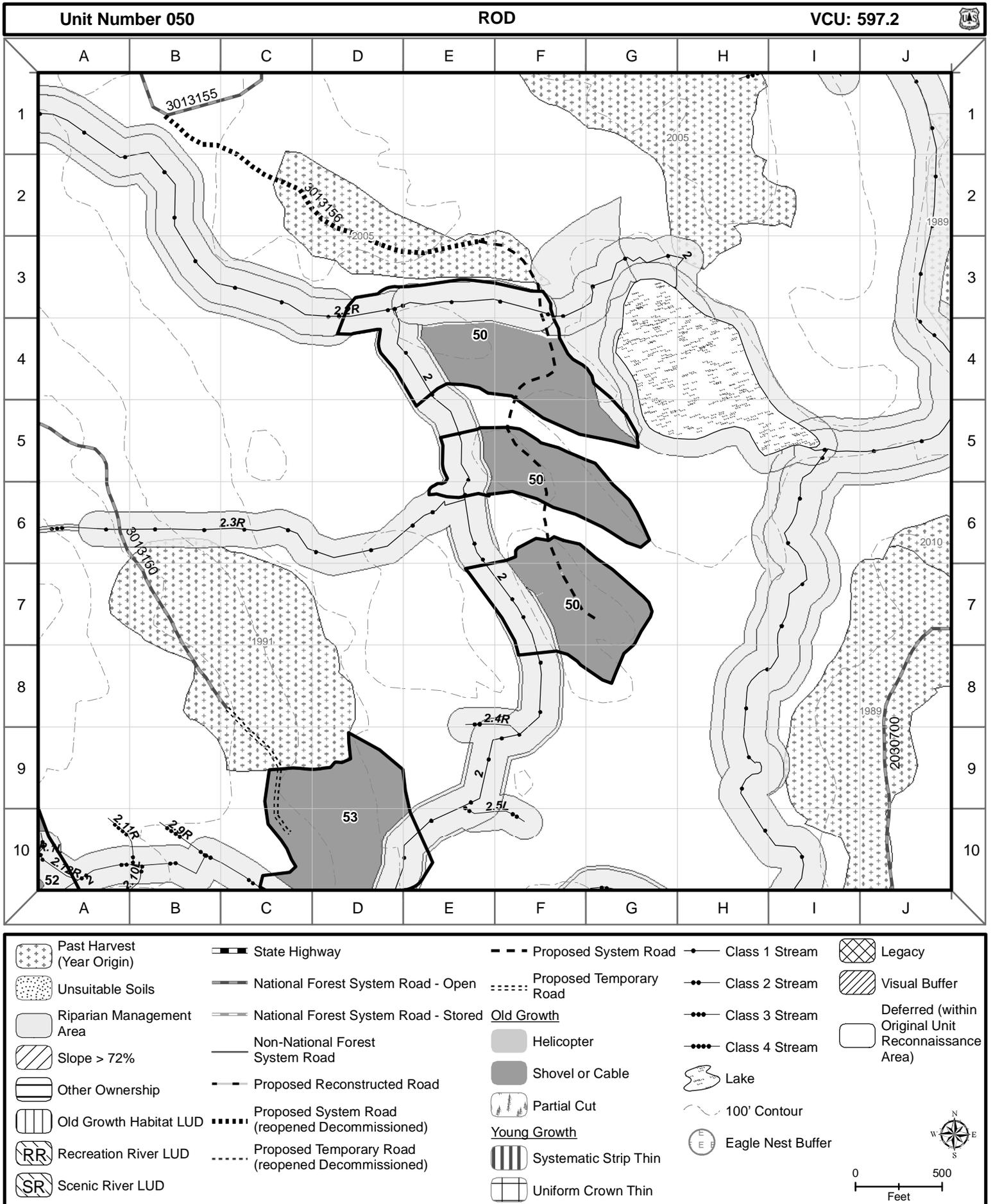
Appendix 1



Unit Number: 50	Alternatives: ROD	Total Unit Acres: 24.9	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 615	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Conditions: Unit 50 consists of three drumlin ridges. The timber is western hemlock and western redcedar with old growth to uneven-age stand structure. The western hemlock overall is high defect with heavy to moderate mistletoe. Windthrow risk is moderate. A 2005 origin even-age harvest is across the large stream buffer along the north boundary. This past harvest does not currently meet NFMA green-up requirements. It is however separate from the proposed unit by the width of the buffer as well as having the combined area of this past harvest and the proposed unit being less than 100 acres.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature to over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU; however, this unit consists of three separate openings that were originally planned as separate units. Each area is less than 20 acres and separated from the others therefore no legacy is required.</p>			
TIMBER/YARDING: Cable and shovel yarding to proposed NFS road 3013156.			
ENGINEERING/ROADS: Unit is accessed by proposed NFS road 3013156 of 4,800 feet; approximately 2,100 feet of this road is constructed over decommissioned road bed. See road card for information on NFS road.			
BOTANY: Two lesser round-leaved orchid populations, of one plant each, are known within the harvest area of this unit.			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Goose Creek. Characteristics for Stream 2.2R do not include project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: Lake 1 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake 1- greater of 100 feet, flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2 Class: I Flagging: B/W C-Type: PAS, LCS, MMS, MCS Concerns: blowdown; braiding and flooding due to beaver dams Buffer (RMA): Class I - greater of 100 feet (PAS) and 120 feet (MMS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for LCS and MCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on south side. Protection: Category A</p> <p>Stream#: 2.2R Class: I Flagging: B/W C-Type: MCO Concerns: none Buffer (RMA): Class I for MCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.3R Class: I Flagging: B/W C-Type: PAB, MCO Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for MCO- greater of 100 feet or to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			

Appendix 1

SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: No Concerns
SOILS/WETLANDS: Slopes range from 5 to 20%. There are small forested wetlands areas located throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). Most of the unit is upland. The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).
WILDLIFE: Includes average snow deer winter range (western half of each setting). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because all settings are less than 20 acre openings.



Appendix 1

Unit Number: 52	Alternatives: ROD	Total Unit Acres: 19.0	Prescription: Clearcut and 50% Removal
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 443	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 52 has old-growth stand structure. In the western hemlock stem decay is moderate to heavy and the incidence of mistletoe is light. Defect is moderate to high for all species. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. The potential opening size for this unit is less than 20 acres as planned and as a result does not require any legacy set-aside.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as designated on the unit card maps) Maintain at least 50 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for parts of this unit due to RAW requirements and to mitigate effect to the watershed in Alternative 5. This system is not optimum for promoting timber production.</p>			
<p>TIMBER/YARDING: Cable and helicopter yarding to the proposed temporary road and NFS road 3013150.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 500 feet.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Goose Creek.</p> <p>Stream#: 2 Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCM, MMO Concerns: blowdown Buffer (RMA): Class II for HCM- greater of 100 feet or the top of the side-slope break. Class III for HCM- the top of the side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): Review on south side and eastern exposure. Protection: Category A, B, and C</p> <p>Stream#: 2.12R Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC and MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>Temporary roads for Unit 52: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			

<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>
<p>SOILS/WETLANDS: Slopes range from 30 to 80%. There are approximately 3 acres of slopes greater than 72%. These steep slopes are suitable for harvest with partial suspension requirements. Forested wetlands are located intermittently in the lower elevations of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, and helicopter yarding should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-5, and Veg-6.</p> <p>The proposed temporary road will impact about ¼ of an acre of forested wetland. Wetland avoidance was not feasible due to the location of the existing road, slopes in the proposed unit, and avoiding stream crossings. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (all of unit except eastern edge), some of which is also deep snow deer winter range/marten habitat (southern 1/3 of unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because the original planned opening is less than 20 acres.</p>

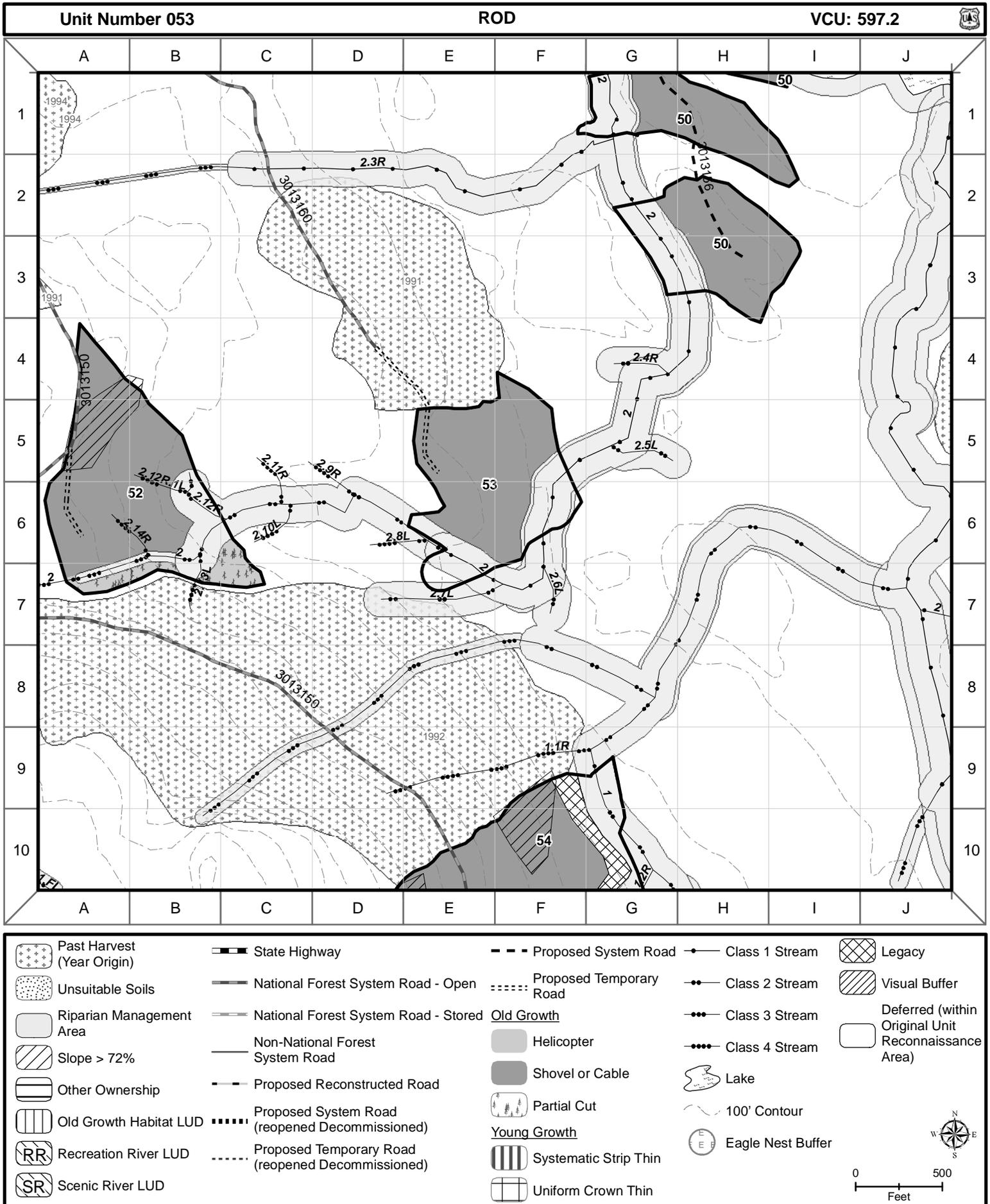
Unit Number: 53	Alternatives: ROD	Total Unit Acres: 12.9	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Shovel	Net Harvest Volume (MBF): 218	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure with a mature overstory of western hemlock, western redcedar and scattered Alaska-cedar and Sitka spruce. The lower elevations have quality, lower defect western redcedar in the middle diameter classes. The western hemlock has moderate defect and light mistletoe infection. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature to over-mature with moderate decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. The potential harvest opening is less than 20 acres. No legacy set-aside is required.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 900 feet.			
BOTANY: One lesser round-leaved orchid population, of one plant, within proposed harvest area.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Goose Creek.			
<p>Stream#: 2 Class: I, II Flagging: B/W C-Type: MMS, HCM Concerns: blowdown Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I and II for HCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.6 Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.7L Class: II Flagging: B/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 53: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No Concerns			

Appendix 1

SOILS/WETLANDS: Slopes are gentle throughout the unit. The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).

The proposed temporary road does not traverse wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (southwestern corner). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because the original planned unit is less than 20 acres.

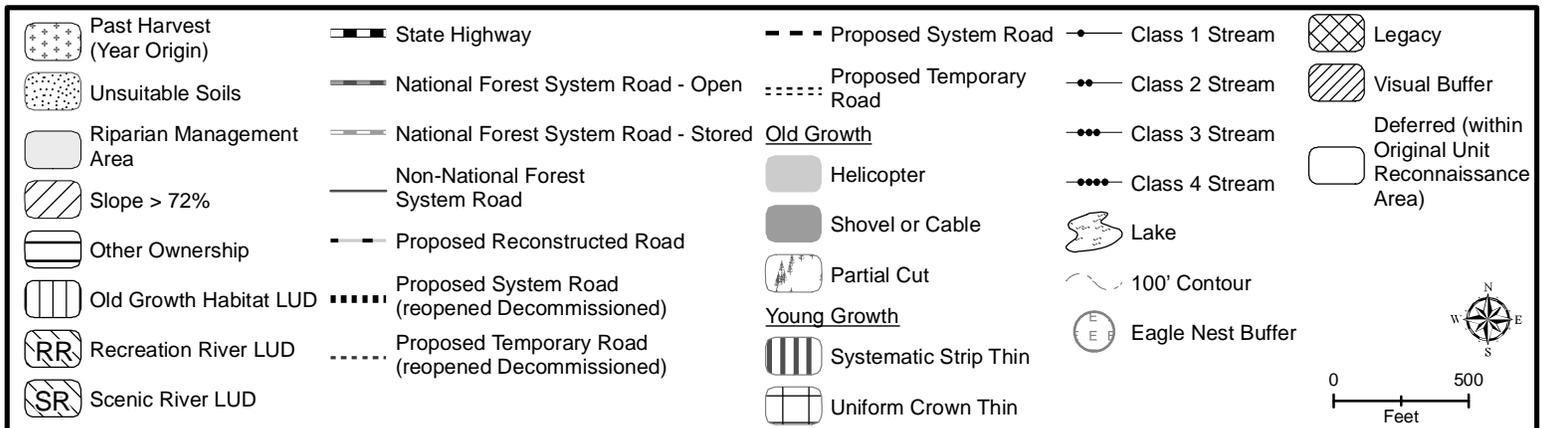
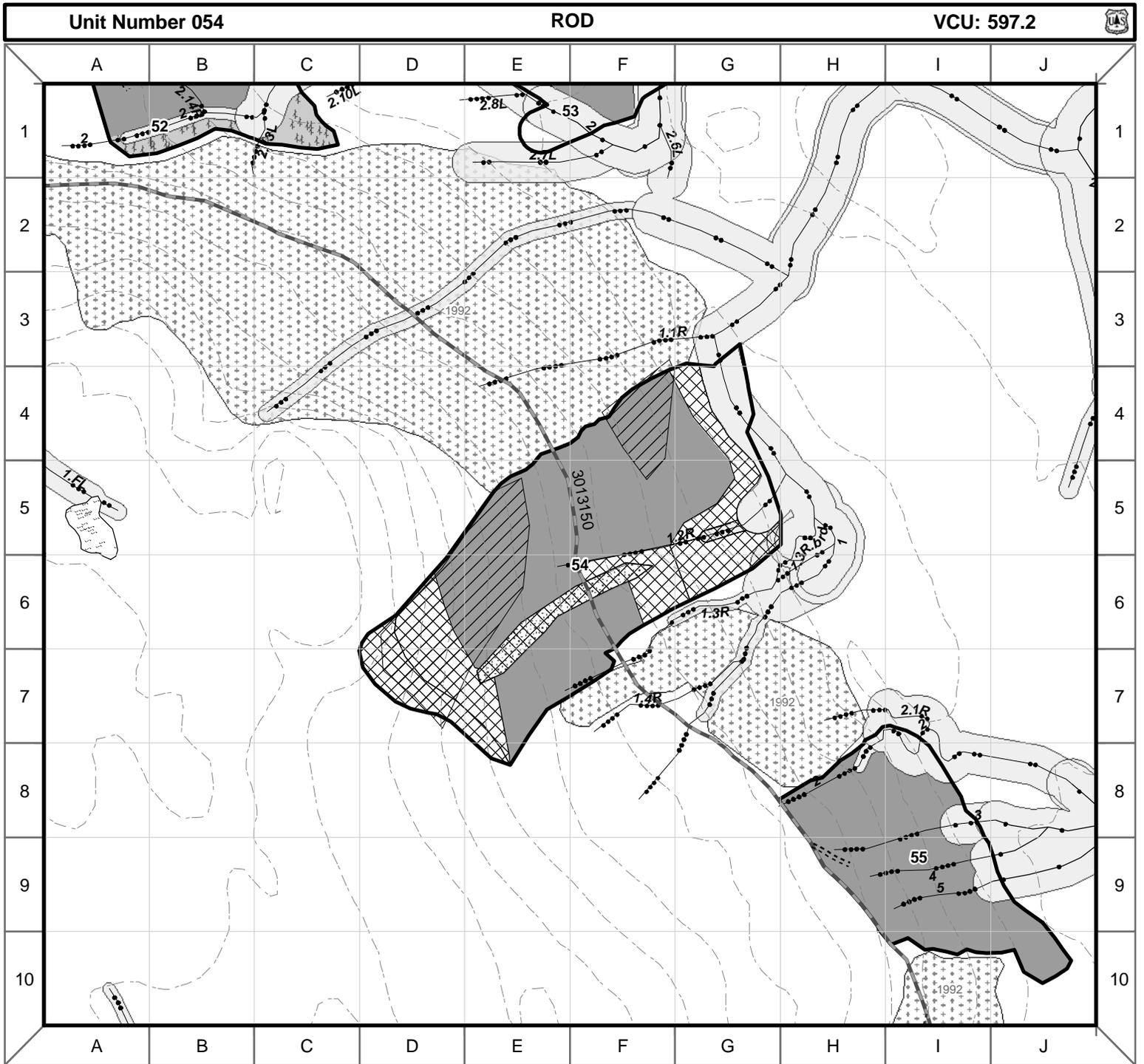


Appendix 1

Unit Number: 54	Alternatives: ROD	Total Unit Acres: 28.8	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable	Net Harvest Volume (MBF): 497	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 54 has old-growth stand structure with a mature to over-mature western hemlock, western redcedar, Alaska-cedar and Sitka spruce overstory. The western hemlock in the stand as well as the larger western redcedar have heavy defect with many dead tops. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 46 acres. This requires 14 acres of legacy set-aside. Approximately 6 acres of legacy are already deferred. An additional legacy set-aside of 12 acres is mapped. The required legacy structure is planned in conjunction with areas of unsuitable soils plus areas of higher value wildlife habitat that are consolidated with unstable soil areas and TTRA buffers to provide functional connectivity across the unit.</p>			
TIMBER/YARDING: Cable yarding to NFS road 3013150.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Goose Creek.</p> <p>Stream#: 1 Class: II, III Flagging: B/W, O/W C-Type: HCM, MCS, AFH Concerns: none Buffer (RMA): Class II for HCM and MCS- greater of 100 feet or to the top of the side-slope break. Class II/III for AFH- greater of 140 feet or to extent of active portion of the fan. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and B</p> <p>Stream#: 1.2R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class II for HCM- greater of 100 feet or to top of side-slope break. Class III for HCM- to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p> <p>Stream#: 1.3R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: AFH, HCM, HCO Concerns: none Buffer (RMA): Class II/III for AFH- greater of 140 feet or to extent of active portion of the fan. Class III for HCM- to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A, B, and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the</p>			

<p>applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).</p>
<p>SOILS/WETLANDS: Slopes range from about 48 to 75%. There are approximately 10 acres of slopes greater than 72% associated with bedrock outcrops. These steep slopes are suitable for harvest with partial suspension requirements. There is a 2-acre drainage area near the center of the unit that is deferred from harvest due to erosion and sedimentation concerns. No wetlands were identified during field reconnaissance. A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).</p>
<p>WILDLIFE: Unit includes average snow deer winter range (all of unit except northern edge), some of which is also deep snow marten habitat/deer winter range (northeastern end of unit). Legacy standard and guideline applies in this VCU; Legacy acres cover a portion of deer winter range/marten habitat.</p>
<p><u>Old-growth Reserve (OGR) Boundary</u> Unit is not adjacent to an OGR.</p>

Appendix 1



Appendix 1

RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years).

SOILS/WETLANDS: Slopes range from about 48 to 70%. Forested wetland is located intermittently in the southwestern third of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).

WILDLIFE: Unit includes average snow deer winter range (northern 3/4 of unit), most of which is also deep snow marten habitat/deer winter range. Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because the original planned opening is less than 20 acres.

Appendix 1

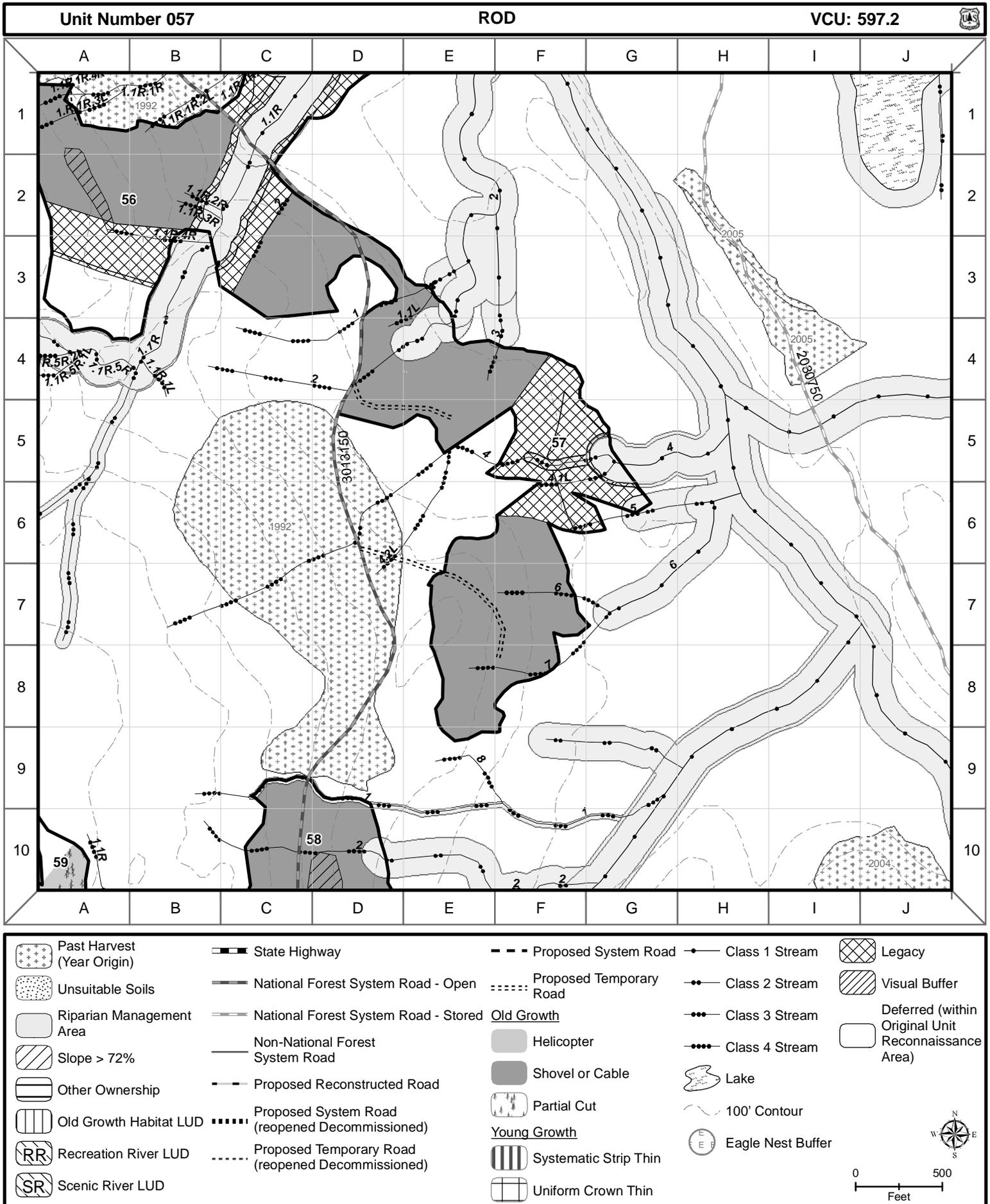
Unit Number: 56	Alternatives: ROD	Total Unit Acres: 22.2	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 558	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 56 is divided into two main areas by a Class II stream and buffer. The primary damage agent affecting volume is Alaska-cedar decline and stem form (top kill/dying, crooks, sweeps, forks). Mistletoe infections were light and stem decay in the hemlock was moderate. Windthrow risk is moderate across the unit. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 78 acres and encompasses Units 56 and 57. This requires 24 acres of legacy set-aside. Approximately 9 acres of legacy are already deferred in Inventoried Roadless and RMAs. An additional legacy set-aside of 21 acres is mapped to provide RAW and expand on stream buffers, coincide with difficult to yard areas and to consolidate POG along stream corridors.</p>			
TIMBER/YARDING: Cable yarding to the proposed temporary road and NFS road 3013150.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,400 feet. Approximately 800 feet of this road will be constructed over decommissioned road bed.			
BOTANY: No Concerns			
INVASIVE SPECIES: A bull thistle infestation is known and has been treated along the existing road just to the north of the proposed unit. Follow up monitoring and treatments are recommended for this infestation. In addition, there is an infestation of orange hawkweed known along the existing road adjacent to the eastern polygon. Monitoring of the unit is recommended after harvest to ensure that these infestations have not spread.			
FISHERIES: Streams are tributaries to Goose Creek.			
<p>Stream#: 1.1R Class: I, II Flagging: B/W C-Type: AFM, AFH, HCV Concerns: blowdown Buffer (RMA): Class I and II for AFM and AFH- greater of 140 feet or active portion of the alluvial fan. Class II for HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): Review required. Protection: Category A</p> <p>Stream#: 1.1R.1R Class: II, IV Flagging: B/W, G/W C-Type: HCO, HCM Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for HCM- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.1R.5R Class: II, III Flagging: B/W, O/W C-Type: HCV, HCD Concerns: blowdown Buffer (RMA): Class II for HCV and HCD- greater of 100 feet or to top of side-slope break. Class III for HCD- to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			
Temporary roads for Unit 56: Two Class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11,			

13.16 14.3, and 14.5.
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years). Much of the southern border of harvest unit is adjacent to the Karta roadless area.
SOILS/WETLANDS: Slopes range from 35 to greater than 72%. There are two cliff bands in this unit with steep slopes. All slopes greater than 72% are suitable for harvest with partial suspension. A small area with forested wetland is located in the northwestern finger of the unit. The southeastern portion of the unit is entirely all forested wetland and emergent short sedge wetlands (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, and helicopter yarding should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-5, and Veg-6. The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Unit includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Legacy standard and guideline applies in this VCU; Legacy acres cover a portion of the deer winter range/marten habitat. <u>Old-growth Reserve (OGR) Boundary</u> Unit is not adjacent to an OGR.

Unit Number: 57	Alternatives: ROD	Total Unit Acres: 30.9	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 726	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 57 has old-growth stand structure. In the western hemlock stem rot is moderate to high with light to moderate mistletoe. Defect for all other species is moderate to high. In the Alaska-cedar, decline is heavy across the area. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. See the legacy direction for Unit 56. The required legacy structure in unit 57 is planned to coincide with and enhance Class I, II, and III RMAs in the center of the unit, eliminate the need for RAW, reduces road construction, concentrate residual POG and split the unit into smaller openings.</p>			
TIMBER/YARDING: Shovel settings yard to the northern proposed temporary road and NFS road 3013150. Cable settings yard to the proposed temporary roads.			
ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 1,800 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: There is an infestation of orange hawkweed known along the existing road just north of the proposed temporary road accessing the southern polygon. Monitoring of the proposed road and unit is recommended after harvest to ensure that this infestation has not spread.			
FISHERIES: Streams are tributaries to Goose Creek.			
<p>Stream#: 1 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 2 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): Review required on south side. Protection: Category A and C</p> <p>Stream#: 3 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 4 Class: I, III, IV Flagging: B/W, O/W, G/W C-Type: MMS, HCM, HCO Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCM- to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): review required on south side. Protection: Category A, B, and C</p> <p>Stream#: 5 Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class I for - greater of 100 feet or to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 6 Class: I, IV Flagging: B/W, G/W C-Type: MMO, HCO Concerns: none Buffer (RMA): Class I for MMO greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for HCO none.</p>			

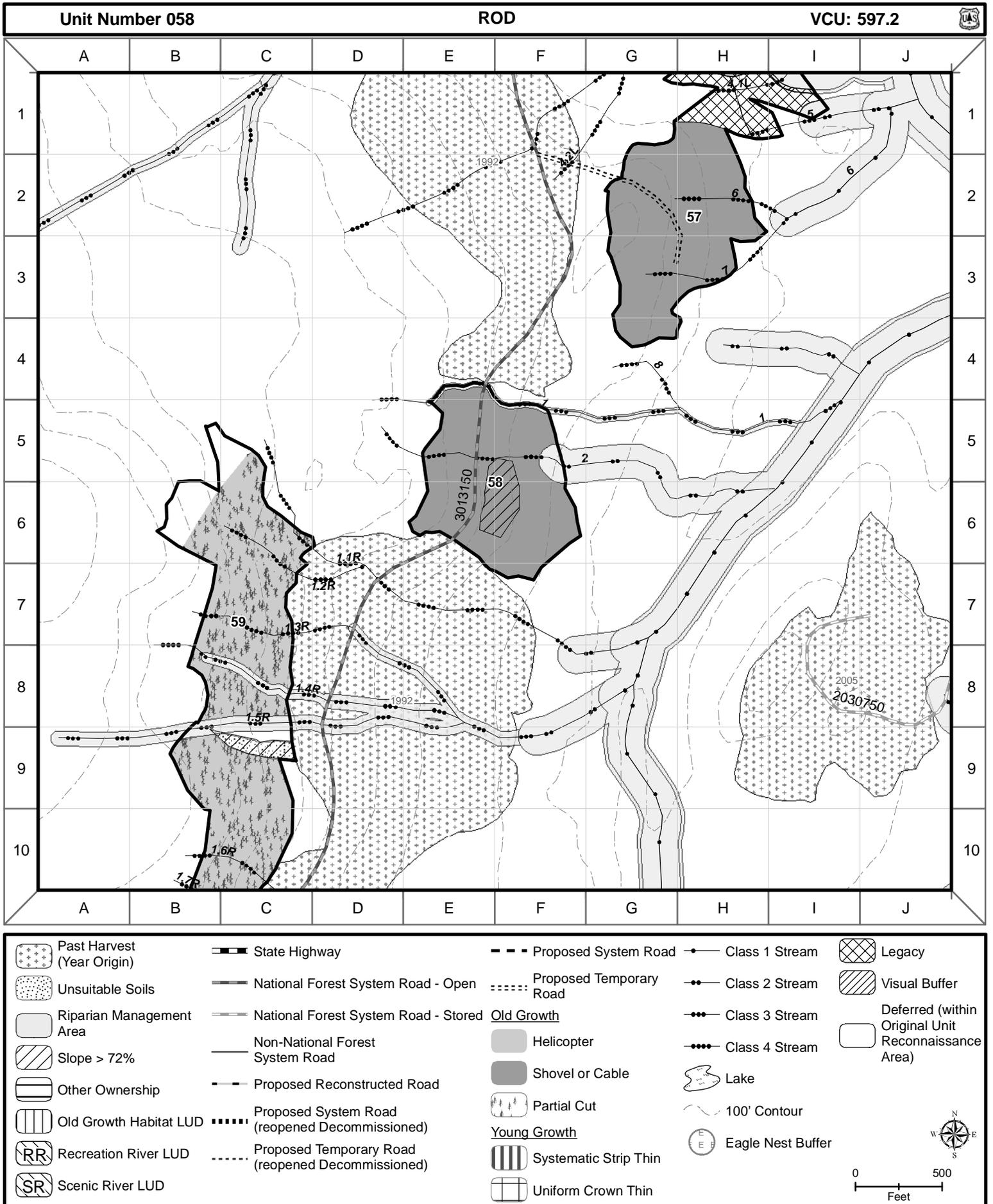
Appendix 1

<p>Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 57: Two Class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No Concerns</p>
<p>SOILS/WETLANDS: Slopes range from 23 to 40%. About 30% of the unit is forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>Two proposed temporary roads will cross about 2 acres of forested wetlands. Wetland avoidance is not feasible due to the existing road locations, small knobs in the unit, and streams. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some deer winter range.</p>



Appendix 1

Unit Number: 58	Alternatives: ROD	Total Unit Acres: 16.3	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable	Net Harvest Volume (MBF): 384	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 58 has old growth stand structure. Most overstory trees are unacceptable tree class with stem rot being the dominant defect. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. The potential harvest opening is less than 20 acres. No legacy set-aside is required.</p>			
TIMBER/YARDING: Cable yarding to NFS road 3013150.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: There has been an infestation of tansy ragwort located along NFS road 3013150 between units 58 and 59. This population was treated previously and is not known to persist. It is recommended that this infestation be monitored and retreated if any plants are observed.			
<p>FISHERIES: Streams are tributaries to Goose Creek.</p> <p>Stream#: 1 Class: III, IV Flagging: O/W, G/W C-Type: HCL, HCO Concerns: blowdown Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCO none. Alternatives: ROD Buffer (RAW): review required on south side. Protection: Category B and C</p> <p>Stream#: 2 Class: III, IV Flagging: O/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class III for HCO- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years). This road is not a VPR.			
SOILS/WETLANDS: Slopes range from 60 to greater than 72%. There are approximately 2 acres of slopes greater than 72% near the center of the unit, east of the 3013150 road suitable for harvest with partial suspension requirements. No wetlands were identified during field reconnaissance. A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).			
WILDLIFE: Unit includes average snow deer winter range (all of unit except very eastern edge), most of which is also deep snow marten habitat/deer winter range. Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because the original planned unit is less than 20 acres.			



Appendix 1

Unit Number: 59	Alternatives: ROD	Total Unit Acres: 47.6	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 1,600	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 59 has old-growth stand structure. Poor stem form, top damage and stem decay are the dominant defect agents. Windthrow risk is moderate. All past harvest areas adjacent to or near this unit are adequately restocked with trees at least 5 feet tall meeting the NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 70 acres. This requires 21 acres of legacy set-aside. Approximately 6 acres of legacy are already deferred in Inventoried Roadless, unsuitable soils and RMAs. An additional legacy set-aside of 17 acres is mapped to provide RAW and expand on stream buffers, coincide with difficult to yard areas and to consolidate POG along stream corridors.</p>			
TIMBER/YARDING: Cable and helicopter yarding to NFS road 3013150.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: There has been an infestation of tansy ragwort located along NFS road 3013150 between Units 58 and 59. This population was treated previously and is not known to persist. It is recommended that this infestation be monitored and retreated if any plants are observed.			
<p>FISHERIES: Streams are tributaries to Goose Creek.</p> <p>Stream#: 1 Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCD Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCD- greater of 100 or to top of side-slope break. Class III for HCD- to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.3R Class: III, IV Flagging: O/W, G/W C-Type: HCL, HCO Concerns: none Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.3R.1R Class: III, IV Flagging: O/W, G/W C-Type: HCL, HCO Concerns: none Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.4R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required Protection: Category B and C</p> <p>Stream#: 1.5R Class: III Flagging: O/W C-Type: HCD Concerns: blowdown and active erosion Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			

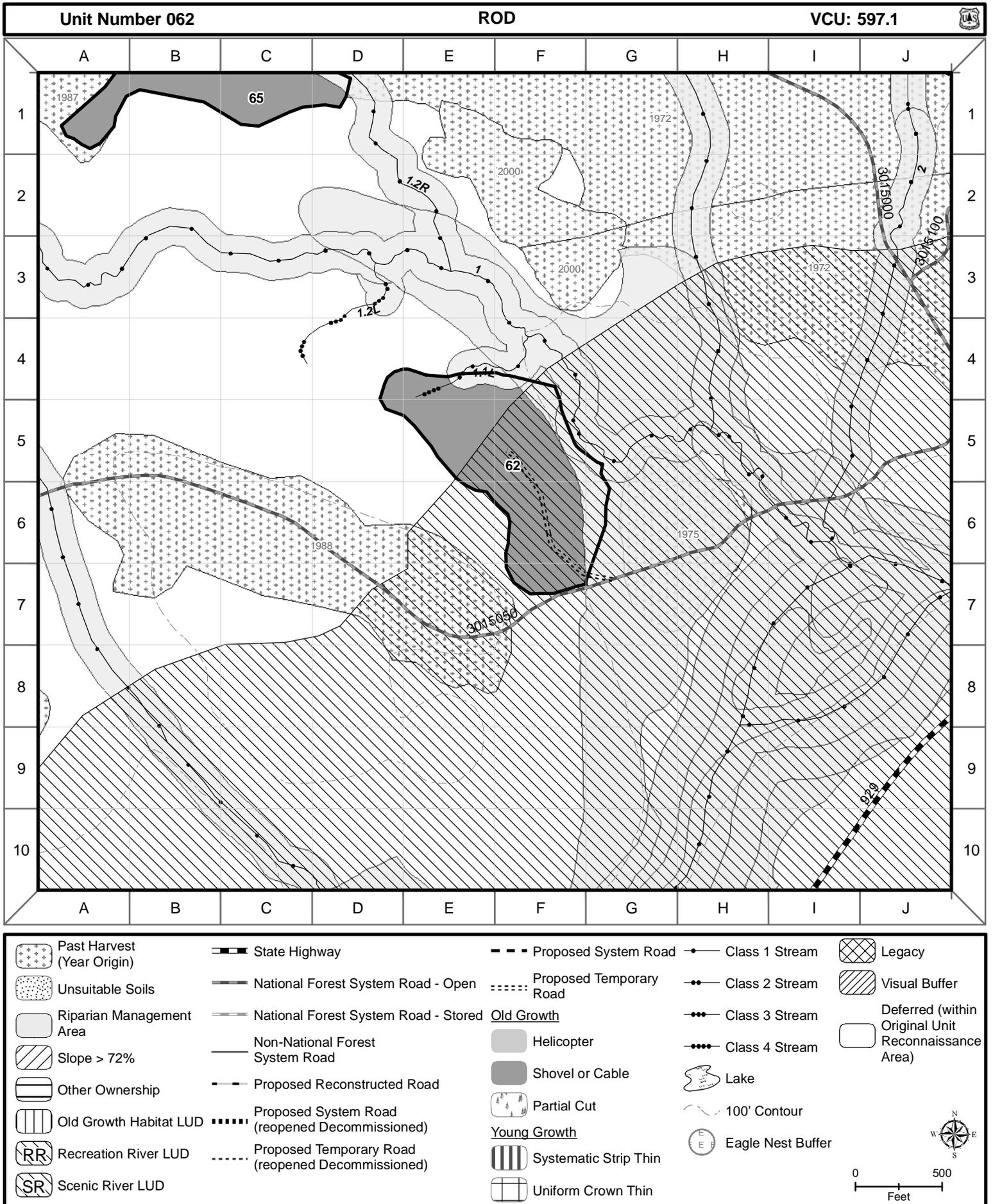
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: Harvest activities in this unit would be visible to recreationists using the existing road. Recreationists may also encounter logging traffic on the road. Harvest in this unit would be consistent with the applicable LUD (Timber Production) and would not change existing ROS settings. Harvest has occurred along the road system in the recent past (less than 30 years). This road is not a VPR.
SOILS/WETLANDS: Slopes range from about 40% to greater than 72%. About 1 acre was excluded due to steep slopes. All slopes greater than 72% are located within the soil exclusion area. Sporadic forested wetlands occur intermittently throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; Legacy acres cover some deer winter range.

Unit Number: 62	Alternatives: ROD	Total Unit Acres: 17.3	Prescription: Clearcut
VCU Number: 597.1	Yarding System: Shovel	Net Harvest Volume (MBF): 310	LUD: Modified Landscape, Recreation River
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Defect and damages are moderate to high. Windthrow risk is moderate. The stand has moderate to high occurrence of Alaska-cedar decline. In the hemlock, mistletoe was rated as light. A previous harvest is adjacent to unit on the northwest edge has met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS road 3015050.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,000 feet.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River.</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: PAB, PAS Concerns: none Buffer (RMA): Class I for PAB and PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: I, IV Flagging: B/W, G/W C-Type: PAO Concerns: none Buffer (RMA): Class I for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for PAO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Temporary roads for Unit 62: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Moderate and Very Low. About 11 acres are in the Recreational River LUD, which is given an SIO of Moderate, even though it is mapped as Seldom Seen. The remainder is in Modified Landscape LUD, but is also Seldom Seen. The unit is in an area with high Visual Absorption Capability because of varied vegetation and flat terrain; the Forest Plan indicates 40 to 60 acres as a typical clearcut size for this VAC and SIO. Therefore, scenery resource concerns are minor.</p>			
<p>RECREATION: A portion of this unit is within the Recreational River LUD. Timber harvest is compatible with the Recreational River LUD in this area due to the adjacent LUD being a development LUD (Modified Landscape), and the minor scenery effects.</p>			
<p>SOILS/WETLANDS: Slopes are less than 25%. Forested wetland is located in the eastern half of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p>			
<p>A temporary road will impact about 0.5 acres of forested wetland for access to the unit. Wetland avoidance is not</p>			

Appendix 1

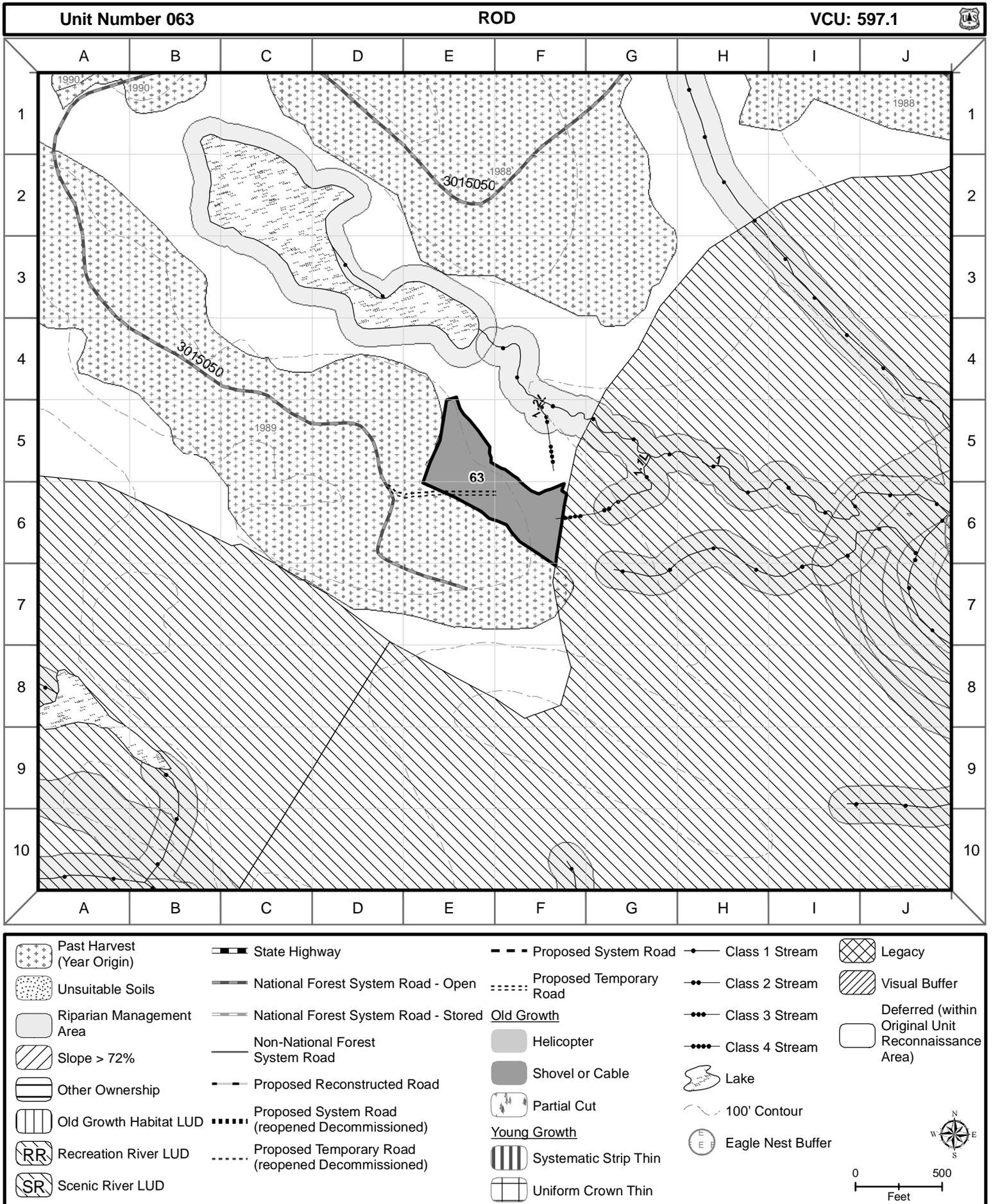
practicable due to the extent of forested wetlands adjacent to the existing road. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern end of unit). Legacy standard and guideline does not apply in this VCU.



Appendix 1

Unit Number: 63	Alternatives: ROD	Total Unit Acres: 7.0	Prescription: Clearcut
VCU Number: 597.1	Yarding System: Shovel	Net Harvest Volume (MBF): 179	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The main damages affecting tree health and volume loss are heavy stem decay and moderate mistletoe infection. Windthrow risk is moderate. A previous harvest adjacent to unit on the western edge has met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is over-mature with high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 600 feet. Road was routed to avoid a large sensitive plant population (see Botany).</p>			
<p>BOTANY: Approximately 17% of a lesser round-leaved orchid population, containing 58 plants total, is directly impacted by proposed unit. An additional 23% of this population is within the indirect effects area. The current proposed road location has been recommended to avoid the orchid population.</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River.</p> <p>All streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 63: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Modified Landscape LUD and is considered Seldom Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns; however, unit is adjacent to the Recreation River LUD on the southeast.</p>			
<p>SOILS/WETLANDS: Slopes are less than 25%. There is approximately 1 acre of emergent short sedge/forested wetland complex located in the northern portion of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p> <p>The proposed temporary road does not traverse any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (southern tip of unit). Legacy standard and guideline does not apply in this VCU.</p>			



Appendix 1

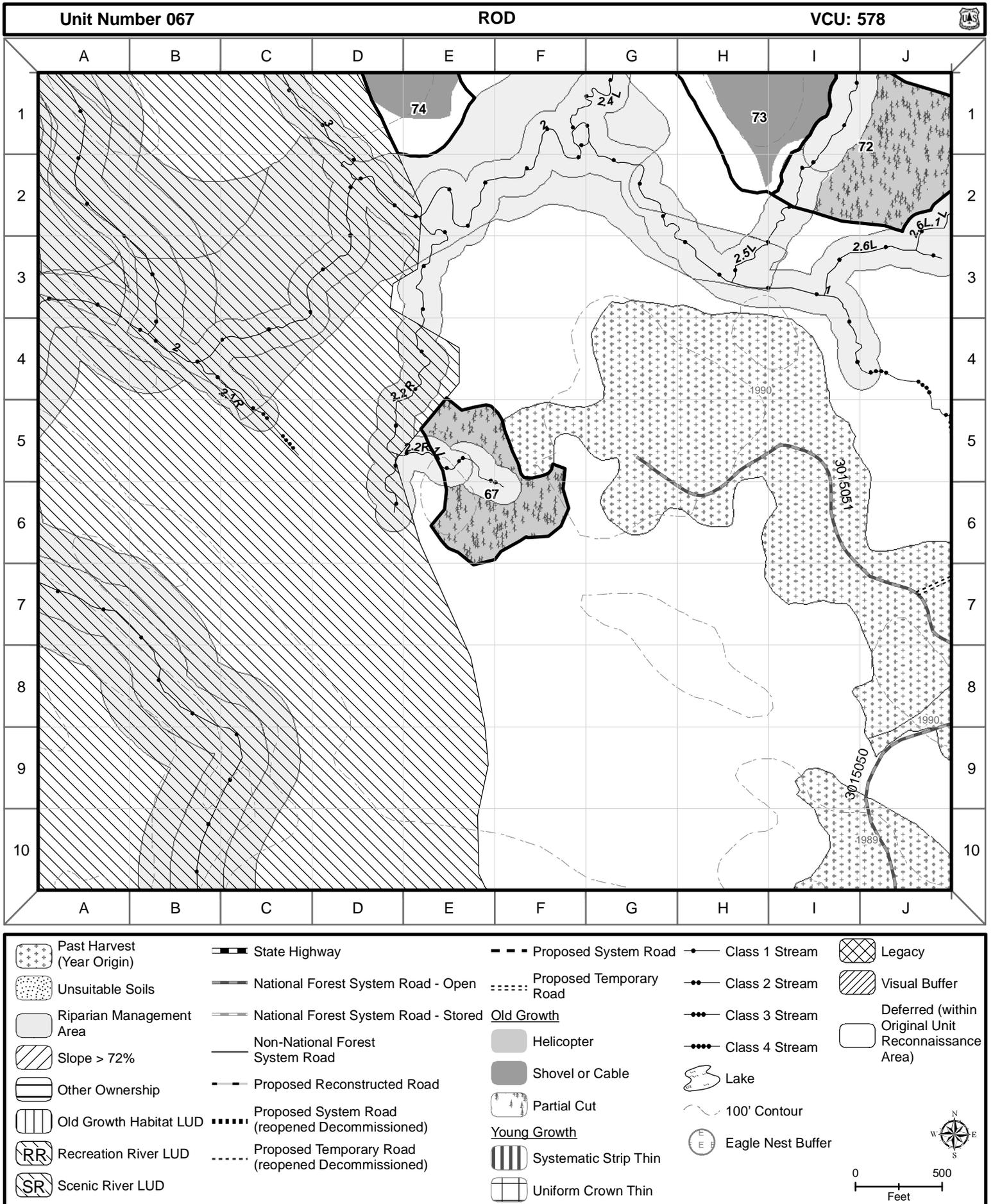
Unit Number: 65	Alternatives: ROD	Total Unit Acres: 11.6	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 213	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old growth structure. The major damage agents affecting overall tree health and volume loss are moderate stem decay and moderate mistletoe infection. The vast majority of the unit is mature timber in the small to medium diameter classes. A previous harvest adjacent to unit on the northwestern edge has met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,200 feet; approximately 1,300 feet of this road will be constructed over decommissioned road bed.			
BOTANY: A lesser round-leaved orchid population, of three plants, is known along the southwestern edge of the proposed unit. Approximately half of this population is within the proposed unit, and the remainder of the population is within the indirect effects area. Where feasible, minimize effects in this area by directionally falling away from the known plants and limiting ground disturbance.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River.			
<p>Stream#: 1.2R Class: I, IV Flagging: B/W, G/W C- Type: MMO, PAB Concerns: blowdown Buffer (RMA): Class I- greater of 120 feet (MMO) or 100 feet (PAB), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for PAB- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Temporary roads for Unit 65: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Modified Landscape LUD and is considered Seldom Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
<p>SOILS/WETLANDS: Slopes range from less than 10% to 50%. The majority of the unit averages 25% with rocky knobs throughout the unit that can be operated around. Forested wetlands are located throughout the southern boundary of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not traverse any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>			
WILDLIFE: Unit includes average snow deer winter range (entire unit except southern edge), all of which is also			

deep snow marten habitat/deer winter range. Legacy standard and guideline does not apply in this VCU.

Unit Number: 66	Alternatives: ROD	Total Unit Acres: 25.5	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 486	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The main damage agents affecting tree health are moderate mistletoe and heart/stem decay. Physical defects are high overall. Windthrow risk is moderate. Past even-age harvest with origins in 1990 and 1988 are along the southern and southwestern boundaries. These areas have met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate stem decay and high physical defects resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,700 feet.			
BOTANY: Two populations of lesser round-leaved orchid were found along the northern and eastern edges of this unit during surveys. The eastern population, of 18 plants, has been deferred, however approximately 70% of the western population is within the proposed harvest for the unit. The remainder of the populations not directly affected are within the indirect effects area. It is recommended that the planned road be located as mapped, and to remain south of the known populations.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River.			
<p>All streams in unit: Class: IV Flagging: G/W C- Type: PA Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 66: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
<p>SOILS/WETLANDS: Slopes are less than 25%. Forested wetlands are located in the eastern portion of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>			
WILDLIFE: Unit includes average snow deer winter range (all of unit except eastern edge), some of which is also deep snow marten habitat/deer winter range (south central portion). Unit is near Honker large OGR complex. Goshawk observed to west of unit in 2011, approx. 2,000 feet south/southwest of proposed road. Unit Legacy standard and guideline does not apply in this VCU.			

Unit Number: 67	Alternatives: ROD	Total Unit Acres: 8.2	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Helicopter	Net Harvest Volume (MBF): 113	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Mistletoe infections and stem decay are generally high. Windthrow risk is moderate. A past harvest area is in close proximity to the unit along the northeast corner. This harvest has met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management -Clearcut This stand is over-mature with high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015051.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Thorne River.</p> <p>Stream#: 2.2R Class: I Flagging: B/W C- Type: PAS Concerns: none Buffer (RMA): Class I for PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.2R.1L Class: I, II Flagging: B/W C- Type: PAO, MMO, HCO Concerns: none Buffer (RMA): Class I and II- greater of 100 feet (PAO) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to top of side-slope break. Alternatives: ROD Buffer (RAW): review required on south side. Protection: Category A</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns. However, unit is adjacent to Scenic River LUD on the northwest.			
RECREATION: No concerns, however, unit touches the boundary of the Scenic River LUD on the northwest.			
SOILS/WETLANDS: Slopes are less than 25%. Forested wetlands cover the entire unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).			
WILDLIFE: Unit includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.			

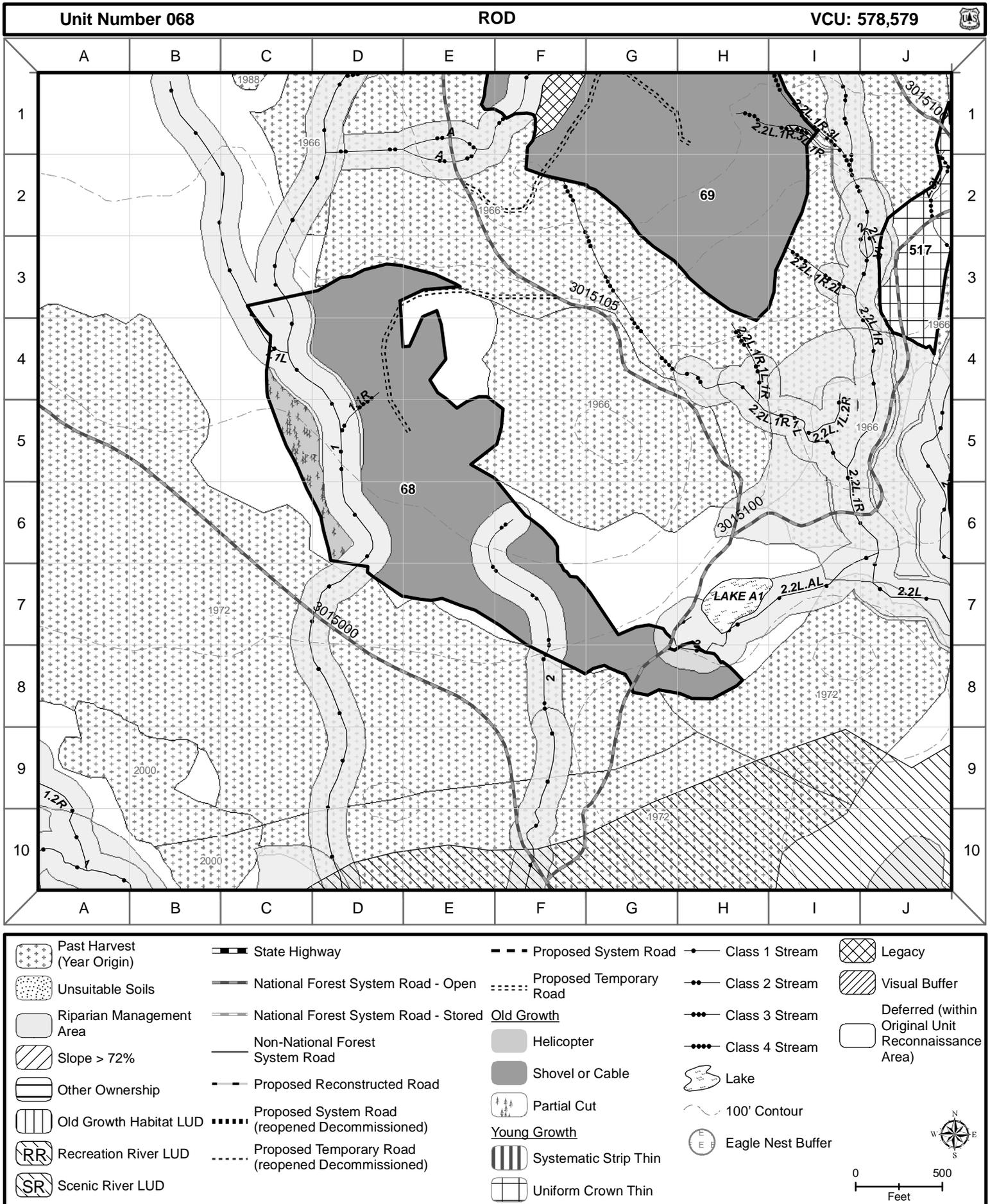
Appendix 1



Unit Number: 68	Alternatives: ROD	Total Unit Acres: 42.0	Prescription: Clearcut and 50% Removal
VCU Number: 579, 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 807	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory has moderate to high defect with stem decay and mistletoe being the major damage agents affecting tree health and volume loss. Mistletoe rating was moderate to high over most of the unit. Windthrow risk is low. All previous harvest areas adjacent to the unit have met green-up with regeneration over 5 foot tall meeting NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies only in VCU 5790 which represents about 12 acres of the unit along its northeastern boundary. The potential opening in VCU 5790 does not exceed 20 acres therefore no legacy set-aside is required. The legacy standard and guideline does apply in VCU 5780.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas as shown on the unit card maps) Maintain at least 50 percent of the setting pretreatment basal area, based on the standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance.</p> <p>Uneven and two-aged management are being prescribed for the unit as a means to maintain large amounts of diverse structure to benefit wildlife over time.</p>			
TIMBER/YARDING: Shovel settings yard to the proposed temporary road and NFS road 3015100. Helicopter setting yard to NFS road 3015000 or 3015100.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,700 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: An infestation of common tansy had been located adjacent to the unit along the NFS road 3015100. This infestation had been treated and monitoring has not observed any continued infestations. It is recommended that this location be monitored and treated if plants are observed.			
FISHERIES: Streams are tributaries to Thorne River and Falls Creek.			
<p>Stream#: 1 Class: I Flagging: B/W C-Type: MCS, HCM, MMS, HCL Concerns: none Buffer (RMA): Class I for MCS- greater of 100 feet or to top of side-slope break. Class I for MMS- greater of 120 feet floodplain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM and HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: I - Flagging: B/W C-Type: MMO, MCS Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, floodplain, riparian vegetation or soils, or riparian associated wetland fens. Class I for MCS- greater of 100 feet or to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2 Class: I, II Flagging: B/W C-Type: PAO, HCO Concerns: blowdown Buffer (RMA): Class I for PAO greater of 100 feet or flood plain, riparian or soils, or riparian associated wetland fens. Class II for HCO greater of 100 feet or the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 3 Class: I Flagging: B/W C-Type: PAB Concerns: none</p>			

Appendix 1

Buffer (RMA): Class I for PAB- greater of 100 feet or flood plain, riparian or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A
Stream#: Lake-A1 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake-1- greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A
Temporary roads for Unit 68: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: No concerns
SOILS/WETLANDS: Slopes are gentle throughout the unit. No wetlands have been identified. The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).
The proposed temporary road crosses less than ¼ of an acre of moss muskeg. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten habitat/deer winter range (all but northern setting). Unit is near Honker large OGR complex. About 12 acres of this unit, along its northeastern boundary, are in VCU 5790 which requires the Legacy standard and guideline; however, there are no requirements for this unit because the portion of the original planned unit in VCU 5790 is less than 20 acres.

