



United States Department of Agriculture

# Navy Timber Sale

## Record of Decision - Draft



Forest Service  
Alaska Region

Tongass National Forest  
Wrangell Ranger District

R10-MB-632c

April 2015

Key acronyms and other terms used in this Record of Decision:

**ADEC:** Alaska Department of Environmental Conservation  
**AFRPA:** Alaska Forest Resources and Practices Act  
**ANCSA:** Alaska Native Claims Settlement Act  
**ANILCA:** Alaska National Interest Lands Conservation Act  
**AYC:** Alaska yellow-cedar  
**BA:** Biological Assessment  
**BE:** Biological Evaluation  
**BLM:** Bureau of Land Management  
**BMP:** Best management practice  
**CEQ:** Council of Environmental Quality  
**CFR:** Code of Federal Regulation  
**CZMA:** Coastal Zone Management Act  
**DEIS:** Draft Environmental Impact Statement  
**DHC:** Deer habitat capability  
**DWM:** Down woody material  
**EFH:** Essential fish habitat  
**EPA:** Environmental Protection Agency  
**ESA:** Endangered Species Act  
**FASTR:** Financial Analysis Spreadsheet Tool – RV  
**FEIS:** Final Environmental Impact Statement  
**FIA:** Forest Inventory and Analysis  
**Forest Plan:** Tongass Land and Resource Management Plan, 2008  
**FSM or FSH:** Forest Service Manual or Forest Service Handbook  
**GHG:** Greenhouse gas  
**GIS:** Geographic information system  
**IRA:** Inventoried roadless area  
**IDT:** Interdisciplinary team  
**LTF:** Log transfer facility  
**LUD:** Land use designation  
**MBF:** Thousand board feet  
**MIS:** Management indicator species  
**MMBF:** Million board feet  
**NEPA:** National Environmental Policy Act of 1969  
**NFMA:** National Forest Management Act  
**NFS:** National Forest System  
**NHPA:** National Historic Preservation Act  
**NMFS:** National Marine Fisheries Service  
**POG:** Productive old growth (forest)  
**RAW:** Reasonable assurance of windfirmness  
**ROD:** Record of Decision  
**SEIS:** Supplemental Environmental Impact Statement  
**SIO:** Scenic integrity objectives  
**TTPA:** Total trees per acre  
**TTRA:** Tongass Timber Reform Act  
**USDA:** United States Department of Agriculture  
**USFS:** United States Forest Service  
**USFWS:** United States Fish and Wildlife Service  
**VCU:** Value comparison unit  
**WAA:** Wildlife analysis area

Cover photo: View of Navy Peak and Cannery Point



**File Code:** 1950

**Date:** April 21, 2015

Dear Planning Participant,

I am pleased to announce that the draft Record of Decision (ROD) for the Navy Timber Sale project on the Wrangell Ranger District, Tongass National Forest is available for your review. This project is subject to the Predecisional Administrative Review Process (Objection Process) pursuant to 36 CFR 218, subparts A and B. The FEIS and ROD are available for review at the Ketchikan Forest Supervisor's Office and Wrangell District Office, and online at [http://www.fs.fed.us/nepa/nepa\\_project\\_exp.php?project=14556](http://www.fs.fed.us/nepa/nepa_project_exp.php?project=14556). Hardcopies and CDs of the document are available upon request.

The draft ROD documents my intention to select Alternative F, and the facts considered in reaching my decision. The ROD replaces the March 2009 decision which was appealed and subsequently remanded by the Regional Forester in July 2009. This decision would make about 13.1 million board feet of sawlog and utility timber available for harvest from about 1,252 acres of commercial forest land on Etolin Island, requiring construction of about 0.6 mile and reconstruction of 0.8 mile of National Forest System road, and construction of 2.7 miles of temporary road.

The ROD is being made available as a draft for public review prior to the final decision. A pre-decisional objection process has replaced the post-decisional appeal process, per the Final Rule published at 36 CFR 218 in March 2013. See the section "Administrative Review – Opportunity to Object" for information on filing an objection at the end of the ROD. More information on the pre-decisional objection process can also be found at: <http://www.fs.fed.us/objections/index.php>.

Under the 36 CFR 218 objection process, the public will be notified of the availability of the draft ROD through a legal notice published in the newspaper of record, the *Ketchikan Daily News*, starting the 45-day objection filing period. A copy of the legal notice will also be posted on the Forest Service project website at [http://www.fs.fed.us/nepa/nepa\\_project\\_exp.php?project=14556](http://www.fs.fed.us/nepa/nepa_project_exp.php?project=14556).

If objections are received during the 45-day objection filing period, a 45-day review period will begin during which time the Reviewing Officer, the Responsible Official, and any objectors may attempt to resolve concerns, with the goal of achieving a better, more-informed decision. The ROD will be signed after any concerns and instructions identified by the Reviewing Officer in the objection response have been addressed. A final decision on projects subject to the objection process may occur on, but not before, 5 business days from the close of the objection filing period, if no objections are received (36 CFR 218.12(c)(2)).

Copies of this letter have been directly mailed to those people who have expressed interest in the project through scoping, comments, consultation, or requests to be on the mailing list. For additional information, please contact Bob Dalrymple, Wrangell District Ranger, at (907)-874-2323.

As the Forest Supervisor, I am responsible for this decision. Your interest in the Navy project and management of the Tongass National Forest is appreciated.

Sincerely,

FORREST COLE  
Forrest Cole



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# Navy Timber Sale

## Record of Decision - DRAFT

United States Department of Agriculture  
Forest Service Alaska Region

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**Lead Agency:**

USDA Forest Service  
Tongass National Forest

**Responsible Official:**

Forrest Cole, Forest Supervisor  
Tongass National Forest  
Federal Building  
Ketchikan, Alaska 99901

**For Further  
Information Contact:**

Robert Dalrymple, Wrangell District Ranger  
Tongass National Forest  
P.O. Box 51  
Wrangell, Alaska 99929-0051  
(907) 874-2323

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### **Abstract:**

The Responsible Official intends to select Alternative F from the Navy Timber Sale Final Environmental Impact Statement (FEIS). This decision will make about 13.1 million board feet of sawlog and utility timber available for harvest from about 1,252 acres of commercial forest land on Etolin Island to contribute to the Tongass National Forest timber sale program. The harvest of this timber will require construction of about 0.6 mile and reconstruction of 0.8 mile of National Forest System road, and construction of 2.7 miles of temporary road.

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# Record of Decision Draft

## Navy Timber Sale

USDA Forest Service  
Wrangell Ranger District, Tongass National Forest, Alaska Region

### Introduction

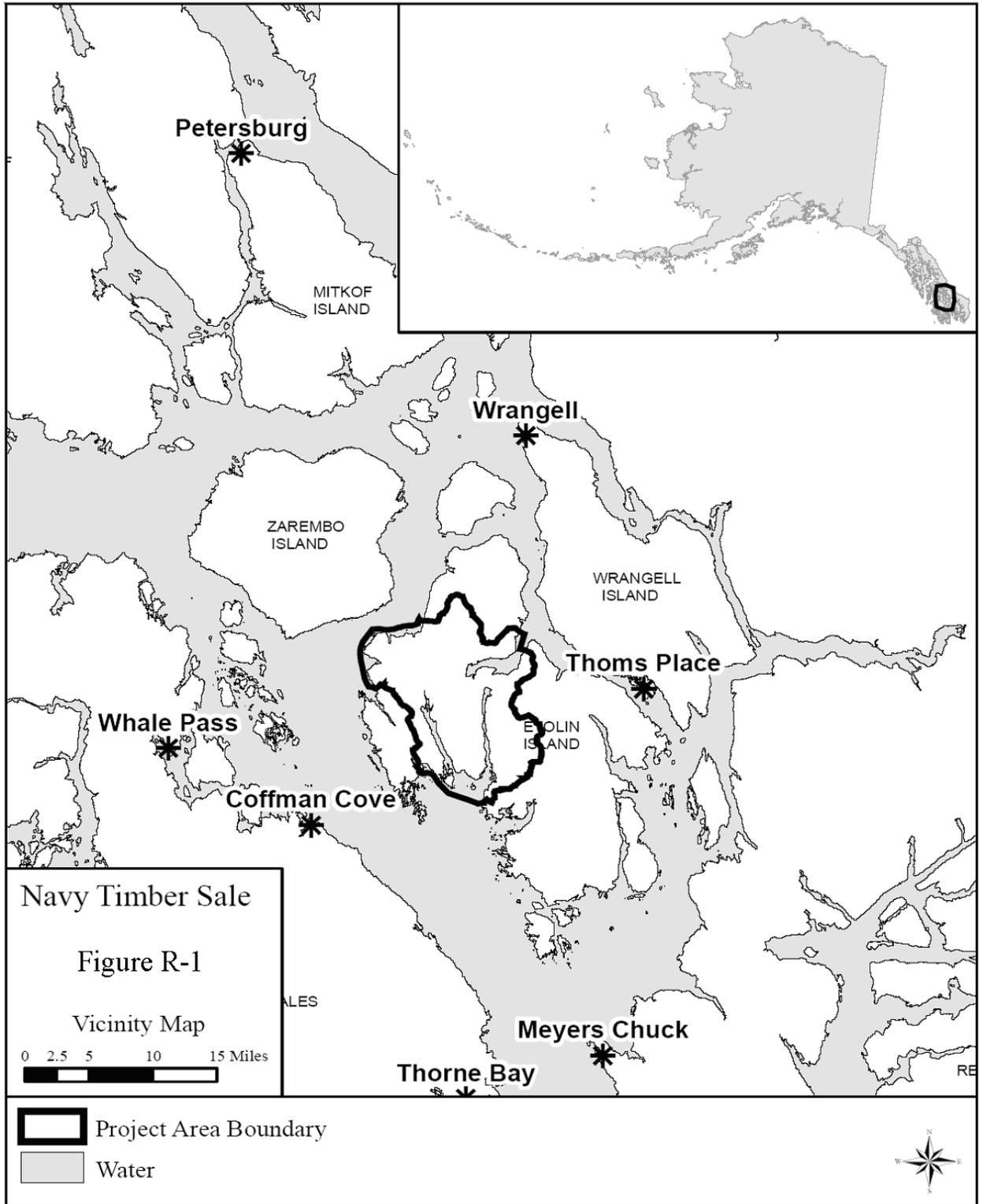
This draft Record of Decision (ROD) is being made available for review under the project-level predecisional administrative review, or “objection process” (Title 36 CFR 218, Subparts A and B). The objection process replaces the former appeals process and gives eligible individuals and entities the opportunity to voice concerns and file objections to the project with the Reviewing Officer and Responsible Official prior to the final ROD.

This draft Record of Decision documents my intention to select Alternative F (hereafter called the Selected Alternative) from the Navy Timber Sale FEIS. The ROD contains a summary of the environmental analysis completed for this project and the rationale for my decision. It also contains findings required by law and policy, and information concerning the rights to administrative review of this decision.

The Selected Alternative will make about 13.1 million board feet of sawlog and utility timber available for harvest from about 1,252 acres of commercial forest land on Etolin Island to contribute to the Tongass National Forest timber sale program. The harvest of this timber will require construction of about 0.6 mile and reconstruction of 0.8 mile of National Forest System road, and construction of 2.7 miles of temporary road. See vicinity map (Figure ROD-1, below), and Selected Alternative map (Figure ROD-2 on page R-33).

# Record of Decision

Figure R-1  
Navy Timber Sale Vicinity Map



## Review of New Information

In preparation of this decision, I asked the interdisciplinary team to identify any relevant new information, direction, or scientific findings since the 2009 FEIS including information presented in the appeals of the 2009 ROD. The assessments of the new information are summarized in Appendix ROD-3. This information was analyzed and documented in addendums to the resource reports. These reports and any supporting data and information have been added to the project record. An updated biological assessment was prepared and submitted to the National Marine Fisheries Service (NMFS).

I have determined that the new information and other changes since 2009 do not result in significant new circumstances or information relevant to environmental concerns and bearing on the Selected Alternative or its impacts beyond those that were previously evaluated in the FEIS. The new information does not result in any new or changed environmental effects from this project that were not already evaluated as part of the original project analysis and the 2008 Forest Plan Amendment. Therefore, as part of this decision, I have determined that the results of the new information assessment do not warrant a supplemental EIS for the Navy Timber Sale project. This conclusion is based on the criteria in the Forest Service Handbook FSH 1909.15, Section 18 and 40 CFR § 1502.9(c)(1).

## Decision

I released the Navy Final Environmental Impact Statement (FEIS) with a Record of Decision in 2009. That decision was subsequently appealed and remanded. This decision replaces my previous decision for this project.

I postponed the release of this draft ROD until now for several reasons. I wanted to know the outcome of the litigation regarding the Tongass National Forest exemption to the Roadless Rule. However, resolution of this issue is ongoing in the courts, and I believe it is prudent to move ahead with a Record of Decision at this time. I also felt that delaying the decision until the new objection process was in place would give the interested public an opportunity to participate in a collaborative decision-making process before the final ROD is signed. The delay also allowed for a careful review of any new information since the FEIS was released in 2009.

Based upon my review of public comments, the analysis contained in the FEIS, the project record and the new information documented in Appendix ROD-3, I intend to select Alternative F as the Selected Alternative. The Selected Alternative is displayed in Figure ROD-2 at the end of this Record of Decision.

I am incorporating the project design criteria and measures to minimize adverse environmental effects of the Selected Alternative as part of my decision. These are described in Appendices ROD-1 and ROD-2. I am satisfied that these are practicable and effective in avoiding or minimizing environmental effects. I have found them to be effective when implemented elsewhere on the Forest.

### Features of the Selected Alternative

The Selected Alternative will harvest timber on approximately 1,252 acres of commercial forest land, which is expected to contribute approximately 13.1 million board feet (MMBF) of sawlog and utility volume to the Tongass National Forest timber sale program.

Timber harvest will occur under even-aged management prescriptions (clearcuts or clearcuts with reserves) or uneven-aged management prescriptions (single-tree selection) using cable, shovel, or helicopter yarding. Design features for timber harvest units in this decision are described in detail on the unit cards in Appendix ROD-1.

The harvest of this timber will require construction of approximately 0.6 mile and reconstruction of 0.8 mile of National Forest System road, and construction of 2.7 miles of temporary road. The existing road system and the Anita Bay log transfer facilities will be used to transport the timber off the island. Design features of the National Forest System roads for this decision are described in detail on the road cards in Appendix ROD-2. Temporary roads are included on the unit cards in Appendix ROD-1.

All new National Forest System roads will be placed in storage and closed to public motorized use after timber sale activities are completed. Temporary roads will be decommissioned and allowed to revegetate after harvest.

All timber harvest and road construction will occur outside of 2001 inventoried roadless areas.

### Rationale for the Decision

Like many other timber harvest projects on the Tongass National Forest, we received public comments both in support of and in opposition to this project. Therefore, I believe it is important to clearly explain why I intend to select Alternative F.

A combination of different factors led to my intention to select Alternative F for implementation:

- I looked at how each alternative responded to the Purpose and Need for action of providing timber to meet the needs of industry.
- I considered how each alternative addressed the key issues developed from scoping.
- I reviewed the environmental effects of each alternative.
- I reviewed public comments to see how the alternatives responded to issues and management concerns raised by the public, other agencies, and the interdisciplinary team members.

- I verified that the decision is consistent with Forest Plan Standards and Guidelines, goals, and objectives within the project area, as well as applicable laws, regulations, and policies.

A detailed discussion of each of these factors is presented below.

### **Purpose and Need**

I looked at how each alternative responded to the Purpose and Need for action (fully described in the FEIS Chapter 1) of offering timber for harvest to meet the needs of the industry. I have determined that the Selected Alternative best meets the Purpose and Need within Forest Plan direction without entering any 2001 inventoried roadless areas (IRAs). The Purpose and Need is to respond to goals and objectives of the Forest Plan, and help move the project area toward the desired conditions. The Selected Alternative will:

- Provide a diversity of opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska.
- Support a wide range of natural resource employment opportunities within Southeast Alaska's communities.
- Manage the timber resource for production of sawtimber and other timber products from suitable forest lands made available for timber harvest, on an even-flow, long-term sustained yield basis and in an economically efficient manner.
- Contribute an estimated 13.1 MMBF of timber in order to seek to meet the annual market demand for Tongass National Forest timber and the market demand for the planning cycle.

### **Key Issues**

An important consideration in making my decision is how each alternative addressed the key issues developed from public scoping. After carefully reviewing the issues (FEIS Chapter 1), I find that the Selected Alternative best addresses these key issues when considered as a whole.

#### **Issue 1: Timber Supply and Demand**

I considered the need to manage the timber resource in the Navy analysis area in order to produce an even-flow of sawtimber and other wood products on a sustained yield and economical basis from the Tongass National Forest. The Selected Alternative provides about 13.1 MMBF toward meeting annual market demand without entering any 2001 inventoried roadless areas.

I evaluated the concerns for providing for economical timber sale offerings within the context of fluctuating timber markets, the amount of timber volume currently available for offer from the Tongass National Forest, and the relative effects of the Selected Alternative, and find that the Selected Alternative provides the best balance overall.

## Record of Decision

The current timber industry in Southeast Alaska is in a state of transition to young-growth harvest. The Selected Alternative will contribute timber volume to meet industry needs. Although there is currently no young-growth timber mature enough for harvest in the Navy project area, the Selected Alternative contributes to the supply of timber needed to maintain the timber industry during the transition to young-growth management. A reliable supply of economically viable timber is critical to maintain the expertise and infrastructure of the existing timber industry during the transition to young-growth management.

The Selected Alternative could support an estimated 52 to 63 annualized jobs, including logging, sawmilling, transportation and other services. Although it provides the lowest timber volume of the FEIS action alternatives and supports the least number of jobs, it is the most economical alternative because it primarily uses the existing road system, builds the fewest miles of road, and uses the least amount of costly helicopter yarding.

The financial efficiency analysis used for the Navy project provides only a relative comparison of values between the alternatives. The financial efficiency analysis at the planning stage relies on past markets and costs and may not reflect future market conditions at the time of offer, since timber markets and values are extremely volatile. The value of the timber will only be known at the time the appraisal is completed and contract offered.

The results of the financial efficiency modeling using historical timber costs and values in the Financial Analysis Spreadsheet Tool – RV (FASTR) model indicate a deficit value based on past market performance for all alternatives. However, the Selected Alternative is the most economical of the action alternatives and it is likely to have a positive value if current market conditions continue to improve.

It is important to have this timber volume available to offer as market conditions improve. Navy timber sales will not be advertised until they appraise with positive values.

### **Issue 2: Wildlife Habitat Fragmentation**

I carefully considered the effects to wildlife habitat. Some commenters expressed concern that further timber harvest may reduce the large patches of old-growth forest in the project area, thereby reducing the preferred habitat for old-growth associated species. They also had specific concerns for habitat connectivity in the area between Anita Bay and Burnett Inlet.

I intend to choose Alternative F as the Selected Alternative because it has the least effect on interior habitat and coarse canopy, and large patches of old-growth habitat of all the FEIS action alternatives, since it harvests the fewest acres of habitat. It will result in an estimated 1.4 percent reduction in productive old-growth forest (POG) within wildlife analysis area (WAA) 1901. No harvest or roads occur within the beach buffer, which will retain its integrity as wildlife habitat.