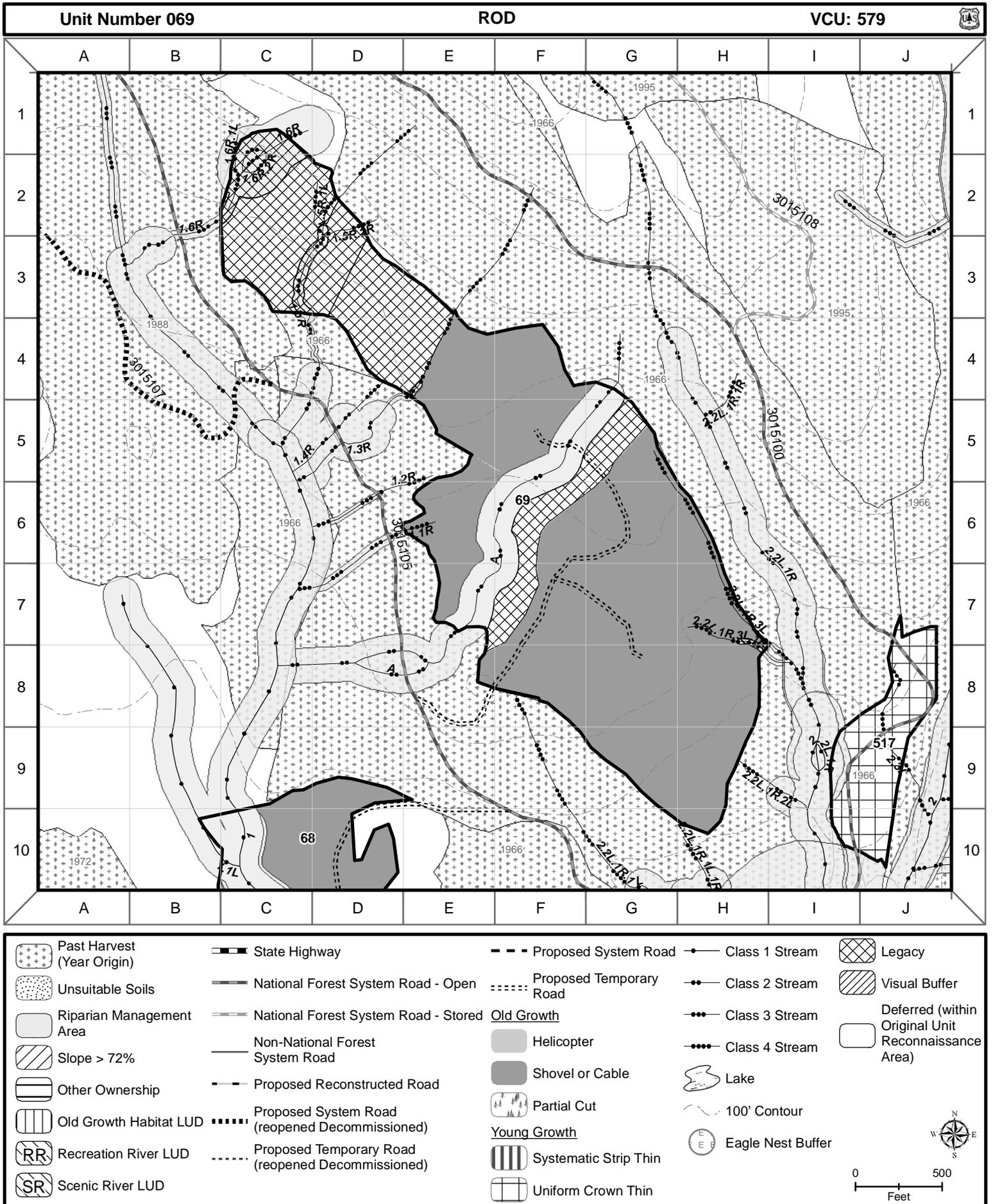


Appendix 1

Unit Number: 69	Alternatives: ROD	Total Unit Acres: 66.7	Prescription: Clearcut
VCU Number: 579	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 1,522	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory is moderate defect with stem decay and poor stem form resulting in the majority of defect deductions. Mistletoe rating is moderate overall. All previous harvest areas adjacent to the unit have met green-up with regeneration over 5 foot tall meeting NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>This unit is within a legacy VCU. The potential opening is 95 acres. This requires 29 acres of legacy set-aside. Approximately 4 acres of legacy are already deferred in RMAs. An additional legacy set-aside of 25 acres is planned to reduce the need for RAW buffers along the central stream, consolidate POG in the northwestern corner of the unit, and reduce road construction.</p>			
TIMBER/YARDING: Shovel and helicopter yarding to the proposed temporary roads.			
ENGINEERING/ROADS: Unit is accessed by proposed temporary roads, totaling 3,500 feet.			
BOTANY: One lesser round-leaved orchid population, of two plants, is within the planned harvest for all alternatives. Under Alternative 4, a partial harvest prescription with helicopter yarding will allow the district botanist to work with implementation to avoid direct impacts and harvest in the immediate vicinity of the known population.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River and Falls Creek			
<p>Stream#: A Class: II , IV Flagging: B/W, G/W C-Type: PAO, MMO, HCO Concerns: none Buffer (RMA): Class II- PAO- greater of 100 feet (PAO) or 120 feet (MMO) or the extent of riparian zone. Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.1R Class: III , IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- greater of 100 feet or the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.2R Class: III, IV Flagging: O/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class III for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.3R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCO, HCM Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class III for HCO- to the top of the side-slope break. Class IV for HCM- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p> <p>Stream#: 1.5R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and steep side-slopes Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review required Protection: Category B and C</p> <p>Stream#: 1.6R Class: III Flagging: O/W C-Type: HCM, AFH Concerns: blowdown, active erosion, and steep side-slopes with mobile sediment</p>			

<p>Buffer (RMA): Class III for HCM- to top of the side-slope break. Class III for AFH- greater of 140 feet or active portion of alluvial fan. Alternatives: ROD Buffer (RAW): no review required Protection: Category B</p>
<p>Stream#: 2.2L.1R Class: II Flagging: B/W C-Type: HCD Concerns: active erosion, steep side-slopes and debris flows. Buffer (RMA): Class II for HCD- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>Stream#: 2.2L.1R.3L Class: III, IV Flagging: O/W, G/W C-Type: HCO, HCO, HCM Concerns: none Buffer (RMA): Class III for HCO- to the top of the side-slope break. Class IV for HCO and HCM- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>
<p>Stream#: 2.2L.1R.3L.1R Class: III, IV Flagging: O/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class III for HCO- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>Temporary roads for Unit 69: One Class II stream crossing. Stream#: A, Class: II, C-Type: MMO. A log culvert is recommended. Cutthroat trout were identified at the proposed Class II crossings and will require a timing window of June 25 to September 1. Alternatives 5 – No known stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering about 24 acres. The unit is entirely in Modified Landscape LUD and the Low SIO areas are the higher elevations of the unit which have a Middleground distance zone designation. The Low SIO area is more than 1 mile from the Thorne Bay-Control Lake highway, which is a Visual Priority Travel Route. No concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes are gentle throughout the unit. No wetlands have been mapped. The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads do not traverse any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten habitat/deer winter range (northern 1/2 of unit). Unit is near Honker large OGR complex. Legacy standard and guideline applies in this VCU; Legacy acres cover some deer winter range/marten habitat.</p>

Appendix 1



Unit Number: 70	Alternatives: ROD	Total Unit Acres: 20.4	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel	Net Harvest Volume (MBF): 330	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Overstory trees are mature to over-mature and rough, with heavy mistletoe and moderate stem decay. Windthrow risk is moderate. Past even-aged harvest areas are to the south, west and across the existing road along the eastern boundary. These past harvest areas have met the green-up requirement with regeneration over 5 feet tall meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary roads and NFS roads 3015000 and 3015200.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 400 feet.</p>			
<p>BOTANY: Two lesser round-leaved orchid populations are within the indirect effects area for the proposed unit. One population, of three plants, is known just northwest of the proposed harvest, and the other population of 67 plants, is within the mapped stream buffer to the south and east.</p>			
<p>INVASIVE SPECIES: One infestation of orange hawkweed is known close to the proposed temporary road into the northern polygon. Monitoring is recommended following implementation to ensure that the infestation has not spread to the new construction.</p>			
<p>FISHERIES: Streams are tributaries to Thorne River.</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: MMS, PAS Concerns: blowdown, steep side-slopes and active erosion Buffer (RMA): Class I - greater of 120 feet (MMS) or 100 feet (PAS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.4R Class: II Flagging: B/W C-Type: HCO, MMO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.4R.1R Class: II, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.5R Class: I, II Flagging: B/W C-Type: MMS, MMO Concerns: none Buffer (RMA): Class I for MMS and Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.5R.1R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.6R Class: I, II Flagging: B/W C-Type: MMO Concerns: blowdown Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p>			

Appendix 1

<p>Alternatives: ROD Buffer (RAW): review required on east side. Protection: Category A</p> <p>Stream#: 1.7R Class: I Flagging: B/W C-Type: MMS, MMO Concerns: none</p> <p>Buffer (RMA): Class I MMO and MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p> <p>Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC and MM</p> <p>Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 70: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes in this unit range from 7 to 45%. Forested wetlands are abundant and cover about 70% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>Two temporary roads will impact approximately 1/2 acre of forested wetland within the unit and less than 1/4 acre outside of the unit. Wetland avoidance was not feasible due to the abundance of forested wetlands in the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (all of unit except eastern tip of southern setting). Unit is near Honker large OGR complex. Possible goshawk detected in unit in 2010; grouse also seen. Legacy standard and guideline does not apply in this VCU.</p>

Appendix 1

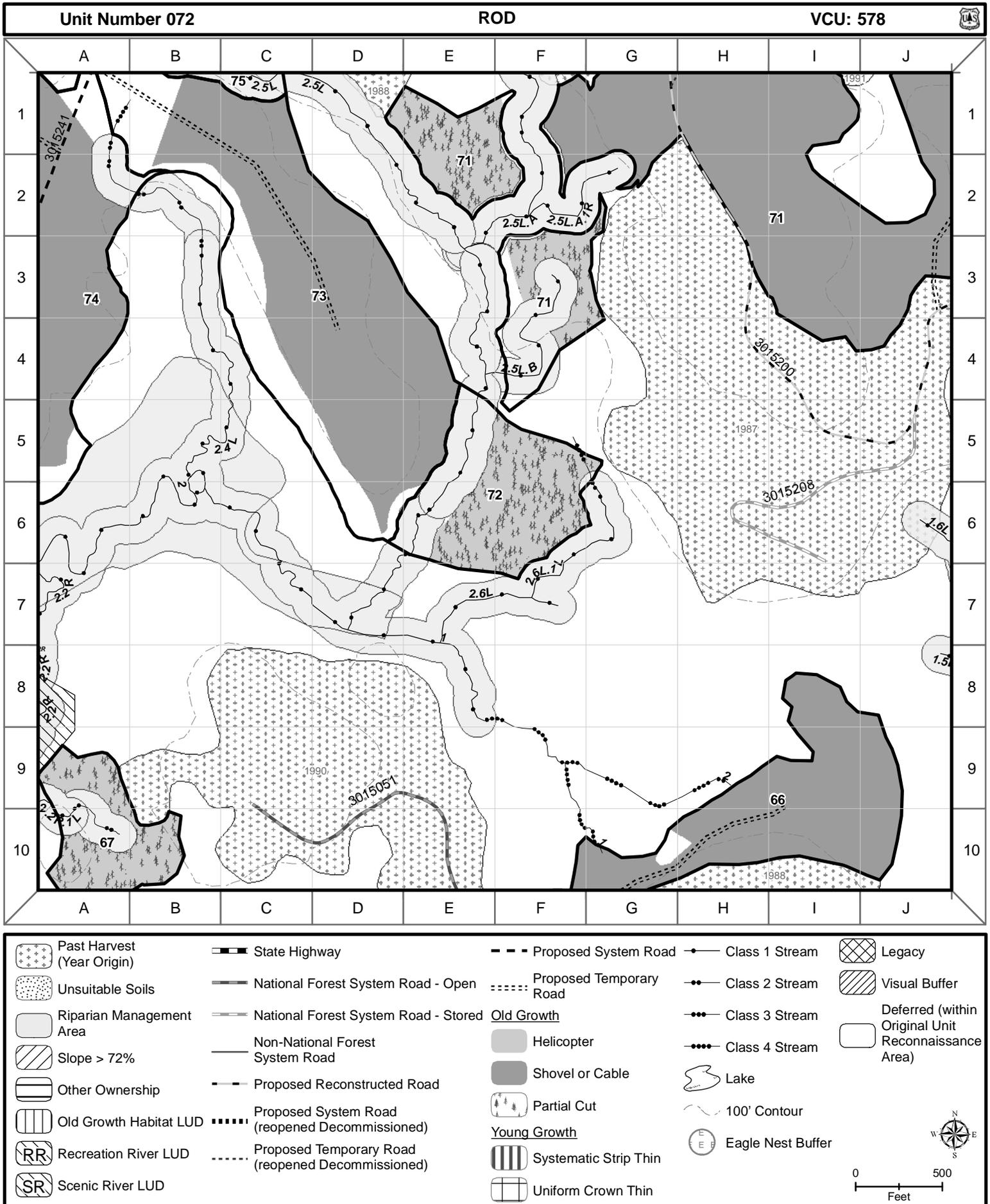
Unit Number: 71	Alternatives: ROD	Total Unit Acres: 91.5	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 2,020	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This area consists of old-growth stand structure that is comprised of over-mature western hemlock, western redcedar, and Sitka spruce. Windthrow risk is low throughout the stand due to limited topographic exposure to winds and timber with high resistance to overturning. Defects and damages are moderate, with the western hemlock being the most defective. Mistletoe was rated low. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management -Clearcut This stand is mature to over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel settings yard to the proposed temporary roads and NFS road 3015200. Helicopter settings yard to NFS road 3015200.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 1,700 feet. Approximately 600 feet of these roads will be constructed over decommissioned road bed. Reconstruction of NFS road 3015200, totaling 3,700 feet, is required to access the unit. Reconstructed NFS road 3015200 is also used to access Units 71-75, 77, 79, and 87. See road card for information on NFS road.</p>			
<p>BOTANY: Four lesser round-leaved orchid populations were found during surveys for this unit. Two are in the western portion of the unit, one with only one plant, and the other with 55. Another population of only one plant is in the central portion of the unit. The fourth population, of eight plants, is in the southeastern portion of the unit.</p> <p>The westernmost population of 55 plants is partially within the proposed harvest, with an additional portion within the indirect effects area. The single plant population in the west is within the mapped stream buffers for the unit, and is within the indirect effects area. The single plant population located in the central portion of the unit is within the proposed harvest area. The population in the east is partially within the proposed harvest area, and partially within the stream buffer and the indirect effects area.</p>			
<p>INVASIVE SPECIES: Two infestations of orange hawkweed are known along the NFS road 3015200 accessing the proposed harvest unit. Monitoring is recommended to ensure that the infestations do not spread as a result of this project.</p>			
<p>FISHERIES: Streams are tributaries to Thorne River.</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: MMS, MCS, PAS Concerns: blowdown Buffer (RMA): Class I- greater of 120 feet (MMS) or 100 feet (PAS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for MCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L Class: I Flagging: B/W C-Type: LCS Concerns: none Buffer (RMA): Class I for LCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.A Class: I Flagging: B/W C-Type: MMS, PAB Concerns: none Buffer (RMA): Class I- greater of 120 feet (MMS) or 100 feet (PAB), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.B Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet or flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			

Stream#: 2.5L.A.1R Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet or flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A
All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C
Temporary roads for Unit 71: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: No concerns
SOILS/WETLANDS: Slopes in this unit are less than 20%. Forested wetlands occupy approximately 10-40% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4). The proposed temporary road will impact about 1.5 acres of forested wetlands. Wetland avoidance was not feasible due to the location of the existing road and fish stream. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Unit includes average snow deer range (entire unit), most of which is also deep marten habitat/deer winter range (all but an eastern lobe of the unit). Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.

Unit Number: 72	Alternatives: ROD	Total Unit Acres: 12.0	Prescription: 25% Removal
VCU Number: 578 Phase 2	Yarding System: Helicopter	Net Harvest Volume (MBF): 90	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit consists of approximately 150 year old even-aged timber from windthrow origin. Mistletoe is heavy and affecting stand volume and value. Defect is moderate overall with stem form defects the primary concern. Adjacent even-age harvest originated in 1989 and meets NFMA requirements for no longer being considered an opening. Windthrow risk is high.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance.</p> <p>The uneven-aged single tree selection regeneration method is being prescribed for this unit due to high windthrow risk and the proximity of the unit to class I streams.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015200.			
ENGINEERING/ROADS: Reconstruction of NFS road 3015200, totaling 2,200 feet, is required to access the unit. Reconstructed NFS road 3015200 is also used to access Units 71-75, 77, 79, and 87. See road card for information on NFS road.			
BOTANY: A sliver (approximately 2%) of a lesser round-leaved orchid population with 55 plants is within the proposed harvest of this unit. This population is also within the direct and indirect effects area for Unit 71. The partial harvest prescription with helicopter yarding will allow the district botanist to work implementation to avoid direct impacts and harvest in the immediate vicinity of the known population.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River.			
<p>Stream#: 2.5L Class: I Flagging: B/W C-Type: PAS, LCS Concerns: none Buffer (RMA): Class I for PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for LCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.B Class: I Flagging: B/W C-Type: PAO Concerns: none Buffer (RMA): Class I for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.6L Class: I Flagging: B/W C-Type: PAO Concerns: none Buffer (RMA): Class I for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.6L.1L Class: I, IV Flagging: B/W, G/W C-Type: PAO, MMO Concerns: none Buffer (RMA): Class I - greater of 100 feet (PAO) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			

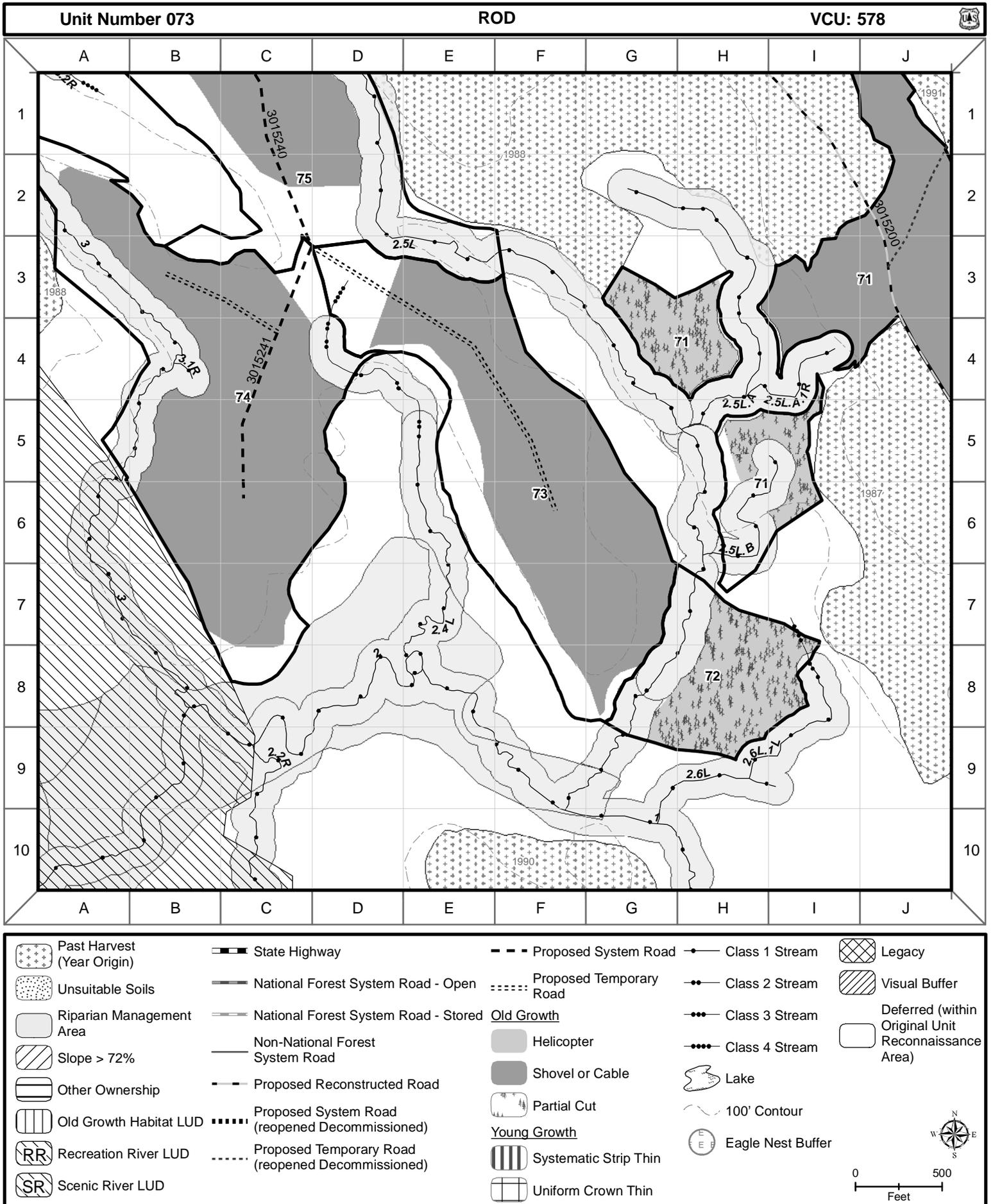
Appendix 1

RECREATION: No concerns
SOILS/WETLANDS: Slopes are less than 25%. Forested wetland is located along the northern edge of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).
WILDLIFE: Unit includes average snow deer winter range (southern and northern ends of unit), some of which is also deep snow marten habitat/deer winter range (southern end of unit). Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.



Appendix 1

Unit Number: 73	Alternatives: ROD	Total Unit Acres: 39.9	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 1,014	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit is mainly old-growth with some areas of even-aged structure in the understory re-initiation stage. Mistletoe is heavy in even-aged areas. In old growth areas the overstory is typically moderate to high defect with stem rot and mistletoe also being of concern. Mistletoe rating was moderate to high overall. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature to over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,200 feet, requiring proposed NFS road 3015240 of 3,000 feet. NFS road 3015200 requires reconstruction of 10,200 feet. Reconstruction of NFS road 3015200 is also used to access Units 71-75, 77, 79, and 87. See road cards for information on NFS roads.</p>			
<p>BOTANY: The proposed temporary road accessing this unit directly impacts a known population of lesser round-leaved orchid, consisting of one plant.</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 2.5L Class: I Flagging: B/W C-Type: PAS, LCS Concerns: none Buffer (RMA): Class I for PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for LCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Temporary roads for Unit 73: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes are less than 20%. Forested wetland is located along the northeastern boundary and central portion of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road crosses less than ¼ acre of forested wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten habitat/deer winter range (western 1/2 of unit). Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.</p>			

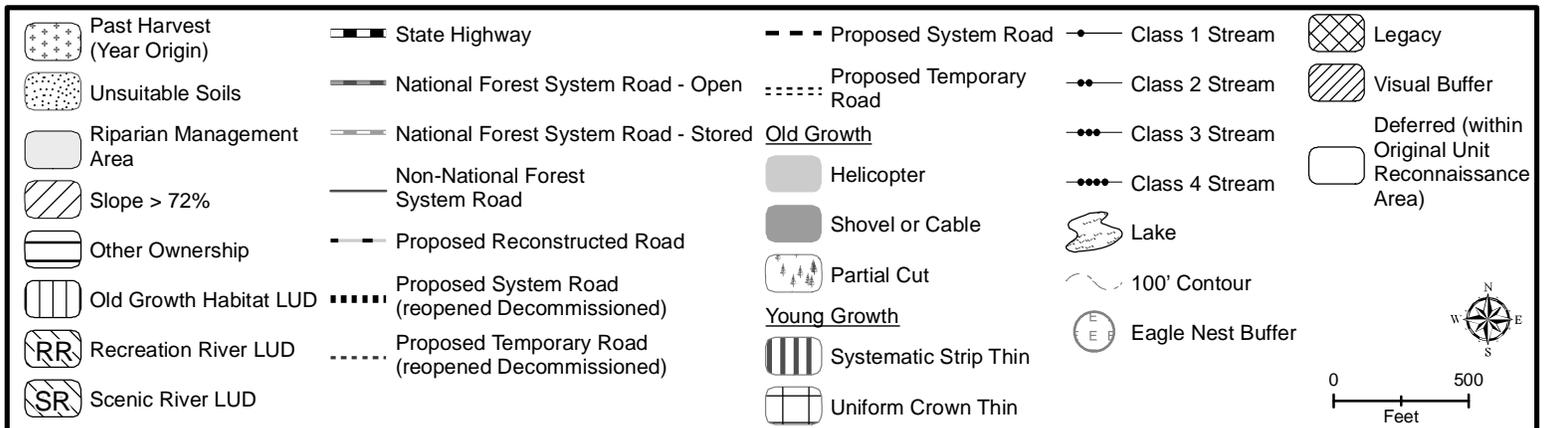
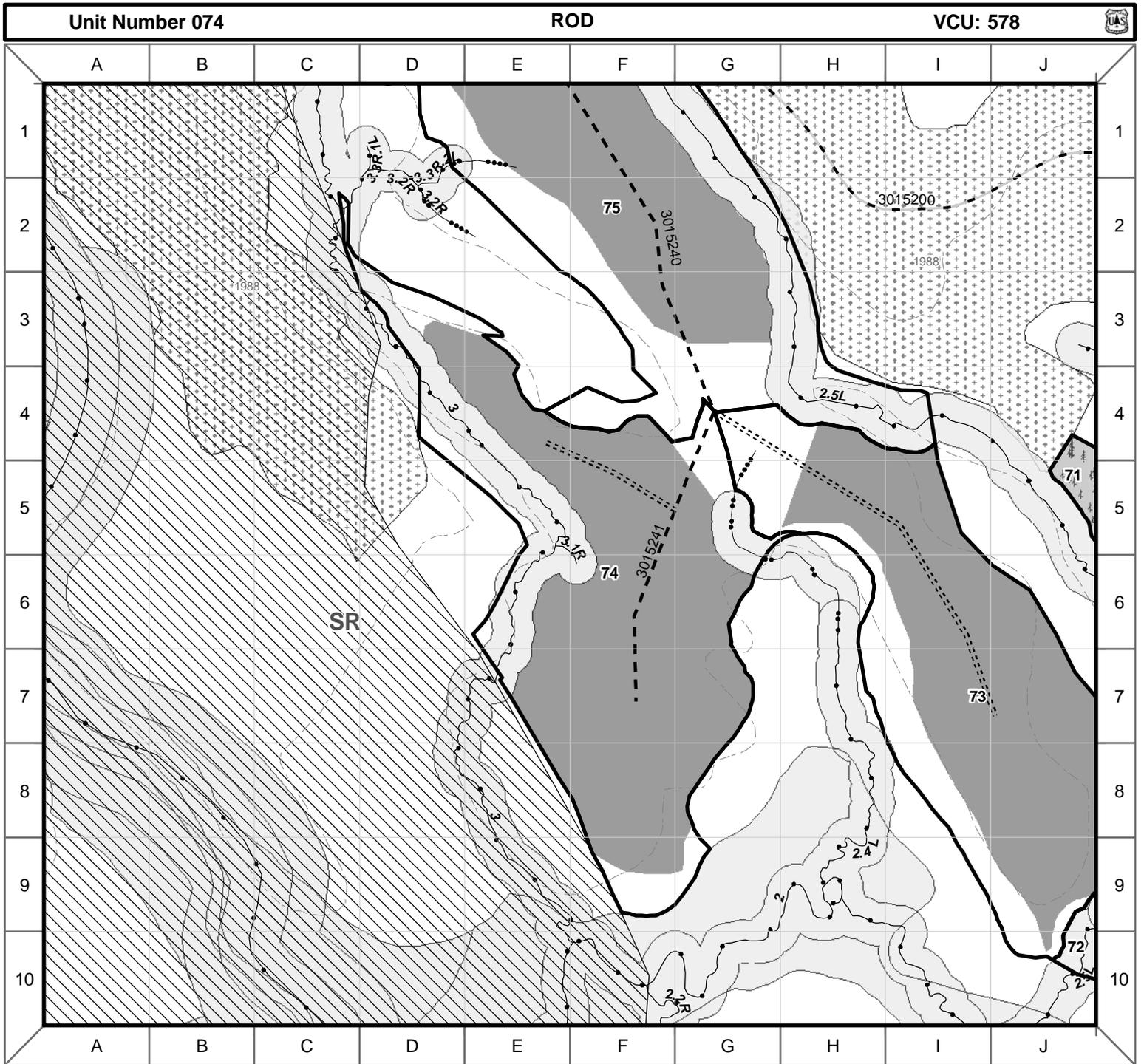


Appendix 1

Unit Number: 74	Alternatives: ROD	Total Unit Acres: 45.9	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 757	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory is typically moderate to high defect with stem decay and mistletoe being of concern. Mistletoe rating was moderate to high overall. Windthrow risk is moderate. Past harvest areas near or adjacent to this unit have met green-up requirements with regeneration over 5 feet tall meeting NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is mature to over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed NFS road 3015241 and the proposed temporary road.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by proposed NFS road 3015241, totaling 1,500 feet; proposed NFS road 3015240, totaling 3,000 feet; a proposed temporary road, totaling 700 feet; and reconstruction of NFS road 3015200. See road card for detailed information on reconstructed NFS road. Existing NFS road 3015200 is also used to access Units 71-75, 77, 79, and 87. Proposed NFS road 3015241 is used to access Units 75 and 73. See road card for information on NFS roads.</p>			
<p>BOTANY: Less than half of one lesser round-leaved orchid population, with three plants, is within the southern portion of the proposed harvest unit. This unit indirectly affects an additional portion of the population.</p> <p>The proposed road needed to access this unit crosses through an additional population of lesser round-leaved orchid, with only one plant.</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 2 Class: I Flagging: B/W C-Type: PAS Concerns: none Buffer (RMA): Class I for PAS- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.4L Class: I, II, IV Flagging: B/W, G/W C-Type: PAO, MMO Concerns: none Buffer (RMA): Class I and II- greater of 100 feet (PAO) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 3 Class: I Flagging: B/W C-Type: PAS, PAO, MMO, PAB Concerns: none Buffer (RMA): Class I - greater of 100 feet (PAS, PAO, PAB) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required for entire east side Protection: Category A</p> <p>Stream#: 3.1R Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required for east side Protection: Category A</p> <p>Stream#: 3.2R Class: I Flagging: B/W C-Type: PAO Concerns: none Buffer (RMA): Class I for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			

<p>Temporary roads for Unit 74: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Seldom Seen. There are no scenery resource concerns. Unit is adjacent to Honker large OGR complex.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes in this unit are generally less than 30%, though slopes over 30% are present. Less than a ¼ of an acre of forested wetland/emergent short sedge wetland is found in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not traverse any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Unit is adjacent to Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.</p>

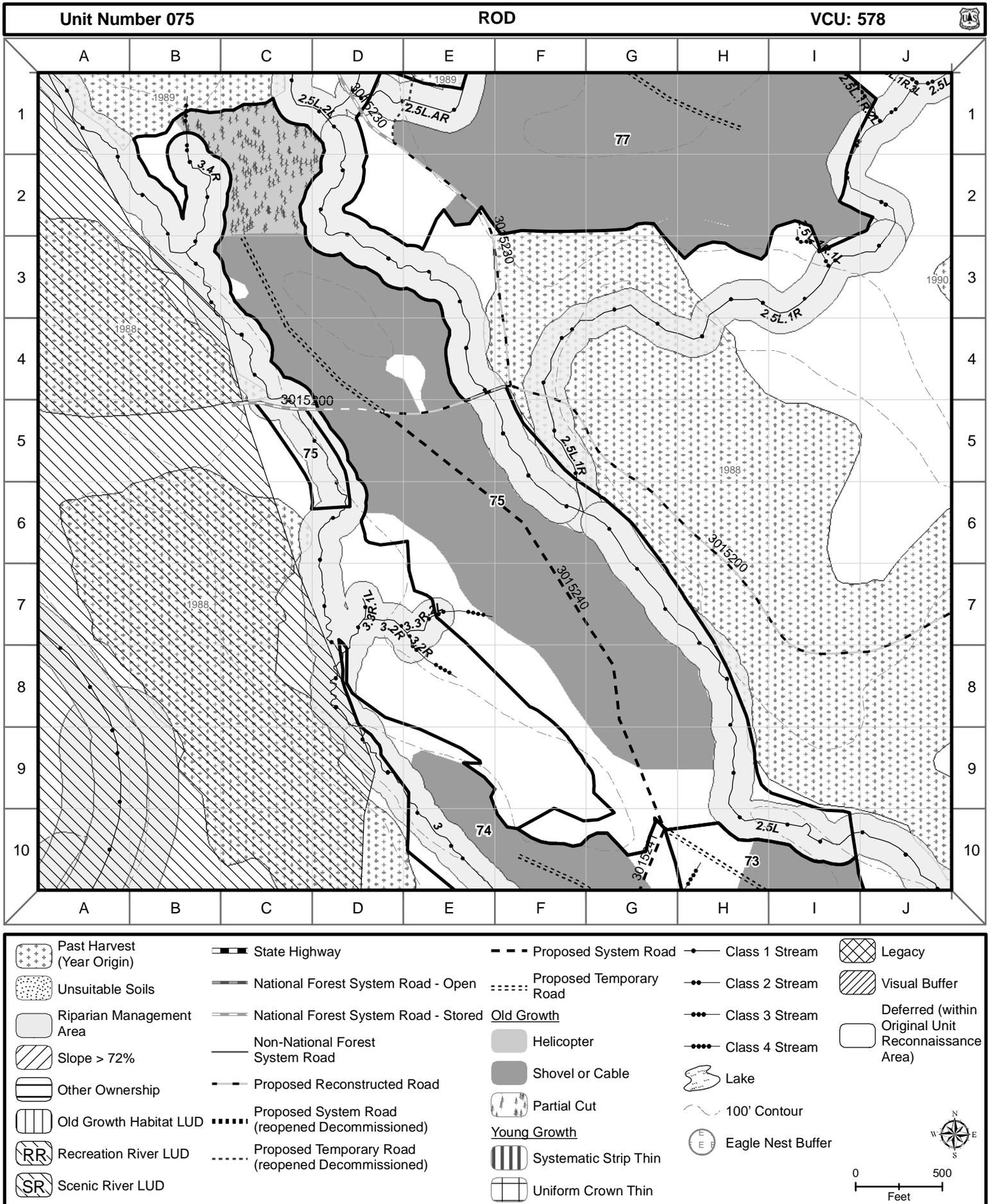
Appendix 1



Unit Number: 75	Alternatives: ROD	Total Unit Acres: 69.6	Prescription: 3 – Clearcut and 50% Removal
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 1,584	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure with moderate to high defect. Stem decay and mistletoe are of primary concern. Mistletoe rating was moderate to high overall. Windthrow risk is moderate. All nearby previous harvest areas have met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is mature to over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (Alternatives 3, 4, 5) Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for this unit as a means to maintain large amounts of diverse structure to benefit wildlife in Alternative 4 and mitigate the effect of harvest on the watershed in Alternative 5. The system is not optimum for timber production.</p>			
<p>TIMBER/YARDING: Shovel settings yard to NFS road 3015200, proposed NFS road 3015240, and the proposed temporary road. Helicopter settings yard to the proposed temporary road.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by proposed NFS road 3015240 of 2,500 feet and a proposed temporary road of 1,300 feet. Reconstruction of NFS road 3015200, totaling 10,200 feet, is also required to access the unit. Existing NFS road 3015200 is also used to access Units 71-75, 77, 79, and 87. See road cards for information on NFS roads.</p>			
<p>BOTANY: Two lesser round-leaved orchid populations, of three and 53 plants, were deferred from harvest, but are within the indirect effects area for all alternatives. An additional two populations of lesser round-leaved orchid, of one and two plants each, were found during surveys.</p> <p>The centrally located population of two plants is within the proposed harvest boundary, but the southern population of one plant is just south of the proposed harvest, but within the indirect effects area.</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River. Characteristics for Stream 2.5L.1L do not include project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: 2.5L Class: I Flagging: B/W C-Type: LCS Concerns: none Buffer (RMA): Class I for LCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on southwest exposure. Protection: Category A</p> <p>Stream#: 2.5L.1R Class: I Flagging: B/W C-Type: PAB Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 3 Class: I Flagging: B/W C-Type: PAB Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required Protection: Category A</p>			

Appendix 1

<p>Stream#: 3.2R Class: I, IV Flagging: B/W, G/W C-Type: PAO, MMO Concerns: none Buffer (RMA): Class I for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO and PAO- none. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A and C</p>
<p>Stream#: 3.3R.2L Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 3.4R Class: I, IV Flagging: B/W, G/W C-Type: PAB Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for PAB- none Alternatives: ROD Buffer (RAW): review required on east side Protection: Category A and C</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>
<p>Temporary roads for Unit 75: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Seldom Seen. There are no scenery resource concerns. Unit is adjacent to Honker large OGR complex.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes generally range from nearly level to 25% with small knobs. Forested wetlands are found along the eastern boundary (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU. Boundary was adjusted to avoid two sensitive plants.</p>

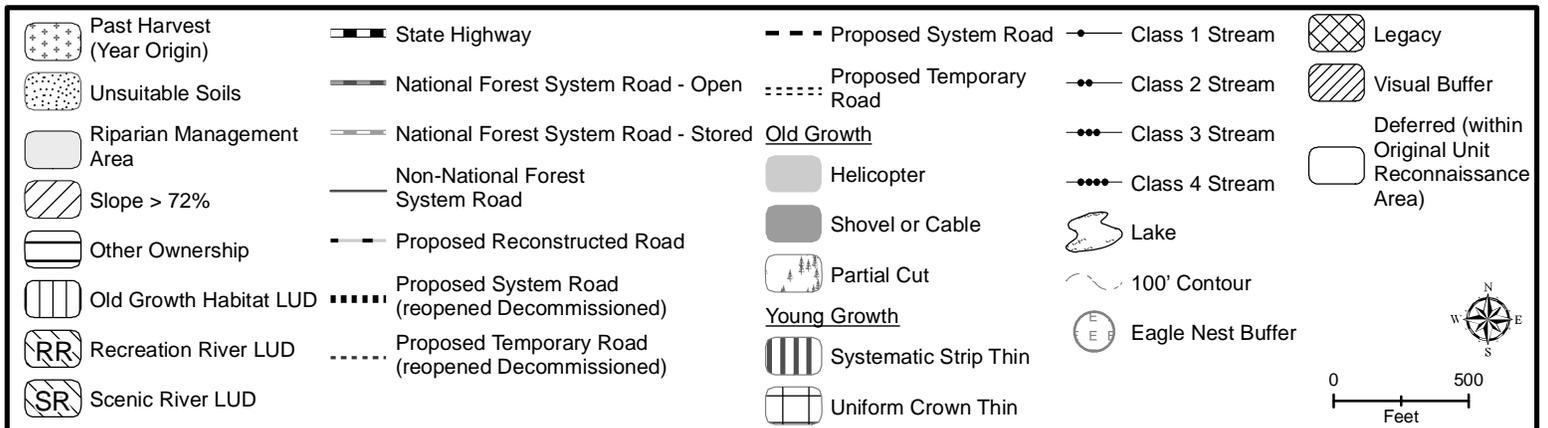
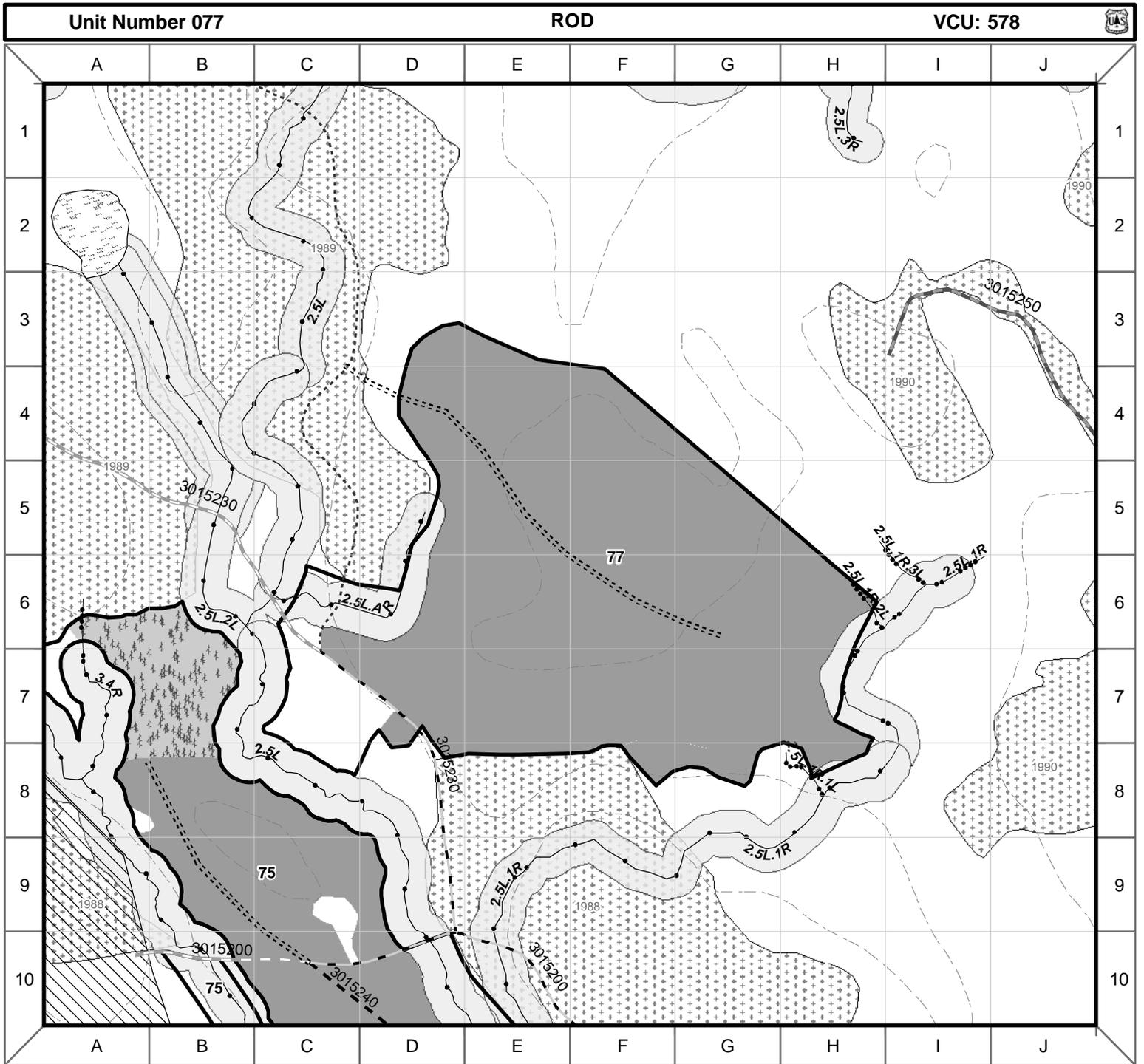


Appendix 1

Unit Number: 77	Alternatives: ROD	Total Unit Acres: 87.3	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel	Net Harvest Volume (MBF): 2,252	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth and uneven-age structure. Moderate to high heart rot and stem decay are present. Mistletoe is moderate with patches of heavy infection. Windthrow risk is moderate. Previous even-aged harvest areas are adjacent to this unit. All have advanced regeneration over 5 feet tall meeting NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management- Clearcut This stand is over-mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS road 3015230.</p> <p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,600 feet; approximately 500 feet will be constructed over decommissioned road bed. Unit is also accessed by reconstruction of NFS roads 3015200 and 3015230, totaling 11,800 feet. These roads are also used to access Units 71-75, 77, 79, and 87. See road cards for information on NFS roads.</p> <p>BOTANY: Two lesser round-leaved orchid populations, of one and two plants each, are within the proposed unit. An additional population of whiteflower rein orchid, with one plant, is within the indirect effects area to the northeast of the proposed unit.</p> <p>INVASIVE SPECIES: No Concerns</p> <p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 2.5L Class: I Flagging: B/W C-Type: LCS, PAB, PAS Concerns: none Buffer (RMA): Class I for LCS- greater of 100 feet or to the top of the side-slope break. Class I for PAB and PAS- greater of 100 feet or to the extent of riparian zone. Alternatives: ROD Buffer (RAW): review required on east side Protection: Category A</p> <p>Stream#: 2.5L.1R Class: I, II, IV Flagging: B/W, G/W C-Type: MMO, PAB Concerns: none Buffer (RMA): Class I and II - greater of 100 feet (PAB) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 2.5L.2L Class: I Flagging: B/W C-Type: PAB Concerns: none Buffer (RMA): Class I for PAB - greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.AR Class: I Flagging: B/W C-Type: MMO, PAS Concerns: none Buffer (RMA): Class I- greater of 120 feet (MMO) or 100 feet (PAS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 77: One Class I crossing. Stream#: 2.5L.AR, Class: I, C-Type: PAB/MMO. A log culvert is recommended. Coho salmon, Dolly Varden char, and Steelhead trout were identified at the proposed Class I crossings and will require a timing window of July 18 to August 15. If any additional crossings are found they will be approved by the USFS in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17).</p>			

<p>The Class I crossing will be designed to provide fish passage using a log culvert or bridge, will be installed under current timing constrictions, and concurrence from the State will be solicited prior to starting the work. During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.14, 14.3, 14.5, 14.20, and 14.8.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from nearly level to about 33%. Most slopes are less than 25%. The majority of the unit is forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road crosses about 1 acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetland located throughout the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (all of unit except southern edge); most of which is also deep snow marten habitat/deer winter range (central portion). Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.</p> <p><u>Old-growth Reserve (OGR) Boundary</u> Unit is not adjacent to OGR boundary</p>

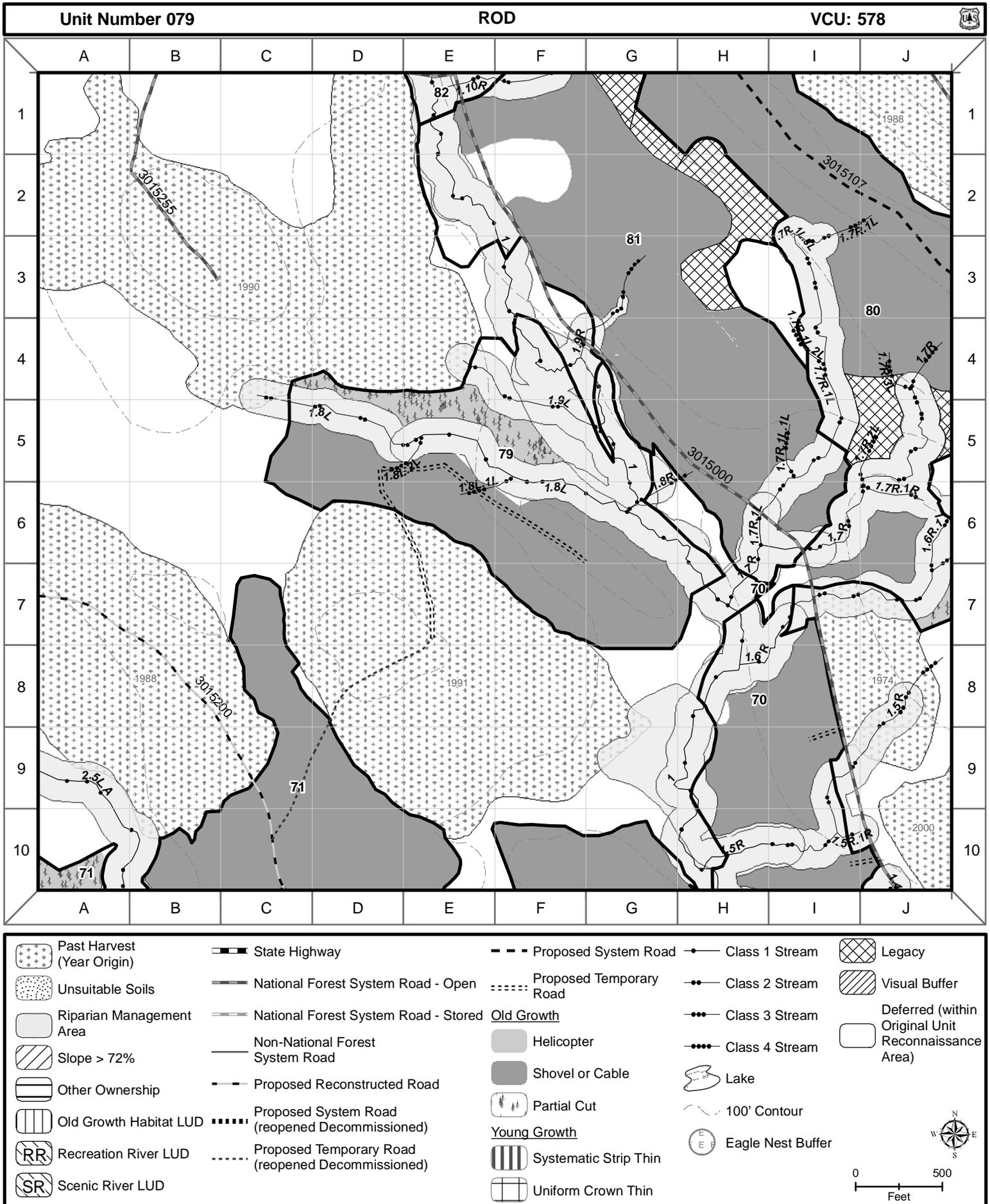
Appendix 1



Unit Number: 79	Alternatives: ROD	Total Unit Acres: 32.3	Prescription: Clearcut and 50% Removal																																																												
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 535	LUD: Timber Production																																																												
Summary of Concerns, Responses, BMPs and Mitigation																																																															
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Trees are typically moderate defect with poor stem form resulting in most defect deductions. Mistletoe was noted as heavy in the eastern half of the unit and moderate to light in the western half. Windthrow risk is low. All adjacent previous harvest areas have regeneration over 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (areas shown on the unit card maps) Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged management is being prescribed for the unit or portions of the unit as a means to reduce impacts to streams and improve harvest economics. This system is not optimum for timber production.</p>																																																															
TIMBER/YARDING: Shovel and helicopter yarding to the proposed temporary road.																																																															
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 4,000 feet; approximately 1,600 feet will be constructed over a decommissioned road bed. Unit is also accessed by reconstruction of NFS road 3015200, totaling 3,700 feet. Reconstructed NFS road 3015200 is also used to access Units 71-75, 77, 79, and 87. See road cards for information on NFS roads.																																																															
BOTANY: One lesser round-leaved orchid population, of fifteen plants, is primarily located within the stream buffer bisecting the proposed unit. The population will be partially impacted by harvest on the western end of the unit, and the remainder of the population is within the indirect effects area.																																																															
INVASIVE SPECIES: No Concerns																																																															
FISHERIES: Streams are tributaries to Thorne River																																																															
<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Stream#: 1</td> <td style="width: 15%;">Class: I</td> <td style="width: 20%;">Flagging: B/W</td> <td style="width: 15%;">C-Type: PAB</td> <td style="width: 30%;">Concerns: none</td> </tr> <tr> <td colspan="5">Buffer (RMA): Class I for PAB - greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</td> </tr> <tr> <td colspan="2">Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Stream#: 1.7R</td> <td style="width: 15%;">Class: I</td> <td style="width: 20%;">Flagging: B/W</td> <td style="width: 15%;">C-Type: MMO</td> <td style="width: 30%;">Concerns: none</td> </tr> <tr> <td colspan="5">Buffer (RMA): Class I for MMO- greater of 120 feet flood plain, riparian vegetation or soils, or riparian associated wetland fens.</td> </tr> <tr> <td colspan="2">Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Stream#: 1.8L</td> <td style="width: 15%;">Class: I, II</td> <td style="width: 20%;">Flagging: B/W</td> <td style="width: 15%;">C-Type: PAO, MMO</td> <td style="width: 30%;">Concerns: none</td> </tr> <tr> <td colspan="5">Buffer (RMA): Class I - greater of 100 feet (PAO) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens.</td> </tr> <tr> <td colspan="2">Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Stream#: 1.9L</td> <td style="width: 15%;">Class: II</td> <td style="width: 20%;">Flagging: B/W</td> <td style="width: 15%;">C-Type: MMO</td> <td style="width: 30%;">Concerns: none</td> </tr> <tr> <td colspan="5">Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</td> </tr> <tr> <td colspan="2">Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A</td> </tr> </table>				Stream#: 1	Class: I	Flagging: B/W	C-Type: PAB	Concerns: none	Buffer (RMA): Class I for PAB - greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.					Alternatives: ROD		Buffer (RAW): no review needed	Protection: Category A		Stream#: 1.7R	Class: I	Flagging: B/W	C-Type: MMO	Concerns: none	Buffer (RMA): Class I for MMO- greater of 120 feet flood plain, riparian vegetation or soils, or riparian associated wetland fens.					Alternatives: ROD		Buffer (RAW): no review needed	Protection: Category A		Stream#: 1.8L	Class: I, II	Flagging: B/W	C-Type: PAO, MMO	Concerns: none	Buffer (RMA): Class I - greater of 100 feet (PAO) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens.					Alternatives: ROD		Buffer (RAW): no review needed	Protection: Category A		Stream#: 1.9L	Class: II	Flagging: B/W	C-Type: MMO	Concerns: none	Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.					Alternatives: ROD		Buffer (RAW): no review needed	Protection: Category A	
Stream#: 1	Class: I	Flagging: B/W	C-Type: PAB	Concerns: none																																																											
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Alternatives: ROD		Buffer (RAW): no review needed	Protection: Category A																																																												

Appendix 1

<p>Stream#: 1.9R Class: II Flagging: B/W C-Type: PAO Concerns: none Buffer (RMA): Class II for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>Temporary roads for Unit 79: Two Class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes are less than 20%. Forested wetlands occupy about 30% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten habitat/deer winter range (near northern end). Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.</p>



Appendix 1

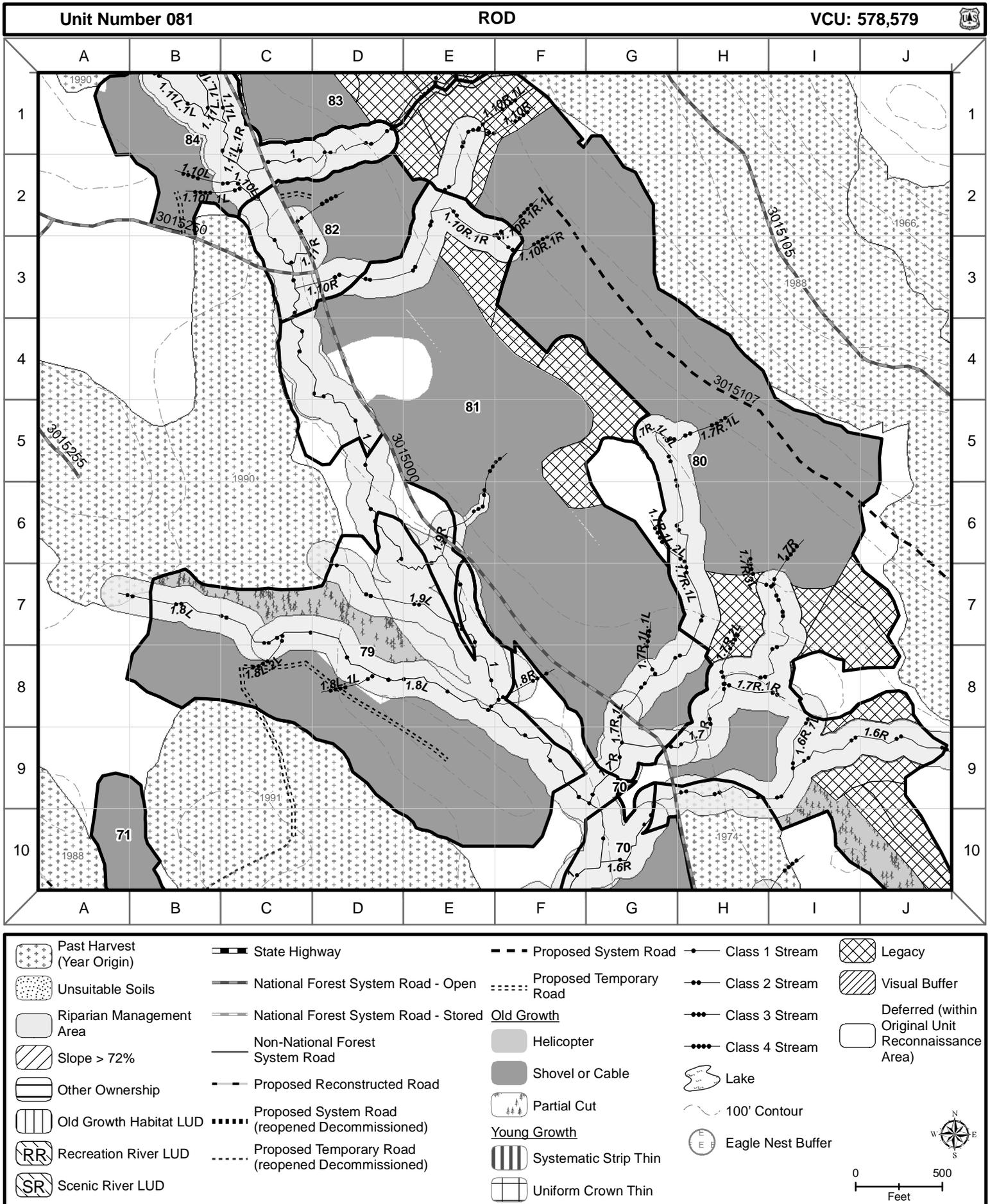
Unit Number: 80	Alternatives: ROD	Total Unit Acres: 61.9	Prescription: Clearcut and 50% Removal
VCU Number: 579; 578 Phase 2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 1,706	LUD: Modified Landscape Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit is predominantly old-growth. Stem decay is the main damage factor affecting tree health and volume loss across the area. Defect is highest within the larger western redcedar and western hemlock. Stem decay and defect are moderate to high overall. Mistletoe is moderate in occurrence. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in VCU 5790 which is the majority of the unit other than the southernmost polygon (VCU 5780). The portions of Units 80, 81, 82 and 83 in VCU 5790 combine to form a potential opening of 158 acres. This requires 47 acres of legacy set-aside. Approximately 2 acres of legacy are already deferred. An additional legacy set-aside of 45 acres is mapped. The combination of Units 80, 81, 82 and 83 create a situation where the maximum opening size allowed under NFMA could be exceeded. The required legacy structure is to be placed to keep the potential opening under 100 acres while building off of RMA corridors, reducing road construction and promoting wildlife travel by maintaining a POG corridor across the unit.</p>			
<p>TIMBER/YARDING: Cable settings yard to proposed NFS road 3015107. Shovel settings yard to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by proposed NFS road 3015107, totaling 5,800 feet; approximately 2,200 feet of this road will be constructed over decommissioned road bed. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I, II, III Flagging: B/W, O/W C-Type: MMS, PAB, HCM Concerns: blowdown Buffer (RMA): Class I- greater of 120 feet (MMS) or 100 feet (PAB), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to top of side-slope break. Alternatives: ROD Buffer (RAW): review required Protection: Category A and B</p> <p>Stream#: 1.6R Class: I, II Flagging: B/W C-Type: MMO, HCM, HCO Concerns: blowdown Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required. Protection: Category A</p> <p>Stream#: 1.6R.1L Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review required Protection: Category A</p> <p>Stream#: 1.7R Class: I, II, IV Flagging: B/W, G/W C-Type: MMS, MMO, HCM, HCO Concerns: blowdown, steep side-slopes, and active erosion</p>			

<p>Buffer (RMA): Class I and II for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 1.7R.1R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>Stream#: 1.7R.1L Class: I, II, IV Flagging: B/W, G/W C-Type: MMO, HCM, HCO Concerns: none Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCO- greater of 100 feet or to top of side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for east side Protection: Category A and C</p>
<p>Stream#: 1.10R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCO Concerns: steep sides-slopes with mobile sediment Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class III for HCO- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for eastern exposure Protection: Category A, B, and C</p>
<p>Stream#: 1.10R.1R Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A and C</p>
<p>Stream#: 1 Class: II, III Flagging: B/W, O/W C-Type: HCM Concerns: blowdown, steep side-slopes with mobile sediment, and active erosion Buffer (RMA): Class II for HCM greater of 100 feet or to the top of the side-slope break. Class III for HCM to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A and B</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering about 16 acres. The unit is mostly in Middleground distance zone, but the majority of the unit is in Timber Production LUD. The northern portion of the unit, which is in Modified Landscape LUD, is where the Low SIO occurs. The Low SIO area is more than 2 miles from the Thorne Bay-Control Lake highway and the Thorne River, which are Visual Priority Travel Routes. No concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range between 15 and 80%, averaging about 55%. There is a cliff with slopes >72% less than 1/2 acre in size just below the upper proposed road .These steep slopes are suitable for harvest with minimum partial suspension. There is a muskeg located in the unit and the unit is approximately 60% forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten habitat/deer winter range (southern, northwestern, and northeastern settings). Unit is near Honker large OGR complex. Legacy standard and guideline applies in VCU 5790 but not VCU 5780; Legacy acres cover some deer winter range.</p>

Unit Number:	81	Alternatives: ROD	Total Unit Acres: 52.0	Prescription: Clearcut
VCU Number: 579; 578 Phase 2		Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 1,589	LUD: Modified Landscape Timber Production
Summary of Concerns, Responses, BMPs and Mitigation				
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Mistletoe infection is variable with an overall rating of moderate. Stem decay is the main damage. Defect and decay are moderate overall. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies. The northeastern 1/3 of the unit is in VCU 5790 and is proposed for clearcutting. The remainder is of the unit is in VCU 5780, a non-legacy VCU. Portions of Units 80, 81, 82 and 83 in VCU 5790 combine to form a potential opening of 158 acres. This requires 47 acres of legacy set-aside for the combined units. Approximately 2 acres of legacy is shown in areas already deferred. An additional legacy set-aside of 45 acres is mapped. The combination of Units 80, 81, 82 and 83 create a situation where the maximum opening size allowed under NFMA could be exceeded. The required legacy structure is placed in these units to keep the potential opening under 100 acres. Legacy also adds RAW along RMA corridors, protects sensitive plants in the eastern corner of the unit and reduces road construction while promoting wildlife travel by maintaining POG corridors across the unit.</p>				
TIMBER/YARDING: Shovel yarding to NFS road 3015000.				
ENGINEERING/ROADS: No proposed road construction or reconstruction.				
<p>BOTANY: Two lesser round-leaved orchid populations, with one and nineteen plants each, were found during surveys for this unit.</p> <p>The single plant population is within the proposed unit and the other population is primarily within legacy. The remainder of the nineteen plant population is within the indirect effects area.</p>				
<p>INVASIVE SPECIES: An infestation of narrowleaf hawksbeard is known near the northwestern end of the unit along the existing road. Future monitoring is recommended to ensure that the infestation doesn't spread as a result of this project.</p>				
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: MMS, PAB, HCM, MCS Concerns: none Buffer (RMA): Class I - greater of 100 feet (PAB) or 120 feet (MMS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM and MCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A</p> <p>Stream#: 1.7R Class: I, II Flagging: B/W C-Type: MMS, MMO, HCM, HCO Concerns: Blowdown and steep side-slopes Buffer (RMA): Class I for MMS and Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.7R.1L Class: I, II, IV Flagging: B/W, G/W C-Type: MMO, HCM, HCO Concerns: none</p>				

Appendix 1

<p>Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM and HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for east side Protection: Category A and C</p>				
<p>Stream#: 1.7R.1L.3L Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>				
<p>Stream#: 1.7R.1R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>				
<p>Stream#: 1.9R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: PAO, HCM, MMO Concerns: blowdown Buffer (RMA): Class II for PAO- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCM- to the top of the side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A, B, and C</p>				
<p>Stream#: 1.10R Class: II, III Flagging: B/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class III for HCO- to top of side-slope break. Alternatives: ROD Buffer (RAW): review required for eastern exposure Protection: Category A and B</p>				
<p>Stream#: 1.10R.1R Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A and C</p>				
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>				
<p>GEOLOGY/KARST: No Concerns</p>				
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>				
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is mostly in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>				
<p>RECREATION: No concerns</p>				
<p>SOILS/WETLANDS: Slopes are generally 5 to 35% with some slopes averaging about 70%. Forested wetlands occur in about 60% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>				
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten winter habitat/deer winter range (western half of unit). Legacy standard and guideline applies to portion of unit in VCU 5790. Legacy acres cover some average snow deer winter range.</p>				

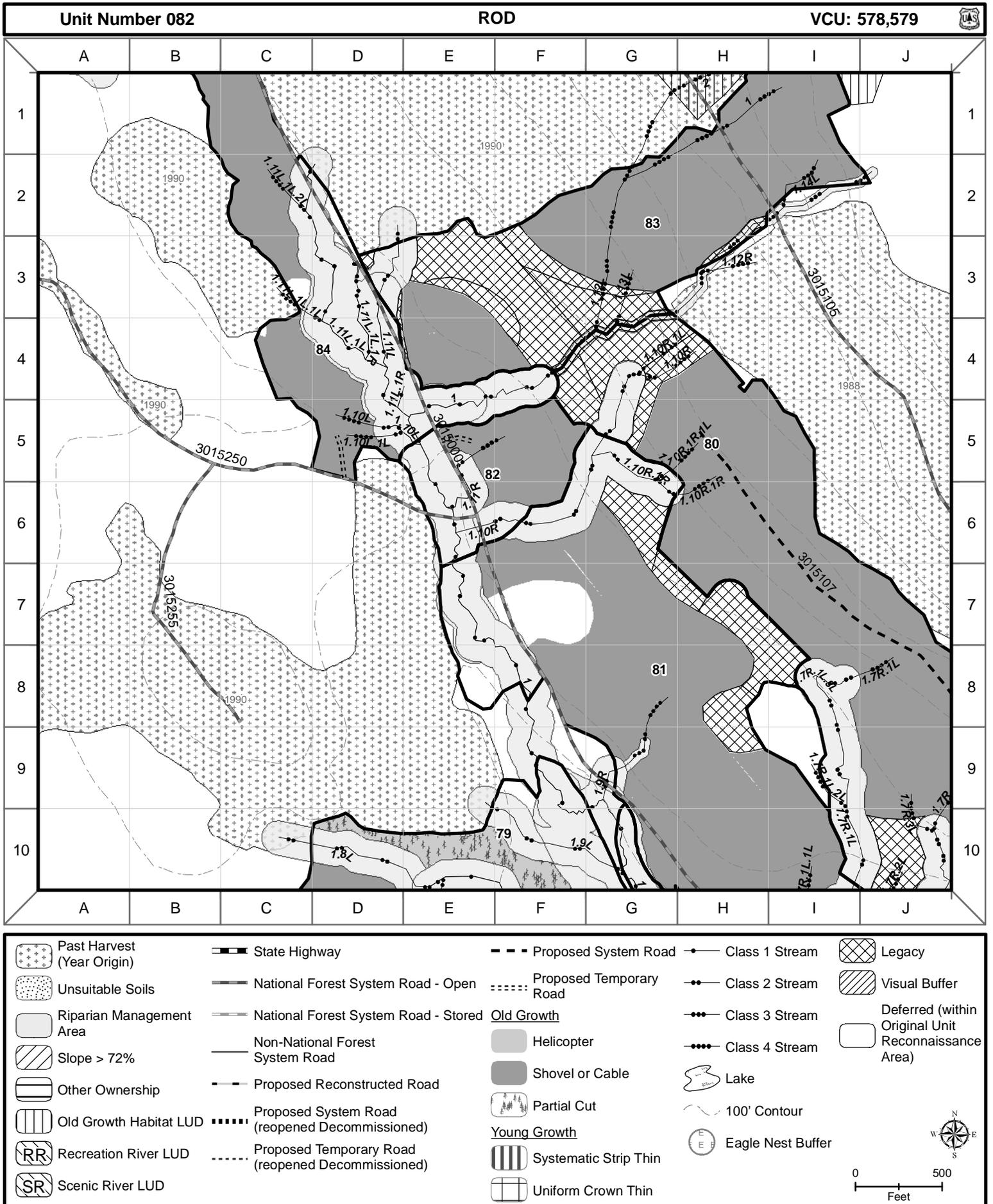


Appendix 1

Unit Number: 82	Alternatives: ROD	Total Unit Acres: 7.5	Prescription: Clearcut
VCU Number: 579; 578 Phase 2	Yarding System: Shovel	Net Harvest Volume (MBF): 117	LUD: Modified Landscape Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 82 has old-growth stand structure. Stem decay is the main damage factor affecting tree health and volume loss across the area. Defect is moderate to high being highest within the larger western redcedar and western hemlock. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies. The northeastern 2/3 of the unit is in VCU 5790 and is proposed for clearcutting. The remainder is of the unit is in VCU 5780, a non-legacy VCU. The portions of Units 80, 81, 82 and 83 in VCU 5790 combine to form a potential opening of 158 acres. The combination of Units 80, 81, 82 and 83 also combine to create a situation where the maximum opening size allowed under NFMA could be exceeded. The required legacy structure is placed in these units to keep the potential opening under 100 acres. The legacy requirement of the combination of units is met in Units 80, 81 and 83. No additional legacy is needed in Unit 82.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 200 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River			
<p>Stream#: 1 Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCM, MCS Concerns: active erosion Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I and II for HCM and MCS- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A and B</p> <p>Stream#: 1.10R Class: II Flagging: B/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for eastern exposure Protection: Category A</p> <p>Stream#: 1.10R.1R Class: II Flagging: B/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for southeast exposure Protection: Category A</p> <p>Stream#: 1.10L Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): review required for eastern exposure Protection: Category A and C</p> <p>Stream#: 1.11R Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet or floodplain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			

Stream#: 1.11L	Class: I	Flagging: B/W	C-Type: MMO	Concerns: none
Buffer (RMA): Class I for MMO- greater of 120 feet or floodplain, riparian vegetation or soils, or riparian associated wetland fens.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
All other streams in unit: Class: IV Flagging: G/W				
Buffer (RMA): none			C-Type: HC	Protection: Category C
Buffer (RAW): no review needed				
Temporary roads for Unit 82: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12. 17, 13.10, 13.11, 13.16, 14.3, and 14.5.				
GEOLOGY/KARST: No Concerns				
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.				
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is mostly in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.				
RECREATION: No concerns				
SOILS/WETLANDS: Slopes are generally 5 to 35%. Forested wetlands are dominant in the southern half of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).				
The proposed temporary spur does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.				
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten winter habitat/deer winter range (western 2/3 of unit). Legacy standard and guideline applies to VCU 5790; however, there are no requirements for this unit because it is less than 20 acres.				

Appendix 1



Unit Number: 83	Alternatives: ROD	Total Unit Acres: 36.4	Prescription: Clearcut
VCU Number: 579; 578 Phase 2	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 1,192	LUD: Modified Landscape Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 83 has predominantly old-growth stand structure. Defect is highest within the larger western redcedar and western hemlock however, many quality stems in the upper diameter classes of both species are present. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management -Clearcut This stand is being recommended for harvest at this time because it is not expected to obtain the desired condition given the current growth trajectory. This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy, improve site productivity through increased soil temperature and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in VCU 5790 which is the majority of the unit other than the very southwestern tip. The portions of Units 80, 81, 82 and 83 in VCU 5790 combine to form a potential opening of 158 acres. This requires 47 acres of legacy set-aside for the combined units. Approximately 2 acres of legacy is shown in areas already deferred. An additional legacy set-aside of 45 acres is mapped. In Unit 83 the required legacy structure is placed to keep the potential opening under 100 acres while also reducing the need for additional road, promoting additional buffer along RMAs and allowing for larger blocks of POG to be maintained. Legacy also divides the unit opening into two areas along a natural setting break.</p>			
TIMBER/YARDING: Shovel and cable yarding to NFS road 3015000.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River			
<p>Stream#: 1 Class: I, II, III Flagging: B/W, O/W C-Type: MCS, HCM Concerns: none Buffer (RMA): Class I and II for MCS and HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on southeast exposure Protection: Category A and B</p> <p>Stream#: 1.11L Class: I, II Flagging: B/W C-Type: MMO, HCM Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on eastern exposure Protection: Category A</p> <p>Stream#: 1.11L.1L Class: I Flagging: B/W C-Type: MMS, MMO Concerns: blowdown Buffer (RMA): Class I for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.11L.1L.1R Class: I, II, IV Flagging: B/W, G/W C-Type: MMO Concerns: blowdown Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.11L.1R Class: I Flagging: B/W C-Type: MMO Concerns: none</p>			

Appendix 1

<p>Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objectives (SIO) of this unit are Low and Very Low, with the Low SIO covering about 29 acres. The unit is mostly in Middleground distance zone and Modified Landscape LUD. The Low SIO area is more than 2 miles from the Thorne Bay-Control Lake highway and the Thorne River, which are Visual Priority Travel Routes. No concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: The slopes range from 15% to 70%. The steep slopes are located below the 3015105 road. These steep slopes are suitable for harvest with a minimum of partial suspension. The unit contains about 40% forested wetlands in the eastern portion with many small drainages (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>
<p>WILDLIFE: Unit includes average snow deer winter range (eastern lobe of unit, east of road). Legacy standard and guideline applies to VCU 5790; Legacy acres do not coincide with deer winter range. Eastern portion of northern boundary of unit is adjacent to small OGR.</p>

Appendix 1

Unit Number: 84	Alternatives: ROD	Total Unit Acres: 21.6	Prescription: Clearcut
VCU Number: 579; 578 Phase 2	Yarding System: Shovel	Net Harvest Volume (MBF): 441	LUD: Modified Landscape Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of a western hemlock and western redcedar mixture. In the larger trees damages and defects are high. In general, the western hemlock have moderate to heavy heartwood and stem decay, with mistletoe infection light to moderate. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible. Only the northeastern corner of this unit (about 2 acres) along the 3015 road is in VCU 5790, a legacy VCU. No legacy set-aside is required.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS roads 3015000 and 3015250.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 200 feet.</p>			
<p>BOTANY: Two lesser round-leaved orchid populations, of five and 30 plants, were found during surveys in the unit. These populations have been deferred from the harvest under all alternatives, but are within the indirect effects area for all alternatives.</p> <p>A population of white-flower rein orchid, with 32 plants, is within the indirect effects area to the north of the proposed unit.</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1.10L Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.11L.1R Class: I Flagging: B/W C-Type: MMO Concerns: blowdown Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.11L Class: I Flagging: B/W C-Type: MMS Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.11L.1L Class: I Flagging: B/W C-Type: MMS, MMO Concerns: blowdown Buffer (RMA): Class I for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required on southwest exposure Protection: Category A</p> <p>Stream#: 1.11L.1L.1R Class: I, II, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class I and II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			

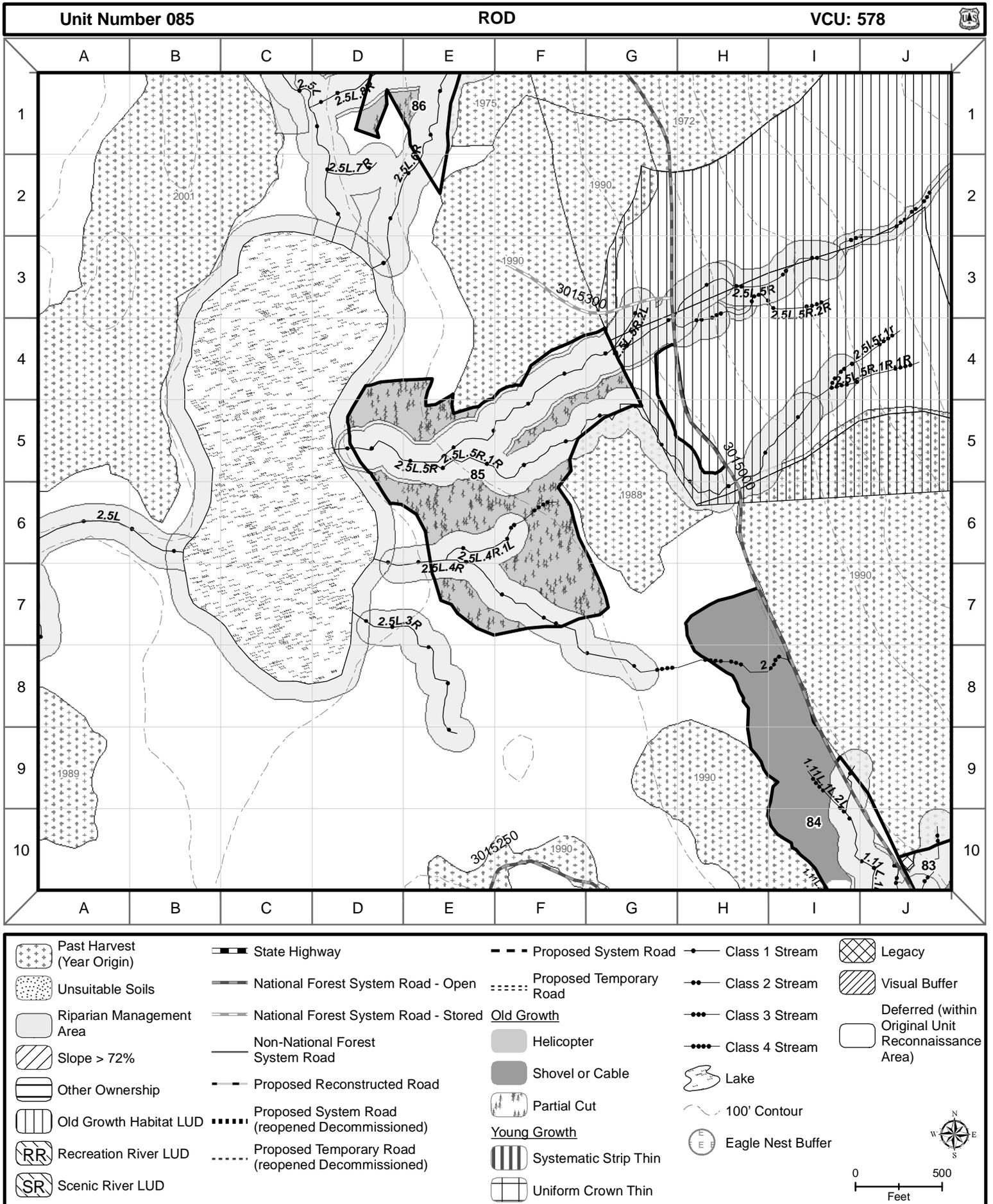
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>Temporary roads for Unit 84: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is almost entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: The unit has slopes averaging 5 to 25%. Forested wetlands are dominant in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>A proposed temporary road will impact less than ½ an acre of forested wetland. Wetland avoidance is not practicable due to the abundance of forested wetlands and fish streams. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten winter habitat/deer winter range (all except northern lobe of unit). Legacy standard and guideline applies to VCU 5790; but no Legacy acres are required because portion of unit in this VCU is less than 20 acres.</p> <p><u>Old-growth Reserve (OGR) Boundary</u> Unit is not adjacent to OGR.</p>

Unit Number: 85	Alternatives: 2 and 3	Total Unit Acres: 16.6	Prescription: 2, 3 - Clearcut
VCU Number: 578 Phase 2	Yarding System: Helicopter	Net Harvest Volume (MBF): 339	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit has old-growth stand structure. Western hemlock and western redcedar make up the overstory. In the western hemlock stem rot is moderate and mistletoe is heavy. Across the unit defects for all species is moderate. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015000.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: streams are tributaries to Lake 1</p> <p>Lake#: 1 Class: I Flagging: B/W C- Type: lake Concerns: none</p> <p>Buffer (RMA): Class I for lake- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p> <p>Alternatives: 2 and 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.4R Class: I Flagging: B/W C- Type: MMO Concerns: none</p> <p>Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p> <p>Alternatives: 2 and 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.4R.1L Class: I, IV Flagging: B/W, G/W C- Type: MMO Concerns: none</p> <p>Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none</p> <p>Alternatives: 2 and 3 Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 2.5L.5R Class: I Flagging: B/W C- Type: MMS Concerns: none</p> <p>Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p> <p>Alternatives: 2 and 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.5R.1R Class: I Flagging: B/W C- Type: MMO Concerns: none</p> <p>Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p> <p>Alternatives: 2 and 3 Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM</p> <p>Buffer (RMA): none Protection: Category C Concerns: none</p>			
GEOLOGY/KARST: No Concerns			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
SCENERY: No Concerns			
RECREATION: No Concerns			
<p>SOILS/WETLANDS: The unit has gentle slopes. Forested wetlands are dominant in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			

Appendix 1

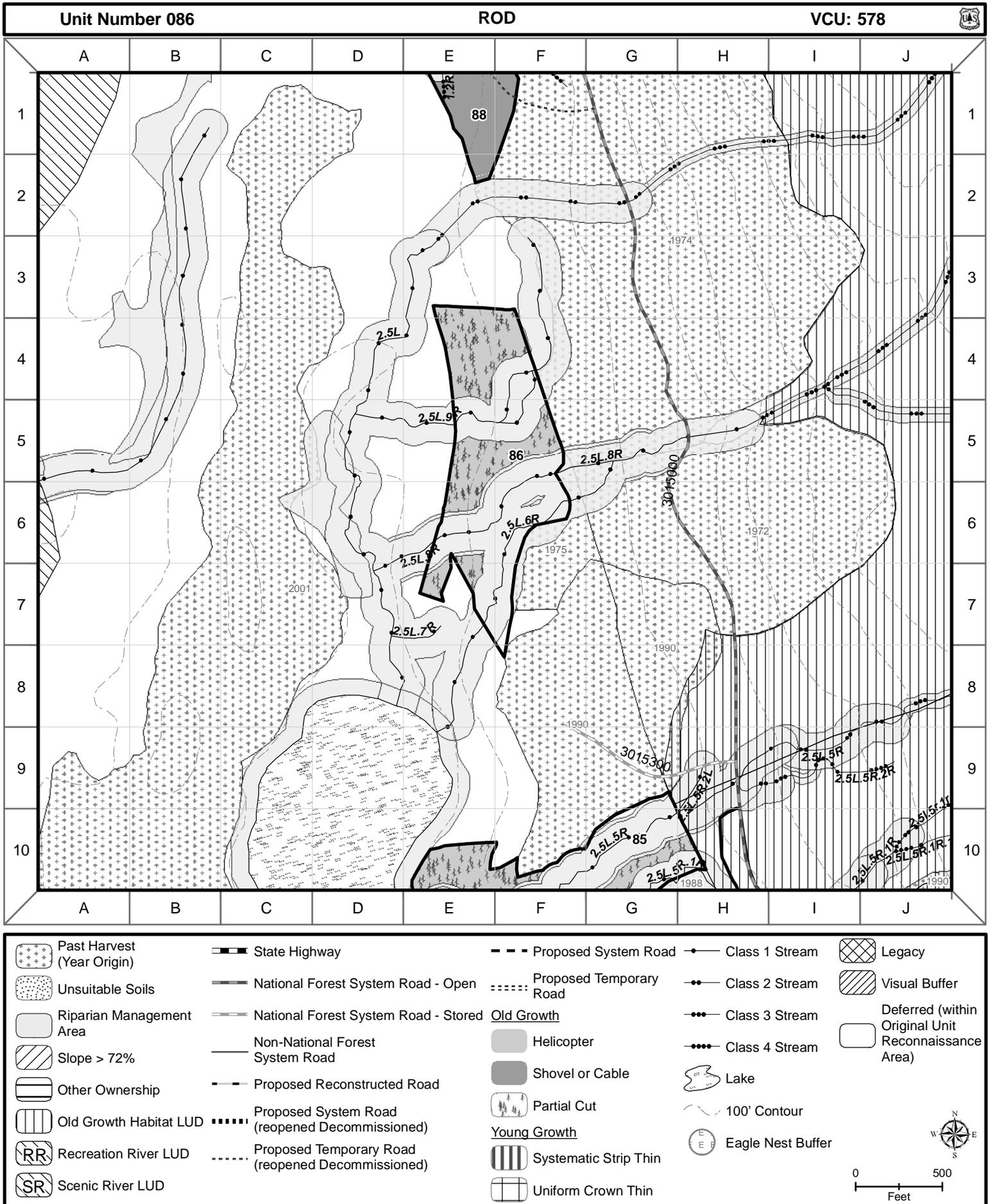
WILDLIFE: Unit includes marten habitat and deer winter range. Legacy standard and guideline does not apply in this VCU.

Alternative 4: This unit is not in alternative 4 due the location of the Interagency OGR.



Appendix 1

Unit Number: 86	Alternative: 3	Total Unit Acres: 9	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Helicopter	Net Harvest Volume (MBF): 185	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure with an western hemlock and western redcedar overstory. Damages and defects are moderate for all species. Mistletoe infection is high. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015000.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: streams are tributaries to Lake 1</p> <p>Stream#: 2.5L Class: I Flagging: B/W C-Type: PAB Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternative: 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.6R Class: I Flagging: B/W C-Type: PAB, PAO, MMO Concerns: none Buffer (RMA): Class I- greater of 100 feet (PAB, PAO) and 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternative: 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.7R Class: I Flagging: B/W C-Type: PAB Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternative: 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.8R Class: I Flagging: B/W C-Type: MMS, HCM Concerns: blowdown Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM- greater of 100 feet or to top of side-slope break. Alternative: 3 Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.5L.9R Class: I Flagging: B/W C-Type: MMO, PAB Concerns: none Buffer (RMA): Class I- greater of 120 feet (MMO) and 100 feet (PAB), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternative: 3 Buffer (RAW): no review needed Protection: Category A</p>			
GEOLOGY/KARST: No Concerns			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
SCENERY: No Concerns			
RECREATION: No Concerns			
<p>SOILS/WETLANDS: The unit has gentle slopes. Forested wetlands are dominant in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes marten habitat. Legacy standard and guideline does not apply in this VCU.</p> <p>Alternative4: Unit not in Alternative 4.</p>			



Appendix 1

Unit Number: 87	Alternatives: ROD	Total Unit Acres: 18.7	Prescription: Clearcut
VCU Number: 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 455	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The main damages affecting tree health and volume loss are heartwood / stem decay, bole cracks and checks. Mistletoe is heavy across the stand. The average defect rating for the unit is moderate to high. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 feet tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management- Clearcut This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel yarding to the proposed temporary road.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 3,900 feet; approximately 3,100 feet of the road will be constructed over decommissioned road bed. The first 500 feet of the proposed temporary road is also used to access a proposed temporary road accessing Unit 77. Unit is also accessed by reconstruction of NFS roads 3015200 and 3015230, totaling 11,800 feet. See road cards for information on NFS roads. These roads are also used to access Units 71-75 and 77.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES:</p> <p>Stream#: 2.5L Class: I Flagging: B/W C-Type: PAB, LCS, MMS Concerns: none Buffer (RMA): Class I- greater of 100 feet (PAB) and 120 feet (MMS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for LCS- greater of 100 feet or to top of side-slope break. Alternatives: 2, 3, and 5 Buffer (RAW): no review needed Protection: Category A</p> <p>Temporary roads for Unit 87: Two Class I stream crossings. Stream#: 2.5L, Class: I, C-Type: PAB. A log culvert or bridge is recommended. Stream#: 2.5L.B Class: I C-Type: PAB. A log culvert is recommended. Coho salmon, Dolly Varden char and Steelhead trout were identified at the proposed Class I crossings and will require a timing window of July 18 to August 15. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production LUD and is considered Not Seen. Originally northwest corner of unit was in Scenic River LUD (1 acre). This small portion was deferred as mitigation. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes are less than 15%. Forested wetlands are located intermittently throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road crosses about ¼ of an acre of forested wetlands. Wetland avoidance was not</p>			

practicable due to the extent of forested wetlands within the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (almost entire unit). Unit is adjacent to Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.

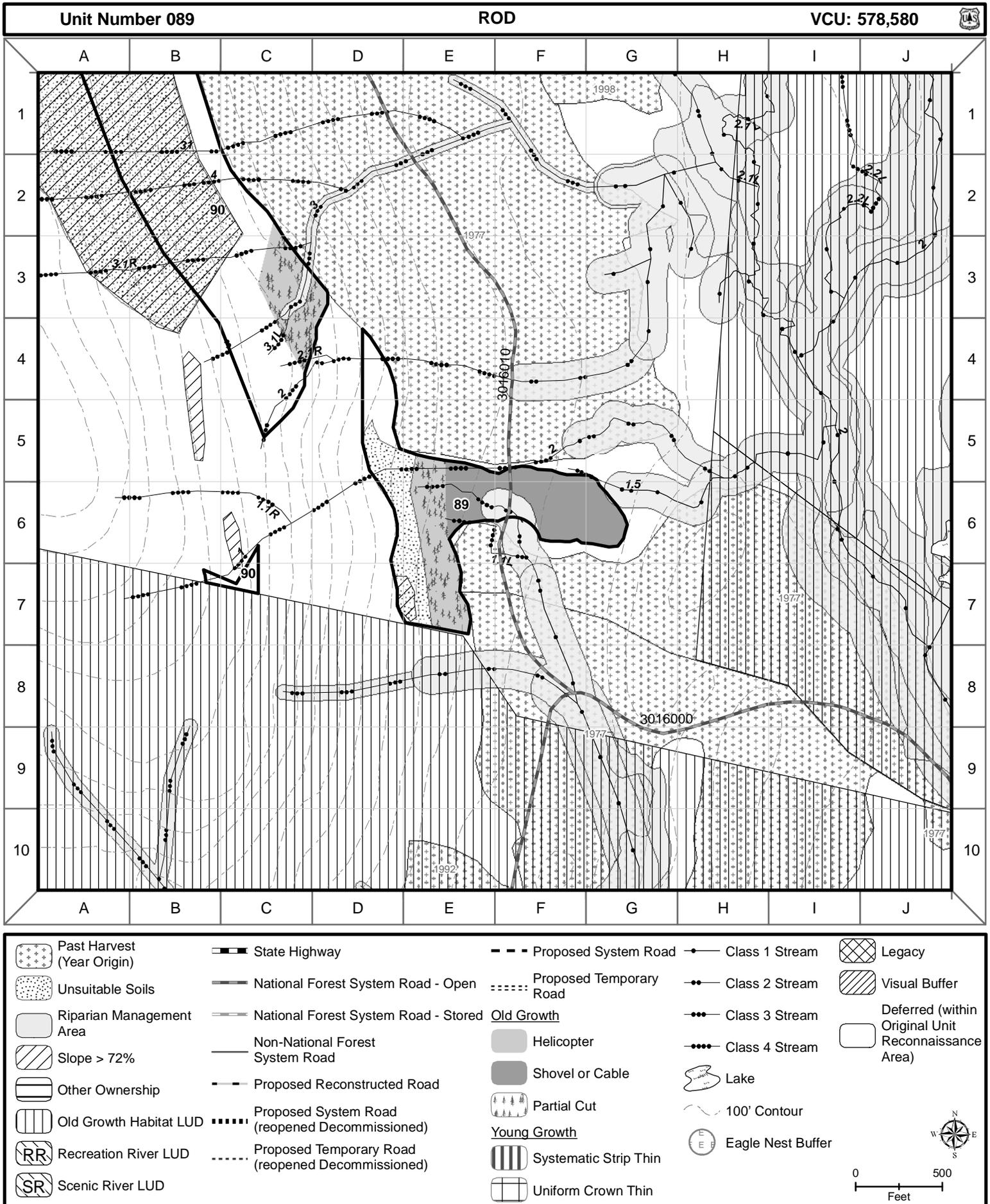
Unit Number:	88 Alternatives: 2, 3, 4 and 5	Total Unit Acres: 2 & 3 – 16.1 4 & 5 – 10.3	Prescription: 2, 3, 5 - Clearcut 4 – Two-age 40 and 50% Removal
VCU Number: 579, 580; 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 2 & 3 - 422 4 – 119 5 – 269	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of a western hemlock and western redcedar mixture. The larger western redcedar in the southern end of the unit are mostly dead or cull. The smaller diameter western hemlock and western redcedar have moderate defect and damages. Mistletoe is light to moderate, while stem decay is high in larger trees and moderate in all others. Windthrow risk is moderate. A past harvest area is adjacent to the unit along the eastern boundary. This past harvest has met green-up with regeneration over 5 feet tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Even-age Management -Clearcut (Alternatives 2, 3, 5) This stand is over-mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>A portion of the unit is in VCU 5790 which requires legacy. The potential opening is less than 20 acres. No legacy set- aside is required.</p> <p>Silvicultural Prescription: Two-age Management Patch Clearcut (Alternative 4 shovel settings) Harvest up to 40% of the setting acreage in patches up to five acres in size. Review the harvest prescription for specific instructions. Review the introduction to the unit cards for general guidance.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (Alternative 4 helicopter settings) Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for the unit or portions of the unit as a means to maintain large amounts of diverse structure to mitigate effects to wildlife. This system is not optimum for timber production.</p>			
TIMBER/YARDING: Alternatives 2 and 3: Shovel yarding to the proposed temporary road. Alternatives 4 and 5: Shovel and helicopter yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,900 feet in Alternatives 2 and 3. Approximately 800 feet of this road will be constructed across decommissioned road bed. Unit is accessed by a proposed temporary road of 800 feet in Alternatives 4 and 5. This road will be entirely constructed across a decommissioned road bed.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I, II, IV Flagging: B/W, G/W C-Type: PAO, HCO, MMO Concerns: none Buffer (RMA): Class I and II- greater of 100 feet (PAB) or 120 feet (MMO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I and II for HCO- greater of 100 feet or to top of side-slope break. Alternatives: 2, 3, 4, and 5 Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.2R Class: I, IV Flagging: B/W, G/W C-Type: MMO, PAB Concerns: none Buffer (RMA): Class I- greater of 120 feet (MMO) or 100 feet (PAB), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: 2, 3, 4, and 5 Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.2R.1R Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: none</p>			

Appendix 1

<p>Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: 2, 3, 4, and 5 Buffer (RAW): no review needed Protection: Category A and C</p>
<p>Stream#: 1.2R.2R Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: 2, 3, 4, and 5 Buffer (RAW): no review needed Protection: Category A and C</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Protection: Category C Concerns: none</p>
<p>Temporary roads for Unit 88: One Class I and one Class IV stream crossings. Stream#: 1.2R, Class: I, C-Type: PAB. A log culvert is recommended. Coho salmon were identified at the proposed Class I crossing and will require a timing window of June 15 to September 1. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Timber Production and Modified Landscape LUDs and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes in this unit are gentle. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>Alternatives 2 and 3: The proposed temporary road crosses about 1 acre of forested wetlands. Wetland avoidance was not practicable due to the extent of forested wetlands and streams within the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (almost entire unit). Unit is near Honker large OGR complex. Legacy standard and guideline applies to VCU 5790, however there are no requirements because portion of unit in this VCU is less than 20 acres. Legacy standard and guideline does not apply in VCUs 5780 and 5800.</p> <p>Alternative 4: Northern portion of unit is helicopter and a portion was dropped to minimize road building. Prescription is two-age management with 40% removal by area for the shovel settings and uneven-age management with 50% removal for the helicopter setting to address concerns from the state and connectivity between areas of past harvest, and maintain other habitat values. No Legacy acres are required because unit is less than 20 acres and uneven-aged management is prescribed.</p>

Appendix 1

Unit Number: 89	Alternatives: ROD	Total Unit Acres: 11.4	Prescription: Clearcut
VCU Number: 580; 578 Phase 2	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 186	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has generally old-growth stand structure with indications of uneven-age to two-aged stand structure resulting from past wind damage. The dominant damage agents are heavy mistletoe and moderate heart/stem decay, especially in the larger western hemlock. Western redcedar has higher than average stem form deformity. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Helicopter and shovel yarding to NFS road 3016010.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: II, IV Flagging: B/W, O/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is about half Low and half Very Low. It is entirely in Modified Landscape LUD and about 6 acres are in Middleground; the remainder is Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes range from about 50 to 120%. All slopes greater than 72% were excluded from harvest. About 4 acres of the original unit were excluded due to very high landslide potential, high colluvial activity, and extremely steep slopes. In the remainder of the unit, the soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4). Forested wetland soils are found intermittently along the gentler slopes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (nearly entire unit), all of which is also deep snow marten winter habitat/deer winter range. Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in these VCUs.</p> <p><u>OGR Boundary</u> OGR boundary moved to the north so unit only abuts OGR to the south.</p>			

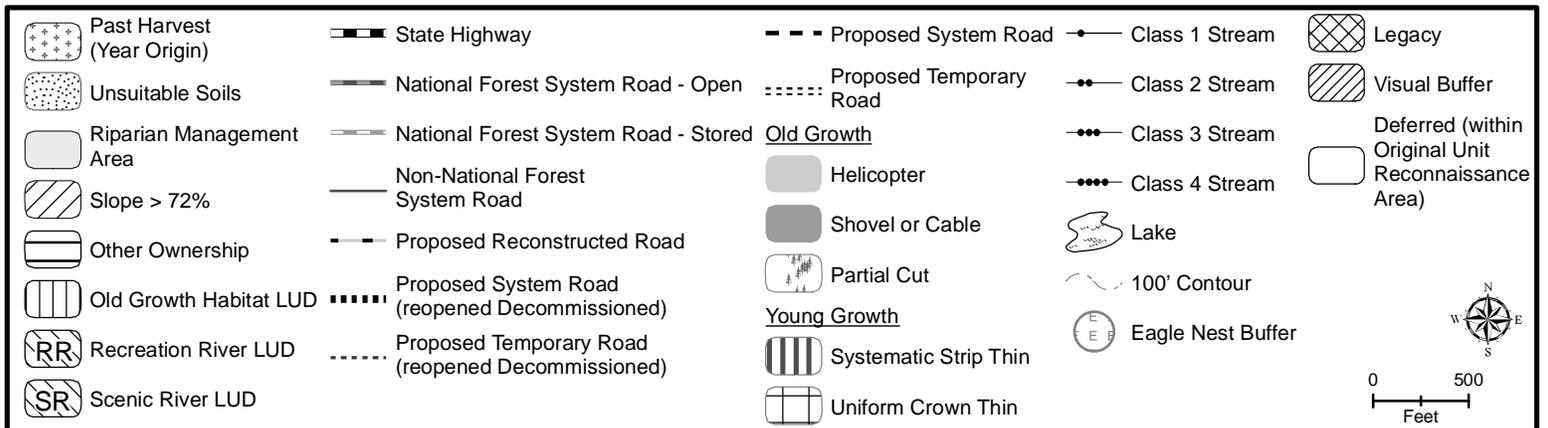
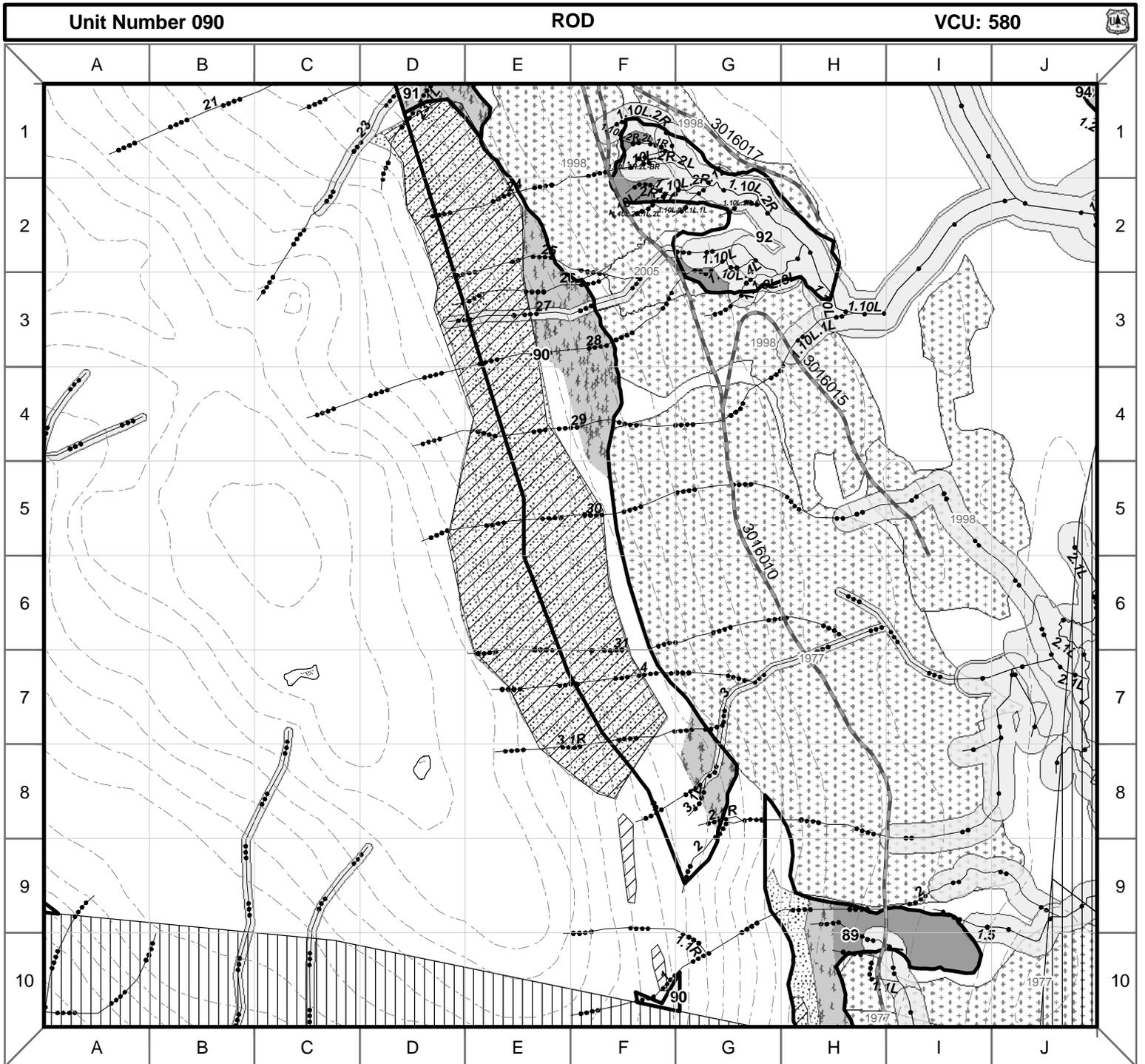


Appendix 1

Unit Number: 90	Alternatives: ROD	Total Unit Acres: 16.5	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 217	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth high elevation stand characteristics. The majority of the merchantable timber was free of mistletoe but had moderate to high heartwood and stem decay. The timber is over-mature with numerous dying or dead tops. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for the unit to address soil concerns. This system is not optimum for timber production.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3016010.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 3 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCL Concerns: blowdown Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCL- none Alternatives: ROD Buffer (RAW): review required on south side Protection: Category B and C</p> <p>Stream#: 23 Class: III Flagging: O/W C-Type: HCL Concerns: blowdown Buffer (RMA): Class III for HCL- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 27 Class: III Flagging: O/W C-Type: HCL Concerns: blow down and active erosion Buffer (RMA): Class III for HCL- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on south side Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is almost entirely in Timber Production LUD and is mostly Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Portions of the western border of the unit are adjacent to the Thorne River inventoried roadless area.</p>			
<p>SOILS/WETLANDS: Slopes in this unit range from 30% to greater than 72%. All slopes greater than 72% are excluded from harvest. Approximately 142 acres in the original unit (including unit 91) were excluded due to very high landslide potential, colluvial activity, historic landslides, and steep slopes; however, many of these acres are in roadless and were excluded for that reason as well. No wetlands were identified in the current unit. A minimum of full suspension partial harvest is required for the remainder of the unit (R10 BMPs 12.5, 13.5 and 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Unit is near Honker large OGR complex.</p>			

Legacy standard and guideline does not apply in this VCU.

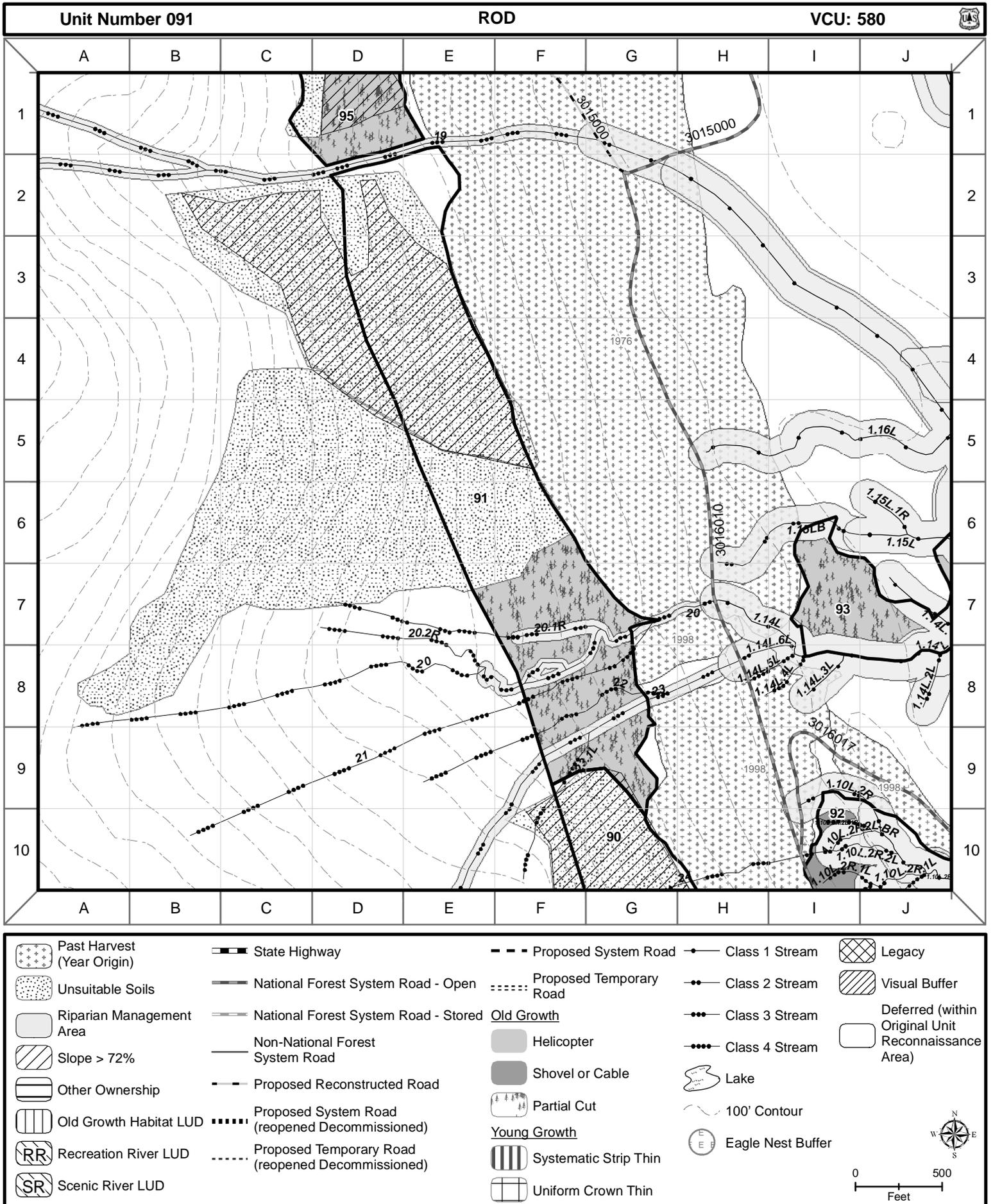
Appendix 1



Unit Number: 91	Alternatives: ROD	Total Unit Acres: 16.9	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 66	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit is an old-growth stand with mostly high elevation characteristics. The majority of the merchantable timber was free of mistletoe, but had moderate to high heartwood and stem decay. Many trees displayed signs of being over-mature with dying or dead tops. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for the unit to address soil concerns. This system is not optimum for timber production.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3016010.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 19 Class: III Flagging: O/W C-Type: HCL Concerns: none Buffer (RMA): Class III for HCL- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review required Protection: Category B</p> <p>Stream#: 20 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCL Concerns: blowdown Buffer (RMA): Class III for HCM and HCL- to the top of the side-slope break. Class IV for HCL- none Alternatives: ROD Buffer (RAW): review required on south side Protection: Category B and C</p> <p>Stream#: 20.1R Class: III, IV Flagging: O/W, G/W C-Type: HCL Concerns: none Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCL- none Alternatives: ROD Buffer (RAW): review required on south side Protection: Category B and C</p> <p>Stream#: 23 Class: III Flagging: O/W, G/W C-Type: HCL, HCO Concerns: blowdown Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required on south side Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Western border of unit is adjacent to the Thorne River inventoried roadless area.</p>			
<p>SOILS/WETLANDS: Slopes in this unit range from 30% to greater than 72%. All slopes greater than 72% are excluded from harvest. Approximately 142 acres in the original unit (including Unit 90) were excluded due to very high landslide potential, colluvial activity, historic landslides, and steep slopes; however, many of these acres are in roadless and were excluded for that reason as well. No wetlands were identified in the current unit. A minimum of full suspension partial harvest is required for the remainder of the unit (R10 BMPs 12.5, 13.5 and 13.9 and National</p>			

Appendix 1

Core BMPs Plan-2, Veg-2, and Veg-5).
WILDLIFE: Unit includes average snow deer winter range (entire unit). Unit is near Honker large OGR complex and IRA. Legacy standard and guideline does not apply in this VCU.



Appendix 1

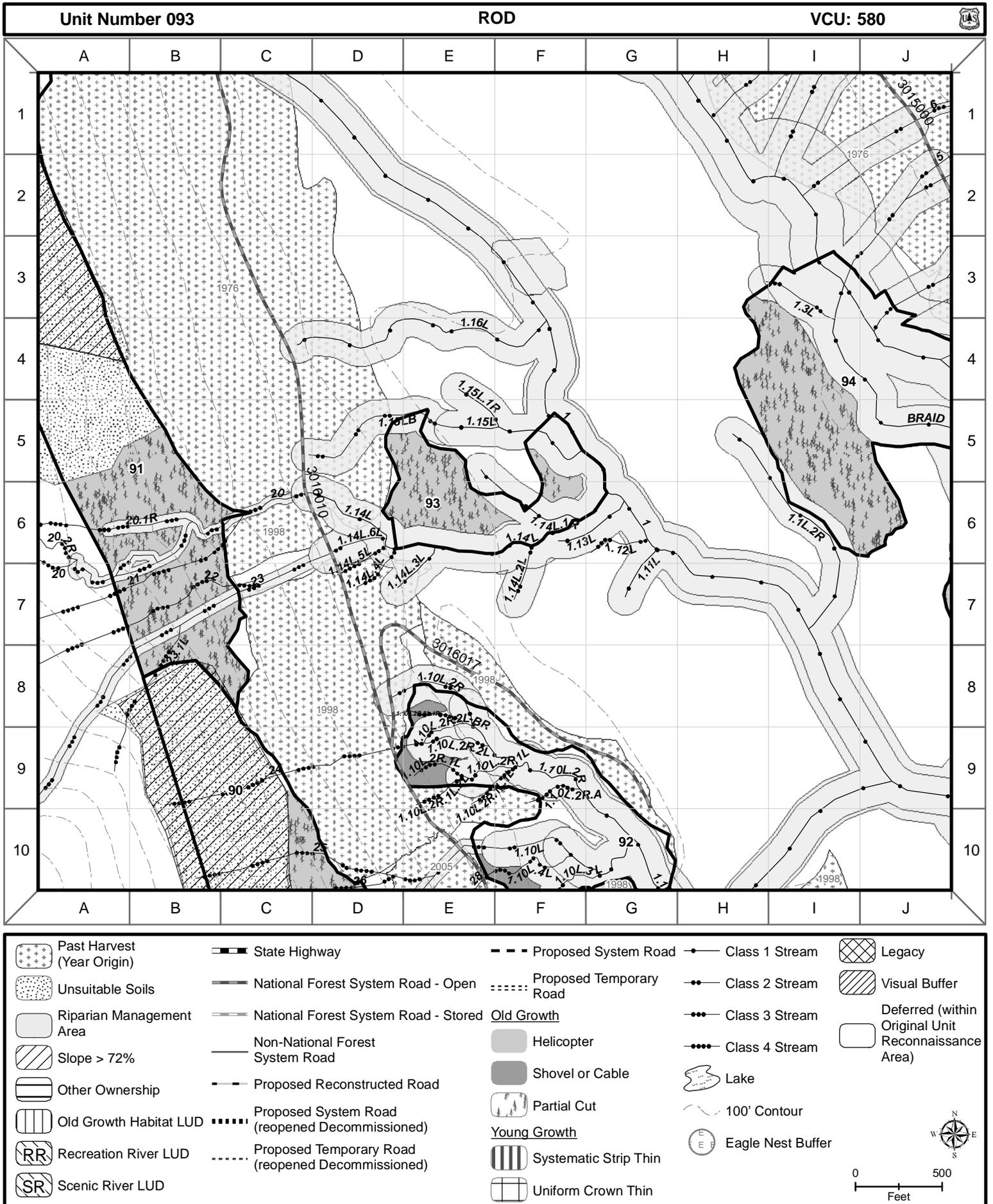
Unit Number: 92	Alternatives: ROD	Total Unit Acres: 2.4	Prescription: Clearcut
VCU Number: 580	Yarding System: Shovel	Net Harvest Volume (MBF): 38	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The overstory consists primarily of a mixture of western hemlock and western redcedar with scattered Sitka spruce. Stand structure is old growth. Defect and damages are moderate on average, but high especially in the western hemlock due to heavy heart and stem decay. Mistletoe is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management -Clearcut This stand is mature to over-mature with high stem decay and moderate overall defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Shovel yarding to NFS road 3016010.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River			
<p>Stream#: 1.10L Class: I, II, III Flagging: B/W, O/W C-Type: FPS, MMS, HCL Concerns: blowdown, active erosion, debris-induced braiding Buffer (RMA): Class I- greater of 130 feet (FPS) or 120 feet (MMS), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II and III for HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 1.10L.1L Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.10L.3L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown and active erosion Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.10L.4L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.10L.2R Class: I, II Flagging: B/W C-Type: MMS, HCO Concerns: blowdown Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I and II for HCO- greater of 100 feet or to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.10L.2R.1L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.10L.2R.2L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			

Stream#: 1.10L.2R.2L-BR	Class: II	Flagging: B/W	C-Type: HCO	Concerns: none
Buffer (RMA):	Category II for HCO- greater of 100 feet or to the top of the side-slope break.			
Alternatives: ROD	Buffer (RAW):	no review needed	Protection:	Category A
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC or MM	
Buffer (RMA):	none	Buffer (RAW):	no review needed	Protection: Category C
GEOLOGY/KARST: No Concerns				
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.				
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.				
RECREATION: No concerns				
SOILS/WETLANDS: Slopes in this unit are 30% or less. The unit contains about 65% forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).				
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (most of northern piece). Unit is near Honker large OGR complex. Legacy standard and guideline does not apply in this VCU.				

Unit Number: 93	Alternatives: ROD	Total Unit Acres: 6.8	Prescription: Clearcut
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 128	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old growth stand structure. The overstory consists primarily of western hemlock with western redcedar as a secondary component. Damages and defects are generally high for all species. In the western hemlock stem and heart decay are high, while mistletoe is generally light. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature to over-mature with high stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3016017.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: MMS Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.11L Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.13L Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.14L Class: I Flagging: B/W C-Type: MMS, HCL Concerns: blowdown Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCL- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.14L.1R Class: I, II Flagging: B/W C-Type: MMO, PAO Concerns: none Buffer (RMA): Class I- greater of 120 feet (MMO) or 100 feet (PAO), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.14L.2L Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.14L.3L Class: I Flagging: B/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class I for HCO- greater of 100 feet or to top of side-slope break.</p>			

Appendix 1

Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A
Stream#: 1.14L.6L	Class: II Flagging: B/W	C-Type: HCO Concerns: blowdown
Buffer (RMA): Class I for HCO- greater of 100 feet or to top of side-slope break.		
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A
Stream#: 1.15L	Class: I Flagging: B/W	C-Type: MMO Concerns: none
Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.		
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A
Stream#: 1.15L-B	Class: II Flagging: B/W	C-Type: FPO Concerns: none
Buffer (RMA): Class II for FPO- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.		
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A
Stream#: 1.15L.1R	Class: I Flagging: B/W	C-Type: MMO Concerns: none
Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.		
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A
All other streams in unit:	Class: IV Flagging: G/W	C-Type: HC or MM
Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C
GEOLOGY/KARST: No Concerns		
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.		
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.		
RECREATION: No concerns		
SOILS/WETLANDS: Slopes in this unit are 15% or less. The unit contains about 15% forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).		
WILDLIFE: Unit includes average snow deer winter range (entire unit). Unit is near Honker large OGR complex and IRA. Legacy standard and guideline does not apply in this VCU.		
<u>Old-growth Reserve (OGR) Boundary</u>		
OGR boundary moved northeast, farther from unit.		