Fifty-five percent of the harvest area (692 of the 1,252 acres) in the Selected Alternative will be partially harvested using a single-tree selection prescription removing approximately 30 percent of the basal area. This leaves the remaining 70 percent to continue to provide habitat components and retain old-growth characteristics within the stand.

The Selected Alternative design reduces impacts to wildlife habitat in the area between Anita Bay and Burnett Inlet, as compared to Alternatives B, C, and D. Alternative E did not propose harvest in this area. This area has experienced timber harvest and road construction and use since the early 1980s. While the Selected Alternative will harvest some timber in the area, it contains features to minimize the negative effects to wildlife. Reserve trees within the harvest units will create future multi-layered forest habitat. Tree retention in Unit 67 is increased, and a portion of Unit 70 is deleted, in comparison to Alternatives B, C, and D, to maintain part of the low-elevation corridor.

Because of the continuing concerns about additional timber harvest in this area, I reviewed the area and found that it consists of a mosaic of vegetation types. When the remaining old-growth forest stands, the unmanaged lower-productivity old-growth forest stands, and the partial-harvest stands in the Selected Alternative are all considered together, I find that this area provides wildlife habitat connectivity. This area will continue to function as wildlife habitat and serve as a travel corridor with implementation of the Selected Alternative, as much of the natural habitat remains.

I have also determined that the Selected Alternative maintains enough old-growth forest to provide the full range of matrix functions in order to meet the Tongass Conservation Strategy.

### **Issue 3: Inventoried Roadless Areas**

I considered the effects to roadless area values, which were analyzed by alternative in the FEIS. These included direct effects from proposed units and roads within the IRA boundaries, and indirect effects such as temporary sight and noise disturbance and the loss of interior habitat values within the IRAs from activities occurring outside of but adjacent to the IRAs.

The FEIS analysis used the Forest Plan 2008 roadless inventory because the Tongass exemption from the Roadless Rule was in place during the FEIS analysis. In 2011, the Alaska Federal District Court vacated the Tongass exemption from the Roadless Rule. In March 2014, that ruling was reversed by the Ninth Circuit Court of Appeals, remanding the case back to the District Court. In August 2014, however, the Ninth Circuit Court of Appeals granted another hearing, which was held in December 2014 before an eleven-judge panel to rehear the appeal of the 2011 District Court decision. The eleven-judge panel has not yet issued a decision. Although resolution of the case is still ongoing, the court rulings did not invalidate the analysis or effects disclosed in the FEIS. The alternatives were reassessed in the new information analysis using the 2001 Roadless Rule inventory boundaries. The differences between the 2008 Forest

## Record of Decision

Plan roadless inventory and the 2001 Roadless Rule Inventory are discussed in Appendix ROD-3.

I intend to choose the Selected Alternative because it does not harvest timber or build roads within any IRA under either the 2001 or the 2008 inventory. If I were to choose another action alternative that proposes some timber harvest and road construction within IRAs, I could defer any timber harvest units and road construction within an IRA pending resolution of the Tongass exemption in the courts. However, for the reasons discussed above, as well as to eliminate further uncertainty, I intend to select Alternative F. This alternative does not have any direct effects on IRAs as it does not harvest timber or build roads within any IRA. Approximately 1 percent of the IRAs could be indirectly affected by sights and sounds of activities occurring outside of, but adjacent to, the IRAs, although these are expected to be minor and of short duration.

### Environmental Effects

I considered the direct, indirect, and cumulative effects of the alternatives in making my decision. All alternatives are consistent with the Forest Plan. The Selected Alternative has the least overall effect of the action alternatives, since it harvests the least timber volume and builds the fewest roads. The FEIS and project record display the effects, both positive and negative, resulting from the action alternatives.

While I reviewed all of the resource effects in addition to the key issues, the public raised some specific concerns which I will address below. More information on these effects is summarized in Appendix ROD-3 and the FEIS.

Alaska yellow-cedar decline: There is concern for Alaska yellow-cedar decline and the regeneration and persistence of Alaska yellow-cedar in stands where it is present. I have examined the silvicultural prescriptions and determined that appropriate measures are provided by the Selected Alternative to ensure establishment of Alaska yellow-cedar in regenerated stands where appropriate. These measures include the retention of cedar seed-trees and cedar inter-planting. This information has been clarified on the unit cards in Appendix ROD-1 and in the addendum to the Silviculture resource report. Recent research publications regarding Alaska yellow-cedar decline have been considered and are included in the project record. The Alaska yellow-cedar is currently in a 12-month review period by the USFWS for potential listing under the Endangered Species Act.

Windthrow: There is concern for windthrow following harvest. I have reviewed the unit design and silviculture prescriptions and find that the risk of future windthrow will be minimized with the use of clearcutting, windfirm buffers, or the use of single-tree selection harvest that retains 70 percent of the basal area to maintain a wind-resistant canopy.

Areas with high windthrow concerns are identified on the unit cards. Reasonable assurance of windfirmness (RAW) buffers will be designed for riparian management areas if needed for protection during implementation.

Watershed effects: I considered the direct and cumulative effects of the Selected Alternative combined with past harvest on watershed resources. The Selected Alternative has the fewest acres of harvest and miles of road construction in true watersheds (an area that contributes surface and subwater to a single point) of the action alternatives. The project design and implementation guidelines will limit watershed effects.

Goshawk nesting habitat: The Selected Alternative has the least effect on high-probability goshawk nesting habitat of any action alternative. The Biological Evaluation determination for the goshawk is “may adversely affect individuals but not likely to result in a loss of viability in the planning area nor cause a trend toward federal listing.” A 230-acre buffer surrounding a group of three goshawk nests adjacent to harvest units 67, 72, and 73 exceeds the Forest Plan Standard and Guideline of 100 acres, providing additional protection for that nest area. The Selected Alternative also avoids harvest near the other known goshawk nesting areas in WAA 1901.

Deer habitat: The Selected Alternative has a minor effect on deer habitat, having the least effect of the action alternatives. The 2011 direction for the deer model was used to estimate the effects on deer habitat and the results are similar to those in the FEIS. The reanalysis using the 2011 direction for the deer model estimates that deer habitat capability will be reduced by about 2 percent from the existing condition due to activities in the Selected Alternative, with a cumulative reduction of 13 percent from historical capability in WAA 1901. Deer deep-snow winter habitat would be reduced directly and indirectly by approximately 2 percent and cumulatively by 24 percent from historic conditions.

Wolf population sustainability: In order to assess the effects on wolves, three analyses were recalculated: 1) Deer density to estimate the effects on the wolves’ primary food source; 2) Road density to evaluate the effect of increased roads on the potential hunting/trapping pressure; and 3) Harvest of wolves to estimate current hunting/trapping pressure on wolves. Based on the results of these analyses (summarized in Appendix ROD-3), the Selected Alternative would have the least effect on wolf populations of the action alternatives. Even during the life of the sale, road densities in WAA 1901 would meet the Forest Plan wolf road density standard and guideline. Wolf populations would remain sustainable on Etolin Island with the implementation of the Selected Alternative.

Soil stability: The Selected Alternative has the least effect on steep slopes of the action alternatives, since it has the fewest potentially affected acres. All areas with slopes greater than 72 percent will have a site stability analysis prior to implementation, and unstable slopes will be avoided to minimize adverse impacts to soil and water resources.

Botany: The Selected Alternative has the least effect on sensitive plants of the action alternatives since it affects the fewest acres of habitat. There may be

## Record of Decision

minor effects to rare plants and Alaska Region sensitive plants. The Biological Evaluation finding is “May adversely affect individuals but not likely to result in a loss of viability in the planning area nor cause a trend toward federal listing” for several species. Detailed information is in the Biological Evaluation and summarized in the FEIS, Chapter 3. Measures are included in this decision, described in Appendix ROD-1, Unit Cards, to reduce the possibility of invasive plant species that may compete with native species.

Recreation: The Selected Alternative would have the least effects to recreation and scenery resources of the action alternatives. Implementation of the Selected Alternative would not noticeably decrease or change the current recreational opportunities or scenery.

Climate change: Climate change is an important consideration, however, the magnitude of this project is so small compared to the factors that contribute to climate change that foreseeable effects would be small if measurable at all for all alternatives. The Forest Plan FEIS discusses climate change factors (p. 3-11 to 3-20) and discloses the risk of possible effects. The Tongass National Forest will continue to monitor potential effects of climate change through the existing Forest Plan monitoring programs, and other studies that are occurring regionally and nationally. Appendix ROD-3 describes some of the climate change considerations and studies which are ongoing at various levels across the nation’s forests, including the Tongass.

### Public Comments

I want to thank the individuals, organizations and agencies that participated and provided comments for this analysis. Their input was valuable to me in identifying issues, creating alternatives for this project, and making a more-informed decision. I have reviewed the many public and agency comments we received during this analysis and the responses to those comments, as presented in the FEIS Appendix B. These responses were also reassessed in light of any new information and documented in Appendix ROD-3.

I have also carefully considered the additional comments received through the administrative appeals process from the four appeals to the 2009 Record of Decision. These comments came in through the written appeals and the discussions during the informal resolution process. This information is in the project record and also discussed as new information in Appendix ROD-3.

There were four appeals to the 2009 decision on this project, submitted under the 36 CFR 215 appeal regulations. These raised a variety of appeal points, including range of alternatives, habitat connectivity and fragmentation, yellow-cedar, highgrading, clearcutting, climate change, deer model and wildlife, market demand and financial analysis, Forest Plan, old-growth reserves, roads and roadless areas, subsistence, and watershed, among others. I offered to meet with the appellants to see if an informal resolution could be reached that would resolve their concerns and still meet the objectives of this project. One appellant declined to participate. The other appellants and interested parties participated

in discussions and provided some proposals. However, a mutually agreeable resolution was not reached and no appeals were withdrawn. The appeals then went to formal resolution.

I have carefully reviewed the points raised during the 2009 appeal period and reviewed the Forest Service responses to the appeals. The project record includes all of the 2009 appeals points and responses. Further analysis was included to address or clarify issues raised in the 2009 appeal points pertaining to activities in this 2015 decision, and resource reports have been updated accordingly. This information is summarized in Appendix ROD-3, and updated reports have been added to the project record. Information on the unit and road cards for the Selected Alternative (Appendices ROD-1 and ROD-2) has been clarified as well.

In making my decision, I considered the proposals presented by some of the appellants during the informal appeal resolution discussions in 2009. These proposals focused on deleting timber harvest units that 1) were within inventoried roadless areas, 2) were within the area between Anita Bay and Burnett Inlet, and 3) had an Alaska yellow-cedar component. Also proposed was 4) removing all culverts when putting roads into a storage status rather than using waterbars for erosion control. I feel that the Selected Alternative best responds to these concerns while still providing timber volume. The Selected Alternative avoids harvest and roadbuilding within inventoried roadless areas. The Selected Alternative partially addresses the Anita Bay/Burnett Inlet concern by increasing retention in Unit 67 and dropping a portion of Unit 70 as compared to Alternatives B, C, and D. All alternatives, including the Selected Alternative, include seed tree retention in some units to help maintain or increase the cedar component in regenerating stands, as shown on the unit cards.

I considered the appellants' fourth proposal point – the suggestion to remove all culverts from roads that will be put into storage. I have decided that the best time to determine whether to remove culverts from roads is at the time of road storage activity to best address site-specific conditions. In some cases, leaving the culvert in place with supplemental erosion control will cause less disturbance than pulling culverts from the roadbed. Roads with Objective Maintenance Level 1 planned for road storage after timber harvest activities are complete will be evaluated for erosion potential, and measures will be implemented to reduce sediment delivery and reduce the risk of crossing failure and stream diversion. This may include the removal of drainage structures and bridges, or construction of water bars, rolling dips or other measures necessary to protect resources. See Appendix ROD-2, Road Cards. This method has been successfully employed on the Tongass and is consistent with best management practices (BMPs).

### **Consistency with the Forest Plan and other Applicable Laws and Regulations**

As the Responsible Official, it is my responsibility, prior to making a decision, to ensure that this project is consistent with the Tongass National Forest Land

## Record of Decision

and Resource Management Plan, as amended, and other applicable laws and regulations. The Forest Plan describes in detail Forest-wide management direction, goals, objectives, research needs, desired conditions, and standards.

I have determined that the Selected Alternative is consistent with the Forest Plan and other applicable laws and regulations. The Selected Alternative will meet Forest Plan Standards and Guidelines, and will contribute toward reaching Forest Plan goals and objectives. The Selected Alternative is consistent with all land use designation standards and guidelines. I also find that my decision to implement the Selected Alternative is consistent with all applicable laws and regulations including NFMA, NEPA, ANILCA, ESA, and the other laws presented in more detail in the section “Findings Required by Other Laws and Regulations” in this ROD.

My decision is consistent with Forest Service policy outlined in agency directives. By providing timber for offer and supporting jobs, the Selected Alternative also contributes to the USDA Investment Strategy for Creating Jobs and Healthy Communities in Southeast Alaska.

### Summary of Decision Rationale

In summary, in making this decision I considered how the alternatives responded to the Purpose and Need, key issues, environmental effects, public comments, Forest Plan and applicable laws, regulations, and policy.

I found that the Selected Alternative provides the best mix of beneficial resources for the public, within a framework of existing laws, regulations, policies, public needs and desires, and the capabilities of the land. None of the alternatives can provide benefits for and meet the needs of all members of the public. My decision includes the evaluation of the trade-offs between effects to resources, desired products, and social values.

The Selected Alternative meets the stated Purpose and Need for the project. It will produce a supply of timber for the timber industry with minimal effects to the environment. It addresses the key issues as a whole by providing a supply of timber, maintaining old-growth forest habitat, and does not enter any 2001 inventoried roadless areas.

The Selected Alternative will meet the Forest Plan direction and conforms to the National Forest Management Act. The direct, indirect, and cumulative environmental effects from project activities are consistent with the goals, objectives, and standards and guidelines in the Forest Plan. I have found that the protection and mitigation measures in Appendix ROD-1, Unit Cards, and design criteria in Appendix ROD-2, Road Cards, are effective in reducing environmental impacts based upon the Forest Plan analysis and experience in using these measures.

## Alternatives

### Alternatives Considered in Detail

Five action alternatives and the no-action alternative were considered in detail in the FEIS. These alternatives were designed to address key issues developed from scoping comments. I found these alternatives provided a reasonable range of alternatives for the analysis.

Each action alternative was designed with different emphases to address the key issues, while meeting the Purpose and Need of providing timber volume. Alternative F was designed to avoid harvest and road building in inventoried roadless areas. Each of the alternatives is summarized below and described in detail in the FEIS Chapter 2. Table R-1 provides a summary comparison of the alternatives.

During the analysis of new information since the FEIS was published, each action alternative was analyzed with higher-resolution GIS mapping data which resulted in minor acreage differences from those published in the FEIS.

Timber volumes in the FEIS were estimated from stand exam plots, which provide a general gross volume estimate. More-intensive timber cruise plots were done since the FEIS. These provided more-precise defect information with more-accurate net timber volume estimates. This resulted in new net volume estimates for the action alternatives. In addition, road reconstruction completed since the FEIS has reduced the amount of reconstruction under the alternatives (Table R-1).

**Alternative A - No Action**, proposed no new timber harvest or road construction in the project area. It does not preclude timber harvest from other areas or from the project area in the future. This alternative represents the existing condition and serves as a baseline for comparing the action alternatives. This alternative displays the effects from the current condition of the area.

**Alternative B** was the proposed action. Alternative B responded to Issue 1, Timber Supply and Economics, by providing logical extensions to the existing Anita Bay road system and using uneven-aged management in helicopter units to improve economics. This alternative proposed timber harvest on approximately 3,212 acres. The use of higher-resolution GIS data resulted in an 8-acre reduction, for a total harvest area of approximately 3,204 acres. This alternative produced 45.5 MMBF of timber volume estimated from stand exam data, and 31.4 MMBF of net cruised timber volume. This alternative proposed timber harvest and road building within 2001 IRAs.

**Alternative C** emphasized Issue 1 by focusing on timber supply, maximizing the available amount of timber while meeting Forest Plan Standards and Guidelines, and using uneven-aged management in helicopter units. This alternative proposed timber harvest on approximately 6,107 acres. The use of higher-resolution GIS data resulted in a 13-acre reduction, for a total harvest area of approximately 6,094 acres. This alternative produced 87.5 MMBF of

## Record of Decision

timber volume estimated from stand exam data, and 62.0 MMBF of net graded cruised timber volume. This alternative had the most harvest units and roads within 2001 IRAs.

**Alternative D**, identified as the preferred alternative in the DEIS, also emphasized Issue 1, by focusing on economics. This alternative proposed timber harvest on approximately 2,369 acres. The use of higher-resolution GIS data resulted in an 8-acre reduction for a total harvest area of approximately 2,361 acres. This alternative produced 37.2 MMBF of timber volume estimated from stand exam data, and 26.6 MMBF of net cruised timber volume. This alternative proposed more-economical units, with greater use of conventional yarding methods, than the proposed action. This alternative proposed timber harvest and road building within 2001 IRAs.

**Alternative E** responded to Issue 2, Wildlife Habitat Fragmentation. This alternative proposed timber harvest on approximately 3,326 acres. The use of higher-resolution GIS data resulted in a 2-acre increase for a total harvest area of approximately 3,328 acres. This alternative produced 38.4 MMBF timber volume estimated from stand exam data, and 24.5 MMBF of net cruised timber volume. No harvest was proposed in the area between Anita Bay and Burnett Inlet. It proposed only small-sized clearcut units and uneven-aged management on most of the units. Road construction was minimized by using a higher proportion of helicopter yarding. This alternative proposed timber harvest and road building within 2001 IRAs.

**Alternative F** is the Selected Alternative as described above. Alternative F was designed to avoid harvest and roadbuilding in inventoried roadless areas. It proposed timber harvest on 1,251 acres. The use of higher-resolution GIS data resulted in a 1-acre increase for a total harvest area of approximately 1,252 acres. This alternative produced 18.3 MMBF of timber volume estimated from stand exam data, and 13.1 MMBF of net cruised timber volume. This alternative responded to Issue 3, Inventoried Roadless Areas, by not harvesting timber or constructing roads in inventoried roadless areas.

I considered whether the Navy FEIS still provided me with a reasonable range of alternatives to choose from in light of the 2011 Federal District Court ruling vacating the Tongass exemption from the Roadless Rule. I concluded that it does, for the following reasons: I could select Alternative F or Alternative A (no action) because they do not propose any activities in 2001 IRAs. I could also choose any action alternative that proposes activities in an IRA and defer any timber harvest units and road construction within an IRA pending resolution of the Tongass exemption in the courts. By selecting Alternative F at this time, I am eliminating the uncertainty of waiting on the outcome of roadless area litigation of an unknown duration, and ensuring that no IRA will be entered as a result of this decision.