Appendix 1

Unit Number: 94	Alternatives: ROD	Total Unit Acres: 18.3	Prescription: Clearcut
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 320	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of western hemlock, western redcedar and Alaska-cedar. The stand is being affected by moderate heart rot, bole cracks, dead tops and heavy mistletoe infection. The overall average defect was rated as moderate. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management-Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: One population of whiteflower rein orchid, with seven plants, was found just to the south of the proposed harvest unit. The population is within the indirect effects area for all alternatives.</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: FPL Concerns: blowdown Buffer (RMA): Class I for FPL- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.3L Class: I, IV Flagging: B/W, G/W C-Type: MMO Concerns: blowdown Buffer (RMA): Class I for MMO greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.1L.2R Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes in this unit are 35% or less. The unit contains about 30% forested wetland (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern piece). Legacy standard and guideline does not apply in this VCU.</p>			

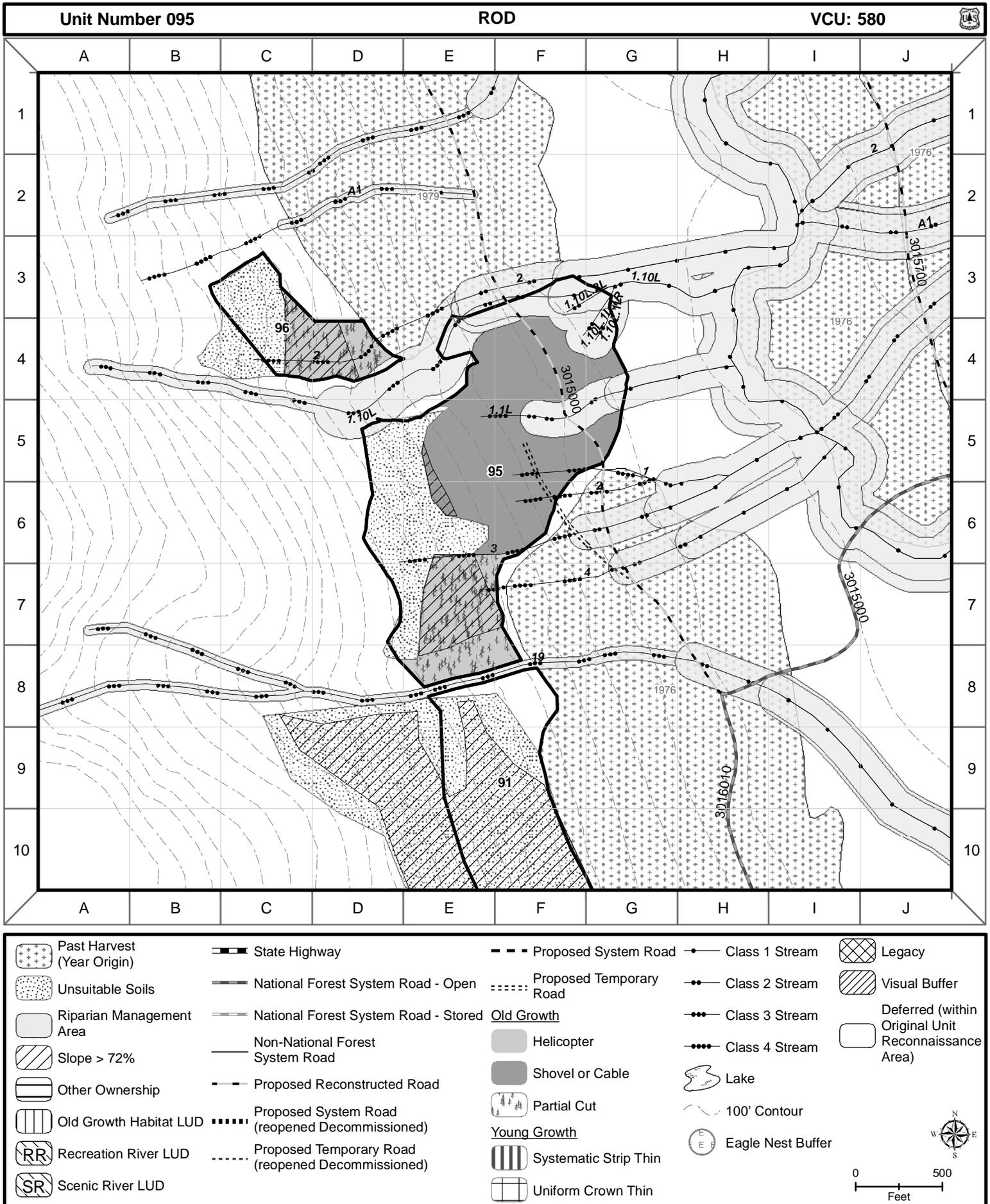
Old-growth Reserve (OGR) Boundary

OGR boundary moved to the northeast, farther from unit.

Unit Number: 95	Alternatives: ROD	Total Unit Acres: 29.0	Prescription: Clearcut
VCU Number: 580	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 455	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure with some small areas of uneven-age structure. The overstory consists primarily of western hemlock, along with western redcedar. Scattered Sitka spruce are present along with isolated patches of Alaska-cedar. Defect is moderate overall. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel and helicopter settings yard to NFS road 3015000. Cable settings yard to the proposed temporary road and NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,000 feet. Approximately 300 feet of this road will be constructed over decommissioned road bed. Reconstruction of NFS road 3015000, totaling 2,400 feet is required to access the unit. This road is also used to access Units 96, 98, 100, 107, 108, and 109. See road card for information on NFS road.</p>			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne River			
<p>Stream#: 1.1L Class: I, II, IV Flagging: B/W, G/W C-Type: MMO, HCO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p>			
<p>Stream#: 1.10L Class: I, II, III Flagging: B/W, O/W C-Type: MMO, HCL, AFH, HCM Concerns: active erosion Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCL- greater of 100 feet or to the top of the side-slope break. Class III for AFH- greater of 140 feet or active portion of the alluvial fan. Class III for HCM- to top of side-slope break. Alternatives: ROD Buffer (RAW): review required for south side. Protection: Category A and B</p>			
<p>Stream#: 1.10.1L Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>Stream#: 1.10L.1L.1R Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>Stream#: 1.10L.2L Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM</p>			

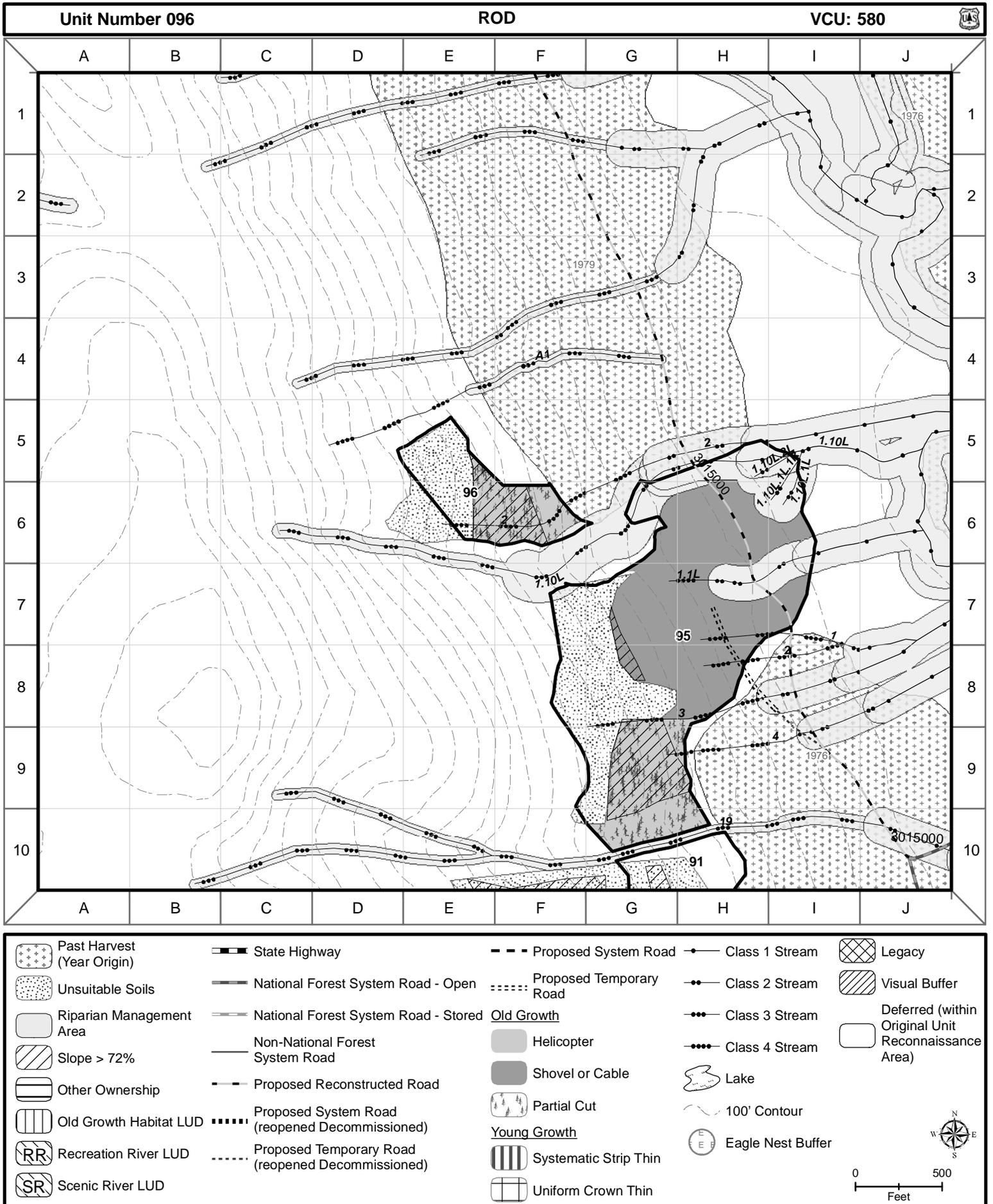
Appendix 1

Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C
<p>Temporary roads for Unit 95: Four Class IV stream crossings. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>		
<p>GEOLOGY/KARST: No Concerns</p>		
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>		
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>		
<p>RECREATION: Southeastern corner of unit is adjacent to Thorne River inventoried roadless area.</p>		
<p>SOILS/WETLANDS: Slopes range from 10 to 75%. Approximately 10 acres were excluded from harvest due to brush fields, steep slopes, and high landslide potential. Approximately 6 acres of slopes greater than 72% are suitable for harvest with partial suspension. Forested wetlands were identified east of the 3015000 road (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, the soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>		
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern 1/2 of unit). Legacy standard and guideline does not apply in this VCU.</p>		



Appendix 1

Unit Number: 96	Alternatives: ROD	Total Unit Acres: 4.4	Prescription: Clearcut
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume 36 (MBF):	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure with some small areas of uneven-age structure. Western hemlock and western redcedar make up the overstory. The dominant damage agents affecting overall tree health and volume are moderate stem deformity and stem decay. Mistletoe infection as a whole is light. Windthrow risk is moderate.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015000, totaling 2,400 feet. This road is also used to access Units 95, 98, 100, 107, 108, and 109. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1.10L Class: III Flagging: O/W C-Type: AFH, HCL, HCM Concerns: active erosion Buffer (RMA): Class III for AFH- greater of 140 feet or to extent of the fan. Class III for HCL- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to top of side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: A1 Class: III, IV Flagging: O/W, G/W C-Type: HCM Concerns: none known Buffer (RMA): Class III for HCM- greater of 100 feet or to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes range from 60 to 100% with 85% slopes common. Approximately 6 acres were excluded from harvest due to brush fields, alder chutes, and very high landslide potential. Approximately 3 acres of slopes greater than 72% are suitable for harvest with partial suspension. No wetlands were identified in the unit. A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.</p>			



Appendix 1

Unit Number: 98	Alternatives: ROD	Total Unit Acres: 5.5	Prescription: Clearcut
VCU Number: 580	Yarding System: Shovel, Cable	Net Harvest Volume (MBF): 142	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure with western redcedar, Alaska-cedar and lesser amounts of hemlock and Sitka spruce. The overstory has moderate stem decay with light mistletoe. Alaska-cedar decline is present in the stand in minor patches. Windthrow risk is moderate. All adjacent previous harvest areas have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature to over-mature with moderate stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
<p>TIMBER/YARDING: Shovel and cable yarding to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015000, totaling 11,800 feet. This road is also used to access Units 95, 96, 100, 107, 108, and 109. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 3 Class: II Flagging: B/W C-Type: MMO, HCL, HCO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet or to extent of riparian zone. Class II for HCL and HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 3.1R Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCO Concerns: blowdown Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class III for HCO- to top of side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p> <p>Stream#: 3.2L Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 4 Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCM Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet or to extent of riparian zone. Class II and III for HCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No Concerns</p>			
<p>SOILS/WETLANDS: Slopes average 45 to 55%. Forested wetlands are dominant east of the 3015000 road (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of</p>			

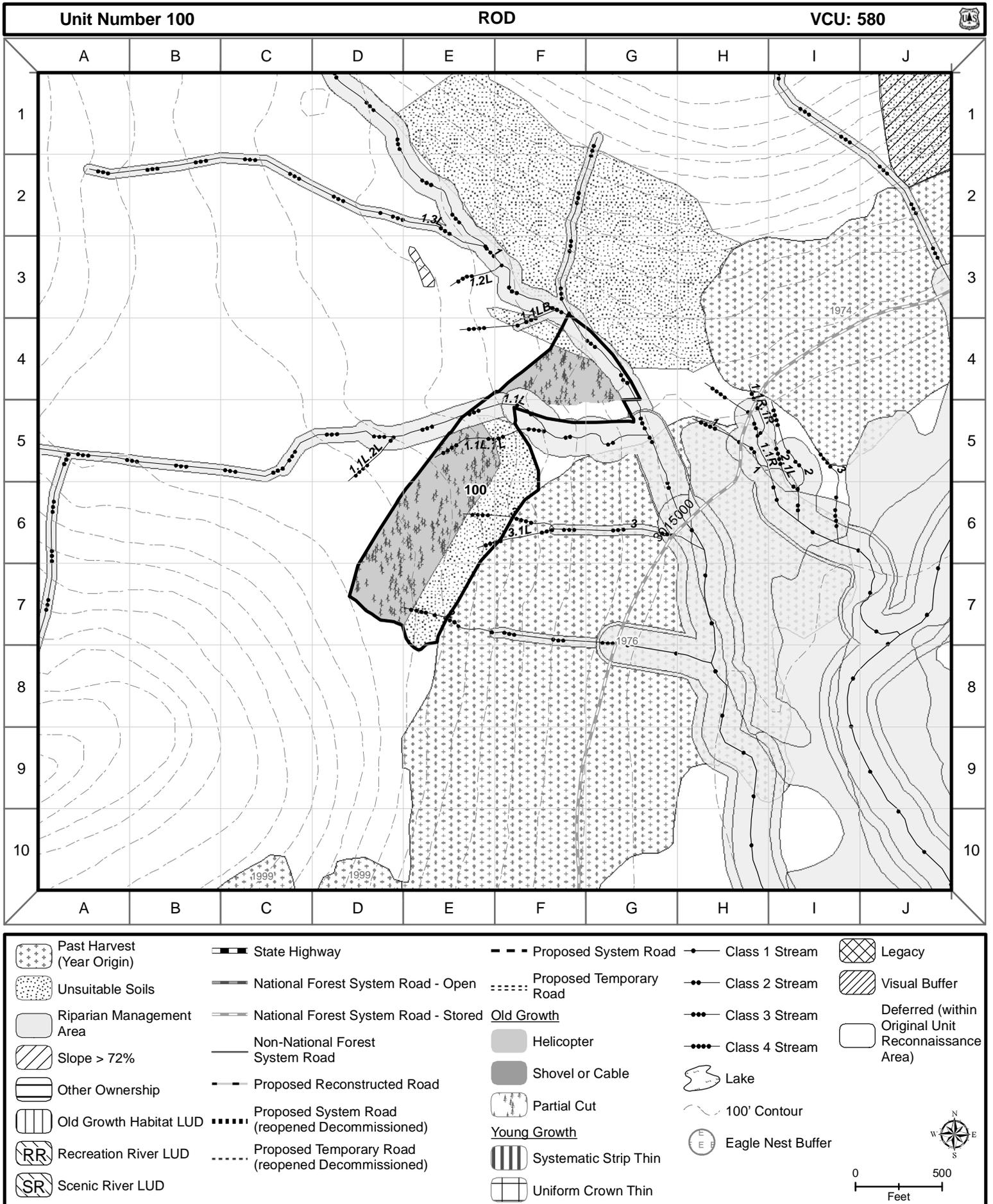
partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).

WILDLIFE: Unit includes marten habitat. Legacy standard and guideline does not apply in this VCU. Unit includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.

Unit Number: 100	Alternatives: ROD	Total Unit Acres: 13.5	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 210	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Mistletoe evidence was light. The overstory is mature to over- mature and typically moderate defect with stem decay resulting in most defect deductions. Windthrow risk is moderate. All previous harvest areas in the vicinity of the unit have met green-up with regeneration over 5 foot tall and meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address economic concerns.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015000, totaling 11,800 feet. This road is also used to access Units 95, 96, 98, 107, 108, and 109. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: III Flagging: O/W C-Type: HCV, HCM Concerns: blowdown Buffer (RMA): Class III for HCV and HCM- to the top of the side-slope break Alternatives: ROD Buffer (RAW): review required for south exposure Protection: Category B</p> <p>Stream#: 1.1L Class: II, III Flagging: B/W, O/W C-Type: HCM, HCD Concerns: blowdown Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for south exposure Protection: Category A and B</p> <p>Stream#: 1.1LB Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Northwestern border of unit is adjacent to the Thorne River inventoried roadless area.</p>			
<p>SOILS/WETLANDS: Slopes in this unit range from gentle to greater than 72%. All slopes greater than 72% are deferred from harvest. Approximately 7 acres were excluded due to very high landslide potential, active and historic landslides, colluvial activity, MMI4 soils, steep slopes, and unstable drainages. Forested wetlands and emergent sedge fens are dominant on slopes less than 40% and are intermixed with upland vegetation. These are located throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core</p>			

Appendix 1

BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (very southern part of northern piece). Legacy standard and guideline does not apply in this VCU.

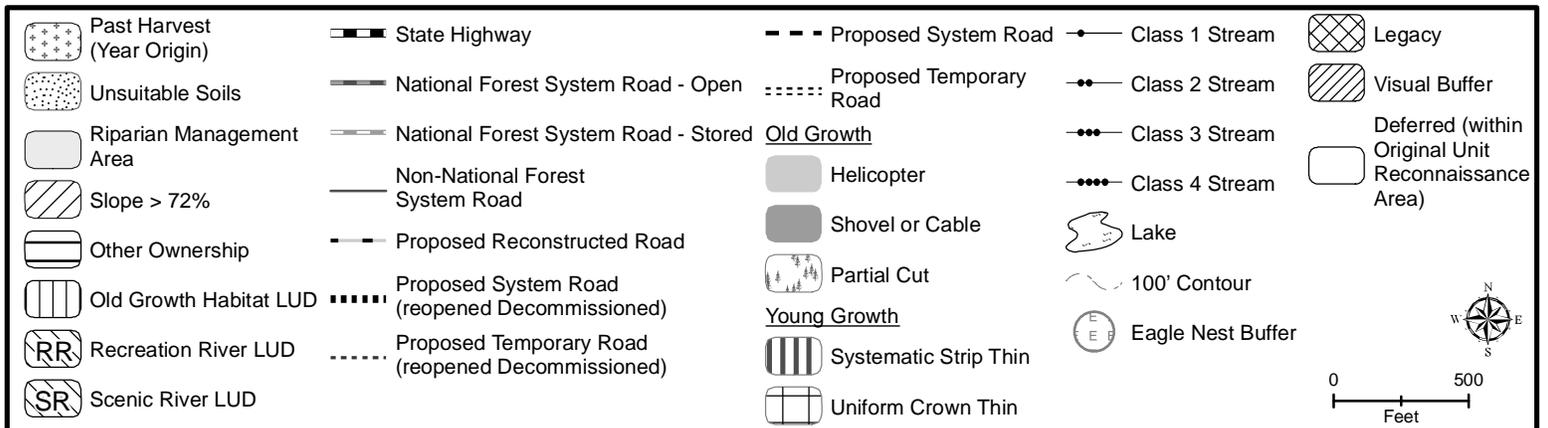
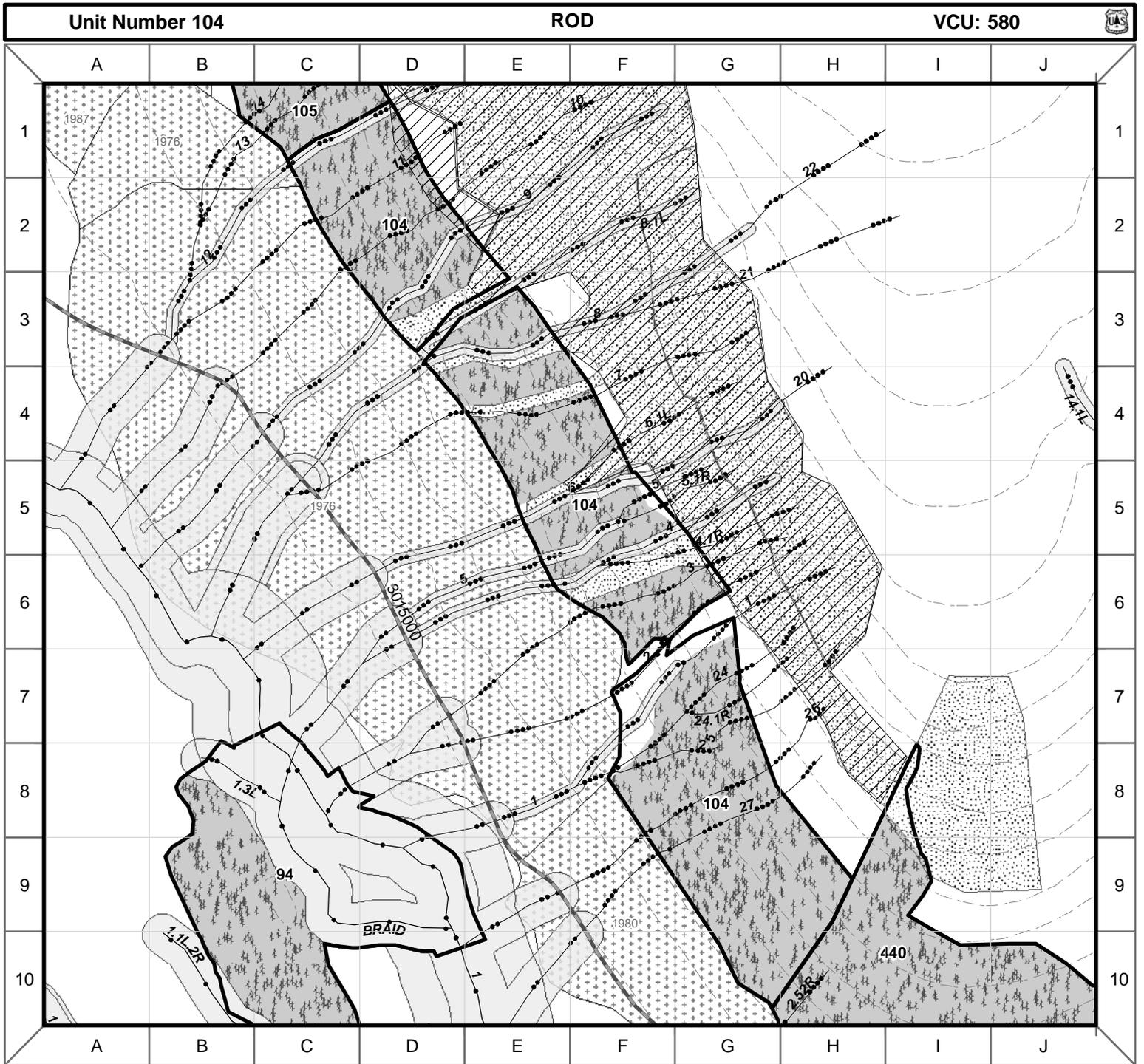


Appendix 1

Unit Number: 104	Alternatives: ROD	Total Unit Acres: 54.2	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 464	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Old-growth stand structure with moderate defect. Stem rots and stem form results in most volume deductions. Mistletoe was not noted in the stand. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 foot tall and meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p> <p>TIMBER/YARDING: Helicopter yarding to NFS road 3015000.</p> <p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p> <p>BOTANY: No Concerns</p> <p>INVASIVE SPECIES: No Concerns</p> <p>FISHERIES: Streams are tributaries to Thorne River.</p> <p>Stream#: 1 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p> <p>Stream#: 4 Class: III and IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III- for HCM to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p> <p>Stream#: 5 Class: III and IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III- for HCM to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p> <p>Stream#: 6 Class: III and IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III- for HCM to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p> <p>Stream#: 8 Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p> <p>Stream#: 8.1L Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion</p>			

<p>Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p>
<p>Stream#: 9 Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p>
<p>Stream#: 12 Class: III and IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III- for HCM to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p>
<p>Stream#: 22 Class: III and IV Flagging: O/W, G/W C-Type: HCD, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III- for HCD to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p>
<p>Stream#: 30 Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p>
<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: Thorne River inventoried roadless area is adjacent to northeastern boundary of unit.</p>
<p>SOILS/WETLANDS: Slopes range from about 45 to 100%. Approximately 3 acres of slopes greater than 72% are suitable for harvest with full suspension partial harvest requirements. Approximately 6 acres (160 acres from original unit) were excluded due to very high landslide potential, active and historic landslides, colluvial activity, steep wet slopes, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). Two debris torrents/avalanches have been removed from the unit. One debris torrent remains in the southern part of the unit; it occupies less than 2 acres of the unit, is marked by alders and can be operated around. No wetlands were identified in the unit.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (two western lobes of unit). Legacy standard and guideline does not apply in this VCU.</p>
<p><u>Old-growth Reserve (OGR) Boundary:</u> OGR boundary moved to the northeast, and is adjacent to eastern boundary of unit.</p>

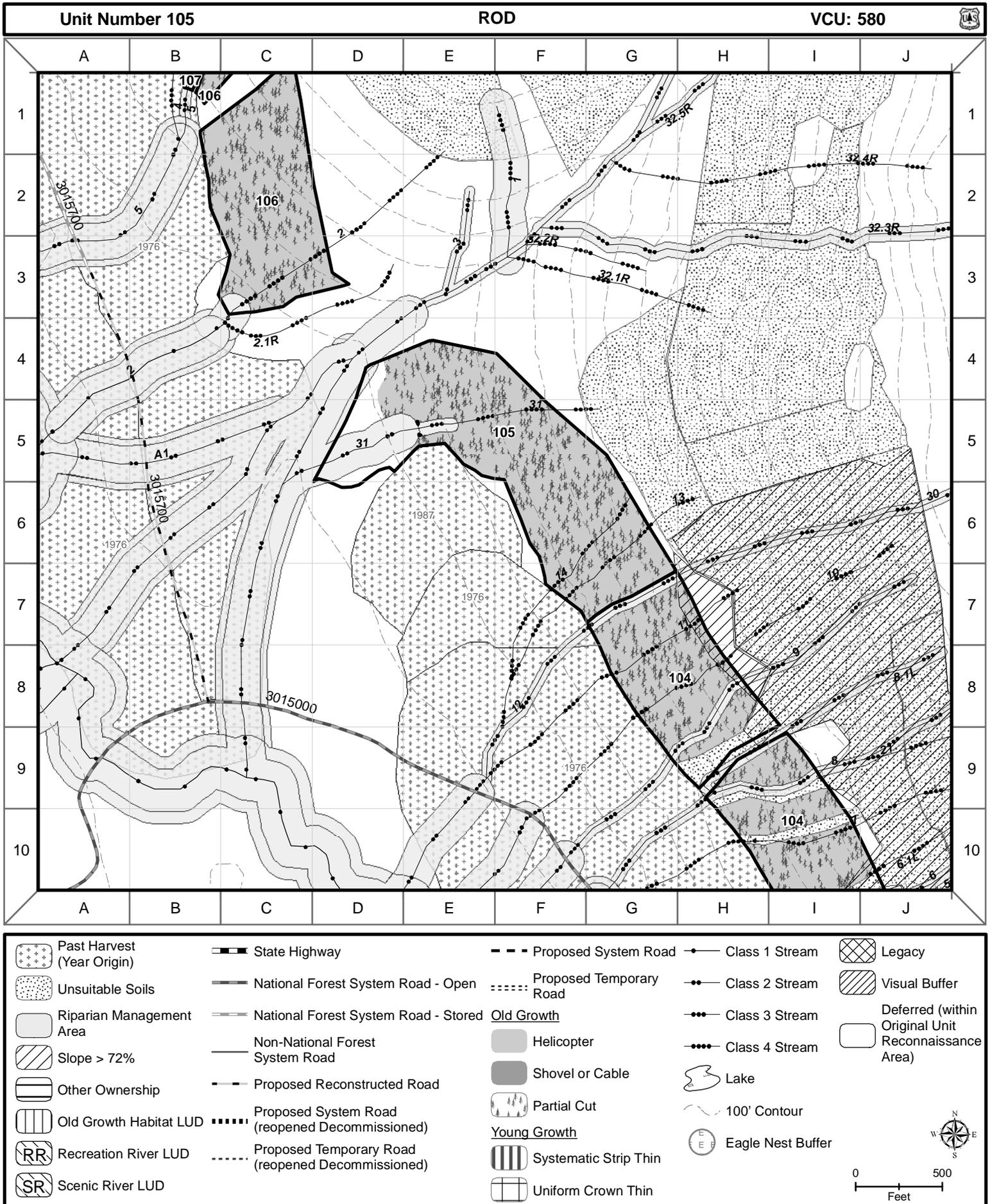
Appendix 1



Unit Number: 105	Alternatives: ROD	Total Unit Acres: 25.9	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 356	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Old-growth stand structure with western redcedar, western hemlock, Sitka spruce and Alaska-cedar. Moderate defect with stem rots and stem form results in most volume deductions. Mistletoe was not noted in the stand. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS roads 3015000 and 3015700.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 12 Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p> <p>Stream#: 31 Class: III and IV Flagging: O/W, G/W C-Type: HCL, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III- for HCL to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B and C</p> <p>Stream#: 32 Class: III Flagging: O/W C-Type: HCD Concerns: blowdown and active erosion Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p> <p>Stream#: 32.3r Class: III Flagging: O/W C-Type: HCD, HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCD and HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p> <p>Stream#: 32.5r Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category B</p> <p>Stream#: A1 Class: II, III Flagging: B/W, O/W C-Type: AFM, HCL, HCM</p>			

Appendix 1

Concerns: blowdown Buffer (RMA): Class II for AFM- greater of 140 feet or active portion of alluvial fan. Class III for HCL and HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for Class III streams with south exposure. Protection: Category A and B
All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: Roadless area is adjacent to eastern boundary of unit.
SOILS/WETLANDS: Slopes range from about 45 to 65%. All slopes greater than 72% identified in the original unit were excluded from harvest. These areas were excluded due to very high landslide potential, active and historic landslides, colluvial activity, steep wet slopes, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). No wetlands were identified in the unit.
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (western 3/4 of unit). Legacy standard and guideline does not apply in this VCU.
<u>Old-growth Reserve (OGR) Boundary</u> OGR boundary moved to the northeast, and is adjacent to eastern boundary of unit



Appendix 1

Unit Number: 106	Alternatives: ROD	Total Unit Acres: 18.4	Prescription: 25% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 97	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory is generally a patchy distribution of western redcedar, Alaska-cedar and western hemlock with scattered Sitka spruce. The stand is typically moderate defect with stem rot, broken tops and mistletoe infections being of concern. Mistletoe rating was moderate over most of the unit. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered an opening.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015700.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015700, totaling 2,600 feet. This road is also used to provide access to Unit 107. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 2 Class: I, II, IV Flagging: B/W, G/W C-Type: AFH, HCO Concerns: none Buffer (RMA): Class I for AFH- greater of 140 feet or the active portion of the alluvial fan. Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review required Protection: Category A and C</p> <p>Stream#: 5 Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review required Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review required Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: Thorne River inventoried roadless area is adjacent to eastern boundary of unit.			
SOILS/WETLANDS: Slopes range from about 30 to 95%. All slopes greater than 72% identified in the original unit were excluded from harvest. Approximately 150 acres of the original unit were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). Forested wetlands were identified on slopes less than 40% (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).			
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (central 1/3 of unit). Legacy standard and guideline does not apply in this VCU.			

Old-growth Reserve (OGR) Boundary

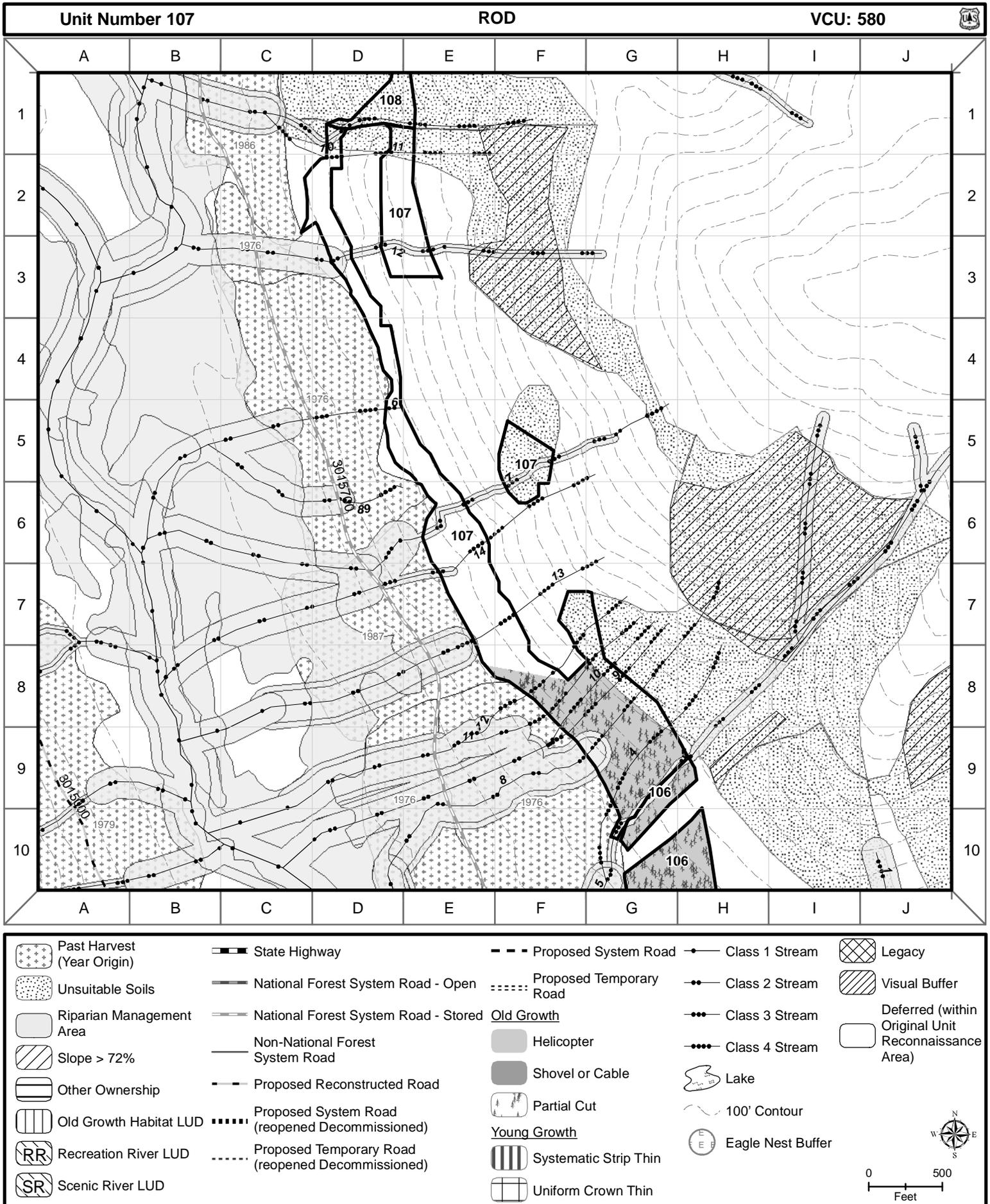
OGR boundary moved to the northeast, and is adjacent to eastern boundary of unit.

Unit Number: 107	Alternatives: ROD	Total Unit Acres: 11.3	Prescription: 25% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 78	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory is typically moderate defect with stem rot, broken tops and mistletoe infections being of concern. Mistletoe rating was moderate over most of the unit. Blowdown is affecting overall stand structure, breaking up the continuity of the canopy. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015700.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015700, totaling 2,600 feet. This road is also used to provide access to Unit 106. See road cards for information on NFS roads.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 5 Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 8 Class: II , IV Flagging: B/W, G/W C-Type: AFH, HCL Concerns: blowdown and active erosion Buffer (RMA): Class II for AFH- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for HCL- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Northeastern boundary is adjacent to Thorne River inventoried roadless area.</p>			
<p>SOILS/WETLANDS: Slopes range from about 35 to 120%. All slopes greater than 72% identified in the original unit were excluded from harvest. Approximately 150 acres of the original unit were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). Forested wetlands were not identified in the current unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.</p>			

Appendix 1

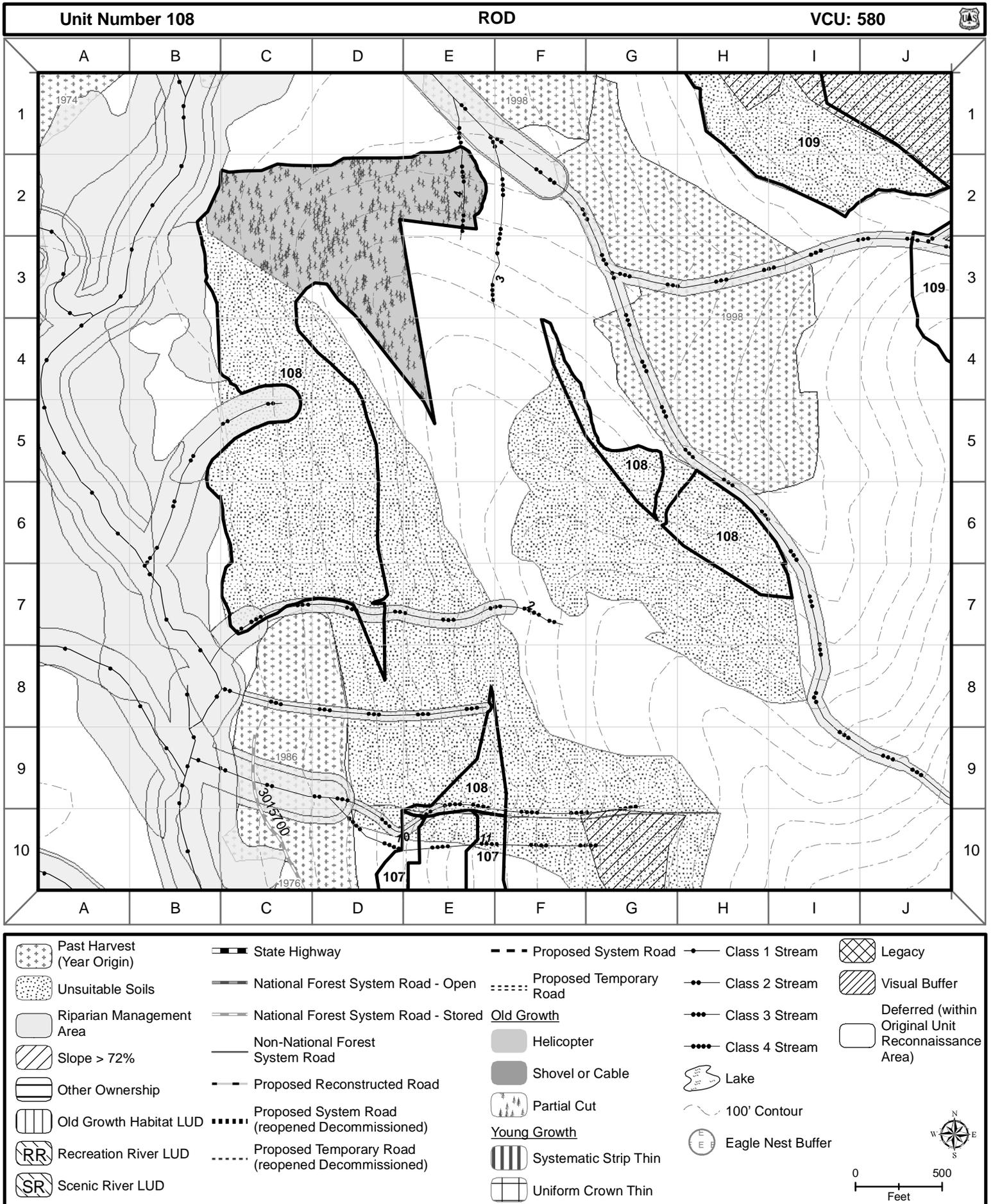
Old-growth Reserve (OGR) Boundary

OGR boundary moved to the northeast, and is adjacent to eastern boundary of unit.



Appendix 1

Unit Number: 108	Alternatives: ROD	Total Unit Acres: 24.7	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 216	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of mature western hemlock along with scattered Alaska-cedar and western redcedar. The main damage agent affecting overstory tree health and volume loss is stem decay and bole cracks which are typical in high elevation stands such as this. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015000, totaling 11,800 feet. This road is also used to access Units 95, 96, 98, 100, 107, and 109. See road card for information on NFS road</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: FPS Concerns: none Buffer (RMA): Class I for FPS- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2 Class: II Flagging: B/W C-Type: HCV Concerns: none Buffer (RMA): Class II for HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed. Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Portion of eastern boundary is adjacent to Thorne River inventoried roadless area.</p>			
<p>SOILS/WETLANDS: Slopes range from about 30 to 100%. All slopes greater than 72% identified in the original unit were excluded from harvest. Approximately 45 acres were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, brushfields, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). Scattered subalpine wetlands were identified in the upper elevation fringes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (western 2/3 of unit). Legacy standard and guideline does not apply in this VCU.</p>			



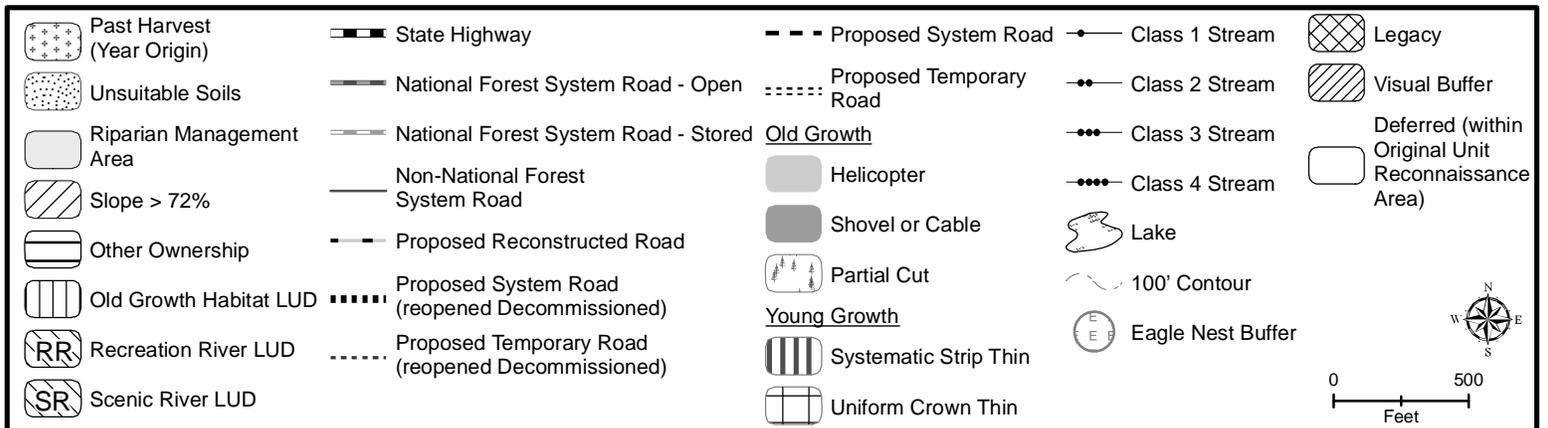
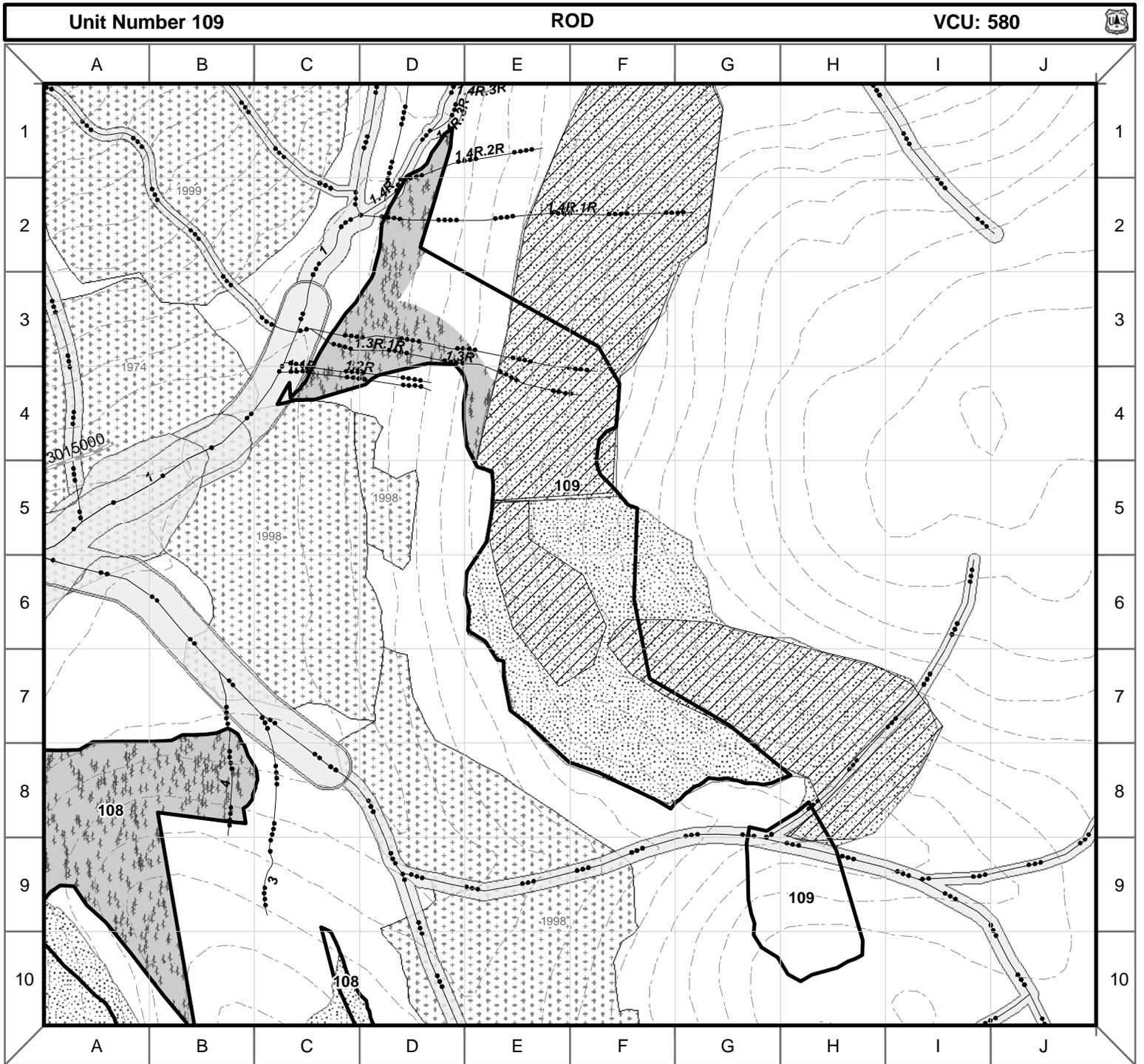
Appendix 1

Unit Number: 109	Alternatives: ROD	Total Unit Acres: 10.3	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 90	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit is an upper elevation old-growth stand. The main damage agent affecting overstory tree health and volume loss is stem rot and bole cracks. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015000.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3015000, totaling 11,800 feet. This road is also used to access Units 95, 96, 98, 100, 107, and 108. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: II, III Flagging: B/W, O/W C-Type: HCV Concerns: blowdown and active erosion Buffer (RMA): Class II for HCV- greater of 100 feet of the top of the side-slope break. Class III for HCV- to the top of the side- slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 1.4R Class: III Flagging: O/W C-Type: HCM Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 1.4R.3R Class: III Flagging: O/W C-Type: HCL Concerns: blowdown and active erosion Buffer (RMA): Class III for HCL- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Eastern portions of boundary are adjacent to Thorne River inventoried roadless area.</p>			
<p>SOILS/WETLANDS: Slopes range from about 30 to 100%. All slopes greater than 72% identified in the original unit were excluded from harvest. Approximately 40 acres were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, brush fields, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). No</p>			

wetlands were identified in the current unit boundary.

WILDLIFE: Unit includes average snow deer winter range (almost entire unit), some of which is also deep snow marten habitat/deer winter range (most of unit except eastern lobe). Legacy standard and guideline does not apply in this VCU.

Appendix 1

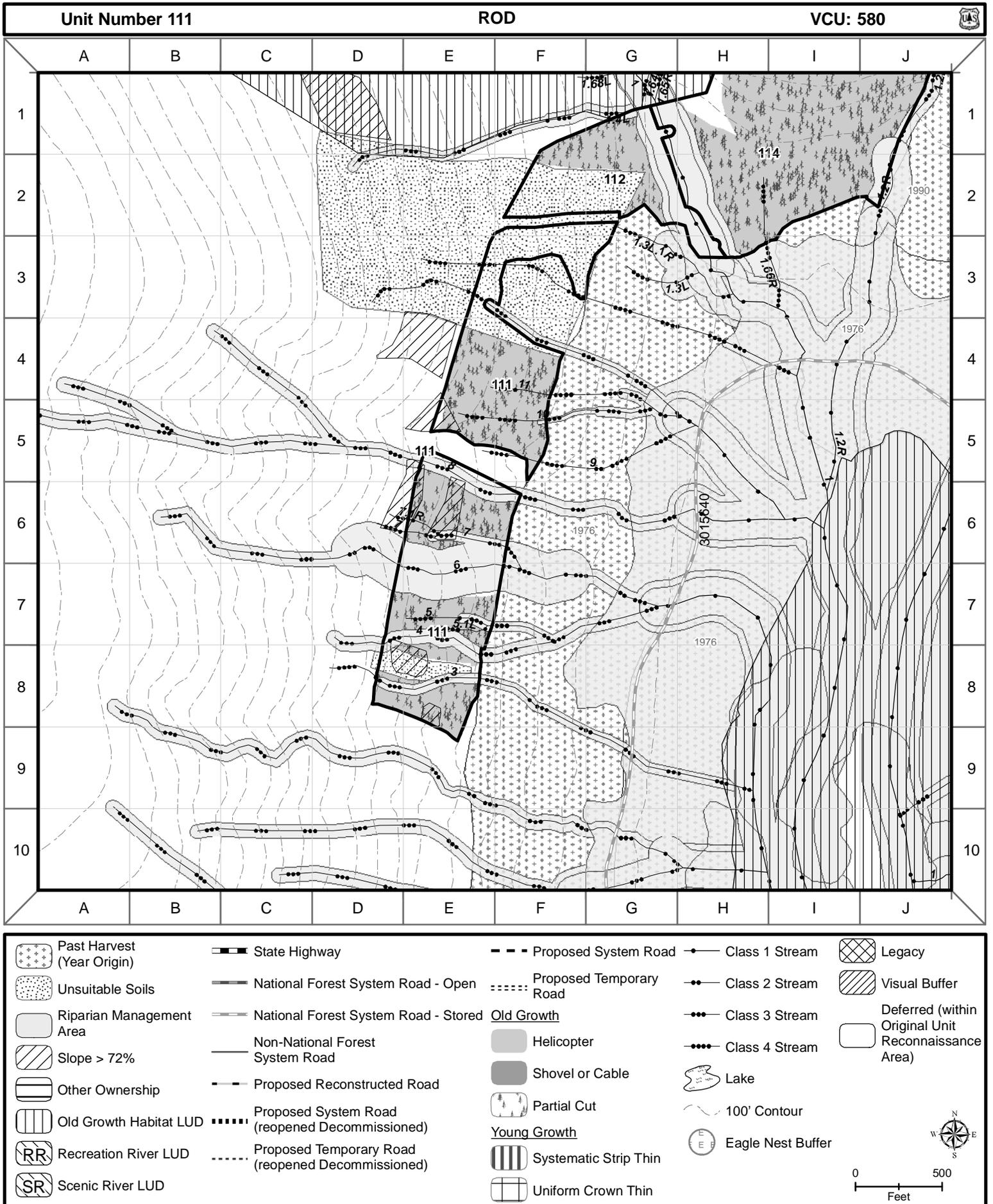


Unit Number: 110	Alternative: 3	Total Unit Acres: 2.6	Prescription: Clearcut
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 45	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth structure. The overstory consists primarily of western redcedar. Mistletoe is light, physical defect and stem decay are both high. The windthrow risk is moderate.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015600.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Thorne River</p> <p>Stream#: 1 Class: I, III Flagging: B/W, O/W C-Type: MMS, HCM Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet or to the extent of the riparian zone. Class III for HCM- to the top of the side-slope break</p> <p>Alternative: 3 Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 1.1R Class: III Flagging: O/W C-Type: HCM Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break</p> <p>Alternative: 3 Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Protection: Category C Concerns: none</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No Concerns			
RECREATION: No Concerns			
<p>SOILS/WETLANDS: Slopes range from about 30 to 95%. All slopes greater than 72% identified in the original unit were excluded from harvest. The majority of the unit was excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, brushfields, and unstable drainages. The remainder of the unit requires a minimum of partial suspension to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). Forested wetlands were identified in the current unit boundary (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).</p>			
WILDLIFE: Unit is not in Alternative 4.			

Unit Number: 111	Alternatives: ROD	Total Unit Acres: 18.7	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 276	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The overstory consists primarily of an old growth western hemlock and western redcedar mixture in the lower elevations, and a western hemlock, Alaska-cedar mix in the upper elevations, particularly on the more south facing slopes. Sitka spruce is present throughout the area, but as scattered trees or groups of one or two. Defect is moderate to high with stem decay and stem deformities of concern. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p> <p>TIMBER/YARDING: Helicopter yarding to NFS road 3015600.</p> <p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p> <p>BOTANY: No Concerns</p> <p>INVASIVE SPECIES: No Concerns</p> <p>FISHERIES: Streams are tributaries to Gravelly Creek and Falls Creek</p> <p>Stream#: 3 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 4 Class: III Flagging: O/W C-Type: HCD Concerns: blowdown and active erosion; channel side-slopes with loose, shallow soils and exposed bedrock. Buffer (RMA): Class III for HCD- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 5 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 6 Class: III Flagging: O/W C-Type: AFH Concerns: blowdown, active erosion, coarse alluvium piles and debris deposits Buffer (RMA): Class III for AFH- greater of 140 feet or the active portion of the alluvial fan. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 7 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 8 Class: III Flagging: O/W C-Type: HCD Concerns: blowdown and active erosion Buffer (RMA): Class III for HCD- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p>			

Appendix 1

<p>Stream#: A12 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown and active erosion assumed Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>
<p>RECREATION: Western boundary of much of unit is adjacent to the Thorne River inventoried roadless area.</p>
<p>SOILS/WETLANDS: Slopes range from about 30 to 100%. Approximately 3 acres of slopes greater than 72% are suitable for harvest with full suspension partial harvest requirements. Approximately 16 acres were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, brush fields, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). No wetlands were identified.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline does not apply in this VCU.</p> <p><u>Old-growth Reserve (OGR) Boundary</u> OGR relocated adjacent to the western boundary of unit.</p>

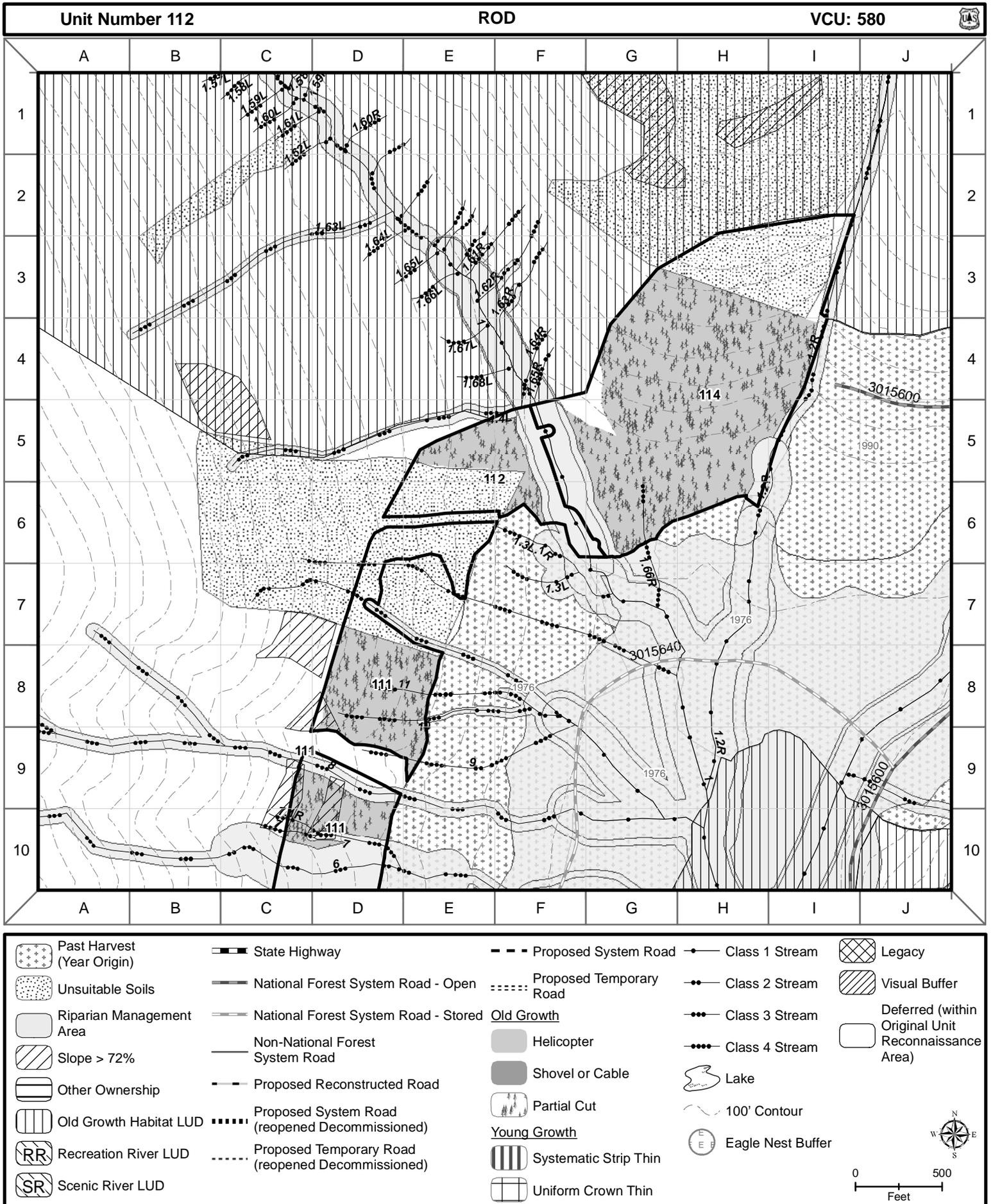


Appendix 1

Unit Number: 112	Alternatives: ROD	Total Unit Acres: 3.9	Prescription: 50% Removal
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 58	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The overstory consists primarily of a western hemlock and western redcedar mixture with Sitka spruce scattered throughout. Stand structure is old growth. Trees are mature to over-mature with declining to static volume growth. Defect and decay are moderate to high. Mistletoe rating is low. Alaska-cedar decline is present. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings. Windthrow risk is moderate.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Maintain 75 percent in Alternative 4. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address soil concerns and mitigate effects to wildlife and the watershed.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS road 3015600.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Falls Creek.</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: AFM, HCV Concerns: blowdown, side-slopes with exposed bedrock and loose shallow soils. Buffer (RMA): Class I for AFM- greater of 140 feet or the active portion of the alluvial fan. Class I for HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.4L Class: III Flagging: O/W C-Type: HCL Concerns: blowdown Buffer (RMA): Class III for HCL- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: Thorne River inventoried roadless area adjacent to western boundary.</p>			
<p>SOILS/WETLANDS: Slopes range from about 30 to 100%. All slopes greater than 72% are located within the exclusion areas. Approximately 4 acres were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, brush fields, and unstable drainages. The remainder of the unit requires full suspension partial harvest to meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). No wetlands were identified.</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Legacy standard and guideline does not apply in this VCU.</p>			
<p><u>Old-growth Reserve (OGR) Boundary</u></p>			

OGR relocated adjacent to the western and northern boundaries of unit.