Table R-1  
Comparison of Alternative Design and Issues by Alternative (updated 2014)

Category	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Sel. Alt. F
<b>Estimated harvest acreage and volume:</b>						
<b>Total acres of harvest</b>	<b>0</b>	<b>3,204</b>	<b>6,094</b>	<b>2,361</b>	<b>3,328</b>	<b>1,252</b>
Acres of cable/shovel yarding	0	1,282	2,519	1,255	554	643
Acres of helicopter yarding	0	1,922	3,575	1,106	2,772	609
<b>Total net cruise volume (saw/utility, MMBF)<sup>1</sup></b>	<b>0</b>	<b>31.4</b>	<b>62.0</b>	<b>26.6</b>	<b>24.5</b>	<b>13.1</b>
Cable/shovel yarding (sawlog only, MMBF)	0	18.4	36.6	18.2	8.0	8.6
Helicopter yarding (sawlog only, MMBF)	0	9.6	18.8	5.6	13.9	3.1
<b>Acres harvested by silvicultural system<sup>2</sup></b>						
Even-aged management	0	1,207	2,185	1,180	487	559
Two-aged management	0	0	268	0	0	0
Uneven-aged management	0	2,005	3,654	1,189	2,839	692
<b>Roads and log transfer facilities (LTFs):</b>						
Miles of NFS road construction	0	6.6	12.1	4.8	2.2	0.6
Miles of temporary road construction	0	5.8	13.6	5.0	2.7	2.7
Miles of proposed road reconstruction	0	0.8	2.1	0.4	0.8	0.8
Proposes construction of Mosman Inlet LTF	No	No	Yes	No	No	No
<b>Issue 1: Timber supply and economics</b>						
Total net cruise volume MMBF)	0	31.4	62.0	26.6	24.5	13.1
Indicated bid value (\$/MBF <sup>3</sup> )	0	(\$75.68)	(\$56.73)	(\$51.56)	(\$42.90)	(\$14.16)
Direct employment (job equivalent) <sup>4</sup>	0	126-151	248-298	107-128	98-117	52-63
Road costs (construction/reconstruction)/MBF	0	\$83	\$82	\$77	\$42	\$59
Logging costs (stump to mill costs) (\$/MBF)	0	\$574	\$563	\$548	\$555	\$513
<b>Issue 2: Wildlife habitat fragmentation</b>						
Acres of POG habitat in WAA 1901 post harvest	60,750	59,169	57,689	59,263	59,889	59,906
% reduction in POG habitat for WAA 1901	0	2.6%	5.0%	2.4%	2.4%	1.4%
Acres of interior POG in WAA 1901 post harvest	24,642	23,051	22,013	23,280	23,702	24,044
Acres of coarse canopy old growth in WAA 1901 post harvest	3,654	3,286	3,255	3,341	3,421	3,583
<b>Issue 3: Inventoried roadless areas (2001 IRAs)</b>						
Acres of timber harvest within the IRAs	0	2,200	4,463	1,094	2,219	0
Total miles of road construction within the IRAs <sup>5</sup>	0	6.3	16.8	4.3	1.7	0
Acres of IRA affected (direct and indirect effects) <sup>6</sup>	0	5,963	12,117	3,120	6,272	566
% Acres of IRA affected	0	11%	22%	6%	12%	1%

<sup>1</sup> MMBF = million board feet; sawlog and utility.

<sup>2</sup> Estimated acres by silvicultural system, as shown in the FEIS. Total acres by silviculture system vary slightly from total harvest acres by 1 to 13 acres due to GIS updates. Even-aged includes: clearcut; clearcut w/ 15% reserves; clearcut w/ 50% reserves; Two-aged includes: clearcut w/ 15% reserves; Uneven-aged includes: single-tree selection.

<sup>3</sup> MBF = thousand board feet

<sup>4</sup> Based on a range of volume from all allowable export to markets outside Alaska, to all sawlogs (hem/spruce) processed locally.

<sup>5</sup> Includes NFS and temporary road construction

<sup>6</sup> Acres affected by alternative includes the zone defined as 1,200 feet from existing and proposed roads, and 600 feet from all harvest units including the helicopter units. Alt F only has indirect effects since no project activities occur within IRAs.

Source: GIS; FASTR v 10212013

### **Alternatives Considered but Eliminated from Detailed Analysis**

Nine alternatives were considered but eliminated from detailed analysis in the FEIS. These are presented in the FEIS Chapter 2, Alternatives Considered but Eliminated from Detailed Analysis. Three additional proposals by appellants were considered during the 2009 informal appeal resolution but eliminated from detailed analysis. These are described in Appendix ROD-3.

After the March 4, 2011 Federal District Court, District of Alaska ruling that the Tongass is no longer exempt from the 2001 Roadless Rule, I also considered modifying Alternatives B through E by dropping proposed units and roads within 2001 inventoried roadless areas, but chose to eliminate this from detailed analysis. The volume and economic results of modifying Alternatives B through D would not address any additional issues not already addressed by Alternative F, and modifying Alternative E was most similar to the TWS and SEACC proposals, which were considered but eliminated during the informal appeals resolution process.

### **Environmentally Preferred Alternative**

The Council on Environmental Quality defines the environmentally preferred alternative as “the alternative that will promote the national environmental policy as expressed in NEPA's Section 101”. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.” 40 CFR 1505.2(b) requires that one or more environmentally preferable alternatives be disclosed. The environmentally preferable alternative is not necessarily the alternative that will be implemented, and it does not have to meet the underlying need for the project. It does, however, have to cause the least damage to the biological and physical environment and best protect, preserve, and enhance historical, cultural, and natural resources. I have reviewed the direct, indirect, and cumulative effects of each alternative. I have determined that Alternative A, the no-action alternative, is the environmentally preferable alternative. This alternative is environmentally preferable because it would result in no environmental effects and thereby best protects, preserves, and enhances historical, cultural, and natural resources on the National Forest. Alternative A does not meet the Purpose and Need, but it does provide me with a baseline to measure the direct and indirect effects of the action alternatives.

Of the action alternatives, I have identified Alternative F as the environmentally preferred alternative because it has the fewest acres of timber harvest, constructs the fewest miles of road, and would result in the fewest environmental impacts. In addition, it does not enter any 2001 IRAs.

## **Public Involvement**

The Navy Timber Sale project included an extensive public involvement process, as documented in the FEIS Chapter 1 and in the project record. Public comments helped to shape the analysis. The public and agency comments

received during scoping helped me to define the key issues, which in turn helped to develop the alternatives. Public comments on the DEIS were addressed in the FEIS and responses to those comments are presented in FEIS Appendix B. These responses were also reassessed in light of any new information and documented in Appendix ROD-3. Some members of the public also exercised their rights to an administrative review of my 2009 Record of Decision through the appeal process.

On January 21, 2014, I sent a letter to the people on the project mailing list notifying them that the Navy Timber Sale Decision was now subject to the project-level predecisional administrative review process under Title 36 CFR Part 218. The project-level predecisional administrative review process gives the public an opportunity to object to the proposed decision prior to it being finalized. This process replaced the appeals process that was previously in place for the 2009 Decision.

### **Mitigation**

The analysis documented in the FEIS discloses the possible adverse effects of implementing the actions proposed under each alternative. These effects were mitigated or reduced through the use of Forest Plan Standards and Guidelines. Specific mitigation measures are listed on the unit and road cards in Appendix ROD-1 and Appendix ROD-2. These are also discussed in FEIS Chapter 2, pp. 15-17 and Chapter 3, pp. 57-58.

### **Monitoring**

Monitoring of the Selected Alternative will be done both during implementation (project-specific monitoring) and as part of the Forest Plan monitoring program. Project-specific monitoring is identified in Appendix ROD-1, Unit Cards and Appendix ROD-2, Road Cards. The Navy FEIS Chapter 2, pp. 16-17 and Chapter 3, pp. 58 and 107 also describes project-specific monitoring activities.

### **Project Record**

The project record for this project includes the DEIS and FEIS, the Forest Plan, reports containing analyses by resource with supporting documentation, public communication and comments, all material incorporated by reference and other critical materials produced during the environmental analysis of this project. The project record is available electronically upon request from the Wrangell Ranger District.

### **Map Disclaimer**

The USDA Forest Service makes no warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose, nor

assumes any legal liability or responsibility for the accuracy, reliability, completeness or utility of these geospatial data, or for the improper or incorrect use of these geospatial data. These geospatial data and related maps or graphics are not legal documents and are not intended to be used as such. The data and maps may not be used to determine title, ownership, legal descriptions or boundaries, legal jurisdiction, or restrictions that may be in place on either public or private land. Natural hazards may or may not be depicted on the data and maps, and land users should exercise due caution. The data are dynamic and may change over time. The user is responsible to verify the limitations of the geospatial data and to use the data accordingly and use constraints information.

## Findings Required By Law and Regulation

### **Alaska National Interest Lands Conservation Act (ANILCA) of 1980; Section 810**

**Subsistence Evaluation:** The decision on the Forest Plan concluded that “implementation of the Forest Plan may result in a significant restriction to subsistence use of deer due to the potential effects of projects on the abundance and distribution of these resources, and on competition for these resources” (ROD p. 61). This is based on the Forest Plan’s cumulative effects analysis of resource development on subsistence resources under full implementation of the Forest Plan, including this project. A subsistence evaluation was conducted for the six alternatives in accordance with Alaska National Interest Lands Conservation Act (ANILCA) Section 810. An ANILCA 810 subsistence hearing was conducted in Wrangell Alaska in June 2008.

Based on the information in the FEIS and the new information analysis, effects within the foreseeable future from this project alone would not result in a significant possibility of a significant restriction on any subsistence resources.

**Finding:** In accordance with Alaska National Interest Lands Conservation Act (ANILCA) Section 810, I have made a determination for the subsistence evaluation that the direct effects of the project will not result in a risk of a significant restriction on the subsistence use of any resources, including deer (FEIS p. 3-122). Cumulatively, since additional timber harvest may occur at some future time in the development LUDs in WAA 1901, there may be a significant possibility of a significant restriction on subsistence use of deer in WAA 1901 in the future due to additional reductions in habitat capability. This is consistent with the Forest Plan finding that full implementation of the Plan could lead to a significant possibility of a significant restriction on subsistence use of deer. The potential foreseeable effects, directly and cumulatively, from the Selected Alternative will not have a significant possibility of a significant restriction on subsistence uses for other resources including bears, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots.

The evaluation determined that:

- **Necessary and Consistent with Sound Management of Public Lands:** I have determined that the Selected Alternative is necessary and consistent with sound management of public lands. In this regard, I have evaluated this project against the National Forest Management Act, the Alaska National Interest Lands Conservation Act, the Tongass Timber Reform Act, the Wilderness Act, the Tongass Land and Resource Management Plan, and the Alaska State Forest Resources and Practices Act. Based on the analysis presented in the Navy Final EIS, the findings I have made in this ROD and the analysis for the Forest Plan, I have determined that the Selected Alternative strikes a balance between meeting the resource needs of the public and protecting the forest resources.
- **Amount of Public Land Necessary to Accomplish the Proposed Action:** I have determined that the amount of land necessary to implement the Selected Alternative is, considering sound multiple-use management of public lands, the minimum necessary to accomplish the purpose of this project. The entire forested portion of the Tongass is used by at least one rural community for subsistence purposes for, at a minimum, deer hunting. It is not possible to avoid all of these areas in implementing resource use activities, such as timber harvesting and road construction, and attempting to reduce effects in some areas can mean increasing the effects in other areas. The current Forest-wide Standards and Guidelines and LUD prescriptions provide for management or limit activities in many of the area's most important for subsistence uses, such as beaches and estuaries, and areas with high fish and wildlife habitat values.
- **Reasonable Steps to Minimize Adverse Impacts to Subsistence Uses and Resources:** Subsistence use is addressed specifically in a Forest-wide Standard and Guideline, and subsistence resources are covered by the Forest-wide Standards and Guidelines for wildlife, fish, riparian areas, and biological diversity, among others. I have determined that fish and wildlife habitat productivity will be maintained at the highest level possible for the Selected Alternative, consistent with the overall multiple-use goals and improved protection of the Forest Plan.

### **Bald Eagle Protection Act**

I have determined that the Selected Alternative complies with the most recent information for the protection of bald eagle protection requirements in 50 CFR Part 22.26. These are described in ROD Appendix ROD-3.

### **Clean Air Act of 1970 (as amended)**

I have determined that emissions from the implementation of the Selected Alternative will be of short duration and are not expected to exceed State of Alaska ambient air quality standards (18 AAC 50). This includes any smoke associated with biofuels used for heating commercial buildings and residences.

### **Clean Water Act (1977, as amended)**

I have determined that the project activities meet all applicable State of Alaska Water Quality Standards. Section 313 of the Clean Water Act and Executive Order 12088 of January 23, 1987 addresses Federal agency compliance and consistency with water pollution control mandates. Agencies must be consistent with requirements that apply to "any governmental entity" or private person. Compliance is to be in line with "all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution."

Clean Water Act Sections 208 and 319 address nonpoint source pollution caused by activities such as timber harvest. Soil and water conservation practices are recognized by EPA as the primary control mechanisms for nonpoint source pollution on National Forest System lands. The site-specific application of best management practices (BMPs), with a monitoring and feedback mechanism, is the approved strategy for controlling nonpoint source pollution as defined by Alaska's Nonpoint Source Pollution Control Strategy (ADEC 2007). In 1997, the State of Alaska approved the BMPs in the Forest Service's Soil and Water Conservation Handbook (USFS 2006) as consistent with the Alaska Forest Resources and Practices Regulations. The BMPs are incorporated into the Tongass Land Management Plan. My finding is based in part on the fact that annual Tongass National Forest BMP monitoring results consistently report a high success rate at applying BMPs (USFS 2005-2012).

A discharge of dredge or fill material from normal silvicultural activities such as harvesting for the production of forest products is exempt from Section 404 permitting requirements in waters of the United States, including wetlands (404(f)(1)(A)). Forest roads, as defined by US Army Corps of Engineers guidance, are exempt from Clean Water Act Section 404 permitting if they are constructed and maintained in accordance with BMPs to assure that flow and circulation patterns and chemical and biological characteristics of the waters are not impaired (404(f)(1)(E)). The BMPs that must be followed are specified in 33 CFR 323.4(a). These specific BMPs are incorporated into the Alaska Region BMPs under BMP 12.5. I have determined that all roads approved in this project are exempt from Section 404 permitting requirements in waters of the United States, including wetlands (404(f)(1)(A)).

The Forest Service has issued National BMPs (April 2012). Directives for using these BMPs are currently in development. Currently, this project cites the Alaska Region BMPs, which are fully described in FSH 2509.22. A crosswalk between the current Alaska Region BMPs and these National BMPs has been placed in the project record for reference. The Navy Timber Sale will implement the most up-to-date BMP guidance.

### **Endangered Species Act (ESA) of 1973 (as amended)**

A biological assessment was prepared for this project. I concur with the finding of "may affect, but is not likely to adversely affect" the federally listed species. An updated biological assessment was sent to the National Marine Fisheries

Service as part of the Section 7 consultation under the Endangered Species Act. NMFS concurred with the findings on September 7, 2012.

Two fish species, the lower Columbia River coho salmon and the green sturgeon, were added as Threatened to the Alaska list on March 2013. A finding of “no effect” was made for these species since no critical habitat occurs in Alaska; NMFS concurred that therefore no consultation was required for these species. On November 4, 2013, a Final Rule was published in the Federal Register, delisting the eastern distinct population segment Steller sea lion, effective December 4, 2013 (78 FR 66139). This species will continue to be protected under provisions of the Marine Mammal Protection Act.

### **Federal Cave Resource Protection Act of 1988**

I have determined that the activities of the Selected Alternative will not have a direct, indirect, or cumulative effect on any significant cave resource in the Navy project area, since these features do not exist. There are minor occurrences of carbonate rock and associated cave resources in the Navy project area, but these will not be adversely affected by the Selected Alternative.

### **National Forest Transportation System Final Administrative Policy and Final Rule**

The Final EIS and this ROD are prepared to be consistent with the National Forest System Transportation Final Administrative Policy and Final Rule (2001), as well as the Tongass National Forest Level Road Analysis (2003), the 2005 Travel Management Rule (36 CFR 212) (FEIS p. 3-133), the Wrangell Ranger District Road Analysis (2006), and the Wrangell Ranger District Access and Travel Management Plan (ATM) (2007). I have determined the proposed road system is “the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands” (36 CFR 212.5).

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fisheries Conservation Act requires the Forest Service to consult with the National Marine Fisheries Service on projects that may affect essential fish habitat (EFH). The potential effects of the project on EFH are discussed in Chapter 3 of the Final EIS. Chapter 3 also includes a description of the EFH in the project area, a description of the proposed activities, and a description of the measures that will protect these essential habitats (FEIS pp. 3-154 to 156). I have reviewed the potential effects of the project on EFH discussed in the FEIS Chapter 3 and have determined that this project may adversely affect EFH (FEIS p. 3-155).

National Marine Fisheries Service was formally consulted on the project. They concurred with my findings that the Navy Timber Sale “may adversely affect EFH because of cumulative effects of past harvest” and submitted recommendations. These recommendations were considered in evaluating the potential effects of all of the alternatives on EFH. Information on applicable BMPs, standards and guidelines, and design measures and criteria to minimize effects to EFH are presented in Appendices ROD-1 and ROD-2, and in Chapter

## Record of Decision

3 of the FEIS. I have reviewed the Navy Appendix ROD-3 and there is no new information that would prompt a reevaluation of EFH.

### **Marine Mammal Protection Act of 1972**

Actions authorized in the Selected Alternative will not have a direct, indirect, or cumulative effect on marine mammals. All marine wildlife guidelines, including special prohibitions on approaching humpback whales in Alaska as defined in 50 CFR 224.103 will be followed during project implementation. These marine mammal viewing guidelines are administered by the National Marine Fisheries Service and enforced by the Coast Guard, and are deemed sufficient for their protection.

### **National Forest Management Act of 1976 (as amended)**

The National Forest Management Act requires several specific determinations in the Record of Decision. These are consistency with the governing Forest Plan, a determination of clearcutting as the optimal method of harvesting, if used, and specific authorizations to create openings over 100 acres in size.

### **Tongass Land and Resource Management Plan (as amended)**

Based on the discussion that follows, I have determined that this decision is consistent with the Forest Plan as amended.

The Forest Plan was completed with the signing of the Record of Decision on January 23, 2008 after the issuance of the Navy Draft EIS (November 2, 2007).

The decision for the Forest Plan contains transition language for the Navy Timber Sale project, which was already being planned, referred to as Category 2 projects. Category 2 projects are projects that the Responsible Official reviewed and determined “are consistent with the goals and objectives of the amended Plan”. The environmental effects of the Navy project have been disclosed to the public through site-specific project-level environmental documents. Navy and the other projects in Category 2 were also assumed to be implemented in the environmental analysis.

I have reviewed the Navy project and incorporated the new direction and analysis for the amended Forest Plan to the extent this can be done without causing major disruptions in the implementation of the project.

### **Clearcutting as the Optimal Method of Harvesting**

Based on the information presented in the FEIS and Forest Plan direction, I have determined that clearcutting is the optimal method of harvesting where it is applied. Site-specific information and rationale where clearcutting is optimal is presented in the silvicultural prescriptions. Clearcutting (an even-aged method) has been prescribed in this project to preclude or minimize the occurrence of potentially adverse impacts from windthrow where the potential is moderate to high, to remove or reduce mistletoe infestations, and to reduce wounding due to logging damage to adjacent trees.

### **Harvest Openings Over 100 Acres in Size**

I have determined that there will be no created openings in excess of 100 acres with the harvest of the Selected Alternative units.

### **National Historic Preservation Act (NHPA) of 1966 (as amended)**

Under the provisions of Section 106 of the National Historic Preservation Act, I have made a determination of “No Historic Properties Affected”. There will be no effects to sites listed in or eligible for listing in the National Register of Historic Places. Heritage resource surveys were conducted in the analysis area in accordance with the Regional Inventory Strategy. By following the provisions of the Programmatic Agreement between the Forest Service, Alaska State Historic Preservation Officer, and the Advisory Council on Historic Preservation, this action complies with Section 106 of the National Historic Preservation Act. No effects on known heritage resources are anticipated.

The State Historic Preservation Officer was consulted, in accordance with Section 106 of the NHPA and 36 CFR Part 800. Therefore, I have complied with the consultation process with the State Historic Preservation Officer. Native communities have been contacted during this process and reports provided for comment.

### **Tongass Timber Reform Act (TTRA) of 1990**

I have determined this project is in compliance of the relevant provisions of TTRA. Any timber harvested under the Selected Alternative will provide part of the timber supply to the Tongass National Forest’s timber program as stated in Section 101 of TTRA - “... the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the annual market demand from such forest for each planning cycle.”

No commercial timber harvest will occur within 100 feet of any Class I stream or any Class II stream flowing directly into a Class I stream, as required in Section 103 of the TTRA.

## **Applicable Executive Orders**

### **Executive Order 11988 (Floodplains)**

Per Executive Order 11988, I have determined that the Selected Alternative avoids all floodplains.

### **Executive Order 11990 (Wetlands)**

I have determined that the long- and short-term adverse effects associated with the destruction or modification of wetlands in the implementation of the Navy Timber Sale will be avoided to the extent possible. The techniques and practices required by the Forest Service serve to maintain the wetland attributes, including values and functions. In some areas, soil moisture regime and vegetation composition or structure may be altered; however, these altered acres would still be classified as wetlands and would function as wetlands in the ecosystem. Where wetlands cannot be avoided, road construction will adhere to BMPs, which include at a minimum the Federal baseline provisions in 33 Code of Federal Regulation (CFR) 323. There will be approximately 5 acres loss of wetlands due to road construction for the Selected Alternative.

### **Executive Order 12898 (Environmental Justice)**

The FEIS analyzed environmental justice to determine whether a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribes was likely to result from the proposed action and any alternatives. The Executive Order specifically directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife. I have determined that no communities are identified as being adversely affected in this area and that none of the alternatives would have a disproportionately high and adverse effect on the health of the environment of the minority, low-income, or Indian populations that use the Navy Timber Sale area.

### **Executive Order 12962 (Aquatic Systems, Recreational Fisheries)**

Per Executive Order 12962, I have determined that the Selected Alternative minimizes the effects on aquatic systems through project design, application of standards and guidelines, BMPs, and site-specific mitigation measures. In the Navy project area, opportunities for recreational fishing are limited. For the Selected Alternative, recreational fishing opportunities would remain essentially the same as the current condition, because aquatic habitats are protected through implementation of BMPs and riparian standards and guidelines.

### **Executive Order 13007 (Indian Sacred Sites)**

Executive Order 13007 directs Federal agencies to consider the protection of American Indian sacred sites and allow access where feasible. In a government-to-government relationship, the tribal government is responsible for notifying the agency of the existence of a sacred site. A sacred site is defined as a site that has sacred significance due to established religious beliefs or ceremonial uses, and which has a specific, discrete, and delineated location that has been identified by the tribe. I have determined that tribal governments or their authorized representatives were consulted and they did not identify any specific sacred site locations in the project area.

### **Executive Order 13112 (Invasive Species)**

A risk assessment completed for the FEIS evaluated the status of invasive species in the project area and the effects from the proposed activities on them. I have included specific measures in Appendix ROD-1, Unit Cards, to minimize the introduction and spread of invasive plant species in the Selected Alternative.

### **Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)**

Executive Order 13175 directs Federal agencies to respect tribal self-government, sovereignty, and tribal rights, and to engage in regular and meaningful government-to-government consultation with tribes on proposed actions with tribal implications. I have complied with this Order and have consulted with and provided information to the following federally recognized tribal governments about this project:

- Wrangell Cooperative Association
- Central Council of the Tlingit and Haida Indian Tribes of Alaska

- Organized Village of Kake
- Petersburg Indian Association

In addition, I have consulted with and provided information to the following corporations about this project:

- Sealaska Corporation
- Kake Tribal Corporation

A detailed list of this consultation is in Chapter 1 of the FEIS.

### **Executive Order 13186 Migratory Birds**

The Migratory Bird Treaty Act of 1918 (amended in 1936 and 1972) prohibits the taking of migratory birds, unless authorized by the Secretary of Interior. The law provides the primary mechanism to regulate waterfowl hunting seasons and bag limits, but its scope is not just limited to waterfowl. The migratory species that may stay in the area utilize most, if not all, of the habitats described in the analysis for breeding, nesting, and raising their young. The effects on these habitats were analyzed for this project. I have determined that the decision will not have a significant direct, indirect, or cumulative effect on any migratory bird species in the project area. There may be moderate direct effects on individuals or small groups and their nests from the harvest of timber or the disturbance caused by harvest and related activities.

### **Executive Order 13443 (Facilitation of Hunting Heritage and Wildlife Conservation)**

Executive Order 13443 directs Federal agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. The analysis considered and disclosed the effects on hunting activities. I have determined that the Selected Alternative will maintain hunting opportunities by adhering to the Forest Plan Standards and Guidelines that maintain habitat for hunted species.

## **Federal and State Permits**

Federal and State permits necessary to implement the authorized activities are listed at the end of Chapter 1 in the FEIS.

## **Process for Implementation**

Appendices ROD-1 and ROD-2 contain the Selected Alternative unit and road cards, respectively. These cards are an integral part of this decision because they document the specific resource concerns, management objectives, and mitigation measures to govern the layout of the harvest units and construction of roads. These cards will be used during the implementation process to ensure that the project is implemented within applicable standards and guidelines and that resource effects will not be greater than those described in the FEIS.

## Record of Decision

Similar cards will document any changes to the planned layout, which may occur during implementation.

Minor changes are expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout to improve logging system efficiency. This usually entails adjusting the boundary to coincide with logical logging setting boundaries. Proposed changes to the authorized project actions will be subject to the requirements of the National Environmental Policy Act the National Forest Management Act, and other laws concerning such changes.

This project will be implemented in accordance with Forest Service Manual (FSM) 2430 and Forest Service Handbook FSH 2409.18 direction for timber sale project implementation. This direction provides a bridge between project planning and implementation and will ensure execution of the actions, environmental standards, and mitigations approved by this decision, and compliance with the Forest Plan and all applicable laws, policy and direction. The current applicable BMPs will be applied to the Selected Alternative.

Changes made during implementation will be reviewed, documented, and approved by the Responsible Official through the Tongass Supplement to FSH 1909.15-2009-1. In determining whether and what kind of NEPA action is required for changes during implementation, the Forest Supervisor will consider the criteria in the Code of Federal Regulations (40 CFR 1502.9(c)), and Forest Service Handbook (FSH) 1909.15, sec. 18 to determine whether to supplement or revise an existing environmental impact statement. I will determine whether the proposed change is a substantial change to the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. I will consider connected or interrelated changes to particular areas or specific activities in making this determination. The cumulative impacts of these changes will also be considered.

The implementation unit and road cards, as approved by this process, are incorporated into the timber sale contract. The sale administrators and road inspectors then enforce the contract requirements with the operators.

The implementation record for this project will display the following:

- Each harvest unit, transportation facility, and other project components as actually implemented,
- Any proposed changes to the design, location, standards and guidelines, or other mitigation measures for the project, and
- Authorization of the proposed changes.

Implementation of all activities authorized by the Record of Decision will be monitored to ensure that they are carried out as planned and described in the FEIS.

## Administrative Review - Opportunity to Object

This decision is subject to the project-level predecisional administrative review process pursuant to Title 36 CFR Part 218, subparts A and B. Individuals or organizations who submitted specific written comments regarding the proposed project either during scoping or other designated opportunity for public comment in accordance with 36 CFR 218.5(a) may file objections to this draft decision. Issues raised in objections must be based on previously submitted, timely, specific written comments regarding the proposed project unless based on new information arising after previous designated opportunities.

As the Navy Timber Sale FEIS and 2009 ROD were completed while the Forest Service appeal regulations at 36 CFR 215 were still in effect, those who would have had standing to appeal under those regulations will have standing to object to the draft ROD proposed at this time.

Individual members of organizations must have submitted their own comments to meet the requirements of eligibility as an individual; objections received on behalf of an organization are considered as those of the organization only. If an objection is submitted on behalf of a number of individuals or organizations, each individual or organization listed must meet the eligibility requirement of having previously submitted comments on the project (36 CFR 218.7). Names and addresses of objectors will become part of the public record.

Incorporation of documents by reference in the objection is permitted only as provided for at 36 CFR 218.8(b).

The objection must be in writing and meet the objection content requirements at 36 CFR 218.8(d).

The objection must be filed with the Reviewing Officer:

Beth Pendleton, Regional Forester  
USDA Forest Service, Alaska Region  
709 W. 9th Street  
P.O. Box 21628  
Juneau, AK 99802-1628  
Email address: [objections-alaska-regional-office@fs.fed.us](mailto:objections-alaska-regional-office@fs.fed.us)  
Fax: (907) 586-7840  
Phone: (907) 586-8863

Written objections, including attachments, must be filed (regular mail, fax, email, hand delivery, or express delivery) with the Reviewing Officer at the correct location within 45 calendar days of the date that the legal notification of opportunity to object to this draft decision is published in the *Ketchikan Daily News*, the official newspaper of record. The publication date in the newspaper of record is the exclusive means for calculating the time to file an objection. Those wishing to submit objections to this draft decision should not rely upon dates or timeframe information provided by any other source. The regulations

## Record of Decision

prohibit extending the time to file an objection. A copy of the legal notice will also be posted on the Forest Service project website at [http://www.fs.fed.us/nepa/nepa\\_project\\_exp.php?project=14556](http://www.fs.fed.us/nepa/nepa_project_exp.php?project=14556).

Hand-delivered written objections will be accepted at the Regional Office during normal business hours (8:00 am through 4:30 pm) Monday through Friday, excluding holidays. Electronic objections must be submitted in a format such as an email message, portable document format (.pdf), plain text (.txt), rich text format (.rtf), and Word (.doc or .docx). It is the responsibility of objectors to ensure their objection is received in a timely manner (36 CFR 218.9). All objections are available for public inspection during and after the objection process.

If objections are received, there is a 45-day objection review period in which the Responsible Official, the Reviewing Officer, and the objectors may meet to attempt to resolve issues. At the end of the 45 days, the Reviewing Officer will issue a written response detailing how the objections have been addressed, which may also include instructions to the Responsible Official (36 CFR 218.11(b)).

### **Implementation Date**

A final decision on projects subject to the objection process may occur on, but not before, 5 business days from the close of the objection filing period, if no objections are received (36 CFR 218.12(c)(2)).

If objections are received, the final decision will not be signed until all concerns and instructions identified by the Reviewing Officer in the objection response have been addressed by the Responsible Official (36 CFR 218.12(b)).

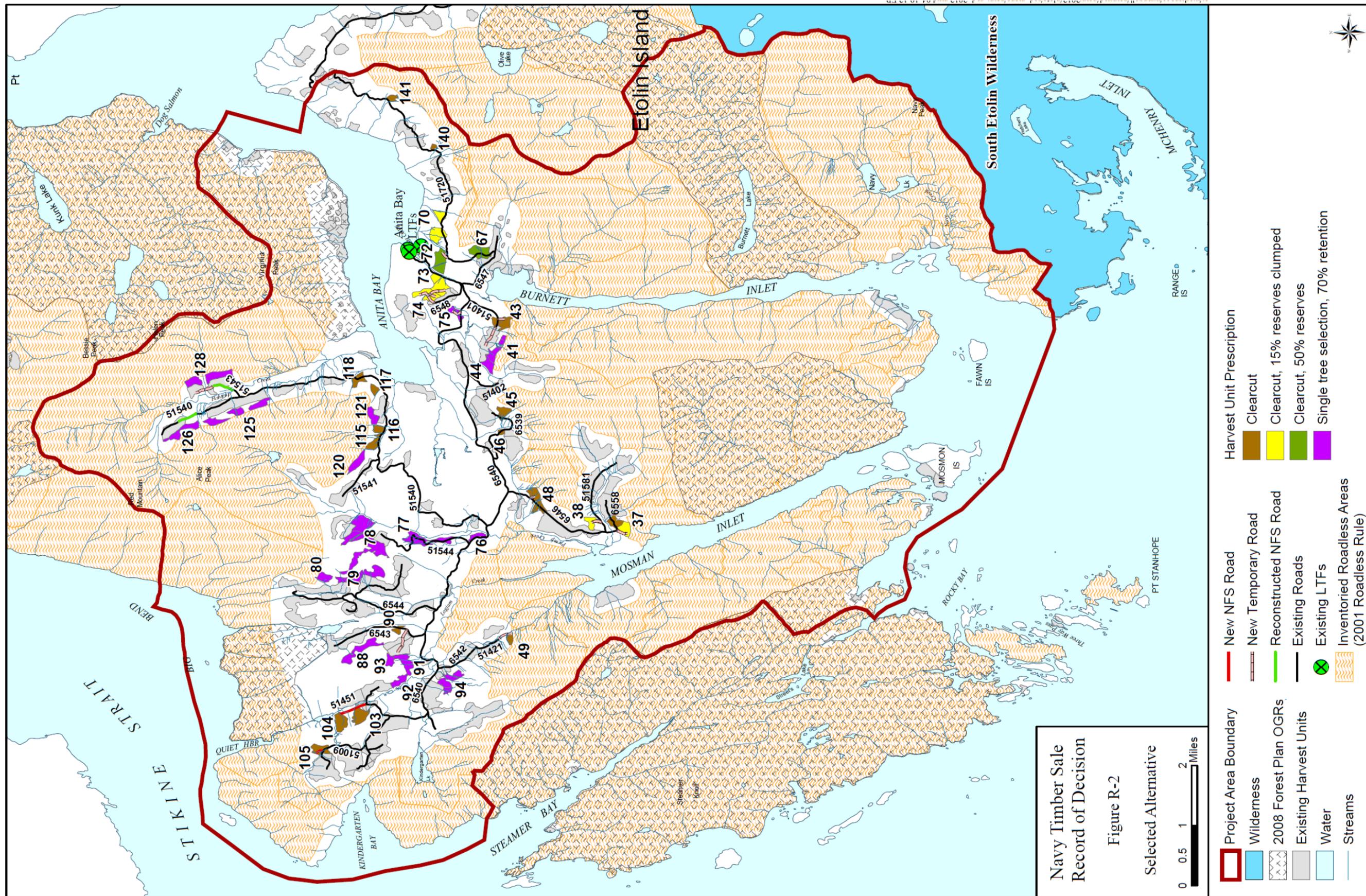
Implementation of decisions subject to the objection process may commence immediately after a final decision is signed. There is not a requirement to publish notification of the decision.

### **Contact Information**

For additional information concerning this draft decision, contact Robert Dalrymple, District Ranger, Wrangell Ranger District, P.O. Box 51, Wrangell, AK 99929, or call (907) 874-2323.

### **Responsible Official**

FORREST COLE  
Forest Supervisor



Navy Timber Sale  
Record of Decision  
Figure R-2  
Selected Alternative

0 0.5 1 2 Miles

# Record of Decision

# Appendix ROD-1

## Unit Cards

Appendix ROD-1, Unit Cards, is used to explain site-specific information about each unit and any resource concerns and mitigations. Narrative cards and maps for each unit are in numerical order and describe the silvicultural prescription, resource concerns, and protection or mitigation measures for each unit.

The section of this introduction, Harvest Treatments, explains the stand description and harvest treatments for this entry. The next section, Resource Concerns and Responses, summarizes how protection measures can be used for resource concerns. These protection measures can be either from the Forest Plan or project-specific.

The introduction to Appendix ROD-1 is followed by a map and a narrative card for each harvest unit.

### Unit Card Header Information

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

**Unit Number:** This is the number assigned to the unit block during the Logging Systems and Transportation Analysis development. Each unit may be comprised of one or more settings, identified on the map; each setting has one harvest method and one prescription assigned to it. However, when unit's are referred to in the text, we simply refer to the number. Unless otherwise stated, it is to be understood that the unit implies all the sections selected for harvest.

**Total Unit Acres:** This is an estimate of total acres within the unit using aerial photos and GIS information.

**Net Harvest Volume (Saw):** This is an estimated volume (in thousand board feet, or MBF) to be harvested. This was derived from field estimates and the stand exam program. A cruise will be done during implementation to determine an accurate volume before the timber is sold.

**Land Use Designation (LUD):** This lists which of the following LUDs the unit resides in: Modified Landscape (ML), Scenic Viewshed (SV) and Timber Production (TM).

**Logging Systems:** This lists whether the unit is to be yarded using cable, shovel or helicopter system.

## Harvest Treatments

### Silvicultural Narrative

**Existing Stand Condition:** This is the developmental stage of the physical and temporal distribution of trees and other plants in a forested area. **Site Index**, listed under this section, is a measure of site productivity. This value is the height growth in feet that will occur over 50 years, with an indicator species (Sitka spruce). William

## Appendix ROD-1

Farr established plots and developed site index tables. For example, a site index of 90 (Sitka spruce, Farr 50) means a Sitka spruce is capable of growing 90 feet in 50 years. **Basal Area (BA)** is the cross-sectional area of a tree trunk measured in square inches, usually at the DBH. On the unit cards, this measurement is in square feet per acre.

**Silvicultural Prescription:** This provides detailed direction about the methods, techniques, timing, and monitoring of vegetative treatments. **Precommercial Thinning (PCT)** is the removal of some trees from a stand that are too small to be sold for lumber or house logs, so the remaining trees will grow faster.

### 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 regimes prescribed for the stand.

A silvicultural prescription has been written for each unit in the Selected Alternative when the Navy Timber Sale Record of Decision (ROD) was signed. Silvicultural prescriptions include these unit cards plus the sale layout and marking guidelines that will be completed for each of the timber harvest unit's included in the ROD. These provide guidance for treatments following this proposed timber harvest, including regeneration and thinning through the entire rotation.

These unit cards and silvicultural prescriptions will be used during the implementation process to assure that all aspects of the project are implemented within applicable standards and guidelines. Minor changes can be expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout for the purpose of improving logging system efficiency or for site conditions.

The harvest treatments found on the unit cards are descriptions of what will occur under the silvicultural systems.

#### Even-aged Systems

Even-aged systems result in the conversion of mature stands to faster-growing stands of a single age by removing most merchantable trees in one entry. Where this treatment is recommended, it has been determined that it is optimum for the site. No openings in excess of 100 acres will be created. Reserve areas between openings must be of sufficient size and composition to be managed as a separate stand, which is a minimum of 10 acres.