Appendix 1

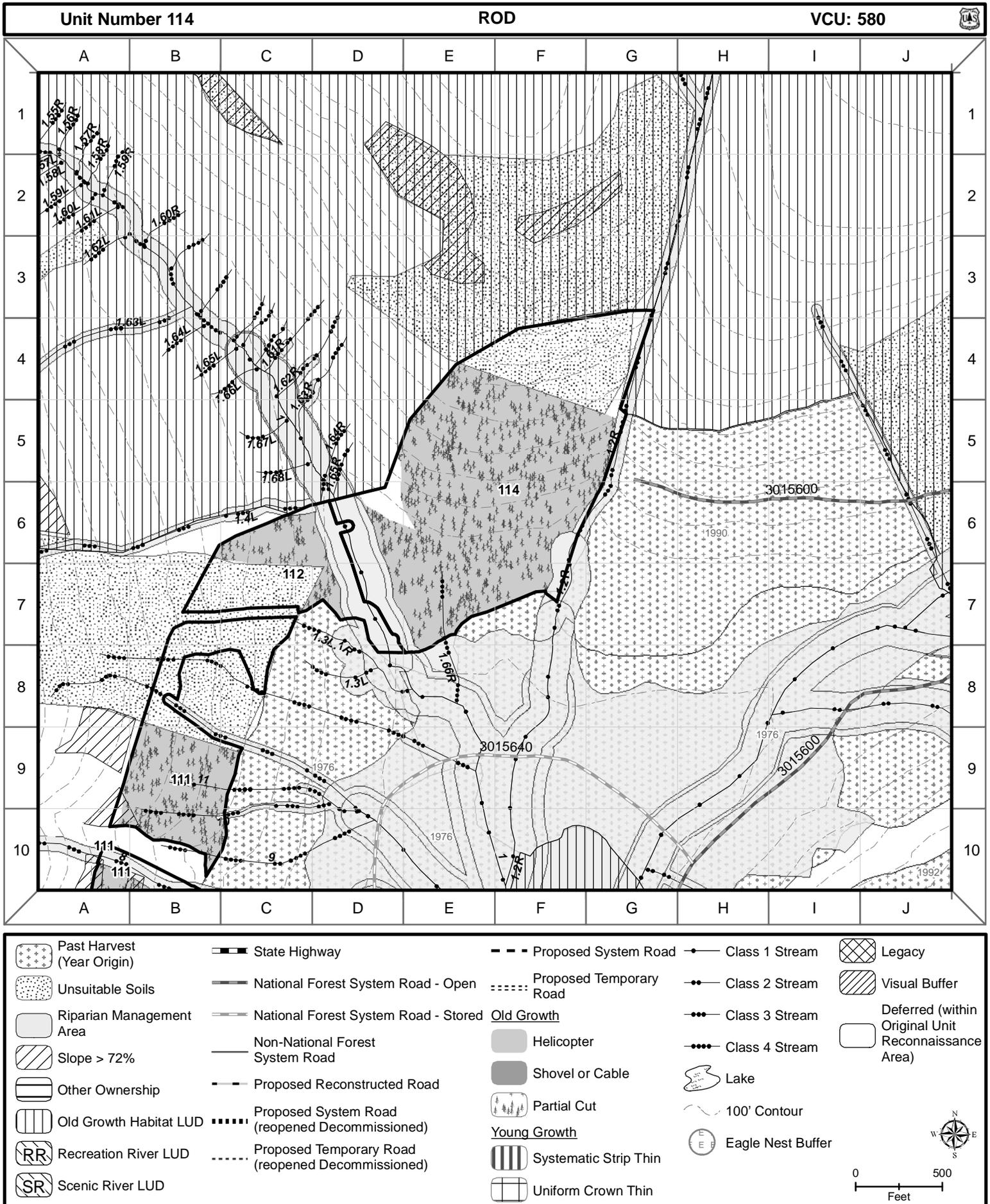


Unit Number: 114	Alternatives: ROD	Total Unit Acres: 32.8	Prescription: Clearcut
VCU Number: 580	Yarding System: Helicopter	Net Harvest Volume (MBF): 870	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old growth stand structure. The overstory consists primarily of a western hemlock and western redcedar mixture in the lower elevations, and a western hemlock, Alaska-cedar mix in the upper elevations, particularly on the more south facing slopes. Moderate to high stem decay and stem deformities are present. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow after harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3015600.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Gravelly Creek.</p> <p>Stream#: 1 Class: I Flagging: B/W C-Type: AFM, HCV Concerns: blowdown, side-slopes with exposed bedrock and loose shallow soils Buffer (RMA): Class I for AFM- greater of 140 feet or the active portion of the alluvial fan. Class I for HCV- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on east side Protection: Category A</p> <p>Stream#: 1.2R Class: I, II, III Flagging: B/W, O/W C-Type: AFM, HCL, HCD Concerns: blowdown and active erosion Buffer (RMA): Class I for AFM- greater of 140 feet or to extent of active portion of the fan. Class I and II for HCL- greater of 100 feet or to the top of the side-slope break. Class III for HCL and HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: Thorne River roadless area adjacent to a portion of western boundary.			
SOILS/WETLANDS: Slopes range from about 35 to 100%. All slopes greater than 72% are located within the exclusion areas. Approximately 8 acres were excluded due to very high landslide potential, active and historic landslides, hollow topography, colluvial activity, steep wet slopes, brush fields, and unstable drainages. A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5). No wetlands were identified.			
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (central 1/3 of unit). Legacy standard and guideline does not apply in this VCU.			

Appendix 1

Old-growth Reserve (OGR) Boundary

OGR relocated adjacent to the western boundary of unit.

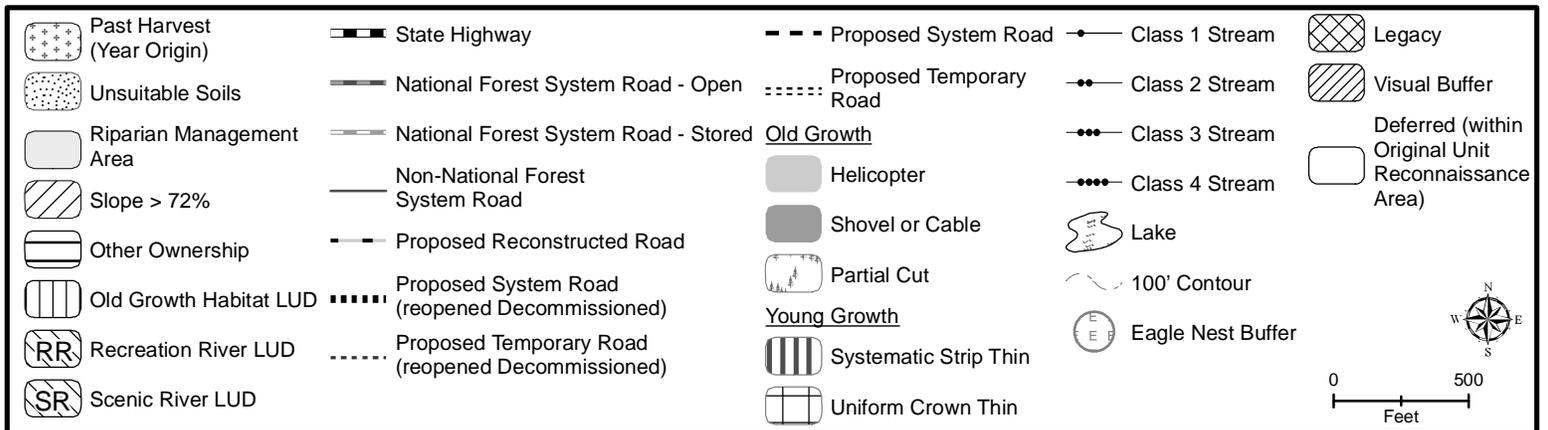
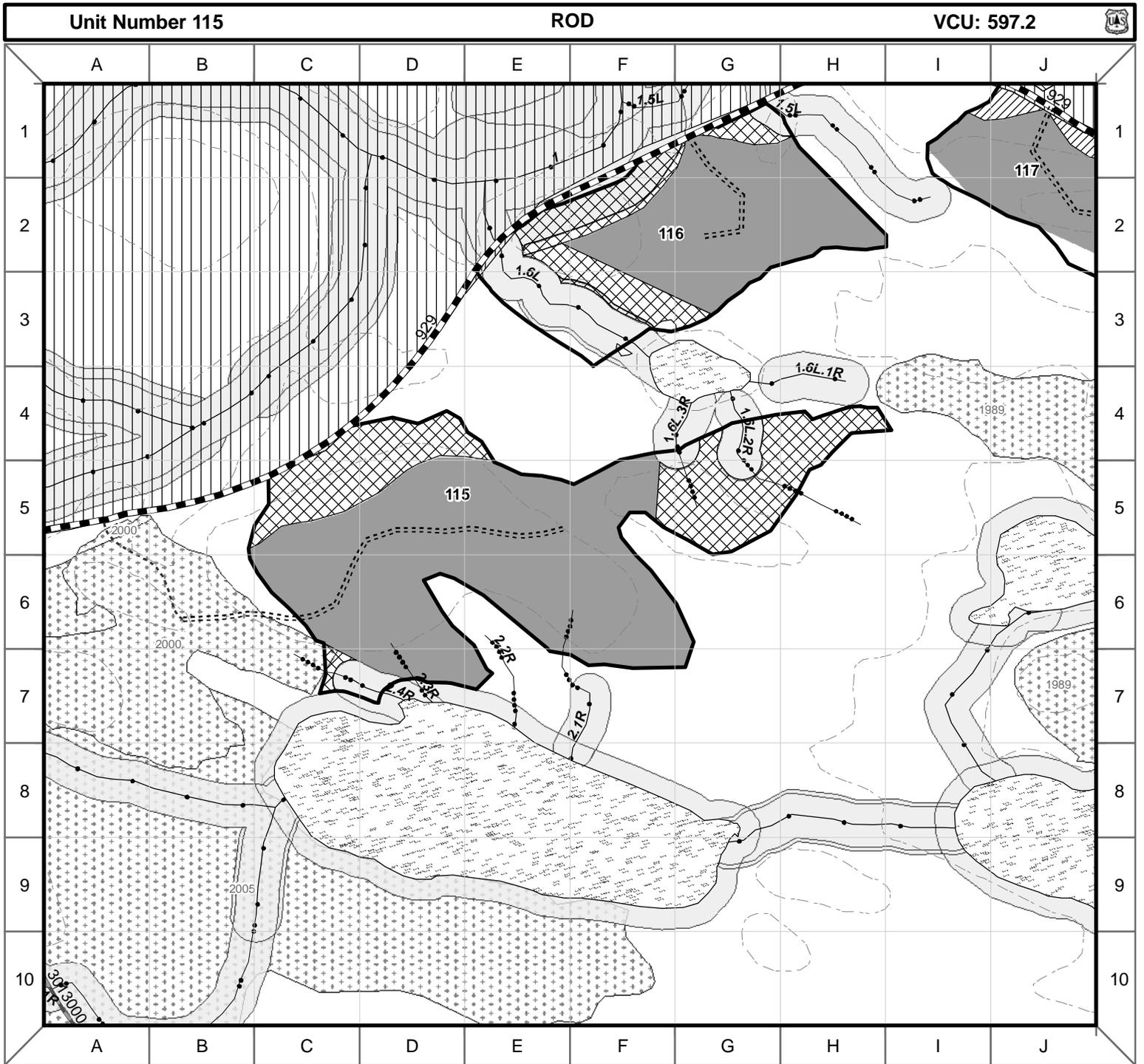


Appendix 1

Unit Number : 115	Alternatives: ROD	Total Unit Acres: 38.1	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Shovel	Net Harvest Volume (MBF): 842	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: Unit 115 is predominantly in old growth stand structure with mostly over-mature, declining timber. In the western hemlock damages and defects are moderate to high except in the eastern portions which has fewer defects and appears as a younger cohort. The incidence of mistletoe is moderate to high throughout. In the western redcedar damages and defect are moderate with scattered areas of better grade present. Windthrow risk is moderate to high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut</p> <p>Approximately 4 acres of this unit is adjacent to the Control Lake-Thorne Bay highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, visual mitigation is required. In order to meet this requirement a screen of trees is being prescribed to block the harvest area from view. Utilize young growth to the maximum extent possible to achieve screening to reduce risk of windthrow along roads and power lines. Adjust legacy to the southern edge of the unit if legacy requirements stated below will not be met along the road.</p> <p>This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 16 acres of productive old growth representative of the overall composition of the planned harvest area be maintained indefinitely. The required legacy structure was planned along highway for screening, however may need to be moved to along the southern boundary. The southwestern legacy is placed to exclude sensitive plant. Legacy is placed in the eastern lobe to reduce road length and compliment areas around Class 1 RMAs. Mapped legacy totals approximately 17 acres.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,800 feet; approximately 700 feet will be constructed over decommissioned road bed. Temporary road is accessed by state highway and will require a driveway permit to allow construction.			
BOTANY: Two lesser round-leaved orchid populations, of one and two plants each, were found during surveys for this unit. Both of these populations were entirely incorporated into legacy, but are within the indirect effects area. One population of whiteflower rein orchid, with fifteen plants, is located just south of the unit, and is also within the indirect effects area.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne Bay			
<p>Stream#: Lake-A1 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake-1- greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: Lake-A2 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake-1- greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.6L.1R Class: I Flagging: B/W C-Type: PAB Concerns: none Buffer (RMA): Class I PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated</p>			

wetland fens.			
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A	
Stream#: 1.6L.2R	Class: I, IV	Flagging: B/W, G/W	C-Type: MMO, HCO Concerns: none
Buffer (RMA): Class I MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV HCO- none.			
Alternatives: ROD	Buffer (RAW): review required on east side	Protection: Category A and C	
Stream#: 1.6L.3R	Class: I, IV	Flagging: B/W, G/W	C-Type: PAB, MMO Concerns: none
Buffer (RMA): Class I PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV MMO- none			
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A and C	
Stream#: 2.1R	Class: I, IV	Flagging: B/W, G/W	C-Type: MMO Concerns: none
Buffer (RMA): Class I- for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none.			
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A and C	
Stream#: 2.4R	Class: I, IV	Flagging: B/W, G/W	C-Type: MMO Concerns: none
Buffer (RMA): Class I- for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for MMO- none.			
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A and C	
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC
Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C	
Temporary roads for Unit 115: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.16, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is mostly Very Low, but it includes 4 acres of Moderate. A portion of the unit is in Modified Landscape LUD along the Control Lake-Thorne Bay highway, but most is in Timber Production. The original unit extended to the edge of the highway in some areas; however, the unit is now screened from the highway by a portion of legacy (see unit card map and silvicultural prescription). As a result all harvest is about 300 ft or more from the highway. As noted in the prescription, the visual buffer or screen will be designed for wind firmness.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from about 10 to 45%. Forested wetland is dominant in the unit. A muskeg was identified in the unit during recon (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).			
The proposed temporary road crosses about 2 acres of forested wetland. Wetland avoidance was not feasible due to the location of the existing road and the dominance of forested wetland within the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.			
WILDLIFE: Unit includes average snow deer winter range (central portions of unit), some of which is also deep snow marten habitat/deer winter range (north central portion of unit). Unit is adjacent to Honker large OGR complex and in an area identified by the interagency OGR review team as a low elevation corridor between the Honker large OGR and salt water at Salt Chuck (south of the project). Legacy standard and guideline applies in this VCU.			

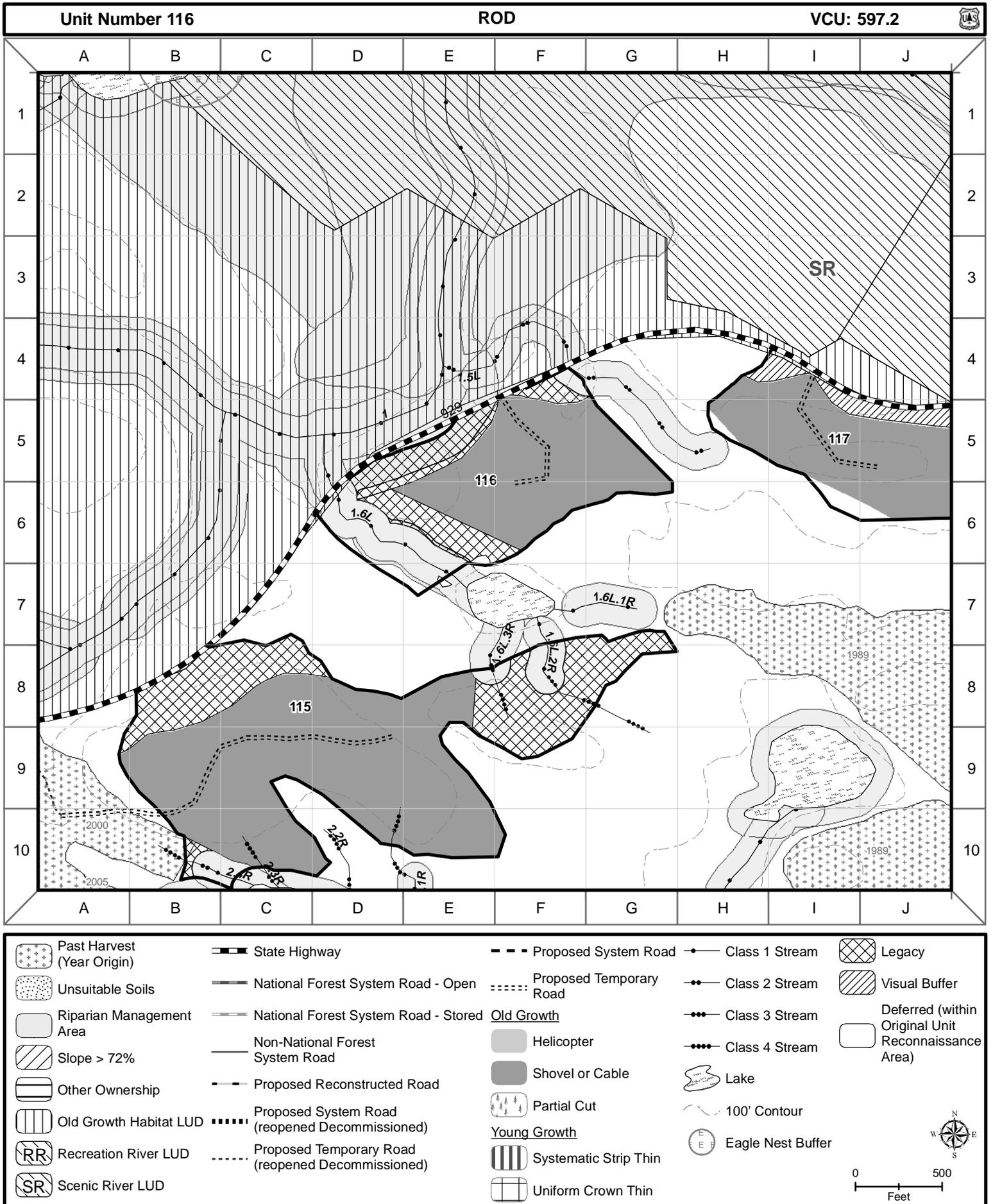
Appendix 1



Unit Number: 116	Alternatives: ROD	Total Unit Acres: 17.0	Prescription: Clearcut
VCU Number: 597.2	Yarding System: Shovel	Net Harvest Volume (MBF): 382	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: This unit has old growth structure with mature to over-mature timber. In the western hemlock mistletoe varies from moderate to heavy and overall stem rot is moderate to high in larger trees. In the western redcedar defect is average or less with quality medium to smaller diameter trees. An even-aged portion of the stand in the southwest has 9" diameter western hemlock indicating a younger cohort and high wind exposure in the area. Windthrow risk is moderate overall. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management A 5 acre portion of this unit is adjacent to the Control Lake-Thorne Bay highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, visual mitigation is required. In order to meet this requirement a screen of trees is being prescribed to block the harvest area from view. Utilize young growth and topography to the maximum extent possible to achieve screening to reduce risk of windthrow along roads and power lines. Adjust legacy to other boundaries of the unit if legacy requirements stated below will not be met along the along road.</p> <p>This stand is mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 7 acres of productive old growth representative of the overall composition of the planned harvest area be maintained indefinitely. The required legacy structure was planned along the highway for screening; however this may need to be moved to along other boundaries. The southwestern legacy is placed to provide RAW and coincide with sensitive plant populations. Mapped legacy is about 8 acres.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 800 feet. Temporary road is accessed by state highway and will require a driveway permit to allow construction.			
BOTANY: Combined Units 116 and 117 directly impact about 1/3 of a large lesser round-leaved orchid population consisting of 80 individuals. Another small population, of four plants, is located within the legacy at the southwestern corner of the unit. This unit indirectly affects portions of both of these populations.			
INVASIVE SPECIES: An infestation of Canada thistle is located northeast of the unit, across the state highway. This infestation has been treated previously. Monitoring and follow-up treatments are recommended.			
FISHERIES: Streams are tributaries to Rio Beaver Creek			
<p>Stream#: 1 Class: I Flagging: B/W C-Type: FPL, LCM Concerns: none Buffer (RMA): Class I for FPL- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for LCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on east exposure Protection: Category A</p> <p>Stream#: 1.5L Class: II Flagging: B/W, C-Type: HCO, MMO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.6L Class: I Flagging: B/W, C-Type: PAB, HCM, MMS Concerns: none Buffer (RMA): Class I- greater of 120 feet (MMS) or 100 feet (PAB), flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM- greater of 100 feet or to top of side-slope break. Alternatives: ROD Buffer (RAW): review required on east exposure Protection: Category A</p>			

Appendix 1

<p>Stream#: Lake-A2 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake-1- greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>
<p>Temporary roads for Unit 116: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is mostly Very Low, but it includes 5 acres of Moderate. Most of the unit is in Modified Landscape LUD along the Control Lake-Thorne Bay highway, but a portion is in Timber Production as well. The original unit extended to the edge of the highway; however, the unit is now screened from the highway by legacy and TTRA buffers (see unit card map and silvicultural prescription). As a result most harvest is at least 150-200 ft from the highway. As noted in the prescription, the visual buffer or screen will be designed for wind firmness. Clearing for the temporary road, which is accessed by the highway, will be visible by passing vehicles, but is largely at right angles to the road and will not be visible from approaching vehicles. Because visual absorption capability is moderate to high, visible openings can be 15 acres or more. No concerns with unit as planned.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from about 10 to 45%. Forested wetland is dominant in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).</p> <p>The proposed temporary road crosses about 1 acre of forested wetland. Wetland avoidance was not feasible due to the location of the existing road and the dominance of forested wetland within the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (nearly entire unit). Unit is adjacent to Honker large OGR complex. It is in an area identified by the interagency OGR review team as a low elevation corridor between the Honker large OGR and salt water at Salt Chuck (south of the project). Legacy standard and guideline applies in this VCU.</p>

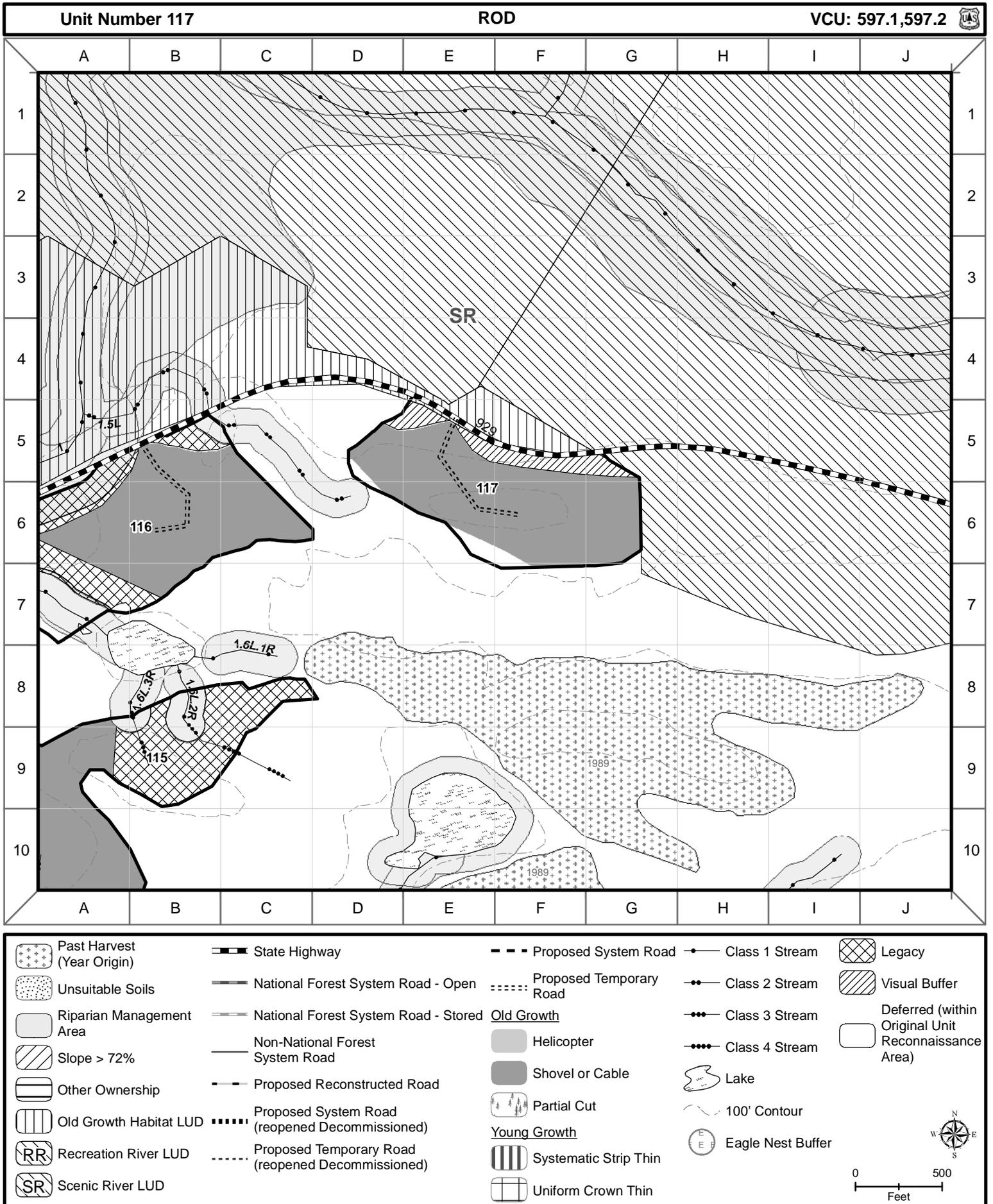


Appendix 1

Unit Number: 117	Alternatives: ROD	Total Unit Acres: 14.6	Prescription: Clearcut
VCU Number: 597.1, 597.2	Yarding System: Cable	Net Harvest Volume (MBF): 335	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: This unit has old-growth stand structure with a western hemlock and western redcedar overstory. Sitka spruce are widely scattered throughout. In the western hemlock mistletoe varies from moderate to heavy and overall stem rot is moderate but high in larger diameter trees. In the western redcedar defect is average or less with medium to smaller diameter trees. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut</p> <p>Approximately 4 acres of this unit are adjacent to the Control Lake-Thorne Bay highway and due to the combination of Scenic Viewshed LUD and foreground distance zone, visual mitigation is required. In order to meet this requirement a screen of trees is being prescribed to block the harvest area from view. Utilize young growth and topography to the maximum extent possible to achieve screening to reduce risk of windthrow along roads and power lines.</p> <p>This stand is mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in VCU 5972. Only about 5 acres of the unit are within this VCU. No legacy is required.</p>			
TIMBER/YARDING: Cable yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 900 feet. Temporary road is accessed by state highway and will require a driveway permit to allow construction.			
BOTANY: Combined Units 116 and 117 directly impact about 1/3 of a large lesser round-leaved orchid population consisting of 80 individuals. This unit indirectly affects an additional portion of this population.			
INVASIVE SPECIES: An infestation of Canada thistle is located to the northwest of the unit, across the state highway. This infestation has been treated previously. Monitoring and follow-up treatments are recommended.			
FISHERIES: Streams are tributaries to Rio Beaver Creek.			
<p>Stream#: 1.5L Class: II Flagging: B/W C-Type: HCO, MMO Concerns: none</p> <p>Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.</p> <p>Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Temporary roads for Unit 117: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is mostly Moderate (14 acres), but it includes 2 acres of Very Low. The unit is entirely in Modified Landscape LUD along the Control Lake-Thorne Bay highway. The original unit extended to the edge of the highway; however, the unit is now screened from the highway by legacy (see unit card map and silvicultural prescription). As a result, most harvest is at least 100-150 ft from the highway. As noted in the prescription, the visual buffer or screen will be designed for wind firmness. Clearing for the temporary road, which is accessed by the highway, will be visible by passing vehicles, but is largely at right angles			

<p>to the road and will not be visible from approaching vehicles. Because visual absorption capability is moderate to high, visible openings can be 15 acres or more. No concerns with unit as planned.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from about 10 to 55%. Forested wetland is intermittent in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).</p> <p>The proposed temporary road does not traverse any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (nearly entire unit), some of which is also deep snow marten habitat/deer winter range (nearly entire unit except northern lobe). Unit is adjacent to Honker large OGR complex. It is in an area identified by the interagency OGR review team as a low elevation corridor between the Honker large OGR and salt water at Salt Chuck (south of the project). Legacy standard and guideline applies in VCU 5972.</p>

Appendix 1

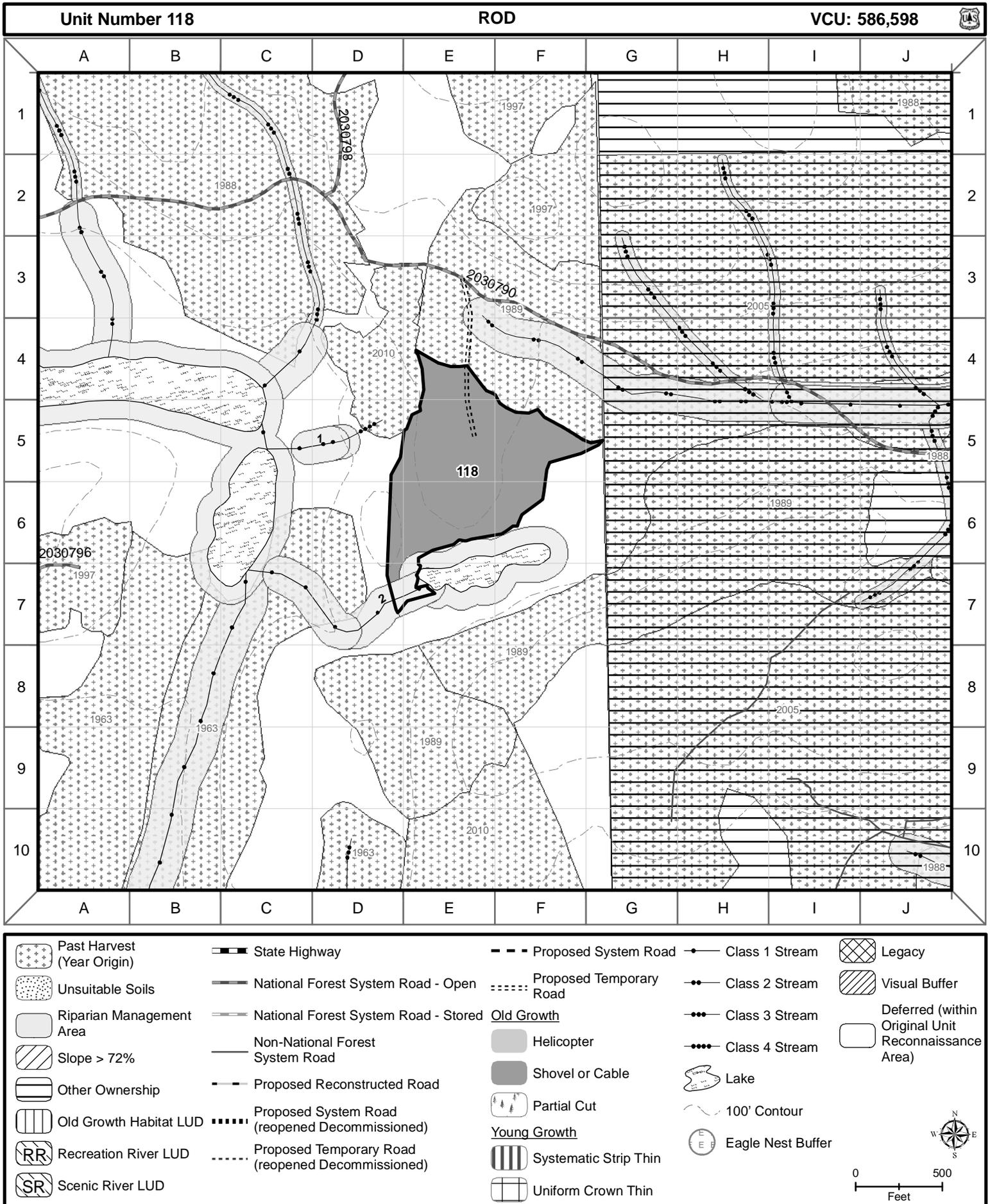


Unit Number: 118	Alternatives: ROD	Total Unit Acres: 18.0	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel	Net Harvest Volume (MBF): 541	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: This unit has old-growth stand structure. The overstory is composed of mostly western hemlock, western redcedar and Sitka spruce within the western half of the unit. The overstory overall has high defect with stem decay and stem form being of concern. Mistletoe is present, but at low levels. Windthrow risk is moderate. The unit has adjacent past harvest from within the last few years. This harvest area is adjacent to the northwest corner of the unit and does not meet green-up requirements. The combined area of this past harvest and the proposed unit are only approximately 25 acres and therefore would be in compliance with NFMA for opening size.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. The potential opening is less than 20 acres. No legacy is required.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 900 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Power Lake and Thorne Bay			
<p>Stream#: Lake-1 Class: I Flagging: B/W C-Type: L Concerns: blowdown and steep side-slopes. Buffer (RMA): Class I for Lake-1- greater of 100 horizontal feet or to the extent of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or one site-potential tree height. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2 Class: I Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class I for HCO greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>Temporary roads for Unit 118: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD but is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes generally range from nearly level to greater than 70%. Slopes average 30 to 35%. Small areas of slopes greater than 72% occur within the unit on knobs and rock outcrops. These are very small areas less than 1/8th acre in size and can be operated around. Forested wetlands and small sedge fens are located in between the rock outcrops and knobs in the drainage ways in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).			

Appendix 1

The proposed temporary road crosses about a ½ acre of forested wetlands. Wetland avoidance is not feasible due to the location of the existing road and a fish stream. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU.



Appendix 1

Unit Number: 119	Alternatives: ROD	Total Unit Acres: 85.5	Prescription: Clearcut
VCU Number: 579	Yarding System: Cable, Shovel	Net Harvest Volume (MBF): 1,750	LUD: Modified Landscape, Recreation River
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Parts of Unit 119 have even-aged characteristics with signs of 80-100 year old stumps. This appears consistent with the earlier harvest along the Thorne River to the south. It is possible that the southern and eastern portions of the stand were partially cut and has suffered pockets of blowdown. The western portion of the unit is more typical old-growth stand structure. The overstory consists primarily of western hemlock in an even distribution. Sitka spruce is common where past harvest occurred as well as in the western edges of unit. Mistletoe is heavy with some moderate patches. Mistletoe may have been proliferated by a heavy occurrence in the overstory remaining after partial harvest and or blowdown. Defect is moderate overall. Windthrow continues to influence stand structure in this unit. Both past and recent evidence was noted. Windthrow risk is high. All adjacent stands meet NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 39 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. The required legacy structure is planned to coincide with areas dropped for other resource concerns, along with RMAs. A total of about 45 acres of legacy are mapped.</p>			
TIMBER/YARDING: Cable and shovel yarding to the proposed temporary roads.			
ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 3,900 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Falls Creek and Gravelly Creek.			
<p>Stream#: 1 (Gravelly Creek) Class: I Flagging: B/W C-Type: FPLb Concerns: none Buffer (RMA): Class I for FPL- greater of 130 feet or to the extent of the riparian zone. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: I, III, IV Flagging: B/W, O/W, G/W C-Type: MMO, HCLw, HCM, HCO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCLw- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p> <p>Stream#: 1.2L Class: I, II, IV Flagging: B/W, G/W C-Type: MMO, HCO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 2 (Falls Creek) Class: I Flagging: B/W C-Type: LCM, MMM, MCS Concerns: blowdown Buffer (RMA): Class I for LCM and MCS- greater of 100 feet or to the top of the side-slope break. Class I for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): review required on east exposure Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC</p>			

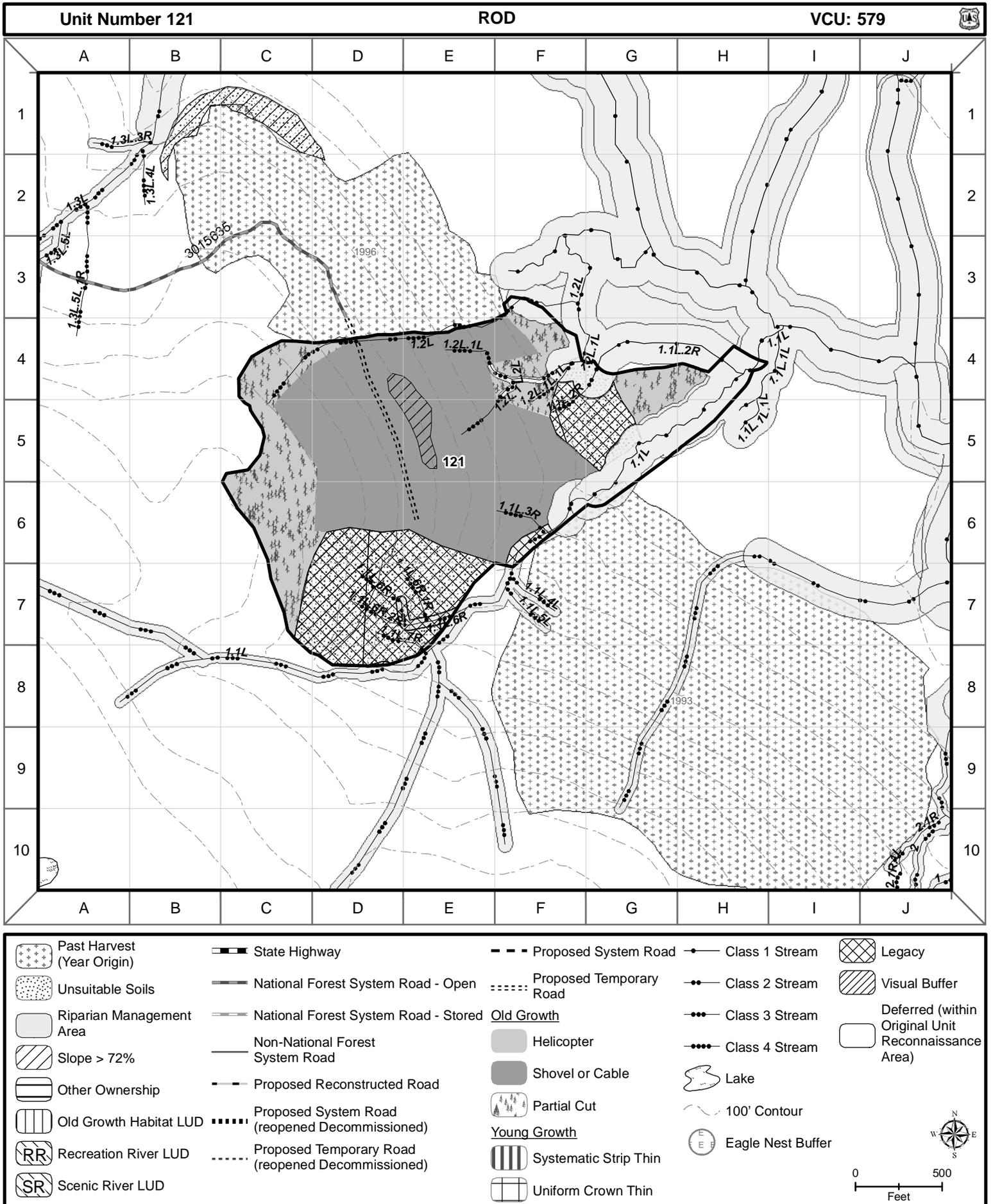
Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C
<p>Temporary roads for Unit 119: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>		
<p>GEOLOGY/KARST: No Concerns</p>		
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>		
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit includes 60 acres of Low and 27 acres of Moderate. It is located north of the Control Lake-Thorne Bay highway mostly in Modified Landscape LUD, but its southern portion is in Recreational River LUD. However, a large portion of the southern portion of the original unit is in legacy and not planned for harvest. Therefore, the nearest harvest to the highway is about 500 ft north and the nearest harvest to the Thorne River (potential recreational river) is about 1,000 ft north. Therefore, there are no scenery resource concerns.</p>		
<p>RECREATION: Harvest in this unit would be heard from Gravelly Creek Picnic area. Although this unit is within close proximity to Gravelly Creek, the picnic area is oriented away from the road and the unit and there is a vegetative buffer so it is unlikely that harvest in this unit would change how people use the picnic area.</p>		
<p>SOILS/WETLANDS: Slopes range from about 10 to 70%. Forested wetland located along the eastern boundary on gentle slopes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads do not traverse any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>		
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (eastern 1/2 of unit). Legacy standard and guideline applies in this VCU.</p>		

Unit Number: 120	Alternatives: ROD	Total Unit Acres: 18.3	Prescription: Clearcut
VCU Number: 579	Yarding System: Shovel	Net Harvest Volume (MBF): 304	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of western hemlock and a mixture of western redcedar and Alaska-cedar. Sitka spruce is present, but less abundant and more widely scattered. Stem rot is high to very high. The mistletoe rating is low. Windthrow risk is moderate. Past harvest has occurred along the entire eastern and southern boundary. These past harvest areas have met green-up with regeneration over 5' tall.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This unit requires approximately 8 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. The required legacy structure is planned to coincide with RMAs, provide RAW and cover blind leads. A total of about 8 acres of legacy are mapped.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS road 3017100.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 500 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Falls Creek			
<p>Stream#: 2 Class: III Flagging: O/W C-Type: HCM, HCO, AFM Concerns: none Buffer (RMA): Class III for HCM and HCO- to the top of the side-slope break. Class III for AFM- greater of 140 feet or active portion of the alluvial fan. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 120: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is about half in Timber Production and half in Modified Landscape LUD, but is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes are gentle throughout the unit. No wetlands were identified. The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).			
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU.			

Unit Number: 121	Alternatives: ROD	Total Unit Acres: 52.2	Prescription: Clearcut and 50% Removal
VCU Number: 579	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 1,002	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of western hemlock and mountain hemlock. Alaska-cedar and Sitka spruce are more abundant in the lower elevations. Stem decay is high to moderate occurrence across the unit. In the western and mountain hemlock, defect and damages are high with high to very high stem decay and light mistletoe. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is being recommended for harvest at this time because it is not expected to obtain the desired condition given the current growth trajectory. This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 20 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. The required legacy structure is planned to coincide with areas of unsuitable soils, as well as isolated areas with difficult yarding. Mapped legacy represents about 20 acres.</p>			
TIMBER/YARDING: Cable settings yard to the proposed temporary road. Helicopter settings yard to NFS road 3015635 and the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,200 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Gravelly Creek			
<p>Stream#: 1.1L Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCL, HCD, HCM Concerns: blowdown and active erosion Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCL and HCD and Class II for HCD- greater of 100 feet or to the top of the side-slope break. Class III for HCD and HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 1.1L.2R Class: I, IV Flagging: B/W, G/W C-Type: PAB, HCO Concerns: none Buffer (RMA): Class I for PAB- greater of 100 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.1L.4L Class: III Flagging: O/W C-Type: HCM Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 1.1L.5L Class: III Flagging: O/W C-Type: HCM Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 1.1L.6R Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p>			

Appendix 1

Stream#: 1.2L	Class: I, III, IV	Flagging: B/W, O/W, G/W	C-Type: HCLw, HCM, HCO
Concerns: none			
Buffer (RMA): Class I for HCLw greater of 100 feet or to the top of the side-slope break. Class III for HCM to the top of the side-slope break. Class IV for HCO none.			
Alternatives: ROD	Buffer (RAW): no review needed Protection: Category A, B, and C		
Stream#: 1.2L.1L	Class: I, III, IV	Flagging: B/W, O/W, G/W	C-Type: MMO, HCO
Concerns: none			
Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCO- greater of 100 feet or to the top of the side-slope break. Class III for HCO- to the top of the side-slope break. Class IV for HCO- none.			
Alternatives: ROD	Buffer (RAW): review required on southern exposure Protection: Category A, B and C		
Stream#: 1.2L.1L.2L	Class: III, IV	Flagging: O/W, G/W	C-Type: HCO
Concerns: none			
Buffer (RMA): Class III for HCO- to the top of the side-slope break. Class IV for HCO- none			
Alternatives: ROD	Buffer (RAW): review required on southern exposure Protection: Category B and C		
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC or MM
Buffer (RMA): none	Buffer (RAW): no review needed		Protection: Category C
Temporary roads for Unit 121: One Class IV stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from 30 to 85%. Less than 2 acres of slopes greater than 72% occur near the center of the unit suitable for harvest with partial suspension. About 15 acres were excluded from harvest due to high landslide potential, present and historic landslides and steep slopes. In the remainder of the unit, the soils and wetlands are suitable for a minimum of partial suspension cable yarding, and helicopter yarding should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-5, and Veg-6. Forested wetlands were identified in the lower elevations of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).			
The proposed temporary road does not cross any wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.			
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU.			



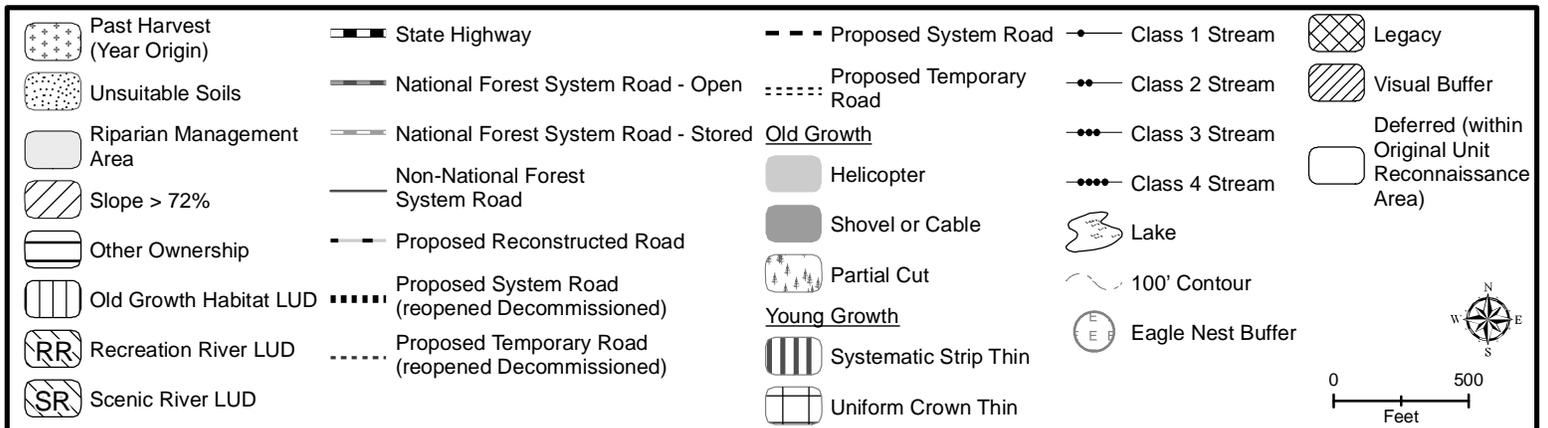
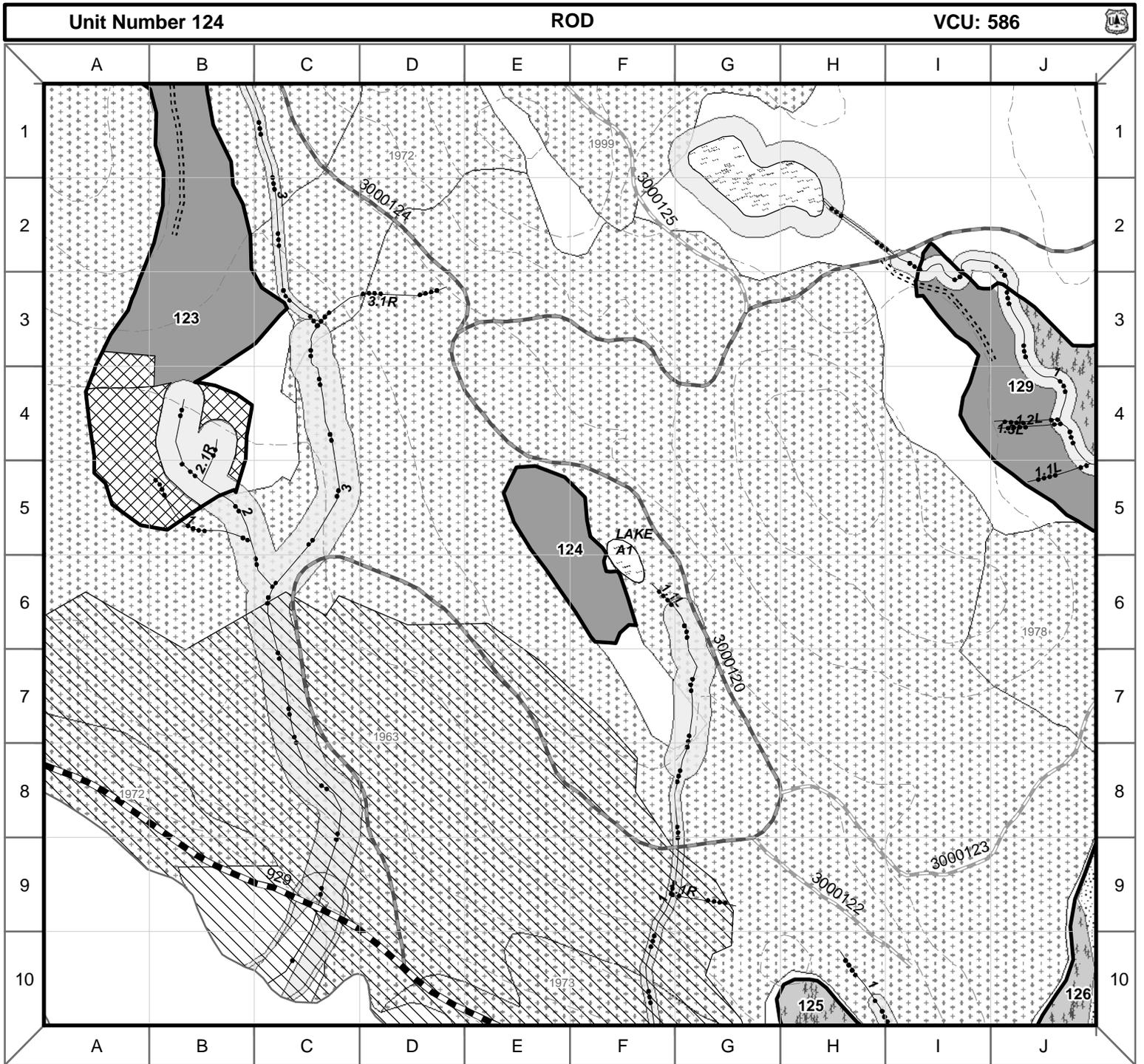
Appendix 1

Unit Number: 123	Alternatives: ROD	Total Unit Acres: 19.0	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 501	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit has old-growth to uneven-age stand characteristics. The overstory consists primarily of a mixture of western hemlock and western redcedar with lesser amounts of Sitka spruce. Overstory distribution is variable due to heavy windthrow. The northern 1/3 of the unit has rough trees due to heavy wind damage. Stem decay and wind are the main damage factors associated with tree health and volume loss. Mistletoe is light. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 8 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. The required legacy structure is placed to shorten required road length, maintain a large area of POG, and build off of the RMAs to provide RAW buffers. Mapped legacy acres equal about 8.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 1,500 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to the Thorne River estuary</p> <p>Stream#: 2 Class: II Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 2.1R Class: II Flagging: B/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 3 Class: II, III Flagging: B/W, O/W C-Type: HCM Concerns: none Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 123: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is mostly Very Low, but 5 acres are considered Low.			

<p>It is entirely in Modified Landscape LUD and is mostly Not Seen. The lower 100 to 700 ft is in legacy, which will provide some screening from the Control Lake-Thorne Bay highway; the nearest edge of the harvested area is about 2,000 ft away from the highway and there is topographic screening as well. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from about 20 to 45%. Forested wetlands are intermittent throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not traverse any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU..</p>

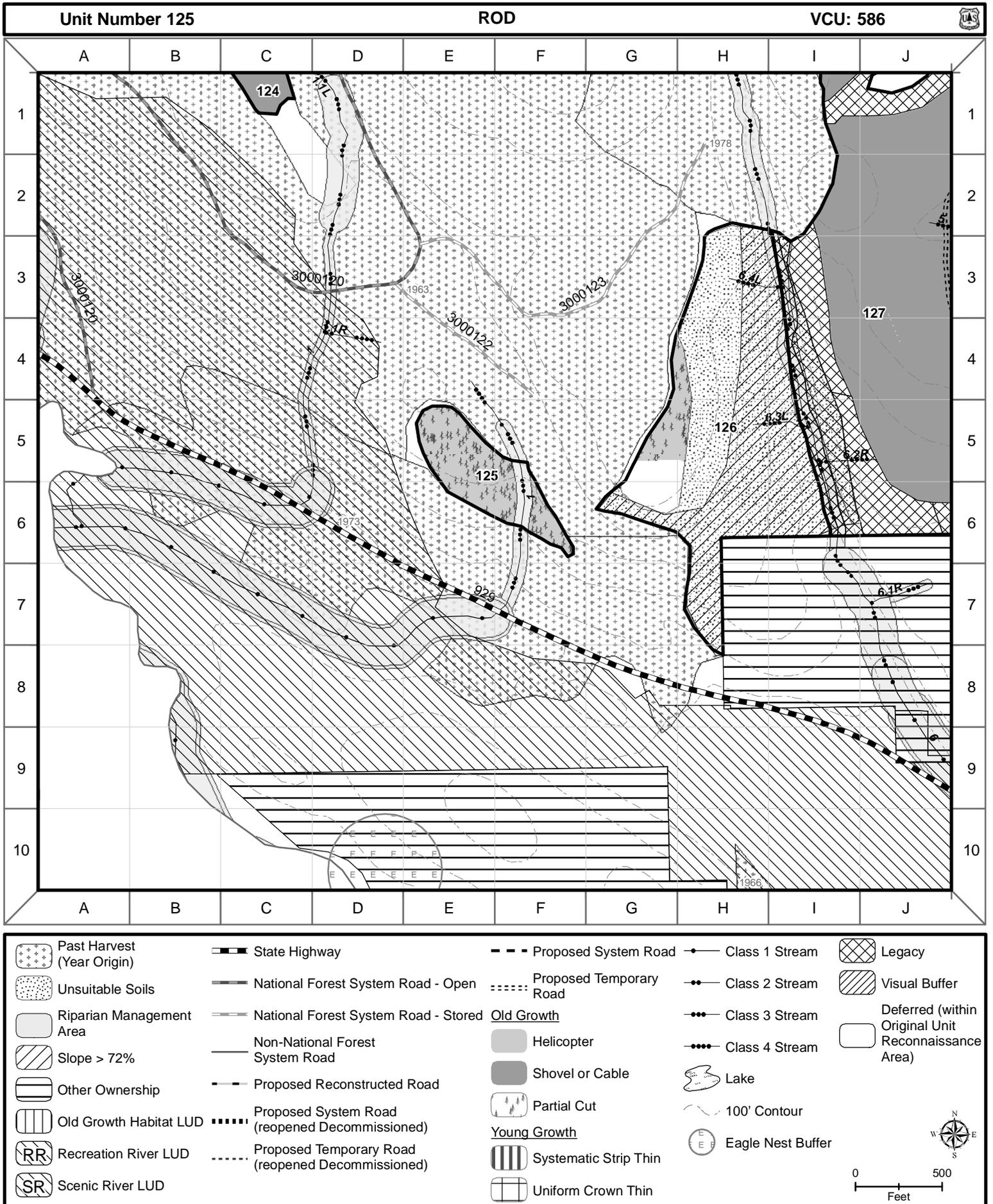
Unit Number: 124	Alternatives: ROD	Total Unit Acres: 6.3	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel	Net Harvest Volume (MBF): 125	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of western hemlock and western redcedar. Sitka spruce is present, but widely scattered. Stem form (top damage) and moderate heart and stem rot in the western hemlock and western redcedar are the main damage agents affecting tree health and volume. The average defect is moderate with patches of high defect particularly where larger diameters trees occur. Numerous dead tops are in the western redcedar. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU; however the potential opening is less than 20 acres. No legacy acreage is required.</p>			
TIMBER/YARDING: Shovel yarding to NFS road 3000120.			
ENGINEERING/ROADS: No proposed road construction or reconstruction..			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Thorne Bay			
<p>Stream#: 1.1L Class: IV Flagging: G/W C-Type: PAO Concerns: none Buffer (RMA): Class IV for PAO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category C</p> <p>Stream#: Lake-A1 Class: III Flagging: O/W C-Type: L Concerns: none Buffer (RMA): Class III for Lake-A1- consider no or limited harvest areas. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes are nearly level in the unit. Forested wetlands are intermittent throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).			
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres.			