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

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

Seed trees will be left in several units, as specified on the unit cards. In these units, one co-dominant or dominant cedar tree will be left as a seed tree for every 5 acres

harvested to provide a seed source for the future stand. Trees will be distributed throughout the unit in areas that have a cedar component in the overstory and will be partially girdled to provide a stress crop of cones. Leaving cedar seed trees would maintain or increase the cedar component in regenerated stands, thus minimizing future porcupine damage as cedar trees are not preferred as a browse species by porcupine. Unit 37 may be planted with western red and Alaskan yellow-cedar, if necessary, to ensure stocking levels are achieved in the regenerating stand. Plantation (survival) surveys will be conducted after the first and third full growing season following completion of planting.

*Clearcut with reserves:* Even-aged systems of clearcut with reserves results in most of the trees removed in a single operation with some trees retained for purposes other than regeneration. Reserve trees are scattered or clumped, and are normally retained throughout a rotation to serve a purpose. Depending on the individual unit prescription, 15 percent or 50 percent of the original stand acres will be retained. In the Navy project area, reserve trees would be retained for wildlife habitat, to reduce visual impact of timber harvest and/or to further enhance windfirmness of leave areas (i.e. RAWs, high-hazard soils, visual retention patches, etc.) Natural regeneration is expected to fully stock the stand with desirable trees by year 5. Regeneration monitoring will be done in the third year following harvest to certify the stocking level.

All stands that are prescribed under an even-aged system will be evaluated for a precommercial thinning treatment at 15-35 years of age to promote stand growth, health, and desired species composition.

### **Uneven-aged Systems**

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

*Single-tree Selection (STS):* An uneven-aged stand contains trees of three or more distinct age classes, intermixed throughout the stand. Uneven-aged stands are created through silvicultural pathways that include uneven-aged systems or small-scale periodic disturbance (gap phased) that allows for recruitment/release of trees resulting in a multi-storied stand structure. Harvest trees are either selected through individually tree marking or designated by description. No more than 30 percent of the total original stand basal area will be removed and no more that 50 percent of the original stand basal area of spruce or cedar will be removed in this entry. No opening will be created that is greater than 2 acres. These stands will continue to develop, and be available for additional future entries (recommended in 40 years). This system is not expected to appreciably increase the likelihood of windthrow in these stands. Natural regeneration is expected to fully stock the stand with desirable trees by year 5. Regeneration monitoring will be done in the third year following harvest to certify the stocking level.

## **Engineering/Roads**

### **Temporary roads**

Temporary roads are described in the unit cards and maps. These roads are decommissioned after harvest. This involves pulling any culverts that were installed, and activities result that in the stabilization and restoration of unneeded roads to a more natural state. While not drivable by motorized vehicles, they may be accessible to non-motorized users. Road drainage structures will be removed and stream channels restored to their original contours.

# Resource Concerns and Responses

## Riparian Management Areas

Forest Plan Standards and Guidelines and BMP 12.6 direct the design of riparian management areas (RMAs) associated with each stream in the project area. The standards and guidelines prohibit programmed commercial timber harvest in RMAs associated with all Class I, Class II, and Class III streams, except for right-of-way clearing for road construction. RMAs vary in width from the edge of the stream channel according to process group (Table ROD1-2) and stream value class (Table ROD1-1).

Unit card maps show the location of all streams and the associated RMAs. Unit card narratives also prescribe the location and width of reasonable assurance of windfirmness (RAW) buffers for protecting RMAs, except where windthrow potential is low (BMP 12.6a).

## Reasonable Assurance of Windfirmness (RAW) Buffers

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

AF – 140 feet

FP - 130 feet

HC - 120 feet

LC - 100 feet

MC - 100 feet

MM - 120 feet

PA - 85 feet or less

## Best Management Practices

The Forest Service recently issued National Core BMPs (USFS 2012). Directives for using these BMPs are currently in development. The Navy Timber Sale will implement the most up-to-date BMP guidance. Currently, this ROD cites the Alaska Region BMPs, which are fully described in FSH 2509.22 (USFS 2006). A crosswalk between the Alaska Region BMPs and the national BMPs has been placed in the project planning file for reference.

**Process Groups and Stream Classes**

Some BMPs are implemented through the location and design of harvest units and temporary roads; others are translated into timber harvest and road contract provisions to ensure implementation.

Log yarding practices are based on slope stability, soil disturbance, and stream class. Additional measures are taken to protect streams from possible disturbance associated with tree falling and yarding according to BMP 13.16. Timber contract provisions guide tree falling and yarding near stream courses. Trees near Class IV streams are felled away from the stream whenever feasible and logging debris introduced into Class IV streams is removed. Suspension requirements are used to minimize soil erosion, mass movement, and formation of new channels (BMP 13.9)

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

The Tongass National Forest defines stream channel types according to the Channel Type User Guide (USDA Forest Service, 1992), the foundation upon which aquatic habitat management prescriptions are developed. Table ROD 1-2 shows the Forest Plan codes used on the unit card narratives. Only the channel types found in timber harvest units are listed.

Stream classes are also used to define appropriate RMAs and protection measures. Stream classes are defined in Table ROD 1-1.

Table Appendix ROD 1-1  
Stream Value Classes

Stream Value Class	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).

## Appendix ROD-1

Table ROD 1-2  
Channel Types In or Adjacent to Harvest Units

Process Group	Channel Type Code	Channel Type Description
Alluvial Fan	AF1	Moderate Gradient Alluvial Fan Channel
	AF2	High Gradient Alluvial Cone Channel
Floodplain	FP4	Low Gradient Flood Plain Channel
High Gradient Contained	HC1	Shallowly Incised Muskeg Channel
	HC3	Deeply Incised Upper Valley Channel
	HC5	Shallowly Incised Very High Gradient Channel
	HC6	Deeply Incised Mountain Slope Channel
Moderate Gradient Contained	MC1	Narrow Shallow Contained Channel
	MC2	Moderate Width and Incision Contained Channel
Moderate Gradient Mixed Control	MM1	Narrow Mixed Control Channel
Large Contained	LC1	Low Gradient Contained Channel
Palustrine	PA1	Narrow Placid Flow Channel
	PA5	Beaver Dam/Pond Channel

### Soils

Forest Plan Standards and Guidelines for Soil and Water (p. 4-65) require that project analysis “evaluate soil stability (BMP 13.5) potential soil mass wasting effects, and stability of Class IV channels and minor drainageways (“non-streams”).” At the Forest Plan level, slopes of 72 percent or more are removed from the tentatively suitable timber base. However, at a project level, the Forest Supervisor may approve timber harvest on slopes of 72 percent or more on a case-by-case basis, based on the results of an on-site analysis of slope and Class IV channel stability, and an assessment of potential erosion.

Road and landing locations will avoid slopes greater than 67 percent, unstable slopes, and slide-prone areas, where feasible (BMP 14.7).

Shovel yarding will follow BMPs 12.5, 13.2 and 13.9. Slopes over 25 percent gradient may not be suitable for shovel yarding depending on soil conditions. Use care when approving shovel yarding on slopes over 25 percent gradient; avoid track slippage and rutting. Puncheon or a slash mat may be necessary to provide adequate bearing strength to prevent rutting. Material should be scattered upon completion of the yarding activities.

### Scenery

The following Scenic Integrity Objectives (SIOs) from the Forest Plan provide standards for management based on the landscape’s scenic characteristics and public viewing concern.

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

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

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

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

Visual Absorption Capability<sup>1</sup> (VAC) is used to estimate the relative ability of a landscape to visually absorb management activities. High, Intermediate, and Low VAC ratings are used, and reflect the degree of landscape variety in an area, viewing distance, and topographic characteristics. A Low VAC setting may be highly visible, have steep slopes, or little landscape variety, while a High VAC setting may be unseen, relatively flat, or have a high degree of landscape variety.

**Heritage Resources**

All identified heritage resources are not in the vicinity of the timber harvest unit’s and proposed roads. If any sites are discovered during implementation, the Forest Service will fulfill it’s consultation requirements as described in Chapter 3 of the Final EIS.

**Botany**

Forest Plan Standards and Guidelines for Plants (p. 4-41) require that project planning avoid, minimize, or mitigate adverse affects to rare plants and populations. When rare or sensitive plant species are identified in a proposed road corridor or harvest unit, a botanist will recommend mitigations. Roads, MAFs, landings, staging yards, sortyards and other hardened sites will have more permanent effects than timber harvest. Mitigation measures include re-routes of roads to avoid populations, modification of unit boundaries, and directional felling and yarding away from populations. In most cases, a 100-foot avoidance buffer around the population is required to ensure protection. In some cases, such as very small populations, or where other populations of the same species exist nearby outside of the influence of the proposed action, no action may be necessary.

To reduce the spread of invasive plants into new areas, the following project-specific mitigation measures will apply:

- Off-road equipment will be cleaned to remove seeds, vegetative matter and other debris, according to the timber sale contract, to help reduce the spread of invasive plant species.
- Use of hay or straw bales for erosion control will not be allowed. Materials that comply with Tongass National Forest standard seed mixture (FSM 2080 TNF supplement R10 2000-2007-1) will be used for erosion control where necessary.

Prior to closing or storing NFS roads that were newly constructed for this project, the roads will be surveyed for high-priority invasive plants. If any new infestations are detected, a treatment strategy will be developed and implemented.

**Wildlife**

Bald eagle nest protection requirements are now found in 50 CFR Part 22.26. They have changed slightly from what was in the former Bald Eagle MOU and the Navy Final EIS. Variances no long exist; permit’s allowing “take” in accordance with the Bald and Golden Eagle Protection Act would have to be obtained if disturbance to nesting bald eagles would occur. The required distances to avoid disturbance to nesting eagles (March 1 through August 31) are as follows:

- Avoid clear-cutting or removal of overstory trees within 330 feet (100 meters) of both active and alternate nests at any time (same as MOU).

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<sup>1</sup> Visual Absorption Capacity is the estimate of the relative ability of a landscape to accept management manipulations such as timber harvest, without significantly affection its visual character, a measure of the relative capacity of the land to absorb visual change.

## Appendix ROD-1

- Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the nesting season within 660 feet (200 meters) of the nest.
- Avoid construction of log transfer facilities and in-water log storage areas within 330 feet (100 meters) of active and alternate nests nest.
- Avoid operating helicopters or fixed-wing aircraft within 1000 feet (305 meters) of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.
- Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of nests (or within 1 mile in open areas).

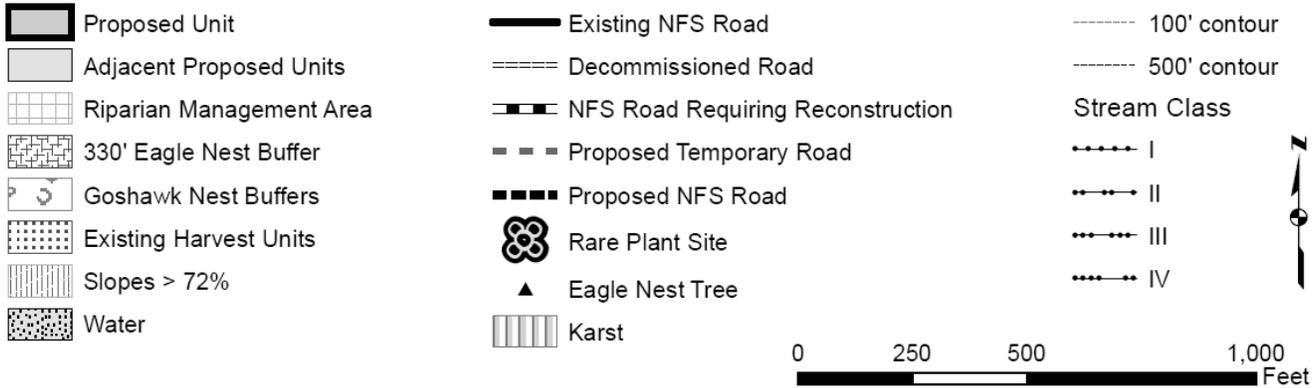
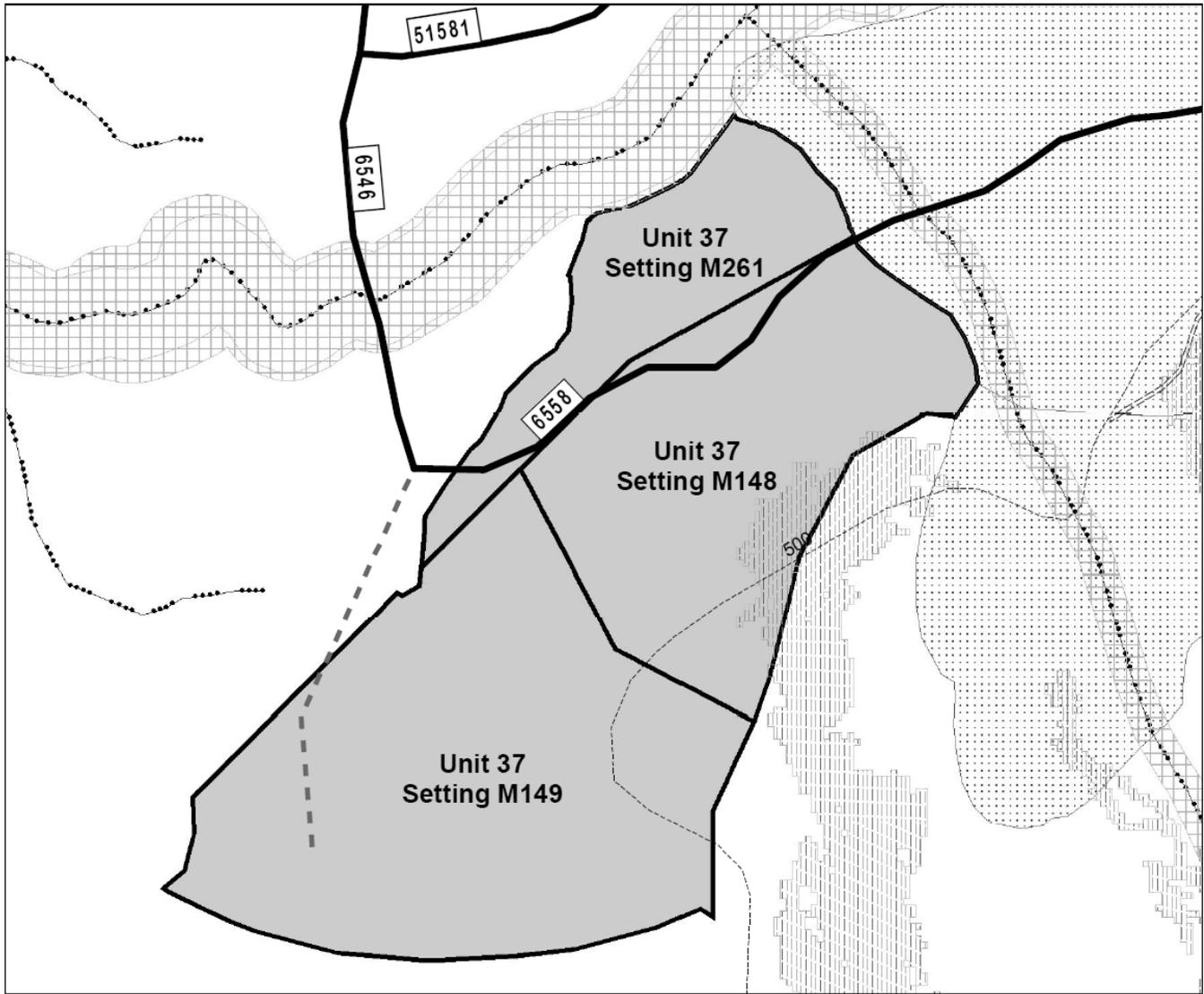
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# Appendix ROD-1

Unit 37

Navy Timber Sale Selected Alternative

45 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM,SV	<b>Logging Systems:</b> Cable & Shovel	<b>Total Unit Acres:</b> 45	<b>Unit Number:</b> 37
		<b>Harvest Acres:</b> 41	<b>Net Harvest Volume (Saw)</b> MBF: 682

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit has old-growth stand structure. The mistletoe, stem decay and windthrow risk rating for the stand is moderate.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe mistletoe infections, stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay and mistletoe is affecting stand vigor. Even-aged clearcutting 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

Planting of red and yellow cedar may be prescribed to minimize the effects of porcupine damage on the young stand. Treat settings M148 and M261 with a clearcut with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source), and treat setting M149 with a clearcut with reserves for visuals (15 percent of acres located in upper portion of unit).

**TIMBER/LOGGING:** Setting M149 is designed for both cable and shovel yarding to the temporary road extension of the 6546 road. Locate retention in the seen portion of setting M149.

**ENGINEERING/ROADS:** 0.19 mile of temporary road will be constructed. The road will be decommissioned after the timber sale. The most likely material source is located on Road 6558 mp 0.07.

**FISH/WATERSHED:**

There is a Class II, channel type MM1 stream (Wetbeck Creek) on the north end of unit. No harvest within 120 feet of the channel. RMA buffer has been built into unit design (BMP 12.6, 12.6a, 13.16). Limit harvest below the 6558 road to protect the RMA of Wetbeck Creek.

There is a Class III, channel type HC6 stream on the east side of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Setting M261 is not seen. The other settings are visible from the Mosman Inlet viewshed, where the adopted SIOs range from moderate to very low and VAC rating is intermediate. The proposed prescription will meet an SIO of moderate to low for setting M149. Setting M148 will meet the prescribed very low SIO.

**SOILS:** Unit includes 4 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. 2 acres of wetlands are included on southwest side of the unit. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks may need to be supported by slash (BMP 13.9) to minimize soil disturbance.

**WILDLIFE:** The temporary road in this unit is within one half mile of one or more bald eagle nests and may be subject to timing restrictions for blasting under 50 CFR Part 22.26. Setting M149 breaks the only old-growth corridor connecting the South Mosman Small Old-growth Reserve to the other reserves on the island.

**ROADLESS AREAS:** Part of this unit is adjacent to the Mosman Inventoried Roadless Area (#233).

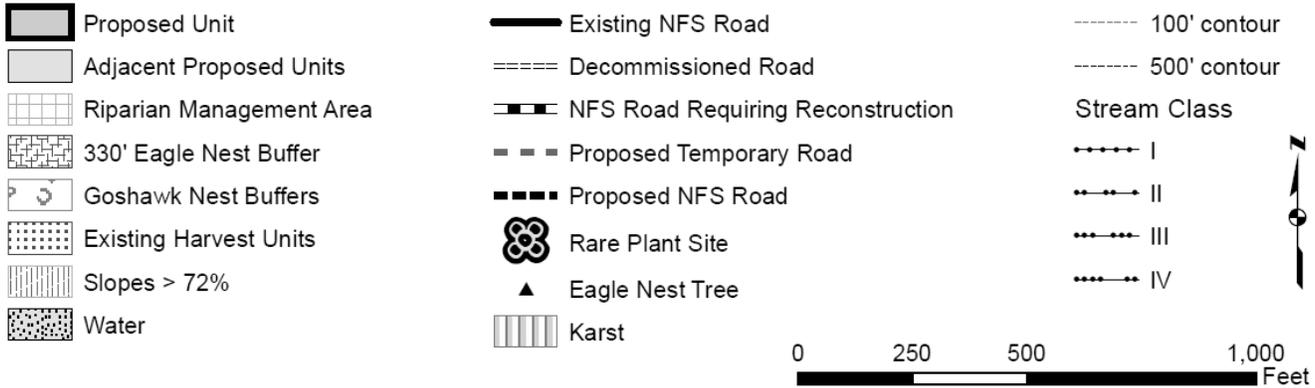
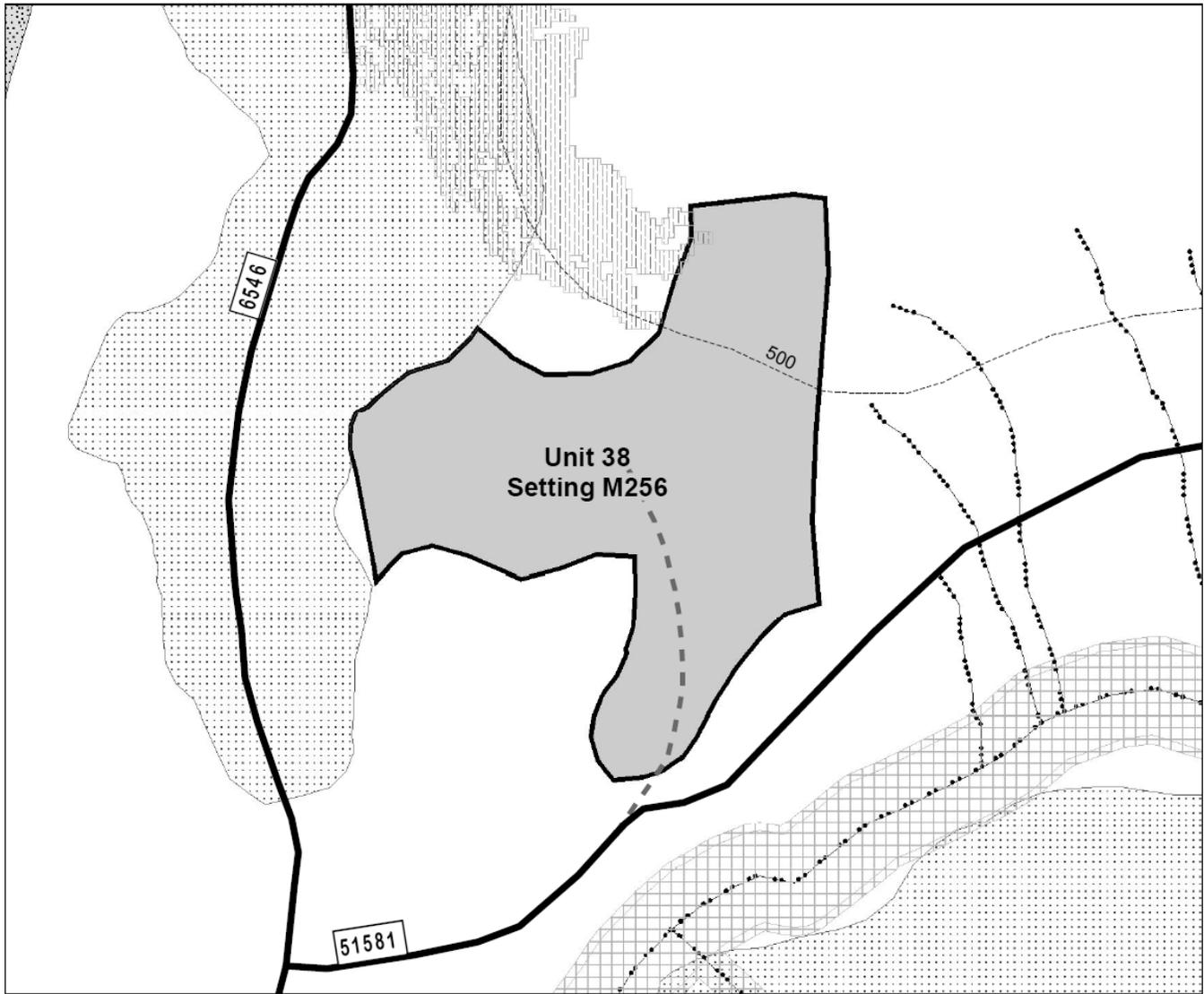
No resource concerns were identified for Botany, Geology, Heritage and Recreation.

# Appendix ROD-1

Unit 38

Navy Timber Sale Selected Alternative

19 Acres



**Unit Data Card – Navy Timber Sale Record of Decision**

LUD: TM SV	Logging Cable Systems:	Total Unit Acres: 19	Unit Number: <b>38</b>
		Harvest Acres: 16	Net Harvest Volume (Saw) MBF: 272

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit is a wind-generated stand that has old-growth stand structure. The mistletoe and stem decay are considered low in this stand but the windthrow risk has been rated as high.

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.

Silvicultural Prescription: 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. Even-aged clearcutting with reserves (15 percent of acres located in upper portion of unit for visuals) with natural regeneration 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to a temporary road off of the 51581 road. Retention will be located during layout in groups or clumps.

**ENGINEERING/ROADS:** Construct 0.18 mile of temporary road. Road will be decommissioned after the timber sale. The material source is located on Road 6568 mp 0.07. No road concerns.

**SCENERY:** The top of this unit is visible from the head of the Mosman Inlet viewshed, where the adopted SIO is low, and VAC rating ranges from low to high. The proposed prescription will meet an SIO of low. A moderate SIO can be achieved if the retention is concentrated in the visible opening.

**SOILS:** This unit harvests 2 acres of forested wetlands; cable yarding will minimize soil disturbance.

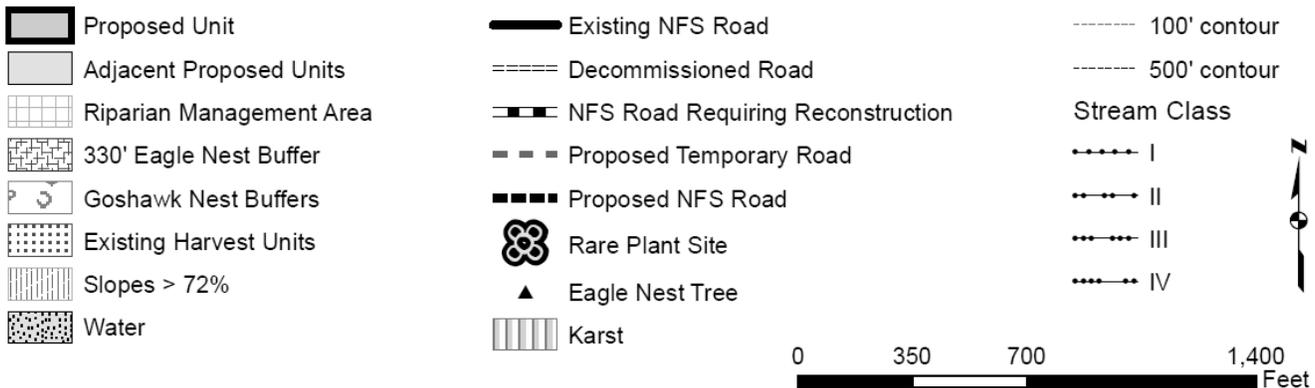
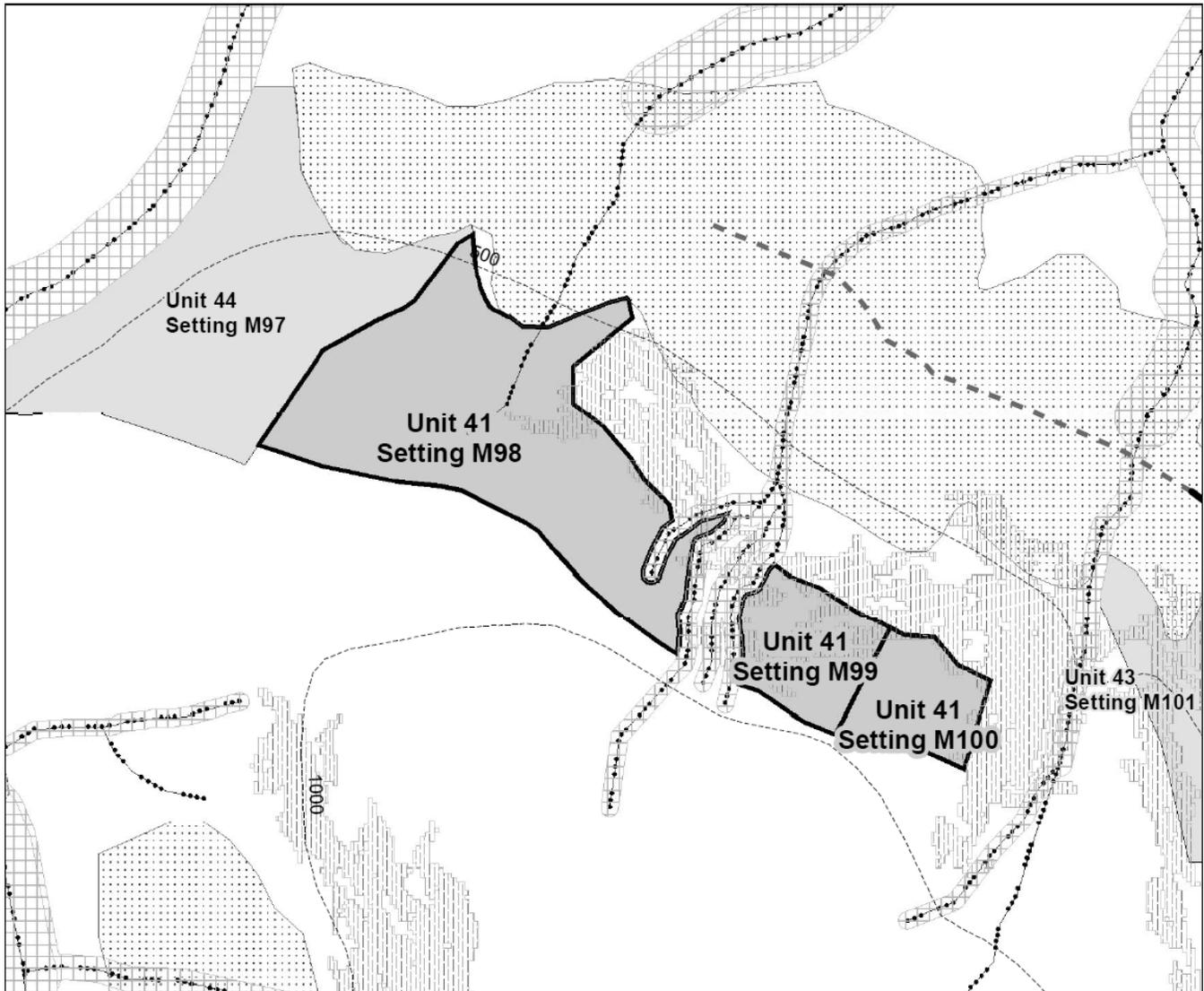
No resource concerns were identified for Fish/Watershed, Geology, Wildlife, Heritage, Recreation, Botany and Soils.

# Appendix ROD-1

Unit 41

Navy Timber Sale Selected Alternative

27 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: TM	Logging Helicopter Systems:	Total Unit Acres: 27	Unit Number: 41
		Harvest Acres: 27	Net Harvest Volume (Saw): MBF: 133

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated, multicanopy, uneven-aged stand. Unit is productive and lies along the backline of a previously harvested unit that was cut in 1993.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.

**TIMBER/LOGGING:** This unit is designed for helicopter yarding to landings located on temporary extensions off of the 51401 road.

**ENGINEERING/ROADS:** 0.36 mile of temporary road will be constructed. The road will be decommissioned after the timber sale. The likely material source is located on Road 6548 mp 0.06, Road 6548 mp 0.67, or Road 6540 mp 3.14. The temporary road will use an existing prism to limit construction costs and environmental effects.

**FISH/WATERSHED:**

There are four Class III, channel type HC5 streams within or adjacent to the unit. Do not harvest in the v-notch (BMP 13.9, 13.16).

There is one Class IV, channel type HC5 stream that lie within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** The unit is visible from either the head of the Burnett Inlet or Anita Bay viewsheds, where the adopted SIOs range from moderate to very low. The proposed prescription will meet moderate SIO.

**SOILS:** The unit includes 4 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided.

**WILDLIFE:** The temporary road in this unit is within one half mile of one or more bald eagle nests and is subject to timing restrictions for blasting under 50 CFR Part 22.26. Seasonal restrictions on helicopter yarding are also required within 1,000 feet of the nests in accordance with 50 CFR Part 22.26.

**ROADLESS AREAS:** Part of this unit is adjacent to the Mosman Inventoried Roadless Area (#233).

No resource concerns were identified for Geology, Botany, Recreation, and Heritage.

# Appendix ROD-1

Unit 43

Navy Timber Sale Selected Alternative

32 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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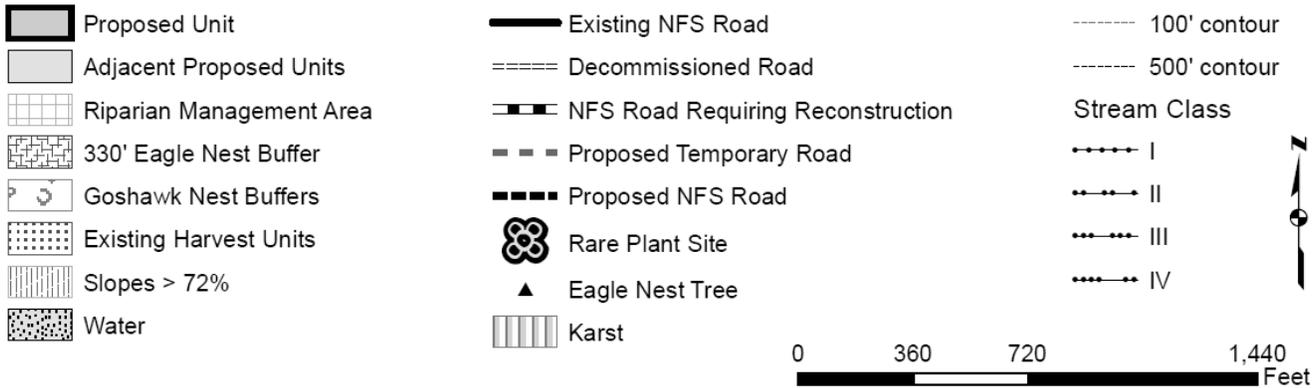
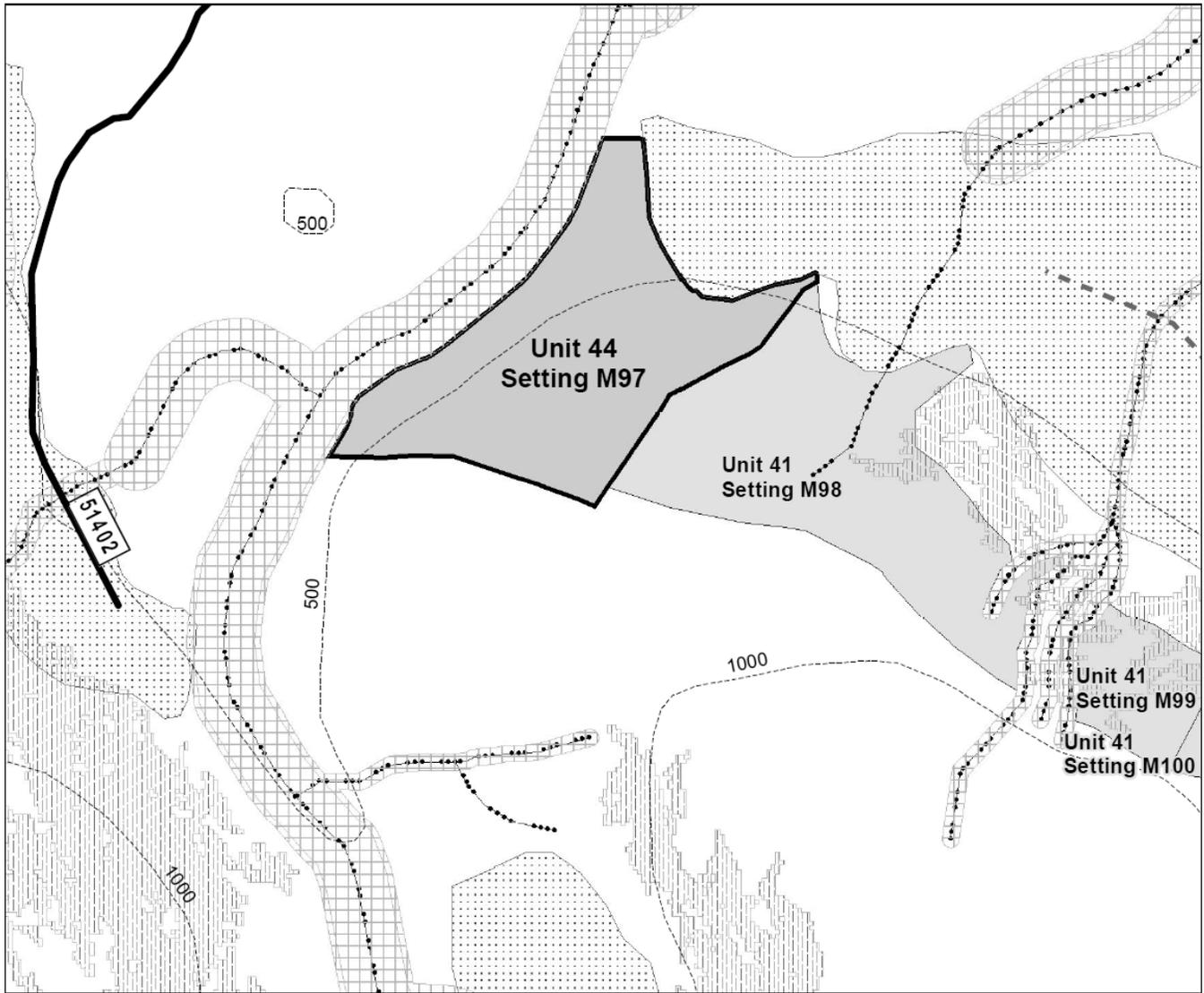
<b>LUD:</b> TM, SV	<b>Logging Systems:</b> Cable & Shovel	<b>Total Unit Acres:</b> 32	<b>Unit Number:</b> 43
		<b>Harvest Acres:</b> 32	<b>Net Harvest Volume (Saw)</b> MBF: 529
<b>SILVICULTURE:</b>			
<p><u>Existing Stand Condition/Vegetation:</u> This unit is a low-lying, lower productive, unmanaged stand with old-growth stand structure. The stem decay and windthrow risk rating for the stand is moderate. Mistletoe infections are light.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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.</p> <p><u>Silvicultural Prescription:</u> This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clearcutting with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.</p>			
<b>TIMBER/LOGGING:</b> Setting M101 is designed for downhill cable yarding to a temporary road located off of the 51401 road. Setting M96 is designed for shovel yarding to continuous landings on the 51401 road.			
<b>ENGINEERING/ROADS:</b> Construct 0.11 mile of temporary road. The road will be decommissioned after the timber sale. The material source is located on Road 6548 mp 0.06, Road 6548 mp 0.67, and Road 6540 mp 3.14.			
<b>FISH/WATERSHED:</b>			
<p>There is a Class III, channel type HC5 stream adjacent to the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.</p>			
<b>SCENERY:</b> Setting M96 is unseen. Setting M101 is visible from the head of the Burnet Inlet Viewshed, where the adopted SIO is low. Only a small portion of the entire unit is evident, so the proposed prescription will meet a low SIO.			
<b>SOILS:</b> This unit includes 4 acres of slopes over 72 percent gradient. A slope stability assessment is included in the project record. (BMP 13.5) Based on the field review, harvest on slopes over 72 percent gradient will require full suspension to minimize soil disturbance and landslide potential. (BMP 13.9) This unit harvests 2 acres of forested wetlands. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks may need to be supported by slash (BMP 13.9) to minimize soil disturbance.			
<b>WILDLIFE:</b> The temporary road in this unit is within one half mile of one or more bald eagle nests and may be subject to timing restrictions for blasting under 50 CFR Part 22.26.			
<b>ROADLESS AREAS:</b> Part of this unit is adjacent to the Mosman Inventoried Roadless Area (#233).			
No resource concerns were identified for Geology, Recreation, Botany, and Heritage.			