Appendix 1



Unit Number: 125	Alternatives: ROD	Total Unit Acres: 6.4	Prescription: 50% Removal																														
VCU Number: 586	Yarding System: Helicopter	Net Harvest Volume (MBF): 37	LUD: Modified Landscape																														
Summary of Concerns, Responses, BMPs and Mitigation																																	
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of western hemlock, along with western redcedar. Sitka spruce is present, but scattered. The main damage agents affecting tree health and volume are moderate mistletoe and moderate heartwood/stem decay. Windthrow risk is moderate overall. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address economic concerns. This unit is within a legacy VCU. Partial harvest is prescribed. No legacy acreage is required.</p>																																	
TIMBER/YARDING: Helicopter yarding to landings on NFS road 3000120.																																	
ENGINEERING/ROADS: No proposed road construction or reconstruction.																																	
BOTANY: No Concerns																																	
INVASIVE SPECIES: No Concerns																																	
FISHERIES: Streams are tributaries to Thorne Bay																																	
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 1</td> <td style="width: 25%;">Class: III</td> <td style="width: 25%;">Flagging: O/W</td> <td style="width: 25%;">C-Type: HCM</td> <td style="width: 20%;">Concerns: none</td> </tr> <tr> <td colspan="5">Buffer (RMA): Class III for HCM- to the top of the side-slope break.</td> </tr> <tr> <td>Alternatives: ROD</td> <td colspan="2">Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category B</td> </tr> <tr> <td colspan="5"> </td> </tr> <tr> <td>All other streams in unit:</td> <td>Class: IV</td> <td>Flagging: G/W</td> <td colspan="2">C-Type: HC</td> </tr> <tr> <td>Buffer (RMA): none</td> <td colspan="2">Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category C</td> </tr> </table>				Stream#: 1	Class: III	Flagging: O/W	C-Type: HCM	Concerns: none	Buffer (RMA): Class III for HCM- to the top of the side-slope break.					Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category B							All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC		Buffer (RMA): none	Buffer (RAW): no review needed		Protection: Category C	
Stream#: 1	Class: III	Flagging: O/W	C-Type: HCM	Concerns: none																													
Buffer (RMA): Class III for HCM- to the top of the side-slope break.																																	
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category B																														
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC																														
Buffer (RMA): none	Buffer (RAW): no review needed		Protection: Category C																														
GEOLOGY/KARST: No Concerns																																	
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.																																	
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.																																	
RECREATION: No concerns																																	
SOILS/WETLANDS: Slopes range from 20 to 50%. No wetlands were observed in the unit. A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).																																	
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres.																																	

Appendix 1

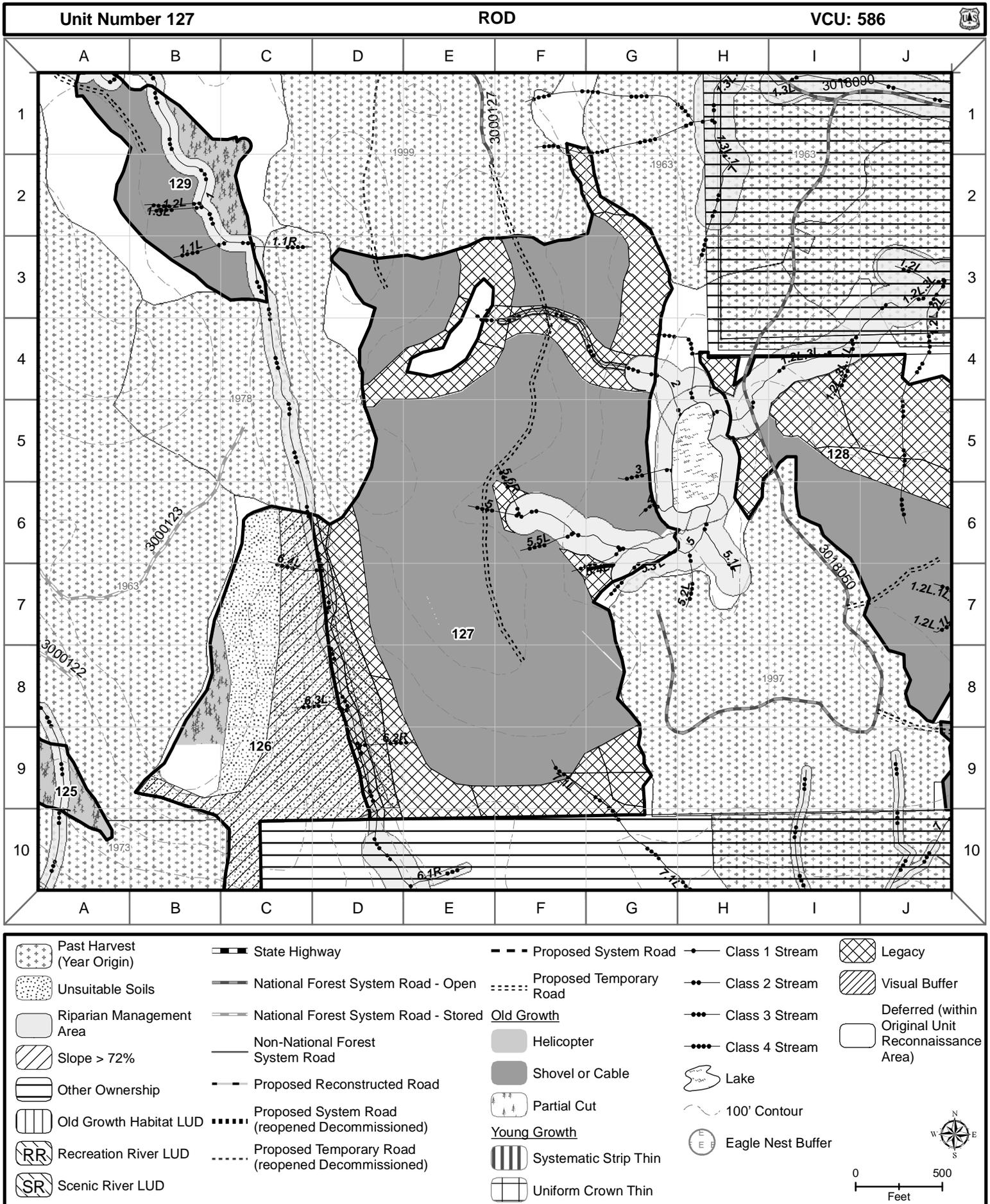


Unit Number: 126	Alternatives: ROD	Total Unit Acres: 2.3	Prescription: 25% Removal
VCU Number: 586	Yarding System: Helicopter	Net Harvest Volume (MBF): 14	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit has predominantly old-growth stand structure. The overstory consists of a mixture of western hemlock, western redcedar and Sitka spruce with moderate defect. Stem decay coupled with wind damage are the primary damage agents. Overall the unit has high wind risk with several areas blowdown. Areas of advanced regeneration with variable densities and ages have occupied these openings. Throughout most of the unit scattered pockets of larger, lower defect western redcedar and Sitka spruce are present, especially along benches. Windthrow risk is high. Mistletoe occurrence is low. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily to address economic concerns. This unit is within a legacy VCU. Partial harvest is prescribed. No legacy acreage is required.</p>			
<p>TIMBER/YARDING: Helicopter yarding to landings on NFS road 3000120.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: All streams are tributaries to Thorne Bay</p> <p>Stream#: 6 Class: III Flagging: O/W C-Type: HCD Concerns: none Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes range from 12 to 150%. All slopes greater than 60% are located in the soil deferral area. Approximately 28 acres were excluded from harvest due to steep and unstable slopes. Forested wetlands were identified throughout the current unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern 1/2 of unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres and due to partial harvest prescription.</p>			

Unit Number: 127	Alternatives: ROD	Total Unit Acres: 87.1	Prescription: Clearcut
VCU Number: 586	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 2,169	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 127 has predominantly old-growth stand structure. The overstory consists of a mixture of mature western hemlock, western redcedar and Sitka spruce. Volume growth is static. Moderate stem decay coupled with windthrow are the primary damages. Overall the unit has high wind risk with several areas blowdown. Mistletoe is light. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Tongass Wide Young Growth Study (TWYGS) sites (POW Thorne Bay Experiment #1 and POW Overview East Experiment #1) are along the southeastern and northern boundaries. Protection of these sites is required. Contact the Forestry Sciences Lab in Juneau for additional information.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 37 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy is planned to divide the potential opening to reduce visual effects, maintain wildlife corridors, coincide with unsuitable soils and expand on RMAs. Mapped legacy totals about 37 acres.</p>			
TIMBER/YARDING: Cable and shovel yarding to the proposed temporary roads.			
ENGINEERING/ROADS: Unit is accessed by proposed temporary roads, totaling 4,400 feet. Approximately 1,100 feet of this road is constructed over decommissioned road bed.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Deer Creek			
<p>Stream #: 2 Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCO, MMO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class III for HCO- to the top of the side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): review required on south side Protection: Category A, B and C</p> <p>Stream #: 5 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): review required on south side Protection: Category A and C</p> <p>Stream #: 5.3L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 6 Class: II, III Flagging: B/W, O/W C-Type: HCD Concerns: none Buffer (RMA): Class II for HCD- greater of 100 feet or to the top of the side-slope break. Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream #: Lake-A1 Class: II Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Lake A-1- greater of 100 horizontal feet or to the extent of flood plain, riparian vegetation or soils, riparian associated wetland fens, or height of one site potential tree. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			

Appendix 1

<p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>Temporary roads for Unit 127: One Class III and one Class IV stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of about 55 acres of Low and 33 acres of Very Low. It is entirely in Modified Landscape LUD and is partially in Middleground from the Thorne Bay to Sandy Beach Rd at a distance of at least 3,300 ft and from Thorne Bay Saltwater Use Area at a distance of more than 4,000 ft. Legacy polygons serve to break up the unit into three openings; thus eliminating scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from 20 to greater than 60%. There are steep slopes along the western boundary that are included in an unsuitable soil exclusion area. About 6 acres were excluded due to very high landslide potential, colluvial activity, and steep slopes adjacent to a steep v notch. Forested wetlands are found in the northern half of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, the soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads traverse about ¾ of an acre of forested wetland. Wetland avoidance was not feasible due to the extent of wetland in the unit. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern lobe and western 1/2 of unit). Legacy standard and guideline applies in this VCU.</p>

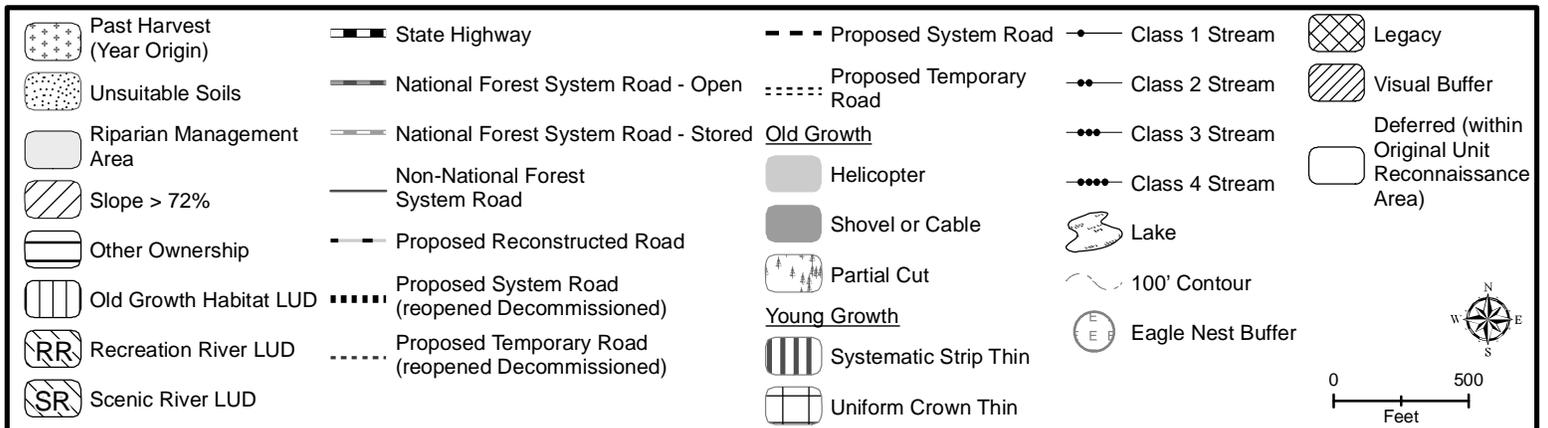
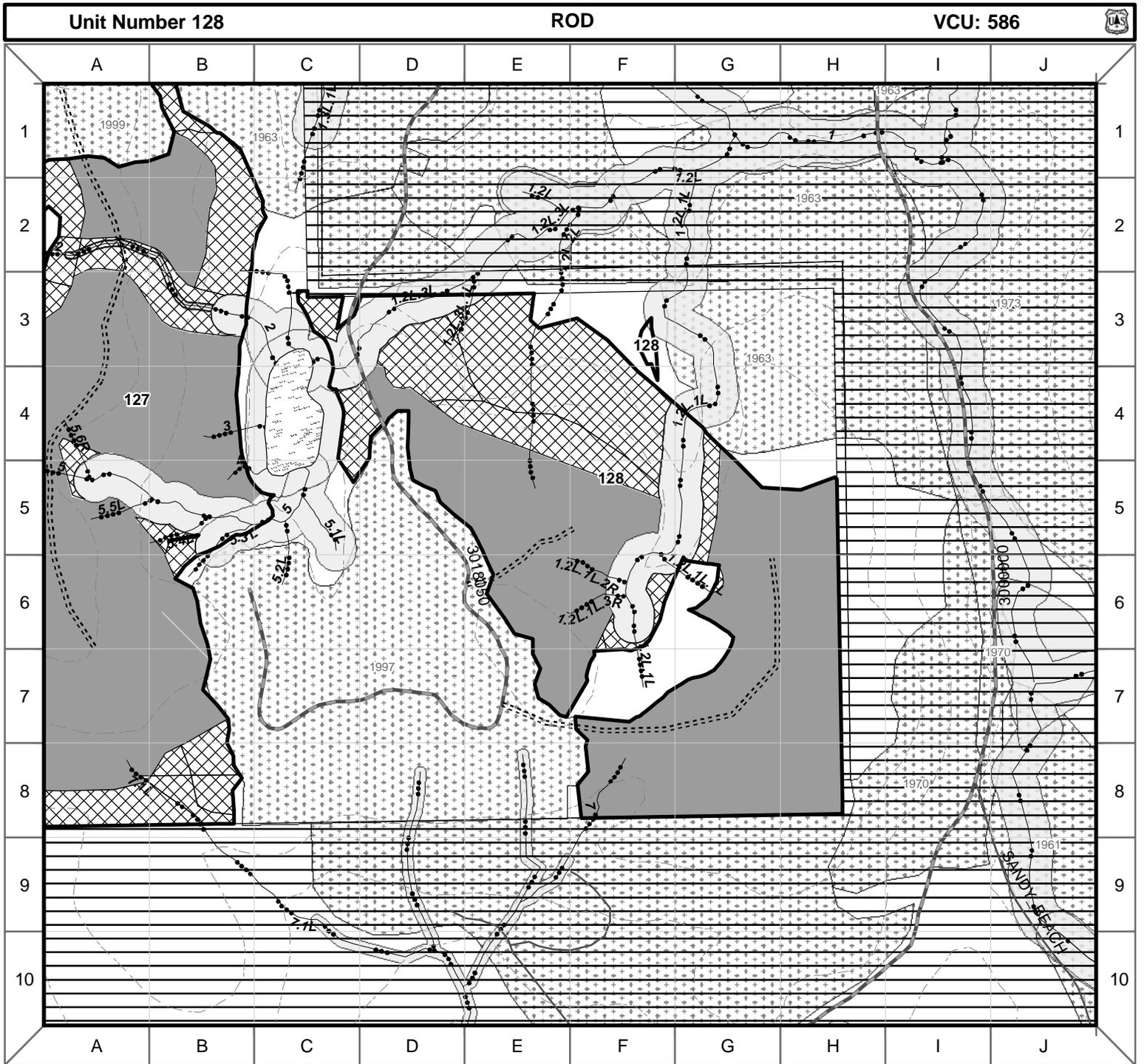


Appendix 1

Unit Number: 128	Alternatives: ROD	Total Unit Acres: 54.0	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 1,016	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit varies from old-growth to uneven-age stand structure. The overstory consists of western hemlock with western redcedar and Alaska-cedar mixed in. There is a high abundance of mistletoe and heart rot in the western hemlock. The larger diameter cedars also were high defect. Mid-diameter cedars are generally low defect. Significant older wind damage was noted in the unit resulting in a heavy stocking of western hemlock in the midstory. These areas have an uneven-age appearance. Windthrow risk is high. Mistletoe is high. A past harvest to the west on USFS land has met green-up with regeneration over 5 feet tall. The harvest areas on state land adjacent to the northern and southern boundaries are more recent and have not yet reached the green-up requirement, but do not count towards USFS opening size restrictions.</p> <p>Silvicultural Objective/Desired Condition: The desired condition for this stand is a highly productive, healthy, windfirm stand grown for timber management that retains residual trees as needed to meet standards and guides or other objectives.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and disease in the future stand to the maximum extent possible.</p> <p>A Tongass Wide Young Growth Study site (POW Thorne Bay Experiment #1) is along the western boundary. Protection of this site is required. Contact the Forestry Sciences Lab in Juneau for additional information.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 23 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy is placed to exclude two sensitive plant populations from harvest, build off RMAs for wind firming, consolidate POG, maintain east-west and north-south connectivity, and exclude unsuitable soils. Total mapped legacy equals approximately 24 acres.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary roads and NFS road 3018050.			
ENGINEERING/ROADS: Unit is accessed by proposed temporary roads, totaling 2,500 feet.			
BOTANY: Two lesser round-leaved orchid populations, with 5 and 24 plants each, have been incorporated into the planned legacy, but are within the indirect effects area for the proposed harvest unit.			
INVASIVE SPECIES: Orange hawkweed and bull thistle infestations have been found along the existing NFS road 3018050 adjacent to the proposed unit. The bull thistle population had been treated previously, and no additional plants have been found during follow-up monitoring. Monitoring is recommended along the proposed temporary road to ensure that bull thistle and orange hawkweed are not spread into the new construction.			
FISHERIES: Streams are tributaries to Slide Creek			
<p>Stream#: 1.2L.1L Class: II, IV Flagging: B/W, G/W C-Type: MMO, HCO, HCM Concerns: blowdown Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO and HCM- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.2L.3L Class: II Flagging: B/W C-Type: HCM Concerns: none Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC</p>			

Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C
<p>Temporary roads for Unit 128: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>		
<p>GEOLOGY/KARST: No Concerns</p>		
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>		
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.</p>		
<p>RECREATION: No concerns</p>		
<p>SOILS/WETLANDS: Slopes range from 15 to 55%. Forested wetlands are found in about 40% of the unit with a muskeg in the central western portion (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads traverse less than ¼ of an acre of forested wetland. Wetland avoidance was not feasible due to the extent of wetland in the unit near the existing road. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>		
<p>WILDLIFE: Unit includes average snow deer winter range (nearly all of unit), some of which is also deep snow marten habitat/deer winter range (eastern and western portions of unit). Legacy standard and guideline applies in this VCU.</p>		

Appendix 1



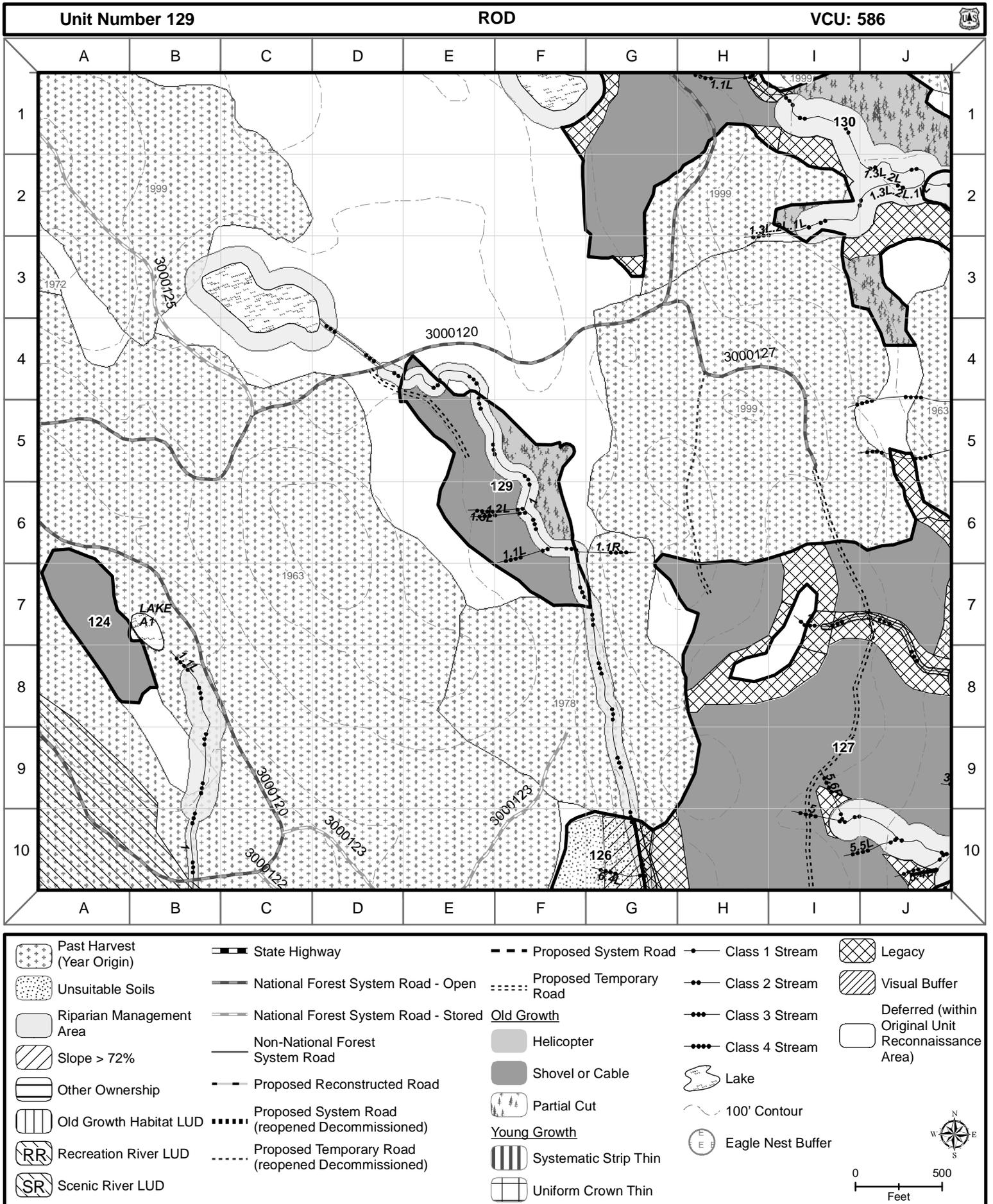
Unit Number: 129	Alternatives: ROD	Total Unit Acres: 13.0	Prescription: Clearcut and 50% Removal																									
VCU Number: 586	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 286	LUD: Modified Landscape																									
Summary of Concerns, Responses, BMPs and Mitigation																												
<p>SILVICULTURE: Existing Condition: This unit has old growth stand structure. The overstory consists primarily of western hemlock and redcedar in a mostly even distribution. Sitka Spruce is widely scattered throughout the unit. Normal rates of stem decay and stem form deformity are the main damages. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut (Ground based settings) This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (Helicopter settings) Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed primarily for economic concerns.</p> <p>The legacy standard and guide applies in this VCU; however, the potential opening is less than 20 acres therefore no legacy set-aside is required.</p>																												
TIMBER/YARDING: Shovel yarding to the proposed temporary road. Helicopter yarding to NFS road 3000120.																												
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 800 feet.																												
BOTANY: No Concerns																												
INVASIVE SPECIES: No Concerns																												
FISHERIES: Streams drain to Thorne Bay																												
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 1</td> <td style="width: 25%;">Class: III</td> <td style="width: 25%;">Flagging: O/W</td> <td style="width: 25%;">C-Type: MCS</td> <td style="width: 20%;">Concerns: none</td> </tr> <tr> <td colspan="5">Buffer (RMA): Class III for MCS- to the top of the side-slope break.</td> </tr> <tr> <td>Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="3">Protection: Category B</td> </tr> <tr> <td colspan="5">All other streams in unit: Class: IV</td> </tr> <tr> <td>Buffer (RMA): none</td> <td>Buffer (RAW): no review needed</td> <td>Flagging: G/W</td> <td>C-Type: HC</td> <td>Protection: Category C</td> </tr> </table>				Stream#: 1	Class: III	Flagging: O/W	C-Type: MCS	Concerns: none	Buffer (RMA): Class III for MCS- to the top of the side-slope break.					Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category B			All other streams in unit: Class: IV					Buffer (RMA): none	Buffer (RAW): no review needed	Flagging: G/W	C-Type: HC	Protection: Category C
Stream#: 1	Class: III	Flagging: O/W	C-Type: MCS	Concerns: none																								
Buffer (RMA): Class III for MCS- to the top of the side-slope break.																												
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category B																										
All other streams in unit: Class: IV																												
Buffer (RMA): none	Buffer (RAW): no review needed	Flagging: G/W	C-Type: HC	Protection: Category C																								
Temporary roads for Unit 129: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.																												
GEOLOGY/KARST: No Concerns																												
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.																												
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.																												
RECREATION: No Concerns																												
SOILS/WETLANDS: Slopes range from 5 to 60%. The steeper ground is located in an incised drainage way in the eastern side of the unit. The majority of the slopes are 10 to 35%. No wetlands were identified in the unit. The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel																												

Appendix 1

yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).

The proposed temporary road does not traverse any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit), all of which is also deep snow marten habitat/deer winter range. Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres.



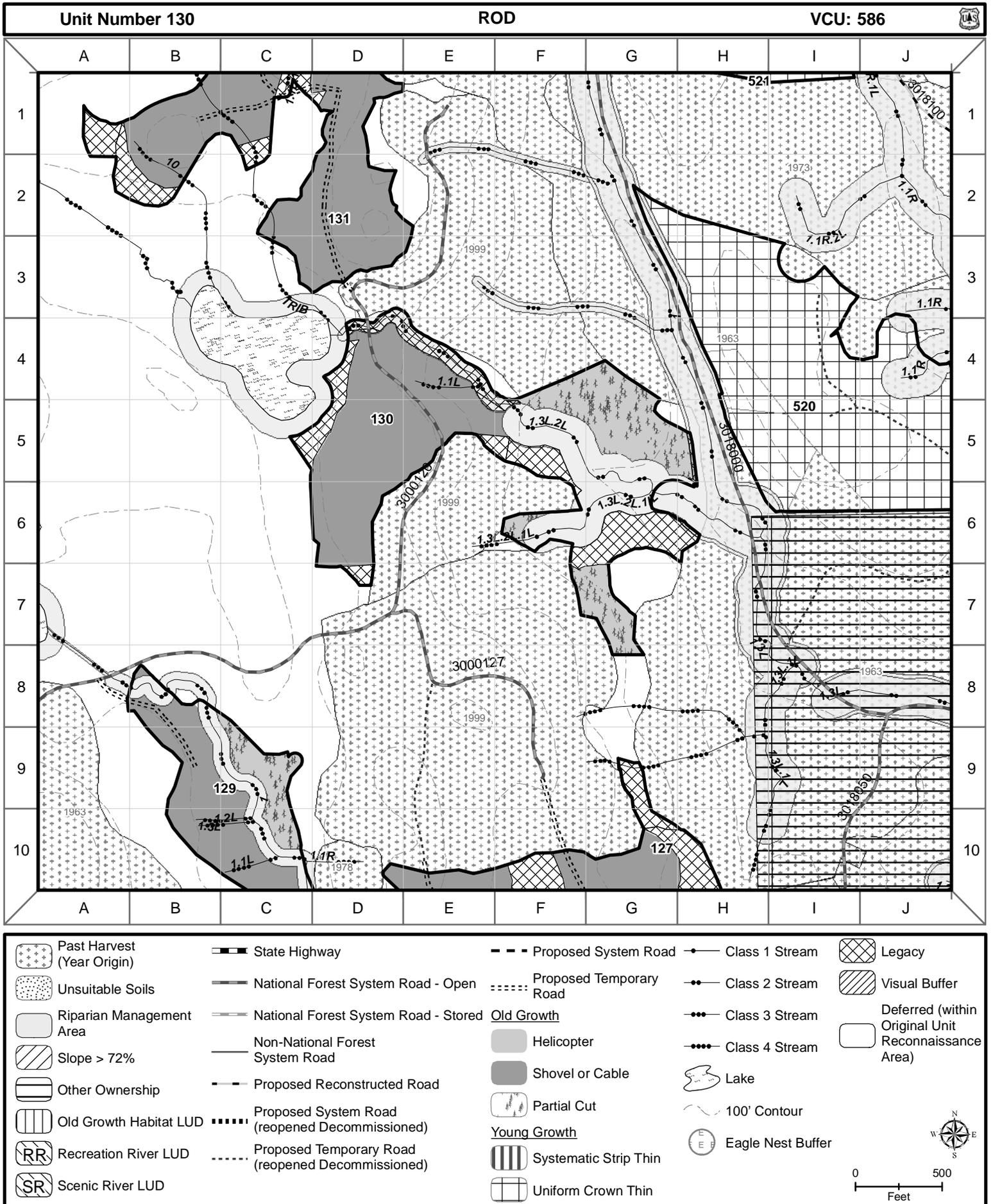
Appendix 1

Unit Number: 130	Alternatives: ROD	Total Unit Acres: 25.4	Prescription: Clearcut
VCU Number: 586	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 636	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 130 has old-growth stand structure. The overstory is made up of mature western hemlock, western redcedar and Sitka spruce. Past evidence of significant wind disturbance is expressed in the stand structure through the mosaic of age classes that are present. Windthrow risk is high throughout the stand. Mistletoe is moderate. Defects and damages are moderate. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with light to moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this unit. This requires that approximately 11 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. The required legacy is planned to coincide with RMAs, and areas on the east end of the unit to expand RMAs and consolidate POG. Mapped legacy totals about 11 acres.</p>			
TIMBER/YARDING: Cable and shovel settings yard to NFS road 3000120. Helicopter settings yard to NFS roads 3000120 and 3018000.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Slide Creek. Characteristics for Streams 2 and 2.1R do not contain project-specific, field-verified information. This information will be collected prior to implementation.</p> <p>Stream#: 1.3L.2L Class: II, III Flagging: B/W, O/W C-Type: HCL, HCD, HCM Concerns: Blowdown and active erosion and abundant gravel deposits. Buffer (RMA): Class II for HCL- greater of 100 feet or to top of side-slope break. Class III for HCD and HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 1.3L.2L.1L Class: II, III Flagging: B/W, O/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class III for HCO- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: Lake-A3 Class: III Flagging: O/W C-Type: L Concerns: none Buffer (RMA): Class III for Lake-A3- consider no or limited harvest. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			

SOILS/WETLANDS: Slopes range from 5 to 30%. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).

WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (southern lobe of unit). Legacy standard and guideline applies in this VCU.

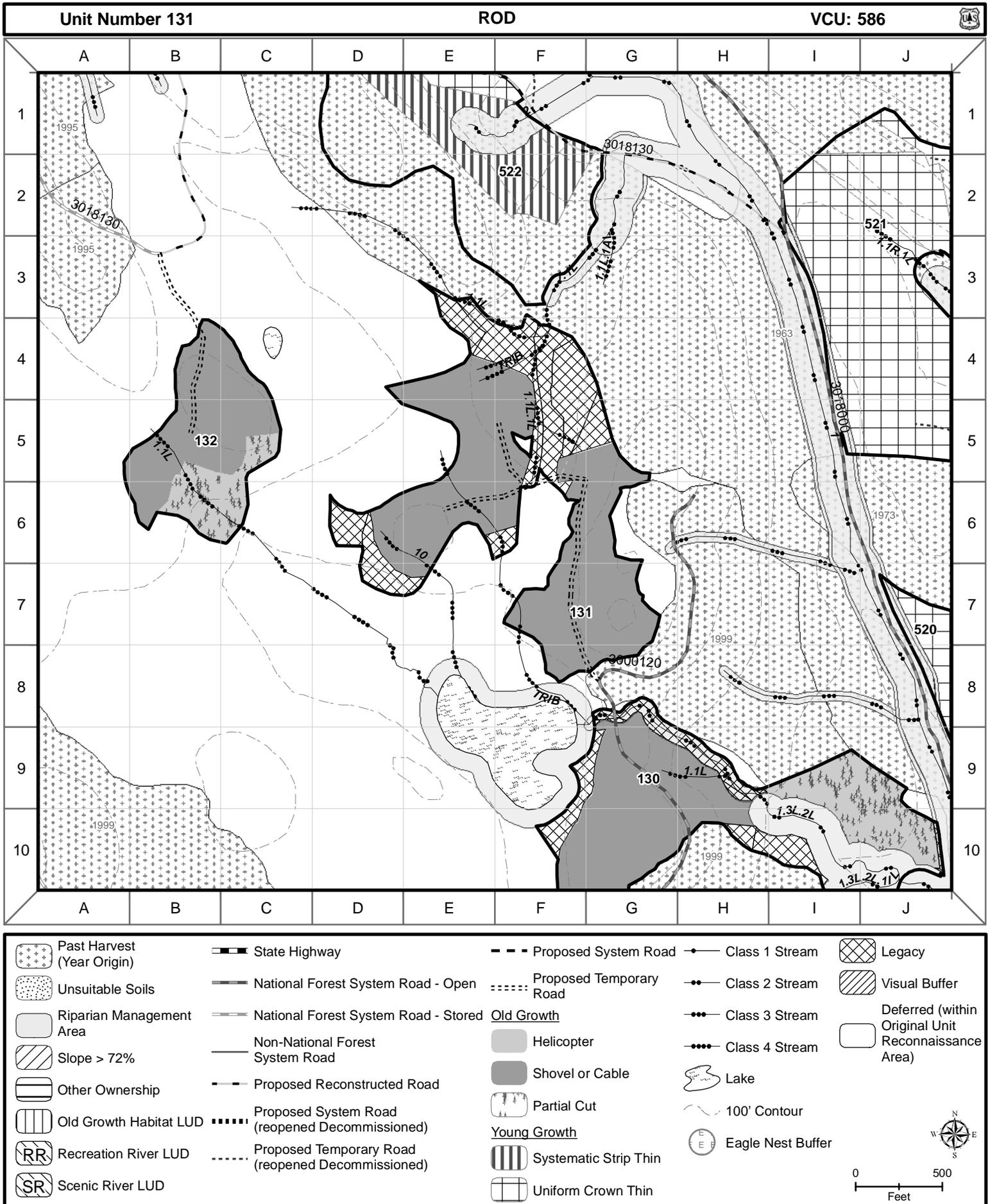
Appendix 1



Unit Number: 131	Alternatives: ROD	Total Unit Acres: 29.3	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 724	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 131 has old growth stand structure. Trees are generally mature with static growth. The overstory consists primarily of western hemlock and western redcedar in a patchy to even distribution. Sitka spruce are present but in less abundance and as a secondary component in the overstory. Stem decay is the main damage agent affecting tree health and volume. Windthrow hazard is moderate. Mistletoe infection is light throughout all units. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 13 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. The required legacy is planned to consolidate POG, while reducing required road length, avoiding areas with longer yarding distances, dividing the unit opening into two openings, and incorporating RMAs. Total mapped legacy equals about 13 acres.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by proposed temporary roads, totaling 2,500 feet.			
BOTANY: One population of whiteflower rein orchid, with seven plants, is within the indirect effects area for the proposed harvest unit.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributary to Deer Creek			
<p>Stream#: 1.1L Class: III, IV Flagging: O/W, G/W C-Type: HCM, MMO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 1.3L.2L Class: III Flagging: O/W C-Type: HCM Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: Lake-A3 Class: III Flagging: O/W C-Type: L Concerns: none Buffer (RMA): Class III for Lake-A3- consider no or limited harvest. Alternatives: ROD Buffer (RAW): no review needed Protection: Category C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			
Temporary roads for Unit 131: One Class IV stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape			

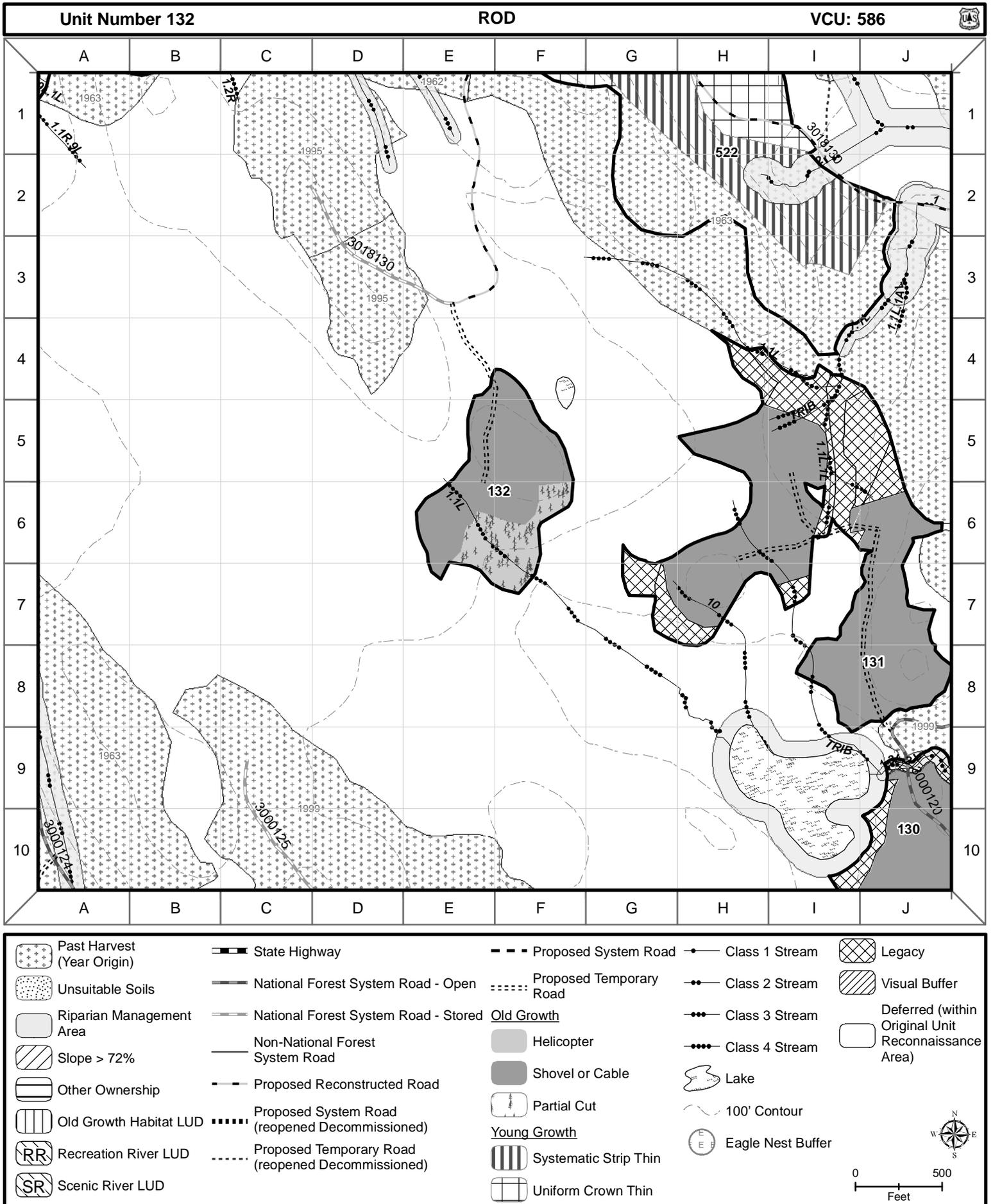
Appendix 1

LUD and is considered Not Seen. There are no scenery resource concerns.
RECREATION: No concerns
<p>SOILS/WETLANDS: Slopes range from nearly level to 60%. The majority of the slopes are gentle. Forested wetlands are found intermittently throughout unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads traverse less than ½ of an acre of forested wetland. Wetland avoidance was not feasible due to the extent of wetland in the unit near the existing road. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
WILDLIFE: Unit includes isolated average snow deer winter range (nearly all of unit), most of which is also deep snow marten habitat/deer winter range (northern and southern ends of eastern half of unit). Legacy standard and guideline applies in this VCU.



Appendix 1

Unit Number: 132	Alternatives: ROD	Total Unit Acres: 15.4	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 357	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory composition consists of a mixture of western hemlock, western redcedar, Alaska-cedar and Sitka spruce. Mortality related to heavy stem and heart decay in the larger hemlock and decline in the Alaska-cedar has created an open overstory with growing space being occupied by tall blueberry. Overall stem decay is moderate to high. Windthrow risk is moderate. Mistletoe is light. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU; however, the unit is less than 20 acres. No legacy set-aside is required.</p>			
TIMBER/YARDING: Shovel and helicopter yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3018130 totaling 6,100 feet, and a proposed temporary road of 1,100 feet. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Deer Creek			
<p>All streams in unit: Class: IV Flagging: G/W C- Type: HC Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p> <p>Temporary roads for Unit 132: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Modified Landscape LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
<p>SOILS/WETLANDS: Slopes are gentle throughout the unit. The majority of the slopes are gentle. No wetlands were identified. The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road does not cross any wetland. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>			
WILDLIFE: Unit includes isolated average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; however there are no requirements for this unit because it is less than 20 acres.			



Appendix 1

Unit Number: 133	Alternatives: ROD	Total Unit Acres: 42.7	Prescription: Clearcut
VCU Number: 586	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 975	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old growth stand structure. The overstory is generally an uneven distribution of western hemlock and western redcedar with patches of Alaska-cedar and scattered Sitka spruce. The overstory is typically moderate defect with stem rot, dead tops and mistletoe being of concern. Mistletoe infection rating was high in the eastern portions, while non-evident in the north lobe. Windthrow risk is low. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 18 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy was placed to consolidate POG and reduce required road length. Mapped legacy equals about 18 acres.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary roads.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3018100 for 9,100 feet and NFS road 3018122 for 3,100 feet and two proposed temporary roads, totaling 2,400 feet. See road cards for detailed information on existing NFS roads.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Clarence Strait			
<p>Stream#: Lake-A1 Class: II Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class II for Lake-A1- greater of 100 horizontal feet or to the extent of flood plain, riparian vegetation or soils, riparian associated wetland fens, or height of one site potential tree. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC, MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p> <p>Temporary roads for Unit 133: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low, except for 1 acre of Low. It is entirely in Modified Landscape LUD and is mostly considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from 10 to 80%. The average slopes are 40 to 65%. The slopes greater than 72% occupy less than ½ of an acre and are suitable for harvest with partial suspension. Forested wetlands were identified in abundance in isolated spots on the gentle low-lying slopes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and			

National Core Veg-4).

The proposed temporary road crosses about 1.5 acres of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands in the unit on the low-lying slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes isolate average snow deer winter range (all of unit except eastern edge). Legacy standard and guideline applies in this VCU.

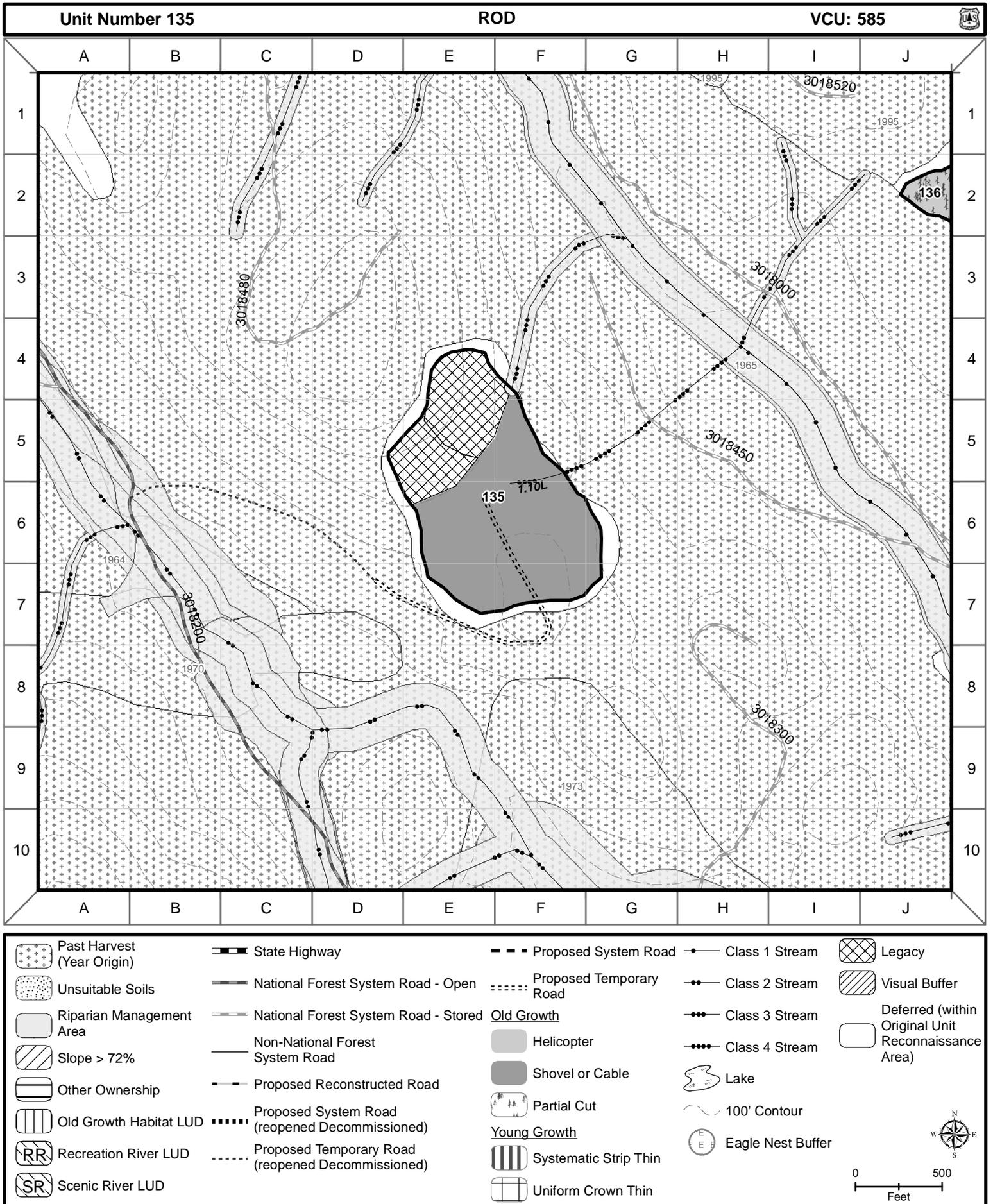
Unit Number: 135	Alternatives: ROD	Total Unit Acres: 18.8	Prescription: Clearcut
VCU Number: 585	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 259	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure and marginal volume for harvest. The overstory consists primarily of western hemlock, western redcedar and Sitka spruce. The main damage agent affecting tree health and volume loss in the overstory is moderate to high amounts of stem decay. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>A Tongass Wide Young Growth Study (TWYGS) site (POW Slide Creek Experiment #4) is along the western boundary. Protection of this site is required. Contact the Forestry Sciences Lab in Juneau for additional information.</p> <p>The legacy standard and guide applies in this VCU. Original unit opening size was 27 acres; this requires that approximately 8 acres of productive old growth representative of the overall composition of the planned harvest area be maintained indefinitely. Legacy was placed to consolidate POG and reduce required road. Mapped legacy equals about 8 acres.</p>			
TIMBER/YARDING: Alternatives 2 and 3: Shovel and cable yarding to the proposed temporary road. Alternative 5: Helicopter yarding to NFS road 3018200.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 3,600 feet. Approximately 1,600 feet will be constructed over decommissioned road bed.			
BOTANY: No Concerns			
INVASIVE SPECIES: INVASIVE SPECIES: An infestation of common tansy had been located along the existing NFS road 3018200. This infestation had been treated previously and monitoring has not observed any continued infestations. It is recommended that this location be monitored and treated if plants are observed.			
FISHERIES: Streams are tributaries to Slide Creek.			
<p>Stream#: A1 Class: III Flagging: O/W C- Type: HCD Concerns: none Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All streams in unit: Class: IV Flagging: G/W C- Type: HC Buffer (RMA): none Buffer (RAW): none Protection: Category C</p>			
Temporary roads for Unit 135: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from nearly level to 50%. Forested wetlands are found on the gentle slopes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a			

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minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).

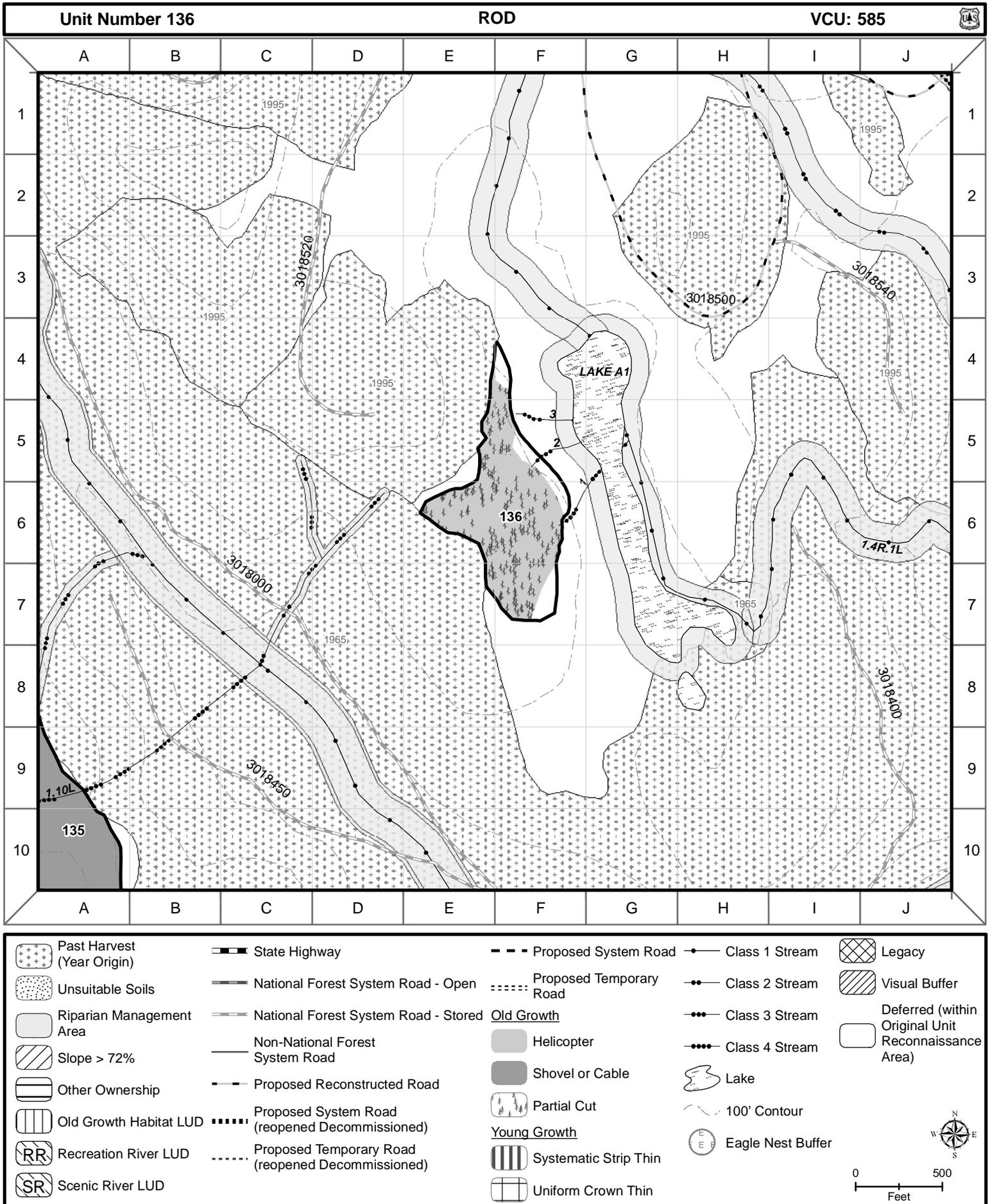
The proposed temporary road crosses about ½ of an acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes isolated average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (southern half of unit). Legacy standard and guideline applies in this VCU.