# Appendix ROD-1

Unit 44

Navy Timber Sale Selected Alternative

19 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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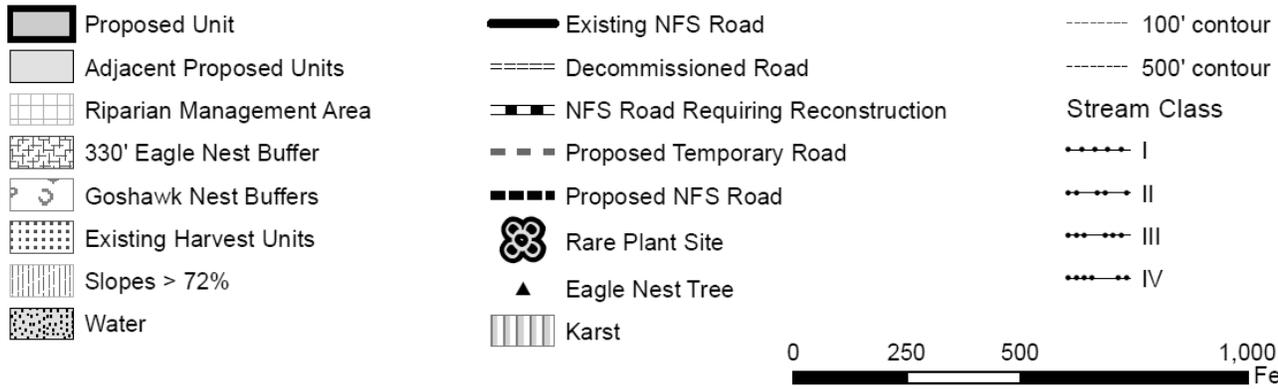
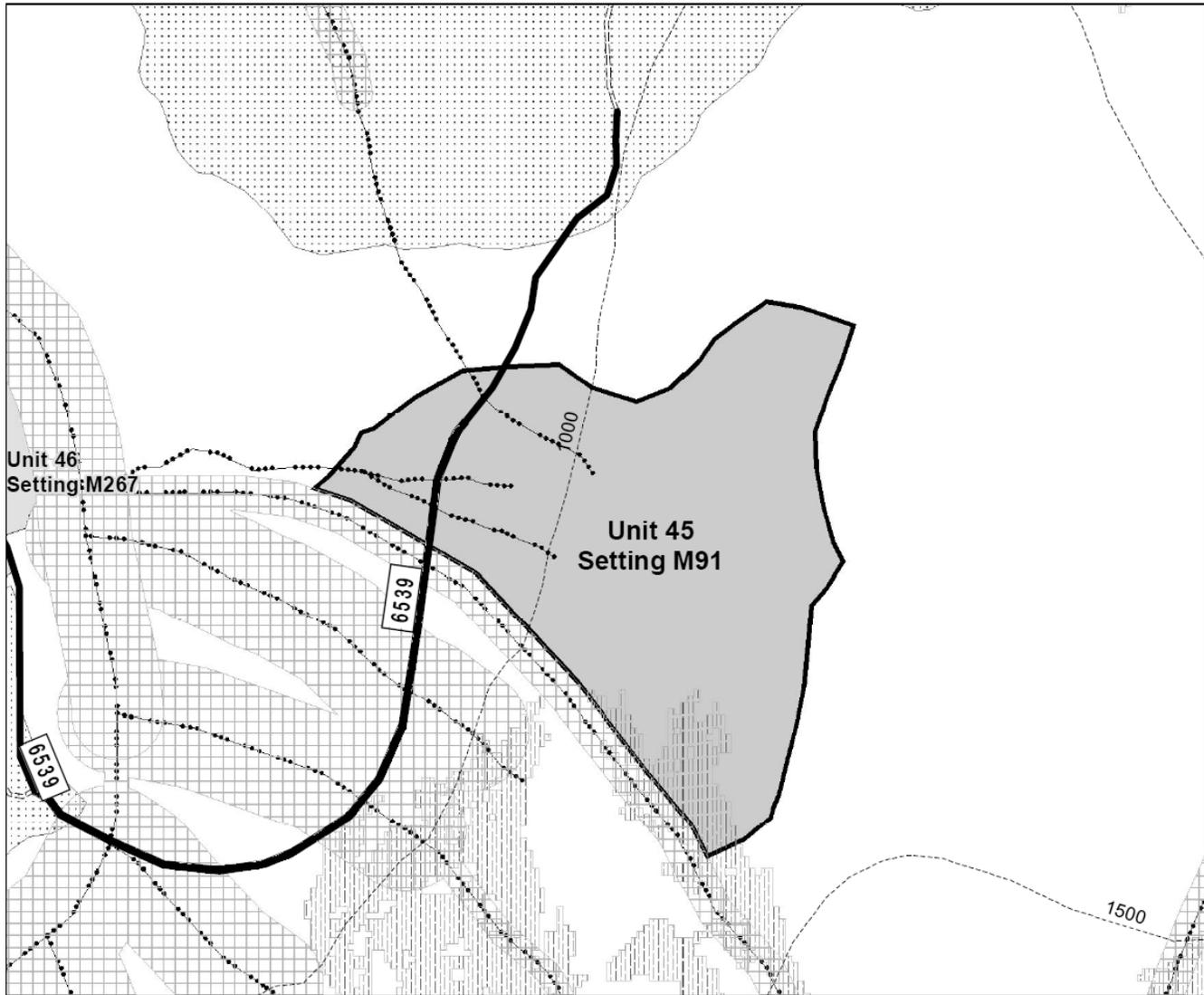
<b>LUD:</b> TM	<b>Logging Helicopter Systems:</b>	<b>Total Unit Acres:</b> 19	<b>Unit Number:</b> 44
		<b>Harvest Acres:</b> 19	<b>Net Harvest Volume (Saw) MBF:</b> 98
<p><b>SILVICULTURE:</b></p> <p><u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated, multicanopy, uneven-aged stand. The stem decay, physical defect and windthrow risk rating for the stand is moderate. Unit is productive and lies along the backline of a previously harvested unit that was cut in 1993.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> Unit is designed for helicopter yarding to landings on the 51401 road.</p>			
<p><b>FISH/WATERSHED:</b></p> <p>There is a Class I/II, channel type MM1 and HC3, stream (Duckbill Creek) adjacent to the west unit boundary. No harvest within 120 feet of the channel. RMA buffer has been built into unit design (BMP 12.6, 12.6a, 13.16). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.</p>			
<p><b>SCENERY:</b> Unit is visible from the head of the Anita Bay viewshed, where the adopted SIO is very low. The proposed prescription will meet a moderate SIO.</p>			
<p><b>SOILS:</b> Unit includes 1 acre with slopes over 72 percent gradient. Helicopter harvest with partial cut prescription will minimize soil disturbance.</p>			
<p><b>WILDLIFE:</b> Consider opportunities to allow for the elevational migration of wildlife, by retaining structure along the boundary with the managed stand to the northeast.</p>			
<p><b>ROADLESS AREAS:</b> Part of this unit is adjacent to the Mosman Inventoried Roadless Area (#233).</p>			
<p>No resource concerns were identified for Geology, Roads, Botany and Heritage.</p>			

# Appendix ROD-1

Unit 45

Navy Timber Sale Selected Alternative

20 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: TM	<b>Logging Cable Systems:</b>	Total Unit Acres: 20	Unit Number: <b>45</b>
		Harvest Acres: 20	Net Harvest Volume (Saw) MBF: 335

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit is an unmanaged stand with old-growth stand structure. The stem decay and windthrow risk rating for the stand is moderate. Mistletoe infections are light.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clearcutting with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to the 6539 road.

**FISH/WATERSHED:**

There is a Class III, channel type HC6 stream on the southwestern unit boundary. Do not harvest in the v-notch (BMP 13.9, 13.16).

There are three Class IV, channel type HC5 streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** Unit includes 1 acre with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes adjacent to the stream will be avoided. This unit includes 1 acre of forested wetlands; cable yarding will minimize soil disturbance.

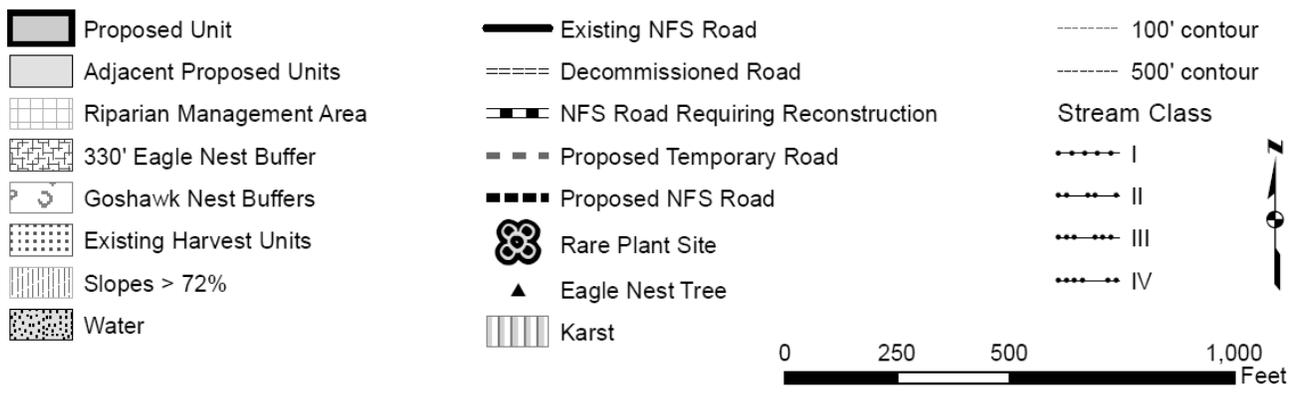
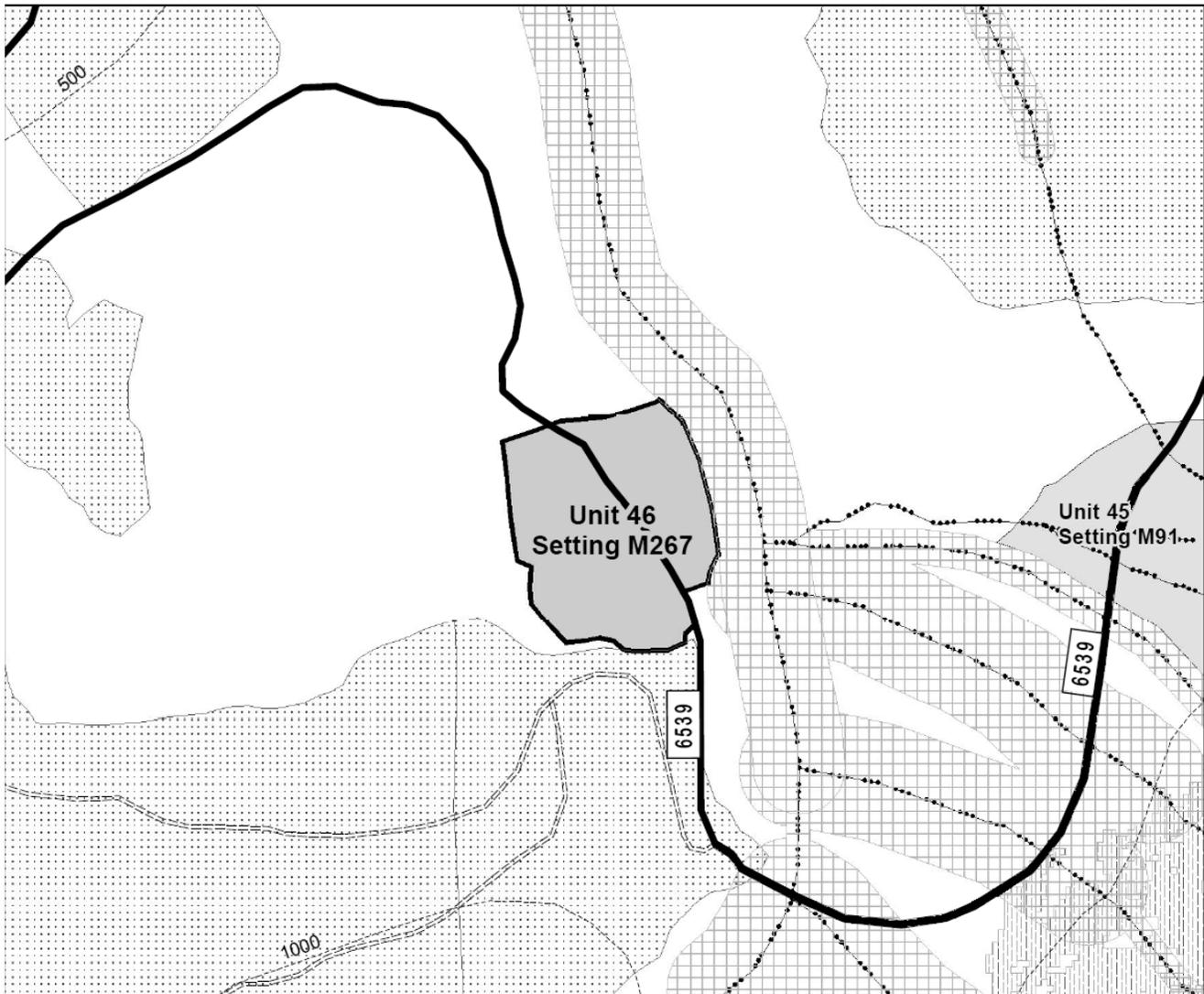
No resource concerns were identified for Roads, Botany, Wildlife, Geology, Heritage and Recreation.

# Appendix ROD-1

Unit 46

Navy Timber Sale Selected Alternative

6 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: TM	Logging Systems: Shovel	Total Unit Acres: 6	Unit Number: <b>46</b>
		Harvest Acres: 6	Net Harvest Volume (Saw) MBF: 93

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit is an unmanaged stand with old-growth stand structure. It is a gently rolling, low-productivity site that has a fairly large component of cedar, many of which are snags or have defect and small crowns.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with stem decay and defect, particularly in the redcedar, resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clearcutting with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for shovel yarding to the existing 6539 road.

**FISH/WATERSHED:**

There is a Class II, channel type HC3 stream (Thrucut Creek) on the eastern unit boundary. No commercial timber harvest within 120 feet of the channel. A RMA buffer has been built into unit design (BMP 12.6, 12.6a, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** The unit is visible from the head of the Anita Bay Inlet Viewshed, where the adopted SIO is very low. Only a slight portion of this opening is evident, so proposed prescription will meet a moderate SIO.

**SOILS:** This unit harvests 6 acres of forested wetlands. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks may need to be supported by slash (BMP 13.9) to minimize soil disturbance.

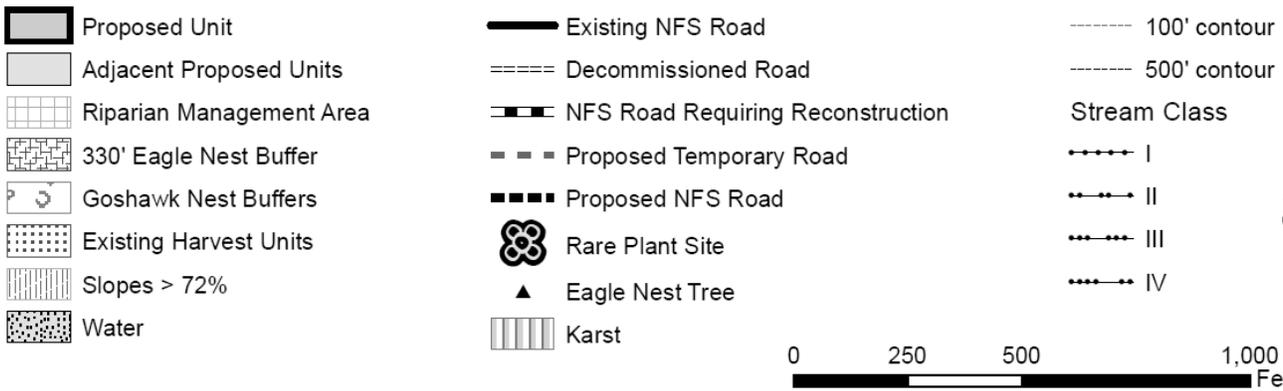
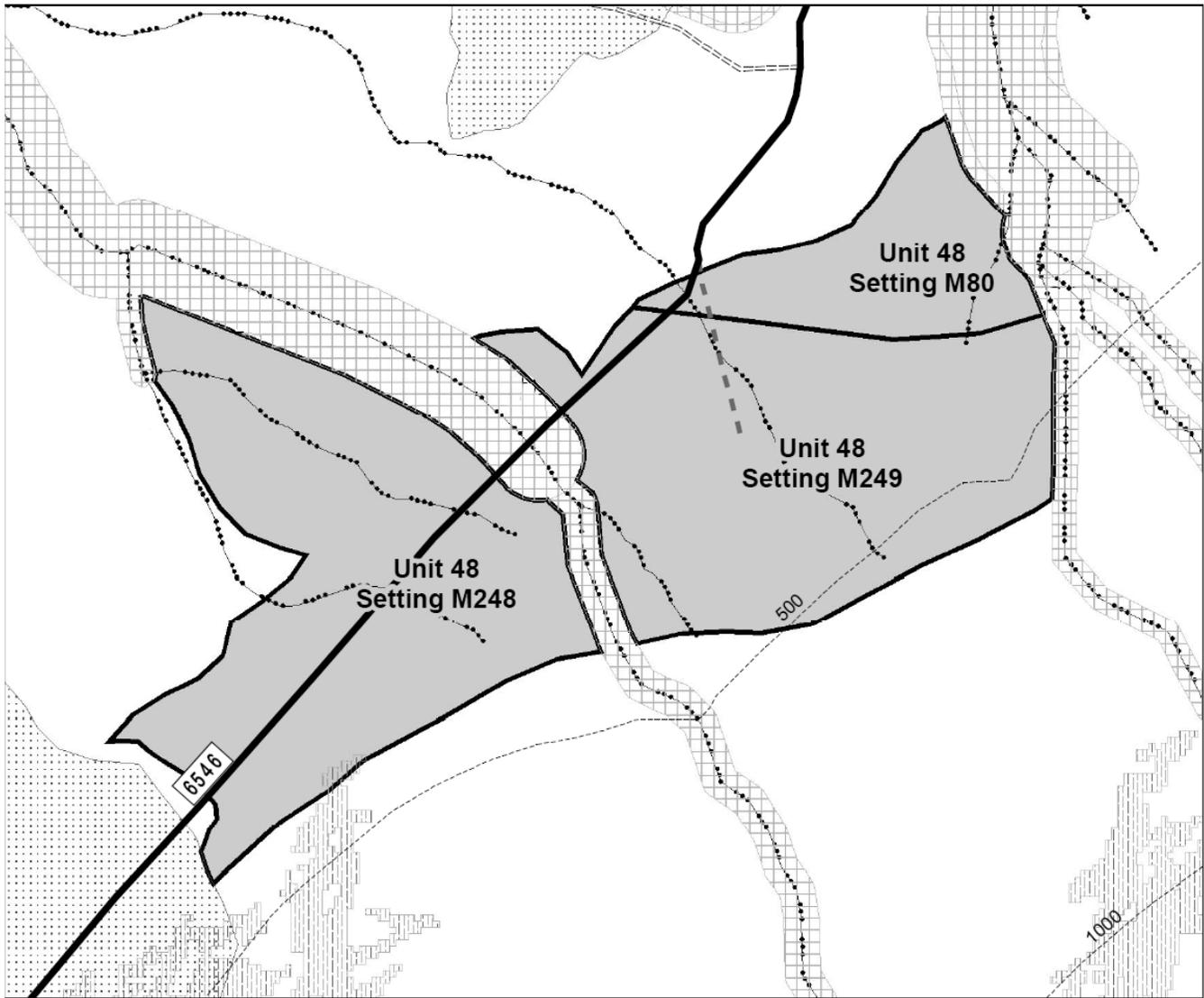
No resource concerns were identified for Roads, Geology, Heritage, Recreation, Botany and Wildlife.