Appendix 1

Unit Number: 136	Alternatives: ROD	Total Unit Acres: 11.4	Prescription: 25% Removal
VCU Number: 585	Yarding System: Helicopter	Net Harvest Volume (MBF): 52	LUD: Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 136 has old-growth stand structure. The overstory consists of western hemlock, Sitka spruce and western redcedar. Stem decay is the main damage. Scattered dead or dying tops are common in all species. The average defect rating is high. Mistletoe was rated as low. The unit has a high windthrow risk. All adjacent past harvest units meet NFMA requirements for green-up.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed for economic concerns and to mitigate effects to wildlife and the watershed.</p> <p>TIMBER/YARDING: Helicopter yarding to NFS road 3018500.</p> <p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3018500, totaling 4,200 feet. NFS road 3018500 will also be used to access Unit 139. See road card for information on NFS road.</p> <p>BOTANY: No Concerns</p> <p>INVASIVE SPECIES: No Concerns</p> <p>FISHERIES: Streams drain to Clarence Strait</p> <p>Stream#: Lake-A1 Class: I Flagging: B/W C-Type: L Concerns: none Buffer (RMA): Class I for Lake-A1- greater of 100 horizontal feet or to the extent of flood plain, riparian vegetation or soils, riparian associated wetland fens, or height of one site potential tree. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): none Protection: Category C</p> <p>GEOLOGY/KARST: No Concerns</p> <p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p> <p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is entirely in Timber Production LUD and is considered Not Seen. There are no scenery resource concerns.</p> <p>RECREATION: No concerns</p> <p>SOILS/WETLANDS: Slopes are gentle throughout the unit. Forested wetlands are found intermittently throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension would meet soil and wetland resource concerns (R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p> <p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (central portion of unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres and partial harvest.</p>			



Appendix 1

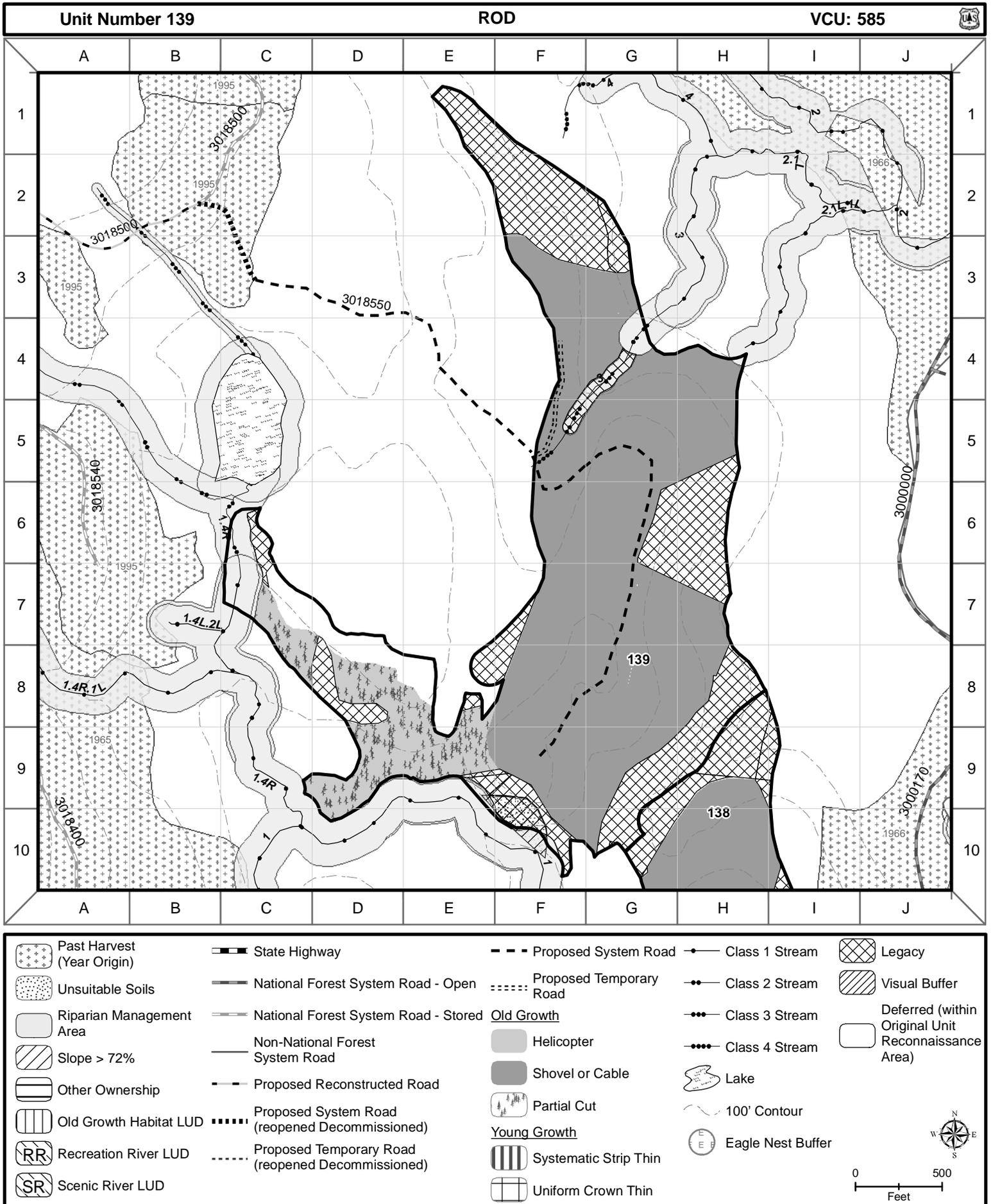
Unit Number: 138	Alternatives: ROD	Total Unit Acres: 34.9	Prescription: Clearcut
VCU Number: 585	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 781	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Old-Growth stand structure with a mixed western hemlock and western redcedar overstory with mostly even distribution. Sitka spruce are widely spaced in the overstory. Mistletoe rating varies across the unit; the rating overall, is moderate to heavy. Overstory is typically moderate to high defect with stem rot, stem form and mistletoe being of concern. Windthrow risk is low. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 138 and 139 combine to form a potential opening of 158 acres. This requires that approximately 48 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined Unit 138/139 opening. Legacy was placed to reduce the size of the opening and to include sensitive plant populations. Legacy on the east side of unit was placed to reduce required road length and reduce visibility of harvesting from Sandy Beach and the Sandy Beach Rd. Legacy also consolidates POG adjacent to Slide Cr. RMA. Unit 138 and 139 combined legacy totals approximately 51 acres.</p>			
TIMBER/YARDING: Shovel and cable yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 2,500 feet.			
BOTANY: One population of lesser round-leaved orchid, with twenty plants, and a population of whiteflower rein orchid, with 49 plants, were found during surveys for this unit. Small portions of these populations are within the area proposed for harvest in Alternative 5 only. Given the partial harvest prescription, the botanist will work with implementation to avoid the direct affects and harvest in the immediate vicinity of the known plants for that population.			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Slide Creek and to Clarence Strait			
<p>Stream#: 1 Class: I Flagging: B/W C-Type: MMM, MCM Concerns: blowdown, active erosion and steep side-slopes with mobile sediment Buffer (RMA): Class I for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, riparian associated wetland fens. Class I for MCS- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All streams in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): none Protection: Category C</p>			
Temporary roads for Unit 138: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of about 15 acres of Moderate and 20 acres of Very Low. It is entirely in Modified Landscape LUD and is partially considered Foreground; however, over half			

<p>of the unit is on the back side of the ridge and is Seldom Seen. Legacy patches have reduced the visibility of the unit so that it meets the SIO. Most views from Sandy Beach are screened by trees along the road. Opening size allowable by the Forest Plan for Intermediate VAC is 15 to 40 acres.</p>
<p>RECREATION: Harvest in this unit would be heard from Sandy Beach Picnic Area. There are often 10 vehicles at this picnic area in the summer. This impact would be short-term and limited to the duration of harvest activities.</p>
<p>SOILS/WETLANDS: Slopes range from 30 to 50%. Forested wetlands are found intermittently throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road crosses about 2 acres of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands, slopes, and location of existing road. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (southern half of unit). Legacy standard and guideline applies in this VCU.</p> <p><u>Old-growth Reserve (OGR) Boundary</u> Current OGR boundary adjacent to unit to the east</p>

Unit Number: 139	Alternatives: ROD	Total Unit Acres: 72.8	Prescription: Clearcut
VCU Number: 585	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 2,019	LUD: Modified Landscape, Timber Production
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing condition: This unit has old growth stand structure with a mixed western hemlock and western redcedar overstory. Sitka spruce are widely spaced. The mistletoe rating is moderate to heavy. Overstory trees typically moderate to high defect with stem decay stem form and mistletoe being of concern. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 138 and 139 combine to form a potential opening of 158 acres. This requires that approximately 48 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined Unit 138/139 opening. Legacy in north lobe of unit was placed to avoid impacting another sensitive plant, to reduce visibility of unit, and to reduce required road length. Legacy in north-center of unit partially avoids a fourth sensitive plant population. Unit 138 and 139 combined mapped legacy totals approximately 51 acres.</p>			
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary road and proposed NFS road 3018550. Shovel and helicopter settings yard to proposed NFS road 3018550.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by a proposed temporary road of 700 feet and proposed NFS road 3018550. Proposed NFS road 3018550 is 5,500 feet with 600 feet constructed over decommissioned road bed. Unit is also accessed by reconstruction of NFS road 3018500 totaling 7,400 feet. See road cards for information on NFS roads.</p>			
<p>BOTANY: Two populations of whiteflower rein orchid, totaling 115 plants, and four populations of lesser round-leaved orchid were found during surveys for this unit, totaling 124 plants.</p> <p>This alternative directly impacts less than half of one of the populations of lesser round-leaved orchid, a population of 47 plants. This alternative indirectly impact portions of the other populations found during surveys.</p>			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Slide Creek and to Clarence Strait			
<p>Stream#: 1 Class: I Flagging: B/W C-Type: MCM, HCV, LCM Concerns: active erosion, steep side-slopes with exposed bedrock Buffer (RMA): Class I for MCM, HCV and LCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>Stream#: 1.4R Class: I, II Flagging: B/W C-Type: HCM, MMS, MMO Concerns: none Buffer (RMA): Class I for HCM- greater of 100 feet or to the top of the side-slope break. Class I for MMS and Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>Stream#: 2.1L.1L Class: I Flagging: B/W C-Type: MMO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p>			
<p>Stream#: 3 Class: II, III, IV Flagging: B/W, O/W, G/W C-Type: HCM, HCD, MMO Concerns: blowdown and active erosion</p>			

Appendix 1

<p>Buffer (RMA): Class II for HCM- greater of 100 feet or to top of side-slope break. Class III for HCD- to the top of the side-slope break. Class IV for MMO- none</p> <p>Alternatives: ROD4 Buffer (RAW): no review needed Protection: Category A, B, and C</p>
<p>Temporary roads for Unit 139: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of about 25 acres of Moderate and 22 acres of Low and 12 acres of Very Low. It is mostly in Modified Landscape LUD and is partially considered Foreground, partially Middleground, and partially Seldom Seen. About 16 acres of the original unit was deferred so that opening sizes would be reduced and the unit could meet the SIO. Legacy patches have further reduced the visibility of the unit. Opening size allowable by the Forest Plan for Intermediate VAC is 15 to 40 acres.</p>
<p>RECREATION: Harvest in this unit would be heard from Sandy Beach Picnic Area. There are often 10 vehicles at this picnic area in the summer. This impact would be short-term and limited to the duration of harvest activities.</p>
<p>SOILS/WETLANDS: Slopes range from 20 to 80%. All slopes greater than 72% are located within the legacy and the stream 1 buffer and will not be harvested. Forested wetlands are found intermittently throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary road crosses about a ½ of an acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands, slopes, avoidance of Class 3 stream crossing, and the location of existing road. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (northern half of unit), some of which is also deep snow marten habitat/deer winter range (southern half of unit). Legacy standard and guideline applies in this VCU.</p> <p><u>Old-growth Reserve (OGR) Boundary</u> Current OGR boundary adjacent to unit boundary to the south.</p>

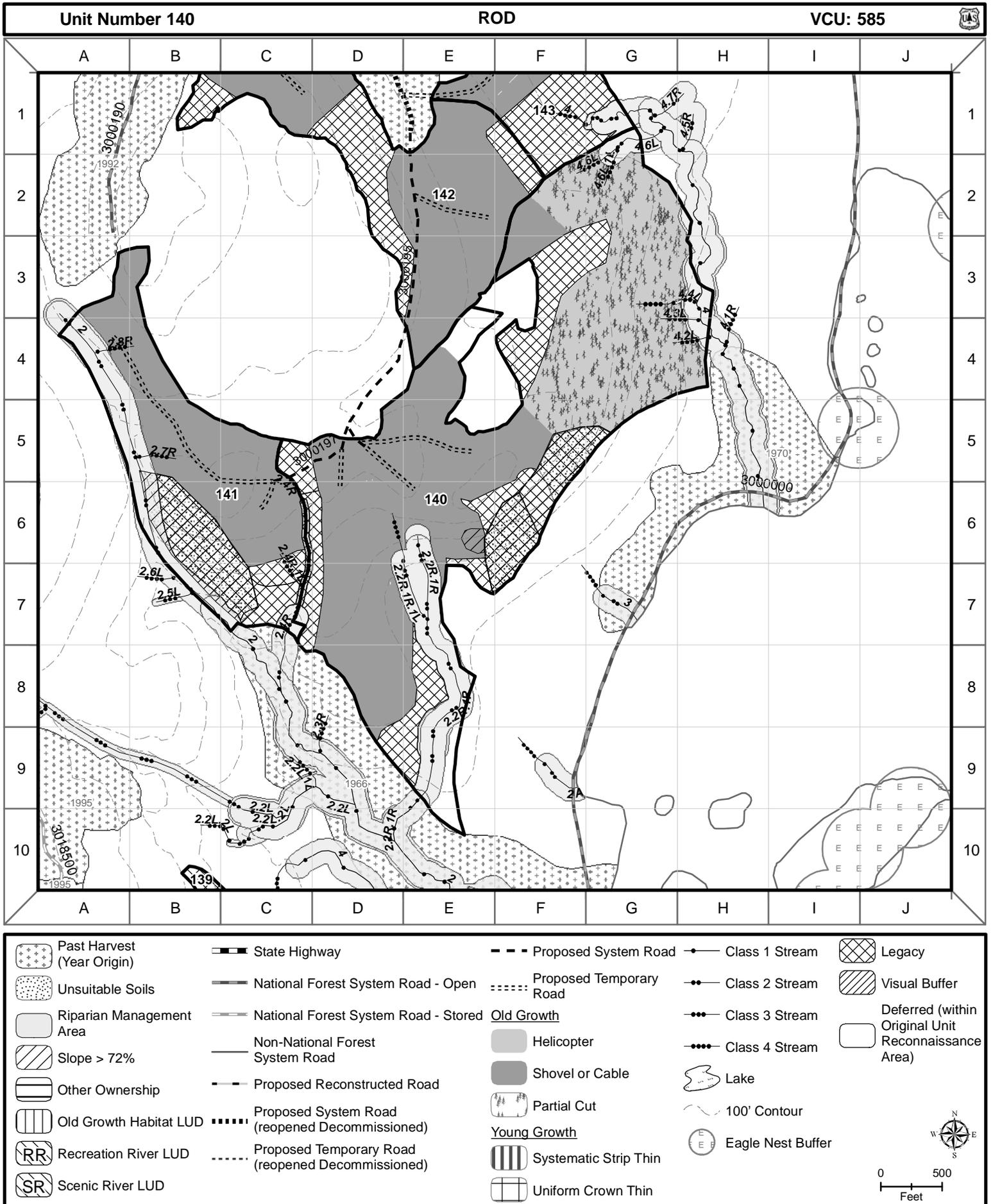


Appendix 1

Unit Number: 140	Alternatives: ROD	Total Unit Acres: 112.7	Prescription: Clearcut and 25% Removal
VCU Number: 585	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 1,526	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has uneven-aged stand structure due to repeated windthrow events. The overstory consists primarily of western hemlock as the dominant species along with scattered western redcedar. The main damage agents affecting tree health and volume loss is stem decay in the western redcedar and a mixture of stem decay and mistletoe in the western hemlock. Overall the average defect rating is high, mostly due to heavy mistletoe. Past windthrow areas are concentrated on the bench in the north central part of the area and along the upper portions of the eastern slope break. Windthrow risk is high. Overall defect is high, with marginal individual tree value. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 140, 141, 142 and 143 combine to form a potential opening of 255 acres. This requires that approximately 77 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined 140, 141, 142 and 143 potential opening. Legacy was placed to split the opening by building off of and providing RAW to the RMA that partially separates Units 140 and 141. Legacy is also positioned to reduce visibility of the opening to Sandy Beach and Sandy Beach Rd. and build off the southern RMA, consolidating POG. Units 140, 141, 142 and 143 have a combined mapped legacy of approximately 79 acres.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production but is being prescribed due to the proximity and visibility of the units from Sandy Beach, this prescription was used in helicopter settings to reduce the visual impact from harvesting. No legacy retention required due to partial harvest.</p>			
TIMBER/YARDING: Cable and helicopter settings yard to landings on the proposed temporary roads. Shovel settings yard to the proposed temporary roads and proposed NFS roads 3000195 and 3000197.			
ENGINEERING/ROADS: Unit is accessed by three proposed temporary roads, totaling 1,700 feet and proposed NFS road 3000195, totaling 5,200 feet. Approximately 2,400 feet of this road will be constructed over decommissioned road bed. This road is also used to access Units 141, 142 and 143. See road card for information about the NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Clarence Strait			
Stream#: 2	Class: I, II	Flagging: B/W	C-Type: HCM, HCD Concerns: none
Buffer (RMA): Class I and II for HCM and HCD- greater of 100 feet or o the top of the side-slope break.			
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A
Stream#: 2.2R.1R	Class: I, II	Flagging: B/W	C-Type: HCO, MMS, MMO
Concerns: none			
Buffer (RMA): Class I and II for HCO- greater of 100 feet or o the top of the side-slope break. Class I and II for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens.			
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A

Stream#: 2.2R.1R.1L	Class: II, IV	Flagging: B/W	C-Type: MMO, HCO	Concerns: none
Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for HCO- none				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A	
Stream#: 2.4R	Class: II, III, IV	Flagging: B/W, O/W, G/W	C-Type: HCM, HCO	Concerns: none
Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Class IV for HCO- none				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A, B, and C	
Stream#: 4	Class: I, II, III, IV	Flagging: B/W, O/W, G/W	C-Type: MMS, MMO, HCL	Concerns: slowdown
Buffer (RMA): Class I for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCL- to the top of the side-slope break. Class IV MMO- none.				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A, B, and C	
Stream#: 4.4L	Class: III, IV	Flagging: O/W, G/W	C-Type: HCO	Concerns: none
Buffer (RMA): Class III for HCO- to the top of the side-slope break. Class IV for HCO- none				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category B and C	
Stream#: 4.6L	Class: II, IV	Flagging: B/W, G/W	C-Type: HCO	Concerns: none
Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none				
Alternatives: ROD	Buffer (RAW): no review needed		Protection: Category A and C	
All other streams in unit:	Class: IV	Flagging: G/W	C-Type: HC	
Buffer (RMA): none	Buffer (RAW): no review needed		Protection: Category C	
Temporary roads for Unit 140: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.				
GEOLOGY/KARST: No Concerns				
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.				
SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of about 88 acres of Low and 6 acres of Very Low. It is in Modified Landscape LUD and is partially considered Foreground, but mostly in Middleground. The most visible portions of the unit are in uneven-aged management and legacy patches screen part of the unit and reduce the size of openings so that the SIO can be met.				
RECREATION: Harvest in this unit would be heard from Sandy Beach Picnic Area. There are often 10 vehicles at this picnic area in the summer. This impact would be short-term and limited to the duration of harvest activities.				
SOILS/WETLANDS: Slopes range from 10 to 80%. There is less than ¾ of an acres of slopes greater than 72% that are suitable for harvest with partial suspension. Forested wetlands are found throughout the unit on the gentle slopes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).				
The proposed temporary roads cross about a ½ of an acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands and slope grades. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.				
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern lobes of unit). Legacy standard and guideline applies in this VCU.				

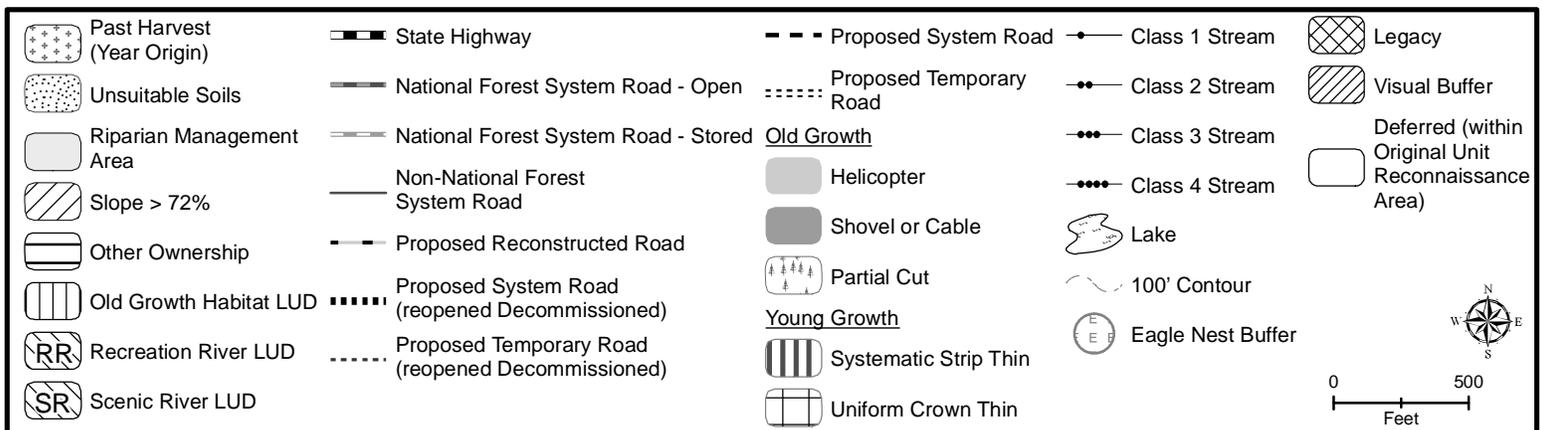
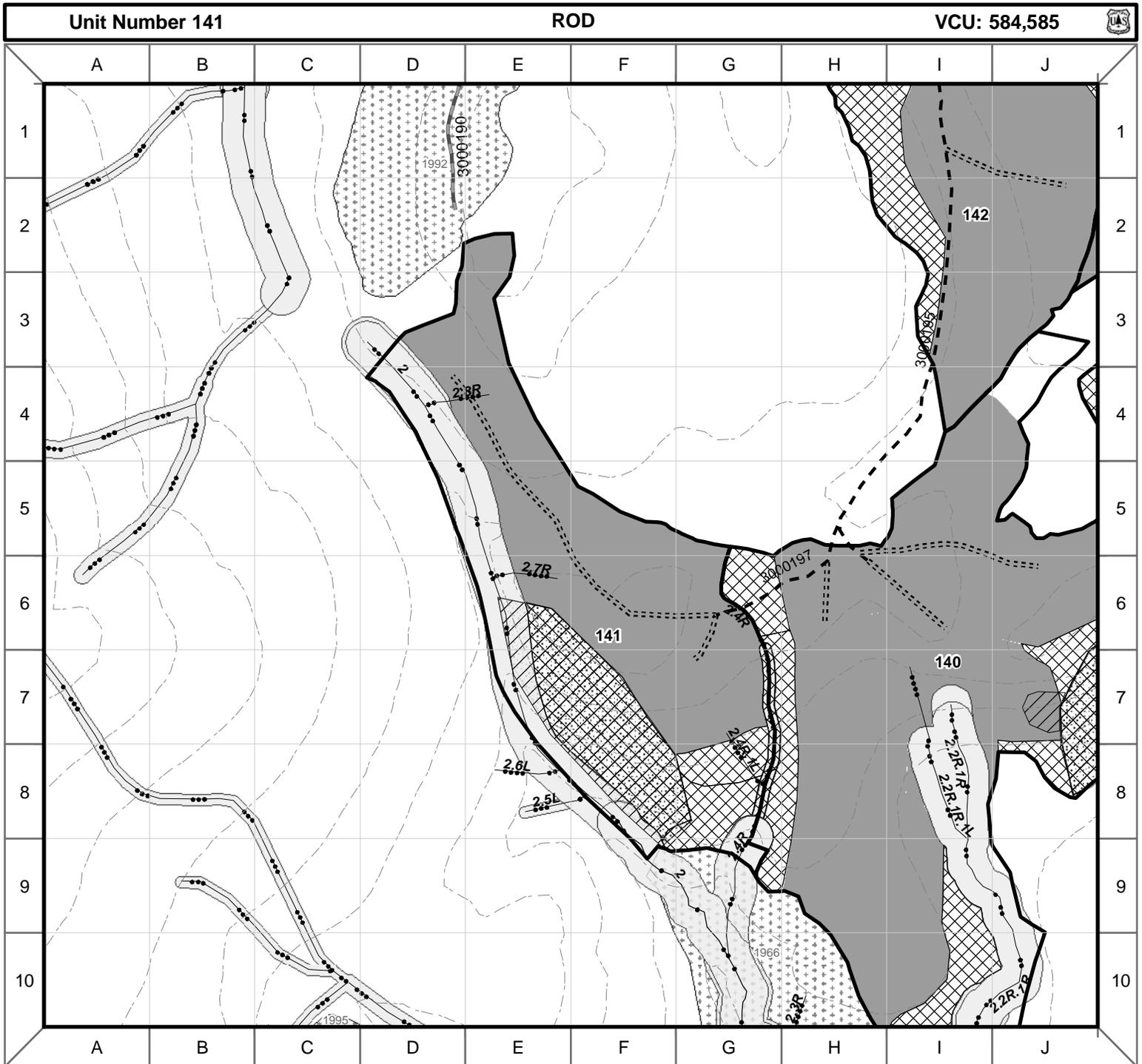
Appendix 1



Unit Number: 141	Alternatives: ROD	Total Unit Acres: 33.9	Prescription: Clearcut																																								
VCU Number: 585	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 740	LUD: Modified Landscape, Timber Production																																								
Summary of Concerns, Responses, BMPs and Mitigation																																											
<p>SILVICULTURE: Existing Condition: Unit 141 has mostly old-growth structure with areas in the northeast tending toward uneven-age. The overstory is composed of mostly western redcedar with western hemlock, Sitka spruce and some patches of Alaska-cedar. Heart rot, bole cracks, shake, mistletoe and broken and dead tops are common. The overall average defect rating is moderate. Mistletoe infections are considered to be moderate. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. In Alternatives 2 and 3 Units 140, 141, 142 and 143 combine to form a potential opening of 255 acres. This requires that approximately 77 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined 140, 141, 142 and 143 potential opening. Part of the required legacy was placed to coincide with areas dropped for soils concerns. The remaining legacy was placed to reduce the size of the opening created by Units 140 and 141 and reduce visibility from the Sandy Beach Rd. Units 140, 141, 142 and 143 have a combined mapped legacy of approximately 79 acres.</p>																																											
TIMBER/YARDING: Shovel and cable yarding to the proposed temporary roads.																																											
ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 2,200 feet; proposed NFS road 3000195, totaling 5,200 feet; and proposed NFS road 3000197, totaling 900 feet. Approximately 2,400 feet of NFS road 3000195 will be constructed over decommissioned road bed. NFS road 3000195 is also used to access Units 140, 142 and 143. See road card for information on NFS roads.																																											
BOTANY: No Concerns																																											
INVASIVE SPECIES: No Concerns																																											
FISHERIES: Streams drain to Clarence Strait																																											
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 2</td> <td style="width: 25%;">Class: I, II</td> <td style="width: 25%;">Flagging: B/W</td> <td style="width: 25%;">C-Type: MMS, HCM, HCD</td> </tr> <tr> <td colspan="4">Concerns: blowdown and active erosion; road influencing channel</td> </tr> <tr> <td colspan="4">Buffer (RMA): Class I and II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM and Class II for HCD- greater of 100 feet or to the top of the side-slope break.</td> </tr> <tr> <td>Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Stream#: 2.4R</td> <td style="width: 25%;">Class: II, III, IV</td> <td style="width: 25%;">Flagging: B/W, O/W, G/W</td> <td style="width: 25%;">C-Type: HCM, HCO</td> </tr> <tr> <td colspan="4">Concerns: none</td> </tr> <tr> <td colspan="4">Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Class IV for HCO- none</td> </tr> <tr> <td>Alternatives: ROD</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category A, B, and C</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">All other stream in unit:</td> <td style="width: 25%;">Class: IV</td> <td style="width: 25%;">Flagging: G/W</td> <td style="width: 25%;">C-Type: HC</td> </tr> <tr> <td>Buffer (RMA): none</td> <td>Buffer (RAW): no review needed</td> <td colspan="2">Protection: Category C</td> </tr> </table> <p>Temporary roads for Unit 141: One Class IV stream crossing. If any additional stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>				Stream#: 2	Class: I, II	Flagging: B/W	C-Type: MMS, HCM, HCD	Concerns: blowdown and active erosion; road influencing channel				Buffer (RMA): Class I and II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM and Class II for HCD- greater of 100 feet or to the top of the side-slope break.				Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A		Stream#: 2.4R	Class: II, III, IV	Flagging: B/W, O/W, G/W	C-Type: HCM, HCO	Concerns: none				Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Class IV for HCO- none				Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A, B, and C		All other stream in unit:	Class: IV	Flagging: G/W	C-Type: HC	Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C	
Stream#: 2	Class: I, II	Flagging: B/W	C-Type: MMS, HCM, HCD																																								
Concerns: blowdown and active erosion; road influencing channel																																											
Buffer (RMA): Class I and II for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCM and Class II for HCD- greater of 100 feet or to the top of the side-slope break.																																											
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A																																									
Stream#: 2.4R	Class: II, III, IV	Flagging: B/W, O/W, G/W	C-Type: HCM, HCO																																								
Concerns: none																																											
Buffer (RMA): Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Class IV for HCO- none																																											
Alternatives: ROD	Buffer (RAW): no review needed	Protection: Category A, B, and C																																									
All other stream in unit:	Class: IV	Flagging: G/W	C-Type: HC																																								
Buffer (RMA): none	Buffer (RAW): no review needed	Protection: Category C																																									

Appendix 1

<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of about 28 acres of Low and 15 acres of Very Low. It is in Modified Landscape LUD and is mostly considered Middleground, but some is Seldom Seen. Much of the visible portions of the unit are in legacy patches, which screen part of the unit and reduce the size of the opening so that the SIO can be met. Typical opening sizes allowed by the Forest Plan in areas with Low SIO and Intermediate VAC are 40 to 60 acres.</p>
<p>RECREATION: Harvest in this unit would be heard from Sandy Beach Picnic Area. There are often 10 vehicles at this picnic area in the summer. This impact would be short-term and limited to the duration of harvest activities.</p>
<p>SOILS/WETLANDS: Slopes range from 5 to 80%. All slopes greater than 72% have been excluded from harvest. Approximately 11 acres were excluded due to very high landslide potential, colluvial activity, and steep wet slopes adjacent to a fish stream. Forested wetlands are found throughout the unit on the gentle slopes (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads cross about 2 acres of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands and slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (nearly entire unit), some of which is also deep snow marten habitat/deer winter range (northern end of unit). Legacy standard and guideline applies in this VCU.</p>



Appendix 1

Unit Number: 142	Alternatives: ROD	Total Unit Acres: 61.7	Prescription: Clearcut
VCU Number: 585, 584	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 1,502	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This area displays uneven-aged stand structure due to extensive repeated windthrow. The overstory consists primarily of western hemlock in an even distribution with multi-age cohorts. Overstory Sitka spruce and western redcedar are found in clumps primarily where windthrow has been less intense. Overall stand damages are moderate to high for all species. In the western hemlock stem decay is heavy to very heavy, while mistletoe is light to moderate. The average defect rating is moderate to high. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 140, 141, 142 and 143 combine to form a potential opening of 255 acres. This requires that approximately 77 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined 140, 141, 142 and 143 potential opening. Legacy was placed to reduce the size of the opening, consolidate POG, and reduce required road length.</p> <p>TIMBER/YARDING: Cable settings yard to the proposed temporary road and proposed NFS road 3000195. Shovel settings yard to the proposed temporary road.</p> <p>ENGINEERING/ROADS: Unit is accessed by proposed temporary roads, totaling 1,900 feet; proposed NFS road 3000195, totaling 3,100 feet, approximately 2,400 feet is over is decommissioned roadbed. This road is also used to access Units 140, 141 and 143. See road card for information on NFS road.</p> <p>BOTANY: No Concerns</p> <p>INVASIVE SPECIES: No Concerns</p> <p>FISHERIES: No streams found in unit at time of survey. If streams are found during implementations, a fish biologist would be notified and appropriate protections would be applied.</p> <p>Temporary roads for Unit 142: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p> <p>GEOLOGY/KARST: No Concerns</p> <p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p> <p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape LUD and is considered Middleground, but not readily seen from the Road 30000000. Much of the visible portions of the unit are in legacy patches, which screen part of the unit and reduce the size of the opening so the SIO can be met. Typical opening sizes allowed by the Forest Plan in areas with Low SIO and Intermediate VAC are 40 to 60 acres.</p> <p>RECREATION: No concerns</p> <p>SOILS/WETLANDS: Slopes range from 10 to 35%. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Shovel yarding should be restricted in the northern section to south of the proposed temporary road. North of the temporary road is only suitable for cable yarding due to very wet 35% slopes. The entire southern portion is suitable for shovel. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>			

Alternatives 2 and 3: The proposed temporary road crosses about $\frac{3}{4}$ of an acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in these VCUs.

Unit Number: 143	Alternatives: ROD	Total Unit Acres: 18.4	Prescription: Clearcut
VCU Number: 585, 584	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 347	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit has old-growth structure. The overstory consists of primarily western hemlock and western redcedar with a minor component of Sitka spruce and Alaska-cedar. The dominant damage affecting tree health and volume loss is stem form (broken, dying or dead tops) and heavy patches of heart and stem decay. The overall defect rating for the entire unit is high/moderate. Overall the unit has marginal timber with generally high defect and many over mature trees that are exhibiting dead or dying tops. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 140, 141, 142 and 143 combine to form a potential opening of 255 acres. This requires that approximately 77 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined 140, 141, 142 and 143 potential opening. Legacy was placed to reduce the size of the opening, consolidate POG, and reduce required road length.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by proposed temporary road of 800 feet; proposed NFS road 3000195, constructed over decommissioned road bed, totaling 2,100 feet. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Clarence Strait			
<p>Stream#: 4 Class: I, II, III, IV Flagging: B/W, O/W, G/W C-Type: MMS, MMO, HCL Concerns: blowdown Buffer (RMA): Class I and II for MMS and MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class III for HCL- to top of side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A, B, and C</p> <p>Stream#: 4.6L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 143: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape LUD and is considered Middleground, but not readily seen from the 30 Road. Much of the visible portions of the unit are in legacy patches, which screen part of the unit and reduce the size of the opening so the SIO can be met. Typical			

Appendix 1

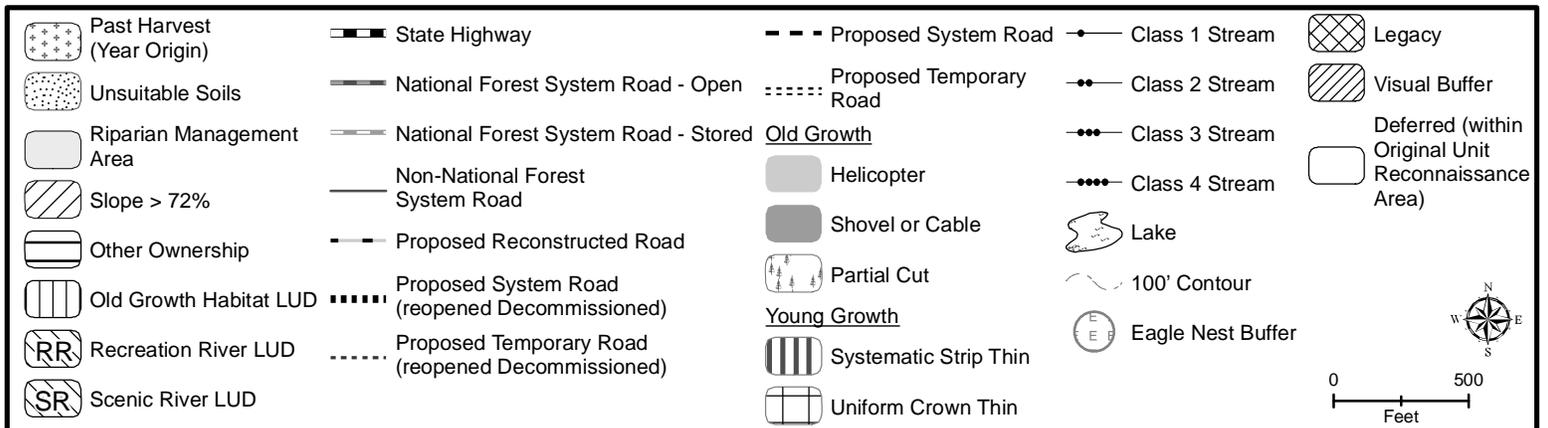
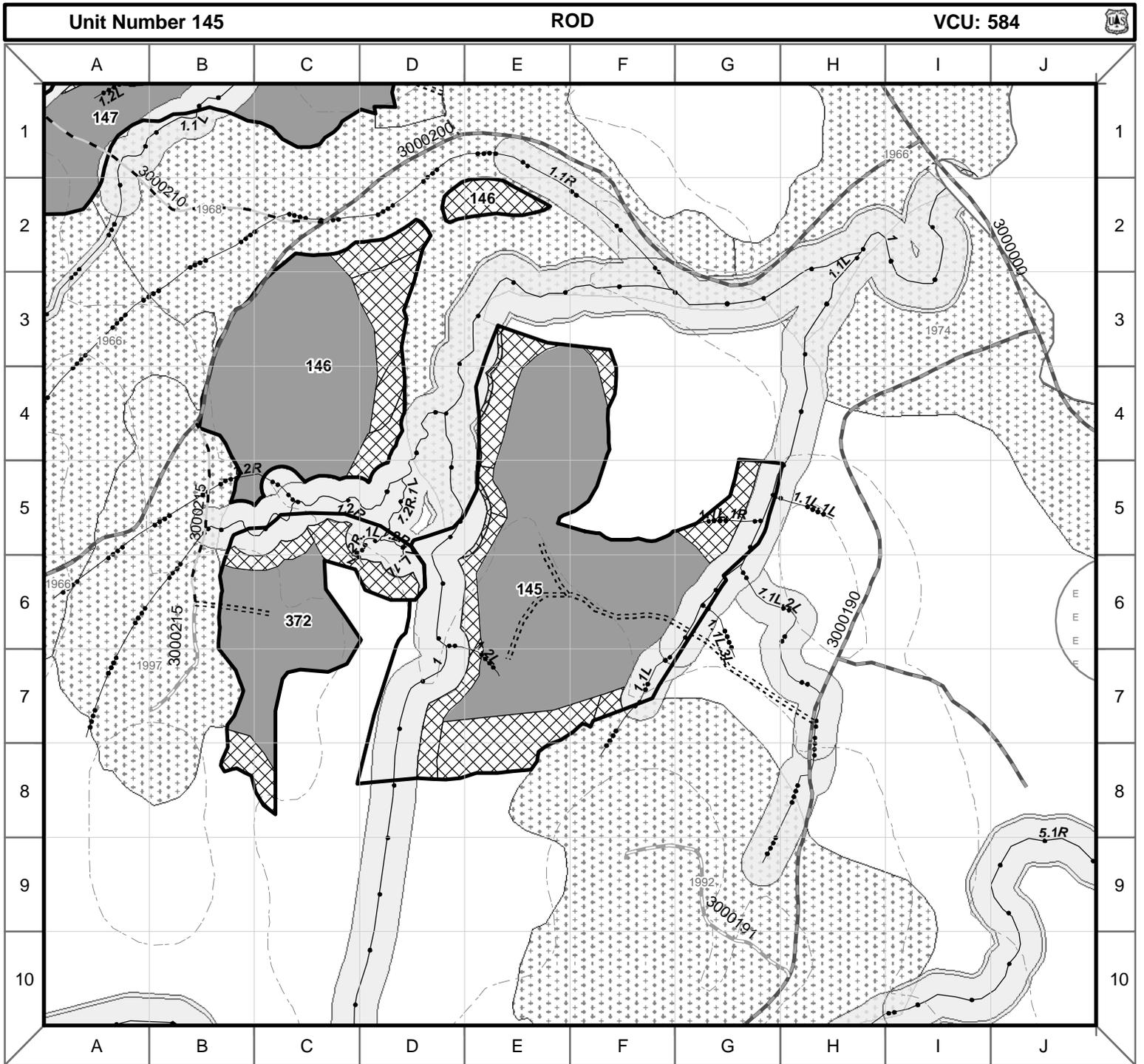
opening sizes allowed by the Forest Plan in areas with Low SIO and Intermediate VAC are 40 to 60 acres.
RECREATION: No concerns
SOILS/WETLANDS: Slopes range from nearly level to 26%. Forested wetlands are dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Care should be taken while operating in this unit. The organic soils are extremely deep with little shear strength. Heavy puncheon should be used to help keep the equipment floating. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4). The proposed temporary road crosses about 1 acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetlands. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (very northern end of unit). Legacy standard and guideline applies in these VCUs; Legacy acres cover reduce opening size, block up POG by building off RMAs, reduce required road length, and include some deer winter range and marten habitat.

Appendix 1

Unit Number: 145	Alternatives: ROD	Total Unit Acres: 28.3	Prescription: Clearcut
VCU Number: 584	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 663	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The over story consists of a western hemlock and western redcedar mixture. Sitka spruce and Alaska-cedar are lightly scattered. Damages and defects are moderate to high for all species, but especially high in the western hemlock, which exhibit heavy stem decay, but rather light mistletoe infections. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 12 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy was placed to consolidate POG along streams, provide RAW, reduce required road length, and reduce the visibility of the harvest. Total mapped legacy equals about 13 acres.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 2,200 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Cobble Creek			
<p>Stream#: 1 Class: I Flagging: B/W C-Type: MMM, MCM Concerns: Blowdown and active erosion Buffer (RMA): Class I for MMM and MCM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.1L Class: I, II, IV Flagging: B/W, G/W C-Type: MMO, MCO, HCO Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I/II for MCO and HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>Temporary roads for Unit 145: One Class I stream crossing. Stream#: 1.1L Class: I C-Type: MMO. A log culvert is recommended. Dolly Varden were identified at the proposed Class I crossing and will require a timing window of June 15 to September 1. Crossing structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). The Class I stream crossings will be designed to provide fish passage, using a log culvert or bridge, will be installed under current timing constrictions and concurrence from the State will be solicited prior to starting the work. During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was			

<p>mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Very Low. It is in Modified Landscape LUD but is considered Seldom Seen. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from 10 to 50%. Forested wetlands occupy about 40% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads cross about 2 acres of forested wetland. Wetland avoidance is not feasible due to the extent of forested wetlands and stream and existing road locations. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), most of which is also deep snow marten habitat/deer winter range (southern 3/4 of unit). Legacy standard and guideline applies in this VCU; Legacy acres serve to block up POG, reduce required road length, and cover some deer winter range and marten habitat.</p>

Appendix 1

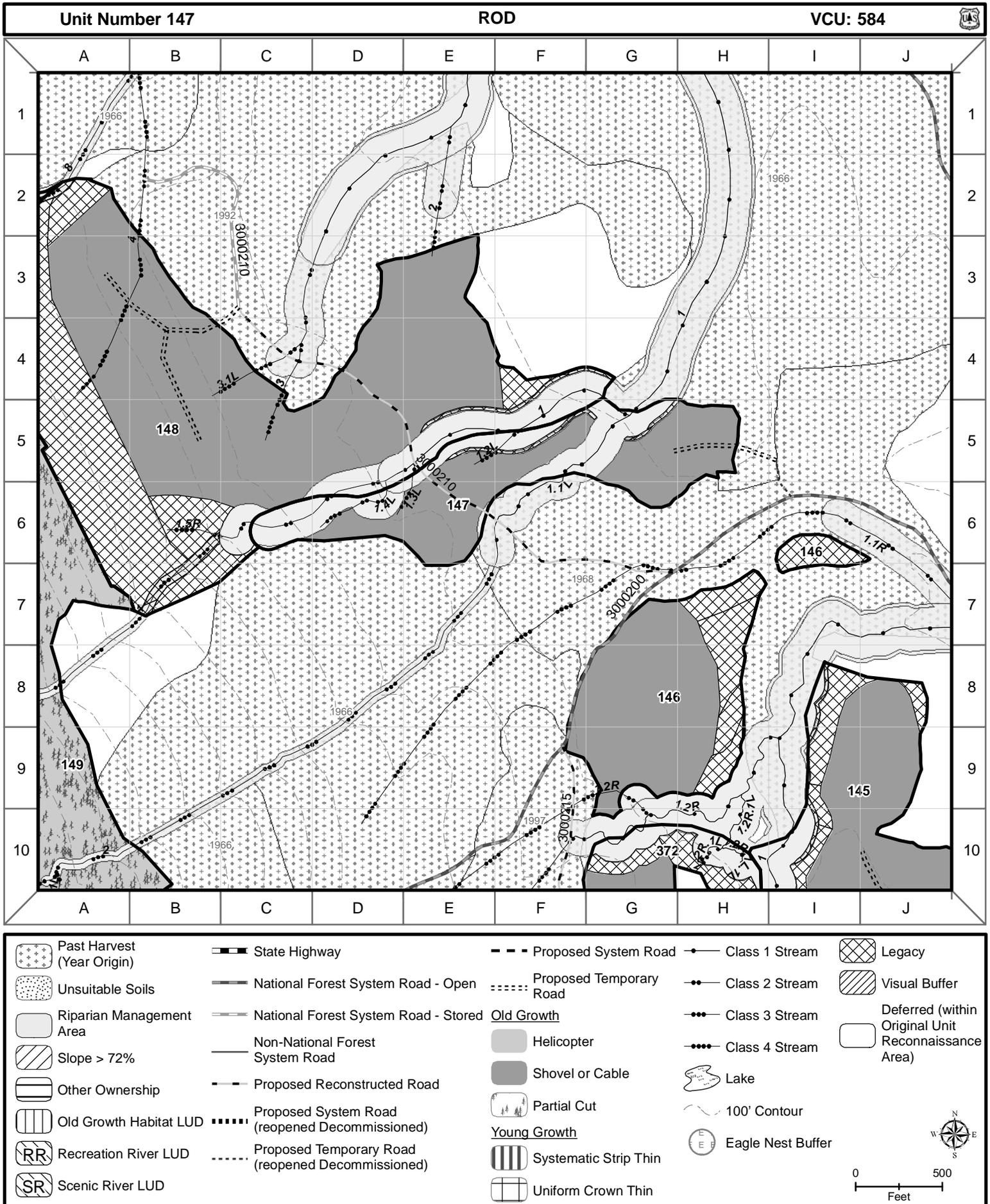


Unit Number: 146	Alternatives: ROD	Total Unit Acres: 17.7	Prescription: Clearcut
VCU Number: 584	Yarding System: Shovel	Net Harvest Volume (MBF): 388	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory species composition consists primarily of western redcedar and western hemlock. There is moderate to high stem decay. Damages are generally moderate, but high in larger trees of both species. Mistletoe is light to moderate. Windthrow risk is moderate. All of the past harvests around the unit have met green-up with regeneration over 5 feet tall.</p> <p>Silvicultural Prescription: Even-age Management - Clearcut This stand is mature with moderate to heavy stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 8 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy was placed to consolidate POG and reduce need for a road. Total mapped legacy equals about 8 acres. Units 146 and 372 combine to form a potential opening of 39 acres. This requires 12 acres of set-aside. The combined Unit 146 and 372 mapped legacy set-aside is 12 acres.</p>			
TIMBER/YARDING: Shovel yarding to NFS road 3000200.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams drain to Cobble Creek			
<p>Stream#: 1.2R Class: I, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class I for HCO- greater of 100 feet or to the top of the side-slope break. Class IV HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed. Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objectives (SIOs) for this unit are Very Low and Low. It is in Modified Landscape LUD and is mostly considered Seldom Seen (5 acres are Middleground). There are no scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from 5 to 20%. Forested wetlands occupy about 40% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for shovel yarding. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core BMPs Plan-2, Veg-2, and Veg-4).			
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; Legacy acres block up POG, eliminate need for a road, and cover some deer winter range.			

Unit Number: 147	Alternatives: ROD	Total Unit Acres: 16.3	Prescription: Clearcut
VCU Number: 584	Yarding System: Shovel, Helicopter	Net Harvest Volume (MBF): 201	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit is predominantly old-growth stand structure with areas of uneven-age structure. The overstory consists primarily of a mixture of western redcedar and lesser amounts of western hemlock found in a patchy distribution. The unit has high defect resulting from over-maturity. The main damage agents affecting tree health and volume loss is stem decay and dead/dying tops particularly in the western redcedar. Overall the overstory is very marginal value due to low stocking and high defect. The largest diameter trees of most species have high defect and many are cull. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 147 and 148 combine to form a potential opening of 102 acres. This requires that approximately 31 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined 147 and 148 potential opening. The mapped legacy for Units 147 and 148 totals 32 acres. The majority of legacy for this area is planned to coincide with difficult yarding areas with lower value timber in Unit 148.</p>			
TIMBER/YARDING: Shovel yarding to the proposed temporary road and NFS road 3000210.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3000210, totaling 1,400 feet; and a proposed temporary road of 900 feet. Approximately 200 feet of the temporary road will be constructed over decommissioned road bed. The NFS road 3000210 is also used to access Units 148 and 149. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Sal Creek			
<p>Stream#: 1 Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCL, HCM Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCL and Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required for southeast side Protection: Category A and B</p> <p>Stream#: 1.1L Class: I, III Flagging: B/W, O/W C-Type: MMO, HCO, HCM Concerns: none Buffer (RMA): Class I for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCO- greater of 100 feet or to top of side-slope break. Class III for HCM- to the top of the side-slope break Alternatives: ROD Buffer (RAW): review required for southeast side Protection: Category A and B</p> <p>Stream#: 1.4L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 147: No known stream crossings. If any stream crossings are found, crossings structures			

Appendix 1

and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objectives (SIOs) for this unit are Very Low and Low. It is in Modified Landscape LUD and is mostly considered Seldom Seen (5 acres are Middleground). There are no scenery resource concerns.
RECREATION: No concerns
SOILS/WETLANDS: Slopes range from 5 to 50%. Forested wetlands occupy about 70% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension helicopter yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, and Veg-5). Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4). The proposed temporary road crosses about ½ of an acre of forested wetland. Wetland avoidance is not feasible due to the extent of forested wetlands and stream and existing road locations. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.
WILDLIFE: Unit includes average snow deer winter range (northern half of unit). Legacy standard and guideline applies in this VCU.

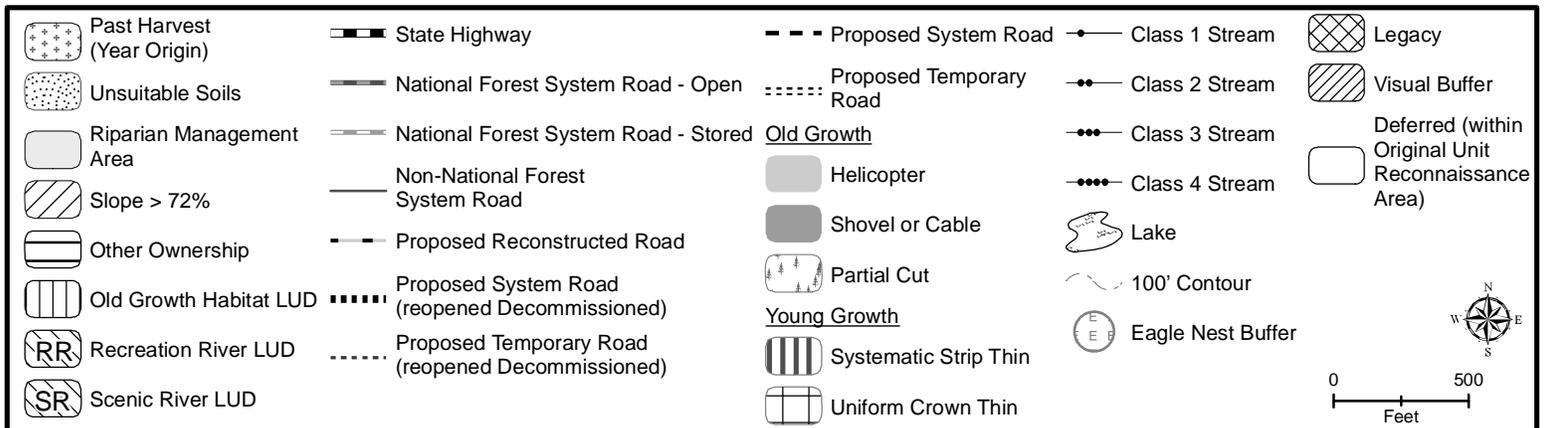
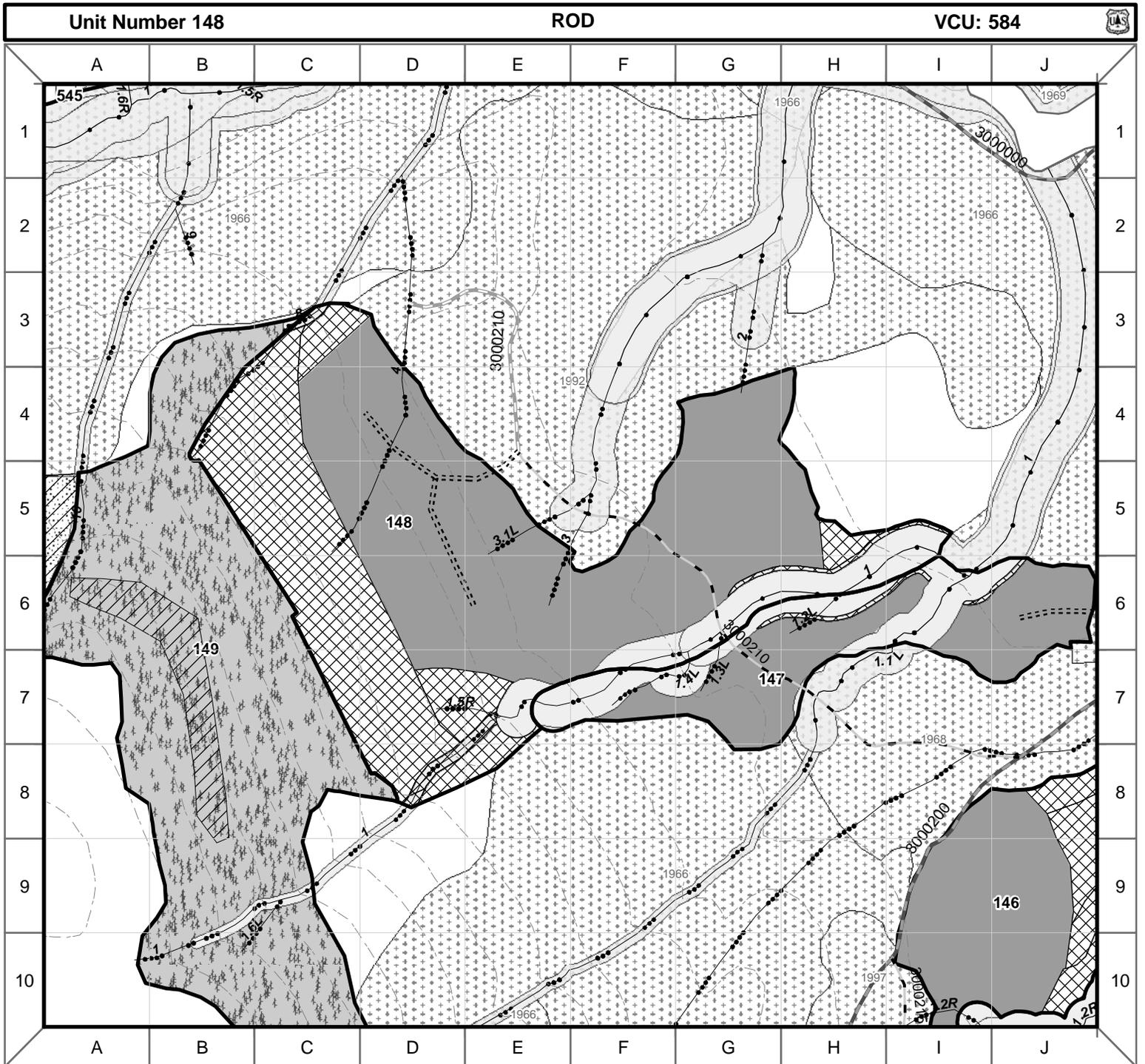


Appendix 1

Unit Number: 148	Alternatives: ROD	Total Unit Acres: 54.0	Prescription: Clearcut
VCU Number: 584	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 826	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists of western redcedar, western hemlock and Alaska-cedar. Sitka spruce are more scattered and considered to be secondary species in the unit. Major damages that are affecting tree health and volume loss are heart rot, stem decay, broken and dead tops and active Alaska-cedar decline. This unit has low volume, open canopy, higher than normal defect and lower value timber. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible. The legacy standard and guide applies in this VCU. Units 147 and 148 combine to form a potential opening of 102 acres. This requires that approximately 31 acres of productive old growth representative of the overall composition of the planned harvest area be maintained within the combined 147 and 148 potential opening. The mapped legacy for Units 147 and 148 totals 32 acres. Legacy was placed to consolidate POG, reduce visibility in low VAC area from the 30 road and improve economics. The mapped legacy for Units 147 and 148 totals 32 acres.</p>			
<p>TIMBER/YARDING: Cable settings yard to the proposed temporary roads. Shovel settings yard to the proposed temporary roads and NFS road 3000210.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3000210, totaling 3,200 feet and two proposed temporary roads, totaling 1,600 feet. The NFS road 3000210 is also used to access Units 147 and 149. See road card for information on NFS road.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Sal Creek</p> <p>Stream#: 1 Class: I, II, III Flagging: B/W, O/W C-Type: MMS, HCL, HCM Concerns: none Buffer (RMA): Class I for MMS- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class I for HCL and Class II for HCM- greater of 100 feet or to the top of the side-slope break. Class III for HCM- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 3 Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 3.1L Class: II, IV Flagging: B/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to top of side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 8 Class: III, IV Flagging: B/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 148: One Class IV stream crossing. If any additional stream crossings are found,</p>			

<p>crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads, implement BMPs 12.17, 13.10, 13.11, 13.6, 14.3, and 14.5.</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of 40 acres of Low and 18 acres of Very Low. It is in Modified Landscape LUD and is partially Not Seen but mostly in Middleground. The upper, more visible slopes of the original unit were designated as legacy. There are no scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from 15 to 65%. Forested wetlands occur intermittently in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable with a minimum of partial suspension cable yarding or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p> <p>The proposed temporary roads cross about 1.5 acres of forested wetland. Wetland avoidance is not feasible due to the extent of forested wetlands, the existing road locations, and slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU.</p>

Appendix 1

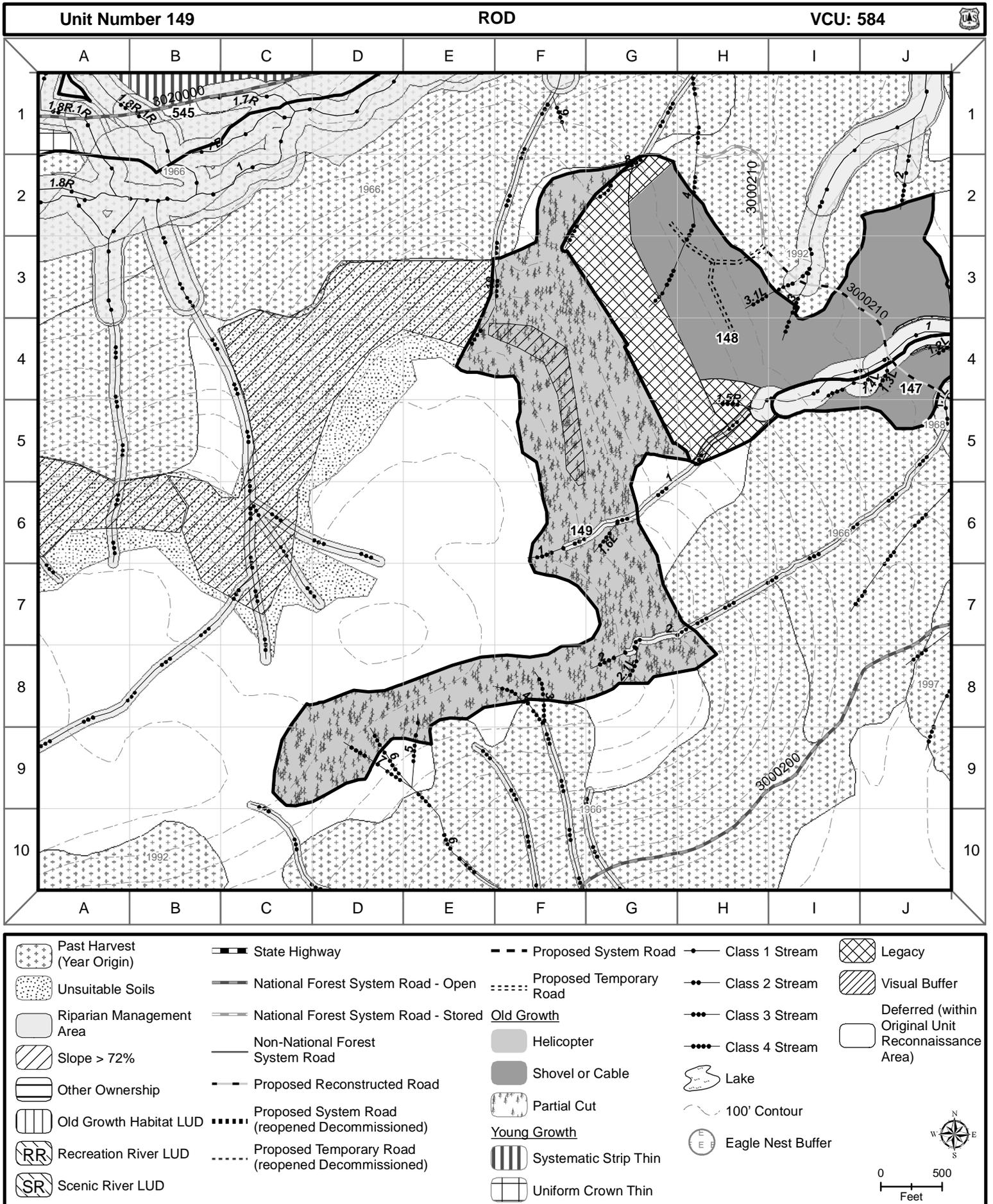


Unit Number: 149	Alternatives: ROD	Total Unit Acres: 110.8	Prescription: 25% Removal
VCU Number: 584	Yarding System: Helicopter	Net Harvest Volume (MBF): 483	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit has uneven-aged structure. The overstory consists of western hemlock mixed with Sitka spruce and mountain hemlock. Alaska-cedar and western redcedar are also present as lesser components. The dominant damage agent is stem decay and stem form deformities. Exposure to heavy weather is evident in the overstory tree crowns and expressed as stunted foliage and spike tops. Mistletoe was generally not a concern. Portions of the unit with south and east aspect have the appearance of being even-aged with western hemlock being the dominate overstory component. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Because of the large size and visibility of the unit, uneven-age management was selected as the silvicultural system to reduce the visibility of harvest. Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. No legacy is required due to the partial harvest prescription.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3000210.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3000210, totaling 3,200 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Sal Creek and Cobble Creek</p> <p>Stream#: 1 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 2 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: blowdown Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 3 Class: III, IV Flagging: O/W, G/W C-Type: HCO Concerns: none Buffer (RMA): Class III for HCO- to the top of the side-slope break. Class IV- for HCO none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 8 Class: III, IV Flagging: O/W, G/W C-Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C-Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of 95 acres of Low and 16 acres of Very Low. It is in Modified Landscape LUD and is mostly in Middleground. The uneven-aged management prescription for this unit eliminates any scenery resource concerns.</p>			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from 25 to greater than 72%. Approximately 6 acres of slopes greater than 72%			

Appendix 1

are suitable for harvest with full suspension partial harvest. Areas to the west of the unit were excluded from harvest due to very high landslide potential, high colluvial activity, active and historic landslides, and extremely steep wet slopes. Intermittent sub-alpine muskegs are located along the fringes of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of full suspension partial harvest helicopter yarding should follow R10 BMPs 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5.

WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (sliver in northern portion of unit). Legacy standard and guideline applies in this VCU; however no legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings larger than 20 acres).



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Unit Number: 153	Alternatives: ROD	Total Unit Acres: 46.9	Prescription: Clearcut
VCU Number: 584	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 932	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory is mostly western hemlock and western redcedar. Sitka spruce are scattered. Moderate to high stem form defects and stem decay are present. Mistletoe was rated as moderate. Windthrow risk is moderate. The unit has over-mature timber with declining growth. All adjacent past harvest areas meet NFMA requirements for green-up.</p> <p>Silvicultural Prescription: Even-age Management – Clearcut This stand is mature with high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 20 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Upper legacy was placed to consolidate POG, reduce visibility of higher slopes, and improve economics. Lower legacy was placed to reduce visibility, build off the Class 2 RMA complex, and consolidate POG. Total mapped legacy equals about 20 acres.</p>			
TIMBER/YARDING: Shovel settings yard to NFS road 3000270. Cable settings yard to the proposed temporary road.			
ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 1,700 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: An infestation of orange hawkweed is known along the NFS road 3000270. Recommend monitoring of the infestation to ensure it does not spread as a result of this project.			
FISHERIES: Streams drain to Clarence Strait			
<p>Stream#: 1 Class: II Flagging: B/W C-Type: MMM, HCM Concerns: blowdown and heavy braiding Buffer (RMA): Class II for MMM- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCM- greater of 100 feet or to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>All other streams in unit: Class: IV Flagging: G/W C-Type: HC Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
Temporary roads for Unit 153: One Class IV stream crossing. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of 5 acres of Moderate, 18 acres of Low and 24 acres of Very Low. It is in Modified Landscape LUD and is in Foreground, Middleground, and Not Seen. Legacy polygons have substantially reduced the harvest in Moderate and Low SIOs relative to the original unit. No additional scenery resource concerns.			
RECREATION: No concerns			
SOILS/WETLANDS: Slopes range from 25 to 72%. There is about ½ acre of 72% slopes that is suitable for harvest with partial suspension. Forested wetlands are intermittent in the unit (R10 BMP 12.5 and National Core BMPs			

AqEco-2 and AqEco-4). The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).

The proposed temporary roads cross about 1 acre of forested wetland. Wetland avoidance is not feasible due to the extent of forested wetlands, existing road locations, and slopes. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (western/northern portion of unit). Legacy standard and guideline applies in this VCU.

Unit Number: 154	Alternatives: ROD	Total Unit Acres: 90.3	Prescription: 50% Removal
VCU Number: 584	Yarding System: Helicopter	Net Harvest Volume (MBF): 898	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 154 has old-growth stand structure. Western hemlock is the dominant overstory species. Sitka spruce and western redcedar are lesser components. Overall the average defect rating is moderate. The main damage agent affecting tree health and volume is stem form and stem rot. Spotty mistletoe occurs across the unit. Windthrow risk is moderate. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Because of the large size and visibility of the unit, uneven-age management was selected as the silvicultural system to eliminate moderate to large openings and reduce the visibility of harvest.</p> <p>Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production.</p> <p>This unit is within a legacy VCU. No additional legacy retention is required because of the partial harvest prescription.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3000272.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams drain to Clarence Strait</p> <p>Stream#: 1 Class: III, IV Flagging: O/W, G/W C- Type: HCM, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III for HCM- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 2 Class: III, IV Flagging: O/W, G/W C- Type: MCS, MMO Concerns: none Buffer (RMA): Class III for MCS- to the top of the side-slope break. Class IV for MMO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 3 Class: III, IV Flagging: O/W, G/W C- Type: HCL, HCO Concerns: blowdown and active erosion Buffer (RMA): Class III for HCL- to the top of side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 4 Class: III, IV Flagging: O/W, G/W C- Type: HCL, HCO Concerns: blowdown, active erosion, heavy scouring with abundant substrate piles Buffer (RMA): Class III for HCL- to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: A1 Class: III Flagging: O/W C- Type: HCM Concerns: none known Buffer (RMA): Class III for HCM- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other stream in unit: Class: IV Flagging: G/W C- Type: HC or MM</p>			

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Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C
GEOLOGY/KARST: No Concerns
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.
SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape LUD and is in Middleground. The uneven-aged management prescription for this unit eliminates any scenery resource concerns.
RECREATION: No concerns
SOILS/WETLANDS: Slopes range from 40 to 100%. There are about 2 acres of slopes greater than 72% suitable for harvest with full suspension. Approximately 21 acres were excluded due to colluvial activity, extremely steep slopes, steep wet slopes, and multiple incisions. No wetlands were identified in the unit. In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northeastern half of unit). Legacy standard and guideline applies in this VCU. No legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings larger than 20 acres).

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Unit Number: 158	Alternatives: ROD	Total Unit Acres: 37.5	Prescription: 25% Removal
VCU Number: 583, 584	Yarding System: Helicopter	Net Harvest Volume (MBF): 221	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit predominantly has old-growth stand structure. The overstory consists of western hemlock, western redcedar and Sitka spruce with some areas of Alaska-cedar. Stem decay is moderate on average. Mistletoe is light. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Because of the moderate size and visibility of the unit, as well as timber economics/silviculture concerns, uneven-age management was selected as the silvicultural system to eliminate moderate to large openings and reduce the visibility of harvest. The 75 percent retention was selected because of high windthrow risk.</p> <p>Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production.</p> <p>This unit is within a legacy VCU. No additional legacy retention is required because of the partial harvest prescription.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3023000.			
ENGINEERING/ROADS: This unit is accessed by reconstruction of NFS road 3023000, totaling 10,200 feet. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Little Ratz Creek			
<p>Stream#: 1 Class: III Flagging: O/W C- Type: HCL Concerns: blowdown and active erosion Buffer (RMA): Class III for HCL- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>Stream#: 10 Class: III, IV Flagging: O/W, G/W C- Type: HCD, HCO Concerns: none Buffer (RMA): Class III for HCD- to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 13 Class: III, IV Flagging: O/W, G/W C- Type: HCD, HCO Concerns: none Buffer (RMA): Class III for HCD- to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of 10 acres of Low and 27 acres of Very Low. It is in Modified Landscape LUD and is partially in Middleground, but mostly Seldom Seen. The uneven-aged management prescription for this unit eliminates any scenery resource concerns.			
RECREATION: No concerns			

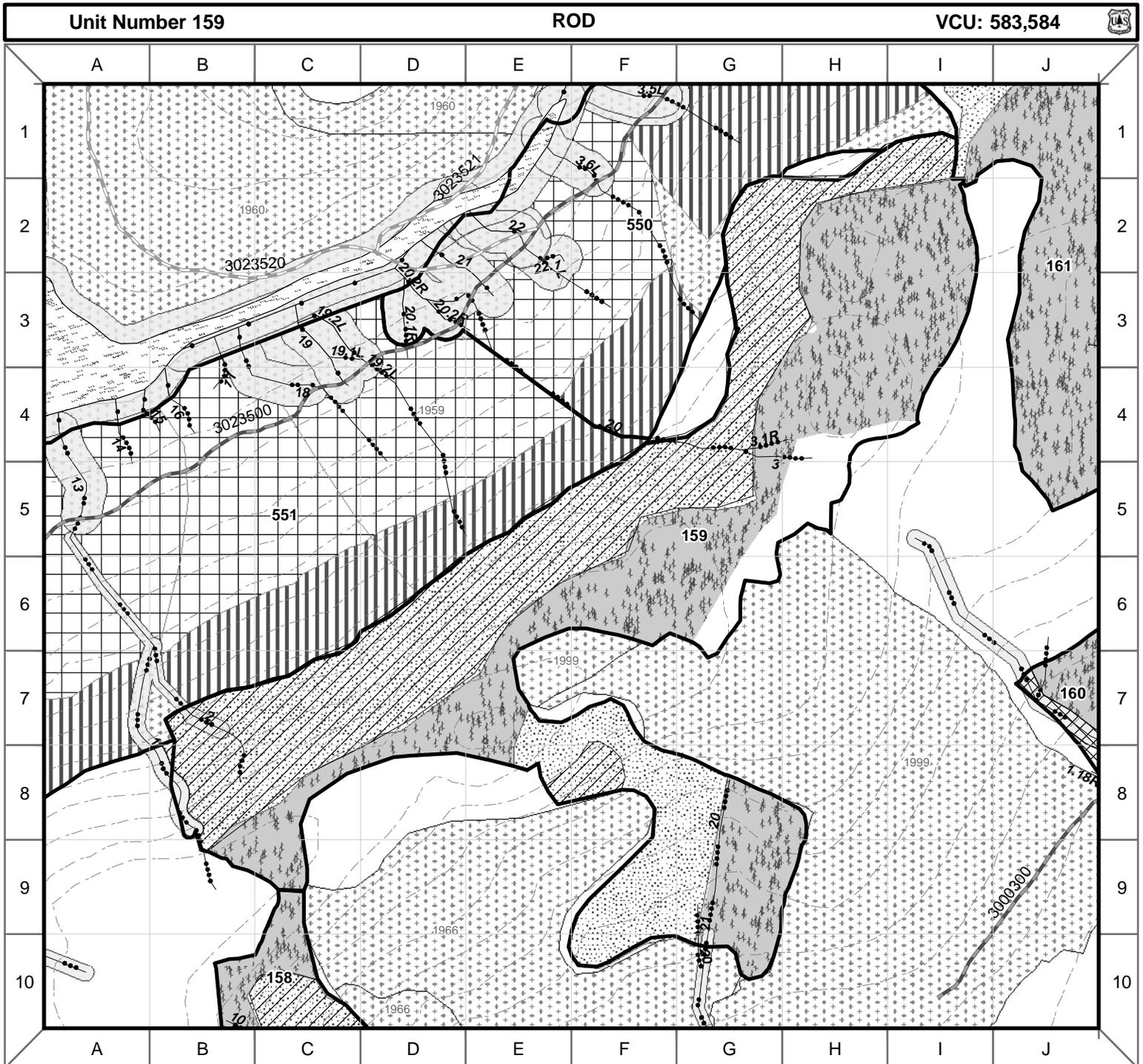
SOILS/WETLANDS: Slopes range from 35 to greater than 100%. All slopes greater than 72% are excluded from harvest. Approximately 15 acres were excluded due to colluvial activity, extremely steep and wet slopes, and active and historic landslides. Small areas of forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).

WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in these VCUs; however, no legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings larger than 20 acres).

Unit Number: 159	Alternatives: ROD	Total Unit Acres: 53.3	Prescription: 25% Removal
VCU Number: 583, 584	Yarding System: Helicopter	Net Harvest Volume (MBF): 449	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: The unit has varying stand structure with predominantly old-growth characteristics. The overstory consists primarily of western hemlock and Sitka spruce with areas of western redcedar and Alaska-cedar. Stem decay and butt rot are the main concerns. Overall average defect is high with moderate patches. Windthrow risk is high. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Because of the large size and visibility of the unit, uneven-age management was selected as the silvicultural system to eliminate moderate to large openings and reduce the visibility of harvest. Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production.</p> <p>This unit is within a legacy VCU. No additional legacy retention is required because of the partial harvest prescription.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS roads 3000300 and 3023500.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Ratz Creek</p> <p>Stream#: 1 Class: III, IV Flagging: O/W, G/W C- Type: HCD, HCO Concerns: slowdown and active erosion Buffer (RMA): Class III for HCD- to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 20 Class: III, IV Flagging: O/W, G/W C- Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit is Low. It is in Modified Landscape LUD and is in Middleground. The uneven-aged management prescription for this unit eliminates any scenery resource concerns.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes range from 30 to greater than 100%. All slopes greater than 72% are excluded from harvest. Approximately 61 acres were excluded due to colluvial activity, extremely steep and wet slopes, and active and historic landslides. Small areas of forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern end of unit). Legacy standard and guideline applies in these VCUs. No Legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings</p>			

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larger than 20 acres.



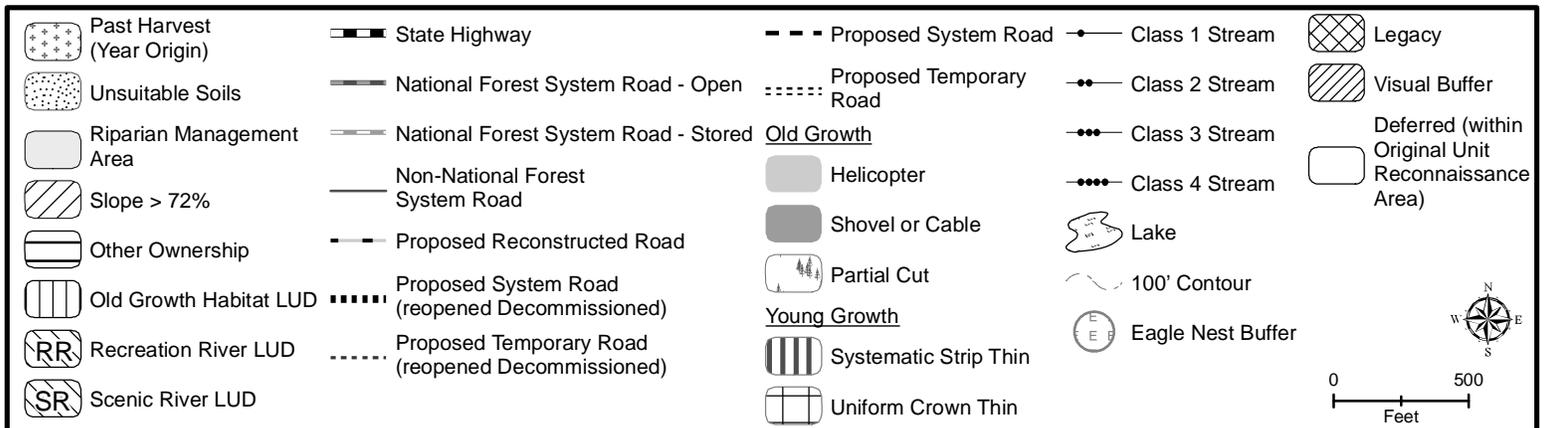
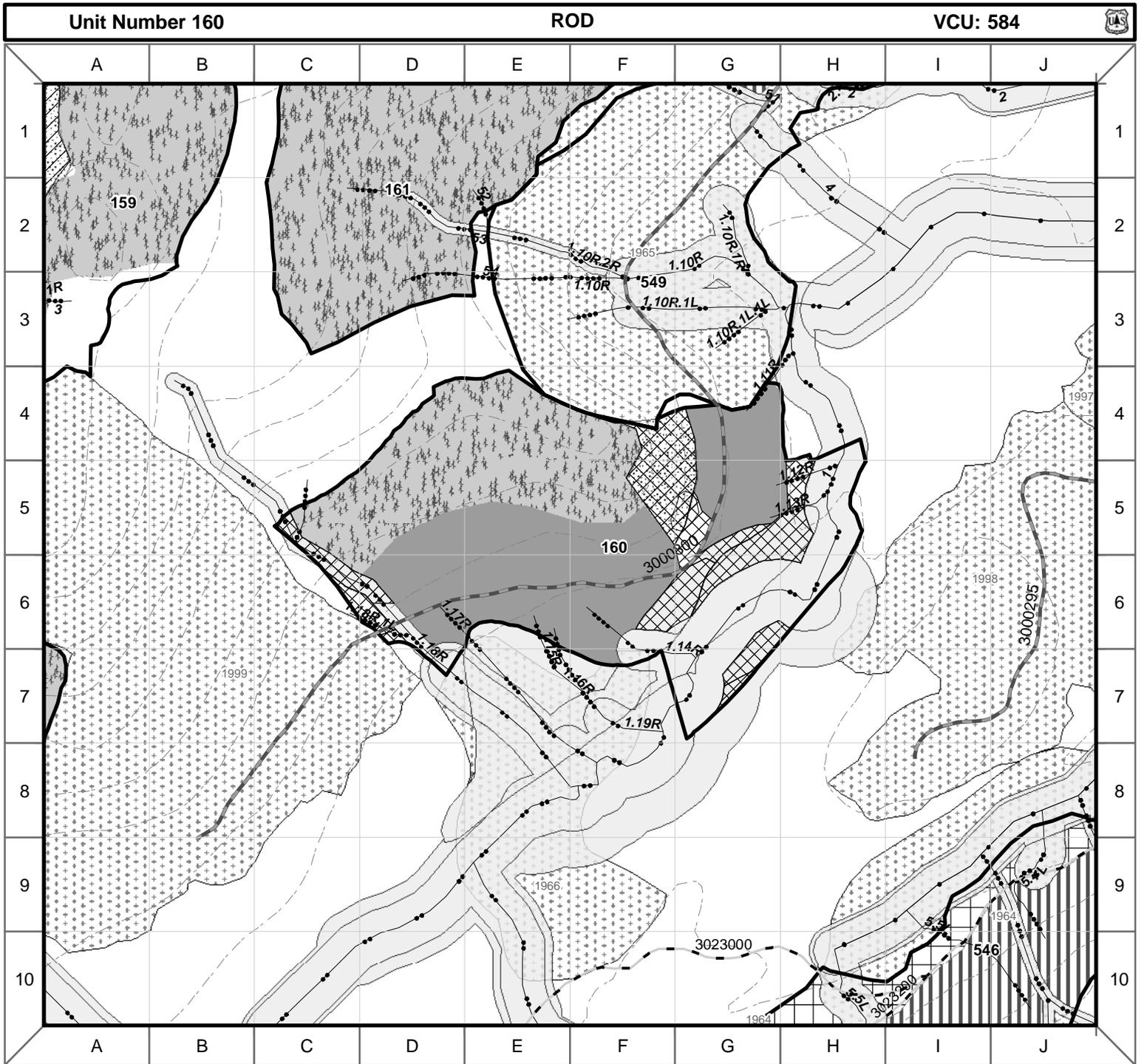
<ul style="list-style-type: none"> Past Harvest (Year Origin) Unsuitable Soils Riparian Management Area Slope > 72% Other Ownership Old Growth Habitat LUD Recreation River LUD Scenic River LUD 	<ul style="list-style-type: none"> State Highway National Forest System Road - Open National Forest System Road - Stored Non-National Forest System Road Proposed Reconstructed Road Proposed System Road (reopened Decommissioned) Proposed Temporary Road (reopened Decommissioned) 	<ul style="list-style-type: none"> Proposed System Road Proposed Temporary Road Old Growth Helicopter Shovel or Cable Partial Cut Young Growth Systematic Strip Thin Uniform Crown Thin 	<ul style="list-style-type: none"> Class 1 Stream Class 2 Stream Class 3 Stream Class 4 Stream Lake 100' Contour Eagle Nest Buffer Legacy Visual Buffer Deferred (within Original Unit Reconnaissance Area)
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Unit Number: 160	Alternatives: ROD	Total Unit Acres: 47.2	Prescription: Clearcut and 50% Removal
VCU Number: 584	Yarding System: Cable, Shovel, Helicopter	Net Harvest Volume (MBF): 798	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 160 has old-growth stand structure. The overstory consists of a mixture of western hemlock, western red and Alaska-cedar and Sitka spruce. The main damage agent affecting tree health and volume is moderate stem decay. Stem form defects are also common. Overall the average defect rating is moderate. Windthrow risk is low. All previous harvest areas adjacent to or near this unit have met green-up with regeneration over 5 feet tall. This meets NFMA requirements for no longer being considered openings.</p> <p>A Tongass Wide Young Growth Study site (POW Little Ratz Experiment #4) is along the northern boundary of this unit. Protection of this site is required. Contact the Forestry Sciences Lab in Juneau for additional information.</p> <p>Silvicultural Prescription: Even-age Management (Shovel and Cable Settings) The lower portions of the unit are being recommended for harvest at this time because this stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Based on the size of clearcut opening, this requires that approximately 9 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy was placed to compliment RMAs, divide the opening, and incorporate unsuitable soils. The upper portion of unit is partial harvest. A total of about 11 acres of legacy are required.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection (Helicopter Settings) Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production. Uneven-age management single tree selection was prescribed in the helicopter settings to reduce the visual impacts of harvest.</p>			
TIMBER/YARDING: Cable, shovel and helicopter yarding to NFS road 3000300.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Ratz Creek			
<p>Stream#: 1 Class: II Flagging: B/W C- Type: MCM, FPLr Concerns: blowdown Buffer (RMA): Class II for MCM- greater of 100 feet or to the top of the side-slope break. Class II for FPLr- greater of 130 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Alternatives: ROD Buffer (RAW): no review needed Protection: Category A</p> <p>Stream#: 1.14R Class: II, IV Flagging: B/W, G/W C- Type: MMO, HCO Concerns: blowdown Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.18R Class: II, III Flagging: B/W, O/W C- Type: AFH, HCL, HCD Concerns: blowdown Buffer (RMA): Class II for AFH- greater of 140 feet or to extend of alluvial fan. Class II for HCL- greater of 100 feet or to the top of the side-slope break. Class III for HCL and HCD- greater of 100 feet or to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p>			

<p>All other stream in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>
<p>GEOLOGY/KARST: No Concerns</p>
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>
<p>SCENERY: The Scenic Integrity Objective (SIO) for this unit consists of 25 acres of Low and 24 acres of Very Low. It is in Modified Landscape LUD and is partially in Middleground and partially Seldom Seen. The uneven-aged management prescription for the upper slopes and the small opening size in visible areas eliminates any scenery resource concerns.</p>
<p>RECREATION: No concerns</p>
<p>SOILS/WETLANDS: Slopes range from 30 to 100%. All slopes greater than 72% are excluded from harvest. Approximately 4 acres were excluded due to colluvial activity, steep slopes, and historic landslides. Small areas of forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, the soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4).</p>
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU to clearcut portion of unit.</p>

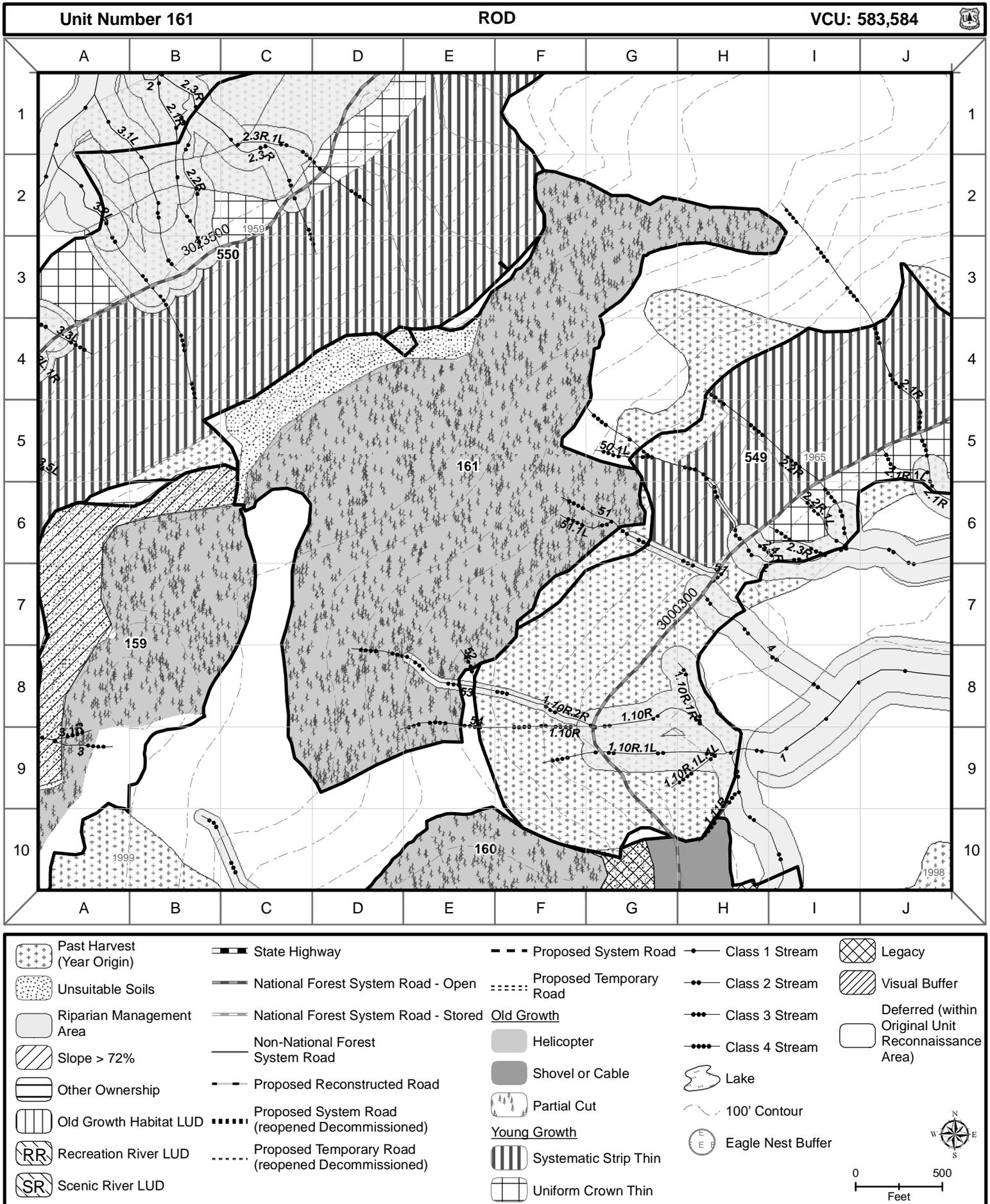
Appendix 1



Unit Number: 161	Alternatives: ROD	Total Unit Acres: 99.1	Prescription: 25% Removal
VCU Number: 583, 584	Yarding System: Helicopter	Net Harvest Volume (MBF): 874	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Conditions: This unit has varying stand structure with predominantly old-growth characteristics. The overstory consists primarily of western hemlock and Sitka spruce with areas of western redcedar and Alaska-cedar. Stem decay, butt rot, light mistletoe and some stem form issues are the main concerns. Overall average defect rating is high with moderate patches. Trees are over-mature to mature with static to declining growth. Windthrow risk is high. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>A Tongass Wide Young Growth Study site (POW Little Ratz Experiment #4) is along the southeastern boundary. Protection of this site is required. Contact the Forestry Sciences Lab in Juneau for additional information.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. This system is not optimum for promoting timber production. It is being used to reduce the visual impacts of harvest.</p> <p>This unit is within a legacy VCU. No additional legacy retention is required because of the partial harvest prescription.</p>			
<p>TIMBER/YARDING: Helicopter yarding to NFS roads 3000300 and 3023500.</p>			
<p>ENGINEERING/ROADS: No proposed road construction or reconstruction.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Ratz Creek</p> <p>Stream#: 51 Class: III, IV Flagging: O/W, G/W C- Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>Stream#: 53 Class: III, IV Flagging: O/W, G/W C- Type: HCM, HCO Concerns: none Buffer (RMA): Class III for HCM- to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category B and C</p> <p>All other streams in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: SIO is low. No concerns because of uneven-age management.</p>			
<p>RECREATION: No concerns</p>			
<p>SOILS/WETLANDS: Slopes range from 30 to 85%. All slopes greater than 72% are excluded from harvest. Approximately 8 acres were excluded due to colluvial activity, extremely steep and wet slopes, and active and historic landslides. Small areas of forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
<p>WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (along southern edge unit). Legacy standard and guideline applies in these VCUs. No</p>			

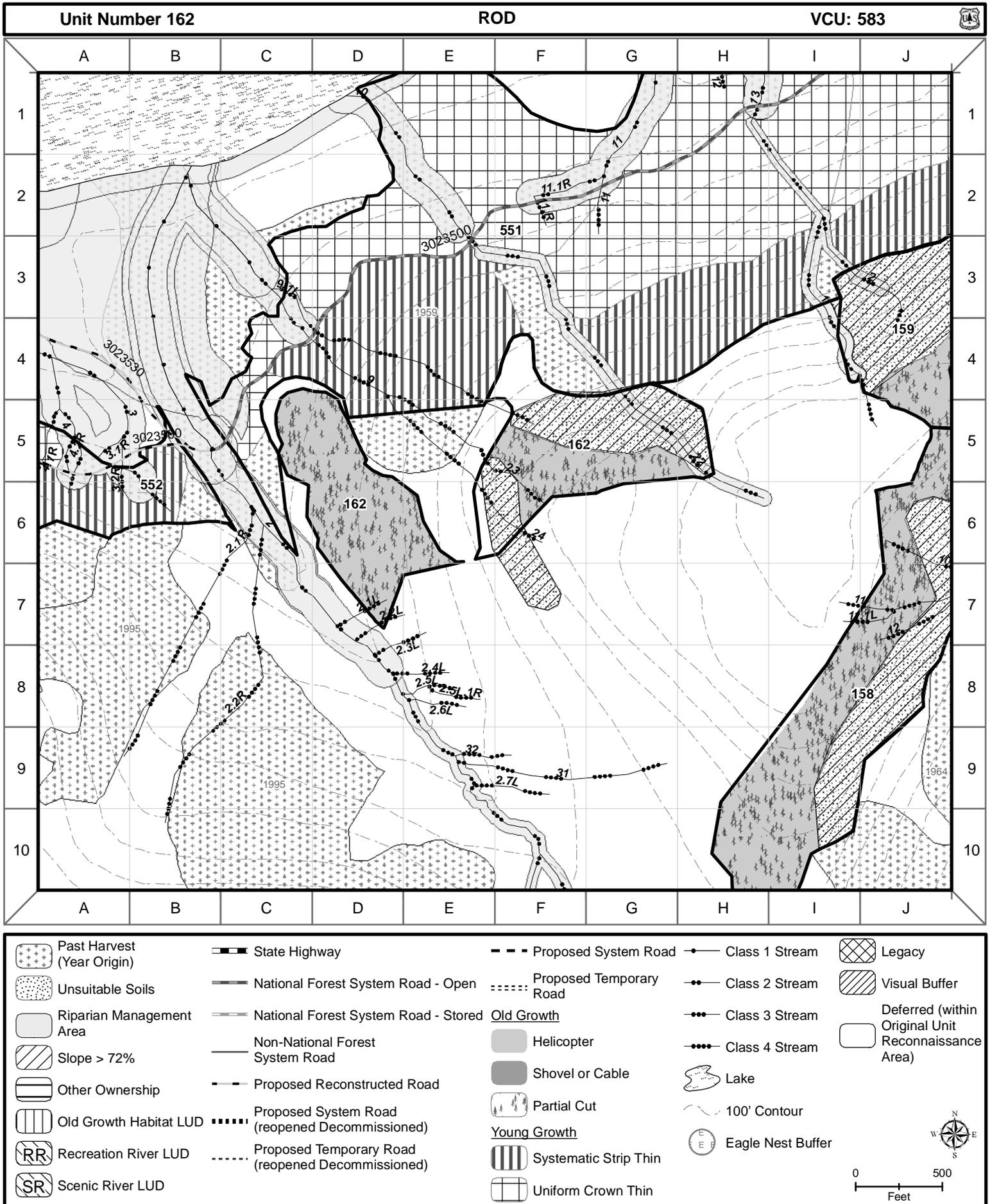
Appendix 1

Legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings larger than 20 acres).



Appendix 1

Unit Number: 162	Alternatives: ROD	Total Unit Acres: 21.2	Prescription: Clearcut
VCU Number: 583	Yarding System: Helicopter	Net Harvest Volume (MBF): 443	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 162 has predominantly old-growth characteristics. The overstory consists of western hemlock and Sitka spruce with areas of western redcedar and Alaska-cedar. Stem decay, butt rot and light mistletoe are the main concerns. Overall average defect rating is high to moderate. Trees are over-mature to mature with static to declining growth. Windthrow risk is high. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate to high stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Legacy is planned to coincide with unsuitable soils areas already deferred from the cutting area.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3023500.			
ENGINEERING/ROADS: No proposed road construction or reconstruction.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
<p>FISHERIES: Streams are tributaries to Ratz Creek</p> <p>Stream#: 2 Class: II, III Flagging: B/W, O/W C- Type: HCV, HCD Concerns: blowdown and active erosion Buffer (RMA): Class II for HCV and HCD- greater of 100 feet or to the top of the side-slope break. Class III for HCD- to the top of the side-slope break Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and B</p> <p>Stream#: 22 Class: III Flagging: O/W C- Type: HCD Concerns: active erosion Buffer (RMA): Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): no review needed Protection: Category B</p> <p>All other stream in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No Concerns			
RECREATION: No Concerns, but Unit borders the Thorne River Roadless Area on the south.			
<p>SOILS/WETLANDS: Slopes range from 30 to 85%. All slopes greater than 72% are excluded from harvest. Approximately 10 acres were excluded due to colluvial activity, extremely steep and wet slopes, and active and historic landslides. Small areas of forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).</p>			
WILDLIFE: Unit includes average snow deer winter range (western portion of unit). Legacy standard and guideline applies in this VCU, due to partial harvest prescription.			



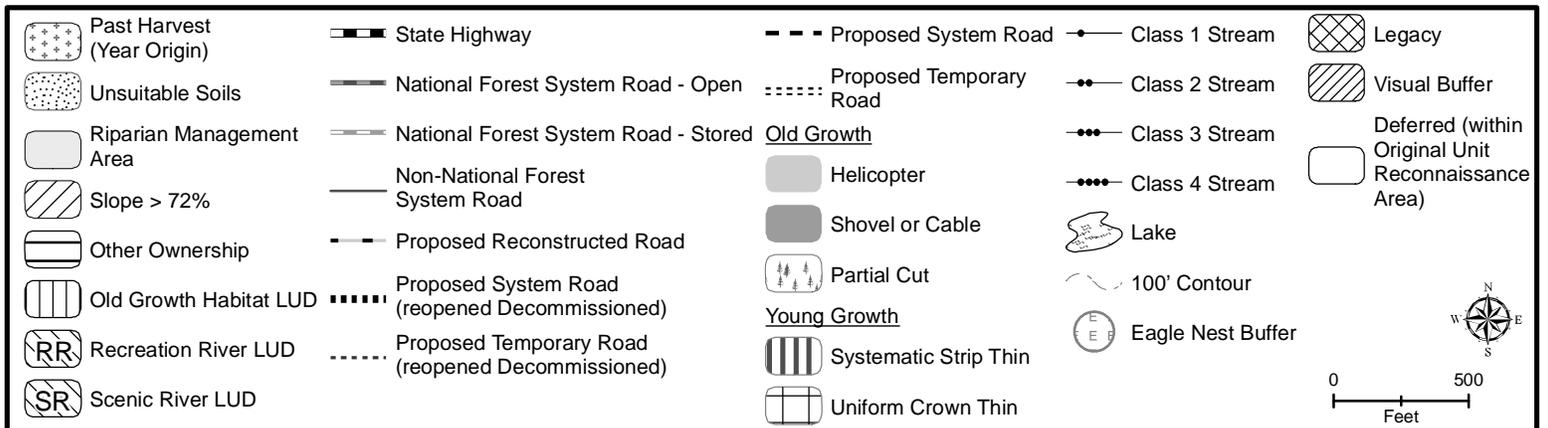
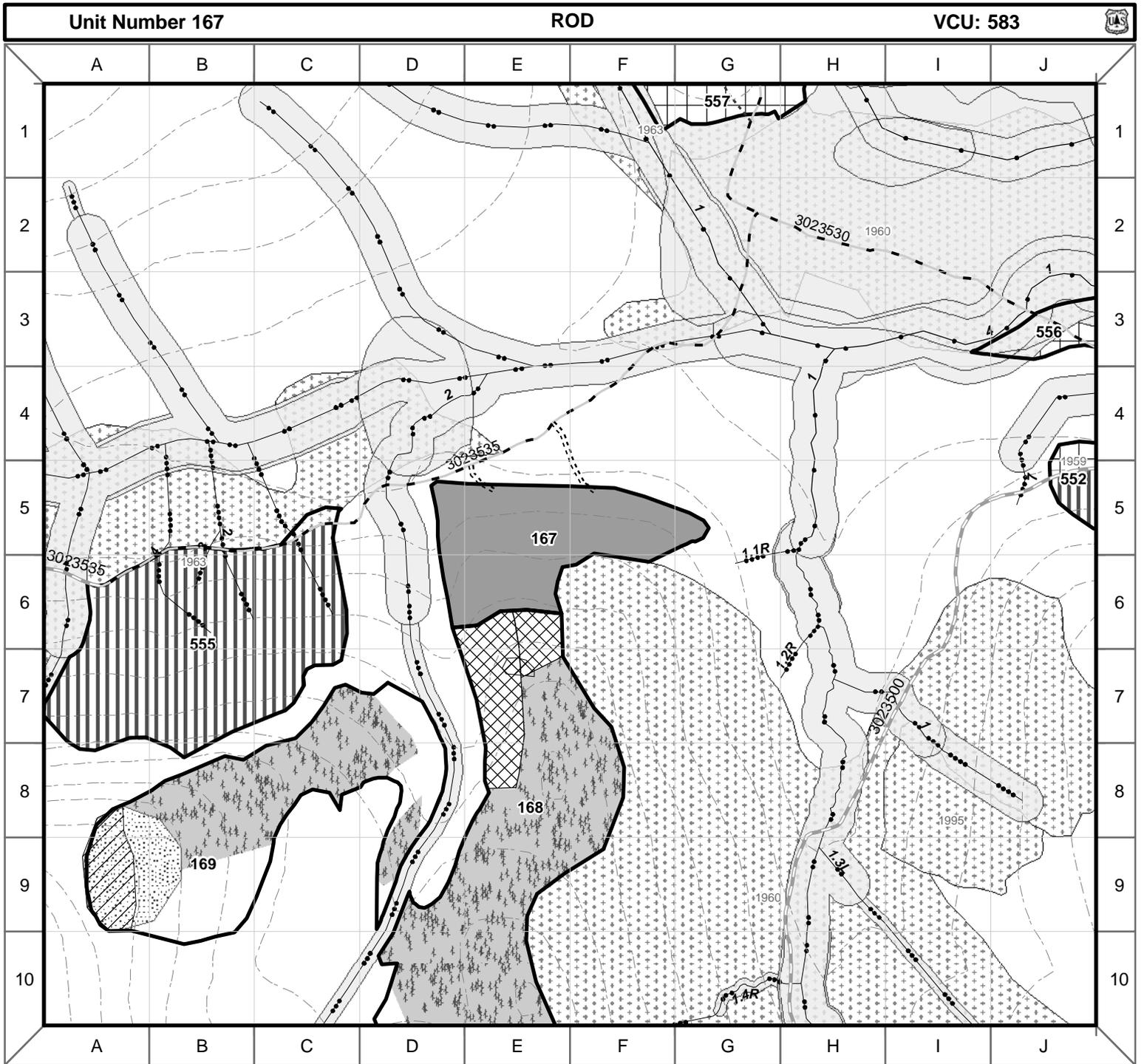
Appendix 1

Unit Number: 167	Alternatives: ROD	Total Unit Acres: 14.0	Prescription: Clearcut
VCU Number: 583	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 421	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This area has old-growth stand structure with mature overstory timber consisting of a western hemlock and Alaska-cedar mixture. Western redcedar and Sitka spruce are present, but as secondary components. Overall the average defect rating for all plots is moderate. Windthrow risk is rated moderate due to elevation, topography (ridgeline stand) and higher risk tree characteristics. Trees are generally mature with static growth. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 167 and 168 combine to form a potential opening of about 82 acres. This requires approximately 27 acres of productive old growth representative of the overall composition of the planned harvest area be maintained for the combined opening. Legacy is planned to coincide with IRA to the west of unit 168 and to divide the opening into multiple polygons. IRA polygons are not currently shown on unit card maps. No legacy is mapped in unit 167.</p>			
TIMBER/YARDING: Cable yarding to the two proposed temporary roads.			
ENGINEERING/ROADS: Unit is accessed by two proposed temporary roads, totaling 600 feet and reconstruction of NFS roads 3023500, 3023530, and 3023535, totaling 6,200 feet. These roads are also used to access Units 552, 555-558, 168, 169, and 177. See road cards for information on NFS roads.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Big Ratz Lake			
<p>Stream#: 2 Class: II, III Flagging: B/W, O/W C- Type: HCL, HCD Concerns: Active erosion, steep side-slopes and unstable soils Buffer (RMA): Class II for HCL and HCD- greater of 100 feet or to the top of the side-slope break. Class III for HCD- to the top of the side-slope break. Alternatives: ROD Buffer (RAW): review required on east side Protection: Category A and B</p> <p>Temporary roads for Unit 167: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No Concerns			
RECREATION: No Concerns.			
<p>SOILS/WETLANDS: Slopes average 55%. Forested wetland is dominant throughout the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of partial suspension with cable yarding will meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, Veg-5, and Veg-6).</p> <p>The proposed temporary road crosses less than ¼ of an acre of forested wetland. Wetland avoidance is not feasible due to the extent of forested wetlands, the existing road locations, and slopes. Provide adequate cross drainage,</p>			

remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit except along southern border). Legacy standard and guideline applies in this VCU, see silviculture section.

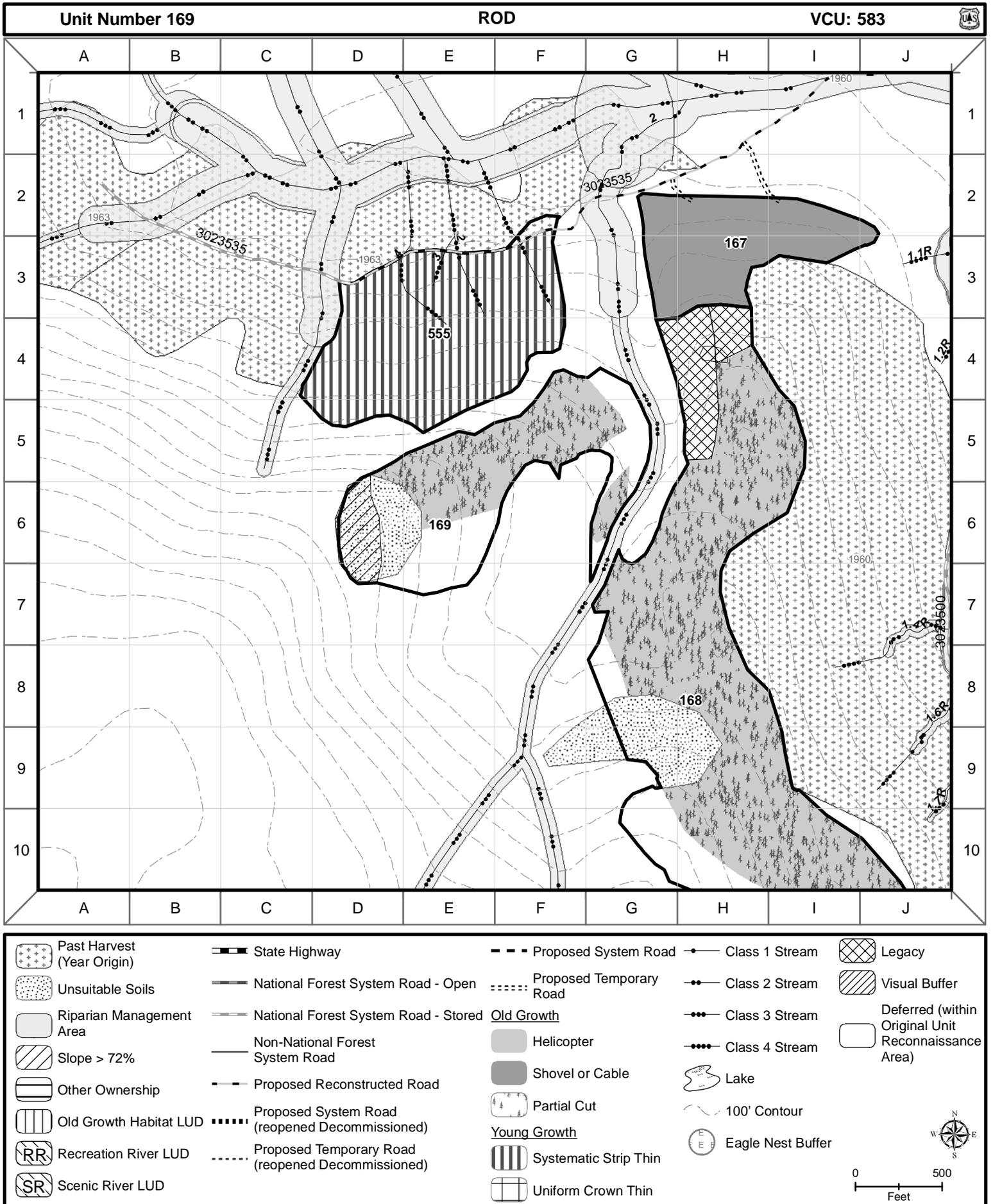
Appendix 1



Unit Number: 168	Alternatives: ROD	Total Unit Acres: 42.8	Prescription: Clearcut
VCU Number: 583	Yarding System: Helicopter	Net Harvest Volume (MBF): 1,001	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This area has old-growth stand structure with mature overstory timber consisting of a western hemlock and Alaska-cedar mixture. Western redcedar and Sitka spruce are present, but as secondary components. The main concerns in the stand are moderate stem decay and stem form defects. The mistletoe rating was low. The windthrow rating was moderate. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. Units 167 and 168 combine to form a potential opening of about 82 acres. This requires approximately 27 acres of productive old growth representative of the overall composition of the planned harvest area be maintained for the combined opening. Legacy is planned to coincide with IRA to the west of unit 168 and to divide the opening into multiple polygons. IRA legacy polygons are not currently shown on unit card maps. No legacy is mapped in unit 167.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3023500.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3023500, totaling 2,300 feet. This road is also used to access Units 552, 167, and 168. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Ratz Creek			
<p>Stream#: 2 Class: III Flagging: O/W C-Type: HCD, HCL Concerns: active erosion and unstable soils Buffer (RMA): Class III for HCD and HCL- to the top of the side-slope break Alternatives: ROD Buffer (RAW): review required on east side Category B</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No Concerns			
RECREATION: No Concerns, but unit borders the Thorne River Roadless Area on the west.			
SOILS/WETLANDS: Slopes range from 15 to 90%. A small ½ acre cliff with slopes greater than 72% is suitable for harvest with full suspension. Approximately 8 acres were excluded due to colluvial activity, steep slopes, and active and historic landslides. Forested wetlands cover about 60% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).			
WILDLIFE: Unit includes average snow deer winter range (entire unit except along eastern border). Legacy standard and guideline applies in this VCU. Positioning of legacy acres blocks up POG and reduces the size of openings, dividing the original unit into smaller openings.			

Unit Number: 169	Alternatives: ROD	Total Unit Acres: 13.5	Prescription: Clearcut
VCU Number: 583	Yarding System: Helicopter	Net Harvest Volume (MBF): 262	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 169 has old-growth stand structure with mature overstory timber consisting of a western hemlock and Alaska-cedar mixture. Western redcedar and Sitka spruce are present, but as secondary components. The main concerns in the stand are moderate stem decay and stem form defects. The mistletoe rating was low. The windthrow rating was moderate. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 7 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy is planned to coincide with areas of unsuitable soils and IRA. Total mapped legacy equals about 10 acres.</p>			
TIMBER/YARDING: Helicopter yarding NFS road 3023535.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS roads 3023500, 3023530, and 3023535, totaling 6,200 feet. These roads are also used to access Units 552, 555-558, 167, and 177. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Ratz Creek			
<p>Stream#: 2 Class: III Flagging: O/W C-Type: HCD, HCL Concerns: active erosion and unstable soils Buffer (RMA): Class III for HCD and HCL- to the top of the side-slope break Alternatives: ROD Buffer (RAW): review required on west side Protection: Category B</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No Concerns			
RECREATION: No Concerns; however, note that the unit borders the Thorne River Roadless Area on the south.			
SOILS/WETLANDS: Slopes range from 15 to 90%. All slopes greater than 72% are excluded from harvest. Approximately 5 acres were excluded due to colluvial activity, steep slopes, and active and historic landslides. Forested wetlands cover about 60% of the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).			
WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU, see silviculture section.			

Appendix 1



Unit Number: 171	Alternatives: ROD	Total Unit Acres: 14.0	Prescription: 25% Removal
VCU Number: 583, 584	Yarding System: Helicopter	Net Harvest Volume (MBF): 96	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. Overstory trees are primarily western hemlock and Sitka spruce with moderate defect. Mistletoe was rated as heavy but patchy. Windthrow risk is high. There are no adjacent past harvest areas.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 75 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. The uneven-aged single tree selection regeneration method is being prescribed for this unit in Alternative 4 to mitigate the effects of harvest on wildlife habitat and in Alternative 5 to maintain significant vegetative cover to reduce watershed effects. This system is not optimum for promoting timber production. No legacy retention required due to unit less than 20 acres and partial harvest.</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3023510.			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3023510, totaling 1,600 feet.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: No streams found in unit at time of survey. If streams are found during implementations, a fish biologist would be notified and appropriate protections would be applied.			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No Concerns			
RECREATION: No Concerns			
SOILS/WETLANDS: Slopes range from 30 to 85%. A ½ acre cliff with slopes greater than 72% is suitable for harvest with full suspension. Approximately 10 acres were excluded due to colluvial activity, extremely steep and wet slopes, and active and historic landslides. Small areas of forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). In the remainder of the unit, a minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).			
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern 1/2 of unit). Legacy standard and guideline applies in this VCU, however there are no requirements for this unit because it is less than 20 acres and partial harvest.			

Unit Number: 172	Alternatives: ROD	Total Unit Acres: 50.1	Prescription: Clearcut
VCU Number: 583	Yarding System: Cable, Helicopter	Net Harvest Volume (MBF): 1,372	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: This unit has old-growth stand structure. The overstory consists primarily of small diameter western hemlock under western redcedar dominants. Scattered Sitka spruce and Alaska-cedar are also in the overstory but less common. The main damages and defects are stem form defects and mistletoe. Mistletoe is reported as moderate rating. The windthrow risk is moderate. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Even-age Management This stand is mature with moderate stem decay and defect resulting in a situation where stand growth is being offset by decay. Even-aged clear cutting is being prescribed to preclude or minimize the risk of windthrow post-harvest, promote natural regeneration by opening up the canopy and minimize defect and disease in the future stand to the maximum extent possible.</p> <p>The legacy standard and guide applies in this VCU. This requires that approximately 22 acres of productive old growth representative of the overall composition of the planned harvest area be maintained. Legacy was placed to consolidate POG, reduce road length, and reduce visibility of unit from NFS road 3000000 and the Clarence Strait. Total mapped legacy is approximately 22 acres.</p>			
<p>TIMBER/YARDING: Cable and shovel yarding to the proposed temporary road and proposed NFS road 3000301.</p>			
<p>ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3000301, totaling 2,800 feet; a proposed temporary road of 1,100 feet; and proposed NFS road 3000301, totaling 2,200 feet. NFS road 300301 is also used to access Unit 559. See road card for information on NFS roads.</p>			
<p>BOTANY: No Concerns</p>			
<p>INVASIVE SPECIES: No Concerns</p>			
<p>FISHERIES: Streams are tributaries to Ratz Harbor</p> <p>Stream#: 1 Class: II, IV Flagging: B/W, G/W C- Type: MMO, HCO Concerns: blowdown Buffer (RMA): Class II for MMO- greater of 120 feet, flood plain, riparian vegetation or soils, or riparian associated wetland fens. Class II for HCO- greater of 100 feet or to the top of the side-slope break. Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>Stream#: 1.6L Class: II, IV Flagging: B/W, G/W C- Type: HCO Concerns: none Buffer (RMA): Class II for HCO- greater of 100 feet or to the top of the side-slope break Class IV for HCO- none Alternatives: ROD Buffer (RAW): no review needed Protection: Category A and C</p> <p>All other stream in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p> <p>Temporary roads for Unit 172: No known stream crossings. If any stream crossings are found, crossings structures and locations will be approved by USFS, in consultation with fisheries biologist or hydrologist, prior to construction (BMP 14.17). During construction of temporary roads implement BMPs 12.17, 13.10, 13.11, 13.16, 14.3, and 14.5.</p>			
<p>GEOLOGY/KARST: No Concerns</p>			
<p>HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.</p>			
<p>SCENERY: SIO for this unit is mostly Low, with 5 acres of Very Low. Because of distance and partial screening from the 30 Road, the relatively gentle topography, and legacy, there are no scenery concerns</p>			
<p>RECREATION: No Concerns</p>			
<p>SOILS/WETLANDS: Slopes range from 10 to 85%. Less than 2 acres of slopes greater than 72% occur in the</p>			

Appendix 1

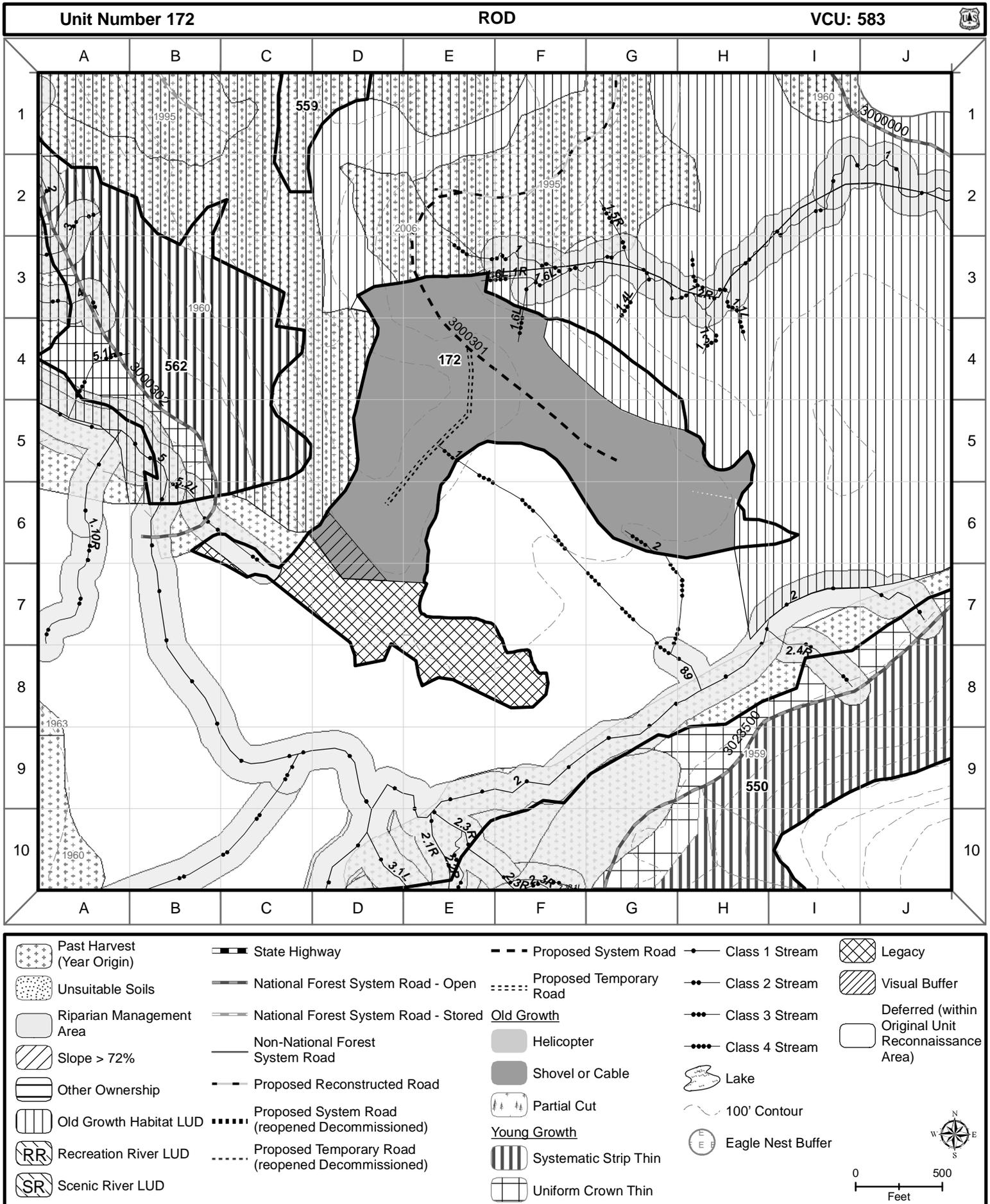
southwest corner of the unit and are suitable with partial suspension. The soils and wetlands are suitable for a minimum of partial suspension cable yarding, helicopter yarding, or shovel yarding and should follow R10 BMPs 12.5, 13.2 and 13.9 and National Core BMPs Plan-2, Veg-2, Veg-4, Veg-5, and Veg-6. Follow shovel yarding guidelines outlined in the introductions to unit cards (R10 BMP 13.9 and National Core Veg-4). Forested wetlands are dominant in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4).

The proposed temporary road crosses about 1 acre of forested wetland. Wetland avoidance is not feasible due to the abundance of forested wetland within the unit, avoidance of stream crossings, slopes, and existing road location. Provide adequate cross drainage, remove drainage structures, and close road after harvest. Follow R10 BMPs 12.5 and 14.9 and National Core BMPs AqEco-2, AqEco-4, Road-2, and Road-7.

WILDLIFE: Unit includes average snow deer winter range (entire unit). Legacy standard and guideline applies in this VCU; positioning of Legacy acres covers some deer winter range.

Old-growth Reserve (OGR) Boundary

Current OGR boundary adjacent to unit to the north.



Appendix 1

Unit Number: 174	Alternatives: ROD	Total Unit Acres: 23.5	Prescription: 50% Removal
VCU Number: 583	Yarding System: Helicopter	Net Harvest Volume (MBF): 288	LUD: Modified Landscape
Summary of Concerns, Responses, BMPs and Mitigation			
<p>SILVICULTURE: Existing Condition: Unit 174 has old-growth stand structure with over-mature timber. The overstory consists primarily of western hemlock along with a fairly equal mix of Alaska-cedar and Sitka spruce. Western redcedar occurs only in isolated patches. Physical defects and stem decay were rated high. Mistletoe and windthrow risk are moderate. All adjacent past harvest areas have regeneration at least 5 feet tall, meeting NFMA requirements for no longer being considered openings.</p> <p>Silvicultural Prescription: Uneven-age Management Single Tree Selection Maintain at least 50 percent of the setting pretreatment basal area, based on standing live tree total for the unit, uncut. Review the marking guides in the harvest prescription for this unit to obtain basal area by species allowances and other specific instructions. Review the introduction to the unit cards for general guidance. Uneven-age Management Single Tree Selection is being used to mitigate impacts to visuals, wildlife habitat, watersheds and to address economic concerns. This system is not optimum for promoting timber production. Legacy standard and guideline applies in this VCU. No Legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings larger than 20 acres).</p>			
TIMBER/YARDING: Helicopter yarding to NFS road 3000306			
ENGINEERING/ROADS: Unit is accessed by reconstruction of NFS road 3000306, totaling 1,700 feet. This road is also used to access Units 563, 175 and 176. See road card for information on NFS road.			
BOTANY: No Concerns			
INVASIVE SPECIES: No Concerns			
FISHERIES: Streams are tributaries to Ratz Harbor			
<p>All streams in unit: Class: IV Flagging: G/W C- Type: HC or MM Buffer (RMA): none Buffer (RAW): no review needed Protection: Category C</p>			
GEOLOGY/KARST: No Concerns			
HERITAGE RESOURCES: This unit was investigated per the third amended interagency Programmatic Agreement (PA) for historic properties. As specified by the PA, any potential adverse effect on historic properties (if any) was mitigated and portions of the Area of Potential Effect will be monitored by a qualified heritage specialist during and/or after actual ground disturbance.			
SCENERY: No concerns because of uneven-aged management and distance from NFS Road 3000000.			
RECREATION: No concerns; however, note that the unit borders the Thorne River Roadless Area.			
SOILS/WETLANDS: Slopes range from 10 to 110%. About 2 acres of slopes greater than 72% are suitable for harvest with full suspension. Intermittent forested wetlands were identified in the unit (R10 BMP 12.5 and National Core BMPs AqEco-2 and AqEco-4). A minimum of full suspension would meet soil and wetland resource concerns (R10 BMPS 12.5, 13.5, and 13.9 and National Core BMPs Plan-2, AqEco-2, AqEco-4, Veg-1, Veg-2, and Veg-5).			
WILDLIFE: Unit includes average snow deer winter range (entire unit), some of which is also deep snow marten habitat/deer winter range (northern and southern ends unit). Legacy standard and guideline applies in this VCU. No Legacy acres required because adequate structure retained in unit under uneven-aged harvest prescription (i.e., no openings larger than 20 acres).			