# Appendix ROD-1

Unit 48

Navy Timber Sale Selected Alternative

41 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM	<b>Logging Systems:</b> Cable & Shovel	<b>Total Unit Acres:</b> 41	<b>Unit Number:</b> 48
		<b>Harvest Acres:</b> 41	<b>Net Harvest Volume (Saw)</b> MBF: 677

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit is an unmanaged stand with old-growth stand structure. It is a gently rolling, moderately productivity site that has low wind risk and light mistletoe infections but moderate amounts of decay in the stand.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe levels of stem decay and defect, resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clearcutting 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable and shovel yarding to the existing 6546 road. A short temporary spur road may be necessary to facilitate yarding in setting M249. Shovel yard setting M248.

**ENGINEERING/ROADS:** Construct 0.09 mile of temporary road if needed to access setting M249. If constructed, the road will be decommissioned after the timber sale.

**FISH/WATERSHED:**

There is a Class II, channel type AF1 stream on the northeast corner of the unit. No harvest within 140 feet of the stream channel (BMP 13.9, 13.16).

There is a Class II, channel type HC3 stream that bisects unit. No harvest within 100 feet of the stream channel. (BMP 13.9, 13.16).

There are three Class III, channel types HC1, HC5, and HC6, within or adjacent to the unit. Do not harvest in the v-notch, (BMP 13.9, 13.16).

There are five Class IV, channel type HC5, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

The temporary road may have stream crossings depending on final location. Adequate size structures will be necessary and will be removed immediately following timber sale activities. (BMP 13.16, 14.20).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SOILS:** Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks may need to be supported by slash (BMP 13.9) to minimize soil disturbance.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

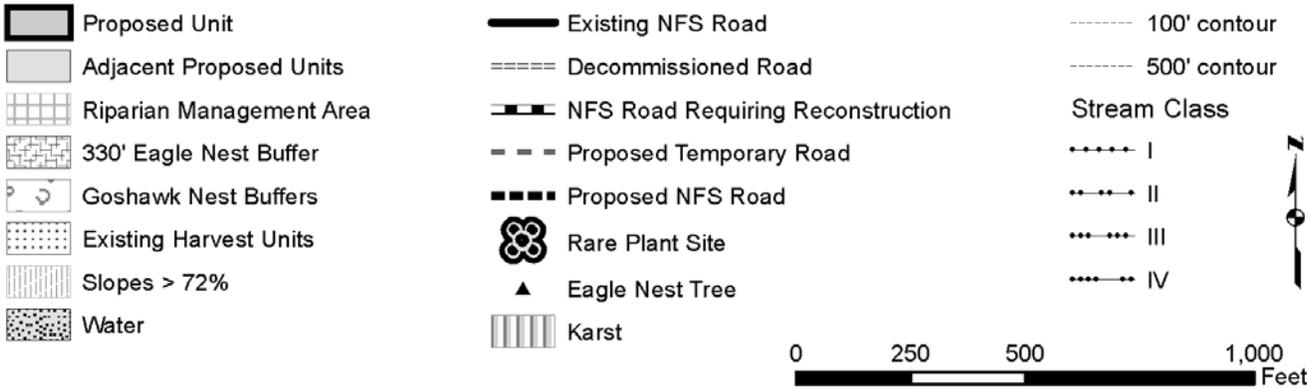
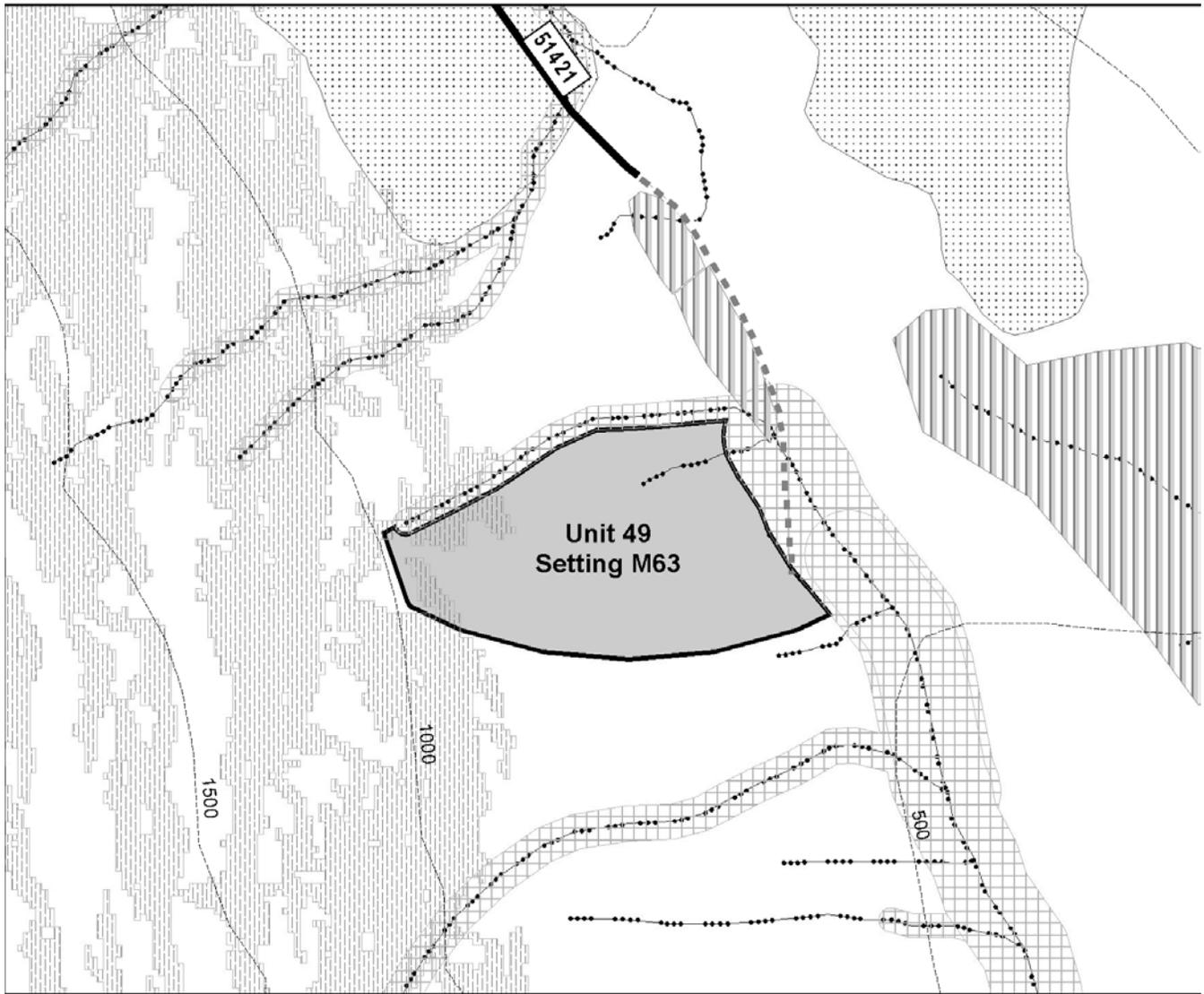
No resource concerns were identified for Geology, Wildlife, Heritage, Botany and Recreation.

# Appendix ROD-1

**Unit 49**

**Navy Timber Sale Selected Alternative**

**10 Acres**



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM	<b>Logging Cable Systems:</b>	<b>Total Unit Acres:</b> 10	<b>Unit Number:</b> 49
		<b>Harvest Acres:</b> 10	<b>Net Harvest Volume (Saw)</b> MBF: 158

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit is an unmanaged stand with old-growth stand structure. It is a moderately productive site that has a fairly large amount of snags, and moderately severe levels of stem defect and decay.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with stem decay and defect, resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clearcutting 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 remove/minimize defect and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** Unit is designed for downhill cable yarding to landings located on the proposed temporary road. Retention will be located in the northern portion as a RAW buffer.

**ENGINEERING/ROADS:** Construct 0.24 mile of temporary road along the base of a ridge. The road will be located to avoid a small section of moderate- and high-vulnerability karst, and crosses a Class III stream. The road will be decommissioned after the timber sale. The material source is located on Road 6540 mp 10.3, and Road 51421 mp 0.34.

**FISH/WATERSHED:**

There is a Class II/III, channel type MM1, stream (Mirkwood Creek) on the east side of the unit. No harvest within 120 feet of the stream channel. (BMP 13.9, 13.16).

There is one Class III, channel type HC6, within or adjacent to unit. No harvest in v-notch. (BMP 13.9, 13.16).

There is one Class IV, channel type HC5 streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

Limit adjacent sedimentation impacts during road construction. The temporary road crosses a very active Class III, channel type HC5, stream (mp. 0.60). A log stringer bridge may be necessary.

Adequate size structures will be necessary for all stream crossings (BMP 14.17) and will be removed immediately following timber sale activities (BMP 13.16, 14.20).

RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**GEOLOGY/KARST:** A well-developed karst area including moderate- and high-vulnerability karst north of the unit was excluded from the harvest unit. Road will be located downslope of the karst.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** This unit includes minor inclusions of slopes over 72 percent gradient. Require partial suspension.

**ROADLESS AREAS:** Part of this unit is adjacent to the Mosman Inventoried Roadless Area (#233).

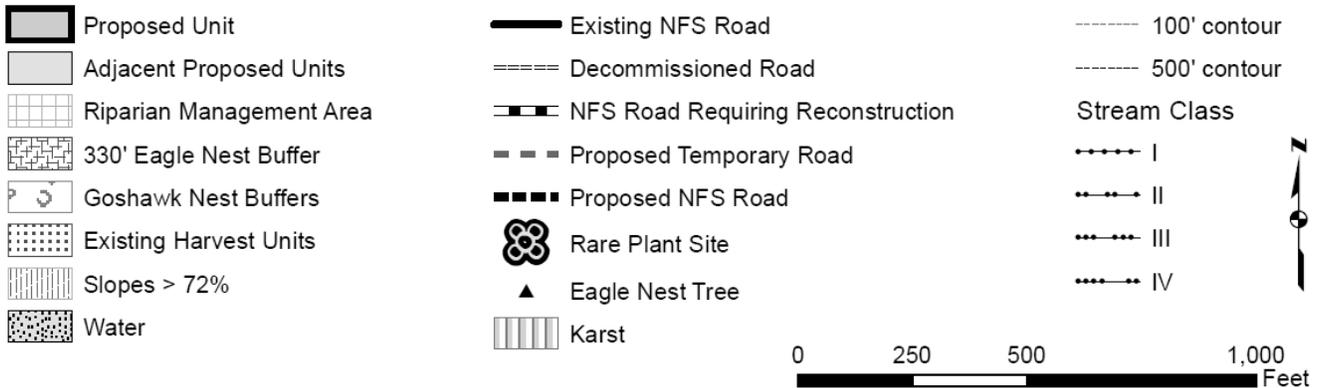
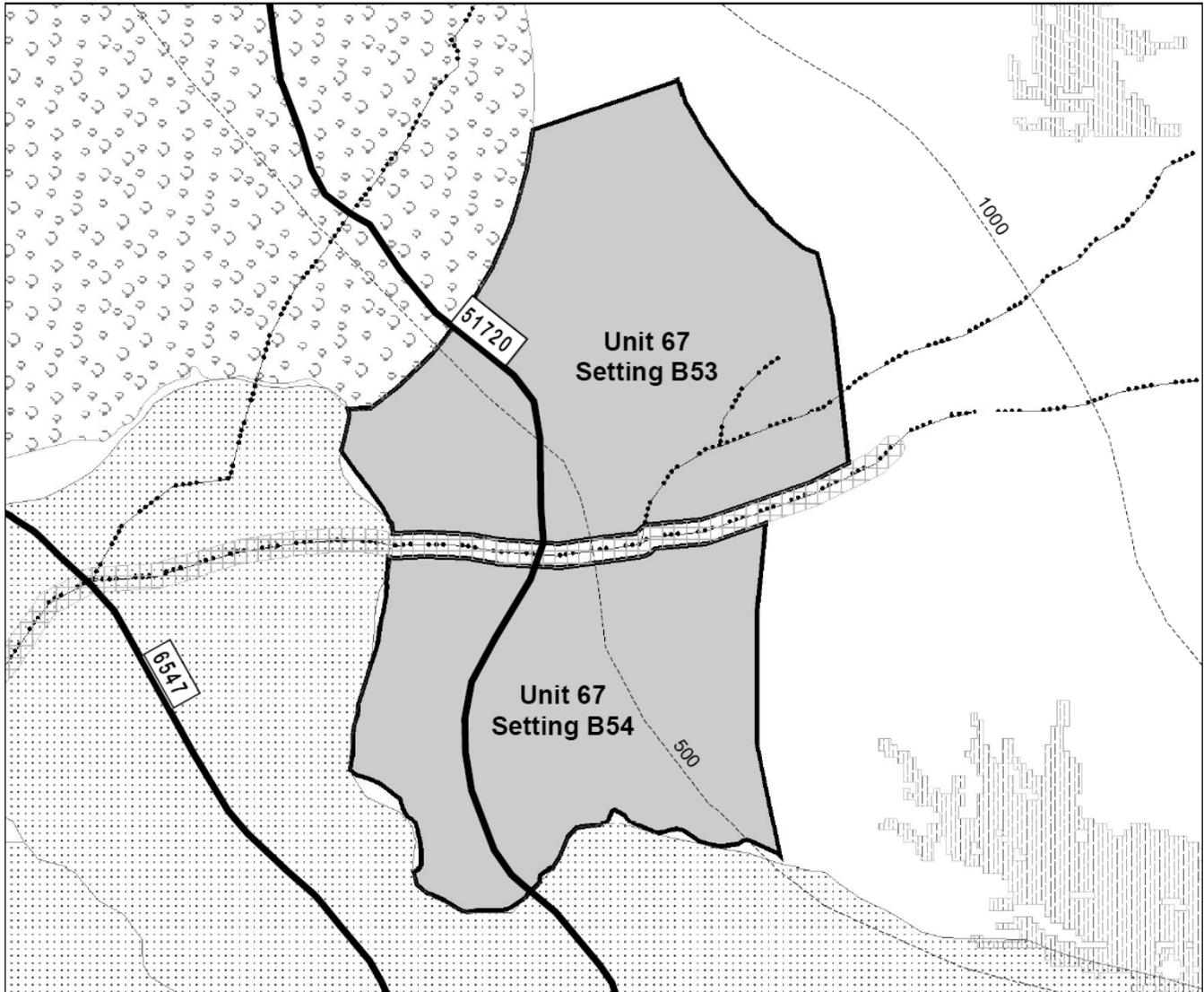
No resource concerns were identified for Wildlife, Heritage, and Botany.

# Appendix ROD-1

Unit 67

Navy Timber Sale Selected Alternative

36 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM, SV	<b>Logging Cable Systems:</b>	<b>Total Unit Acres:</b> 36	<b>Unit Number:</b> 67
		<b>Harvest Acres:</b> 18	<b>Net Harvest Volume (Saw)</b> MBF: 299

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit has old-growth stand structure. It is a productive unit that lies along the backline of an existing young growth unit that was harvested in 1982. The stem decay and windthrow risk rating for the stand is high, while mistletoe infections were not recorded.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with severe levels of stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay and defect. Even-aged clearcutting with reserves for visuals and wildlife (50 percent of acres) is being prescribed to preclude or minimize the risk of windthrow post harvest in this high risk unit, 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information. Treat setting B53 as a clearcut and then reserve setting B54 as reserves for wildlife connectivity.

**TIMBER/LOGGING:** The unit is designed for cable yarding to the existing 51720 road.

**FISH/WATERSHED:**

There is a Class III, channel type HC5, stream that bisects the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16). There are two Class IV, channel type HC5, streams within the unit. Fall timber away from the streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is seen from the head of the Burnett Inlet viewshed, where the adopted SIOs are moderate to very low. The portion of Scenic Viewshed that lies at the bottom of setting B54 is unseen. The proposed prescription will meet moderate to very low SIOs.

**SOILS:** This unit is not suitable for harvest with ground-based equipment due to slope steepness and soil conditions.

**WILDLIFE:** This unit is adjacent to a 230-acre goshawk nesting habitat buffer surrounding several known nests. No commercial timber harvest is permitted within the identified buffer. New road construction is permitted if no other reasonable roading alternatives outside the mapped nesting habitat exist. Permit no continuous disturbance likely to result in nest abandonment within the surrounding 600 feet from March 15 to August 15. Activity restrictions are removed for active nests that become inactive or unsuccessful.

This prescription retains 50% acres adjacent to the existing clearcut for wildlife connectivity which should provide adequate cover.

No resource concerns were identified for Roads, Botany, Geology, Heritage, Recreation.

# Appendix ROD-1

Unit 70

Navy Timber Sale Selected Alternative

49 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: ML, TM	<b>Logging Cable Systems:</b>	Total Unit Acres: 49	Unit Number: <b>70</b>
		Harvest Acres: 41	Net Harvest Volume (Saw) MBF: 694

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit has old-growth stand structure with moderate levels of mistletoe in most western hemlock. Stem decay and defect is prevalent throughout the stand and is found in all tree species. Windthrow risk rating for the stand is low.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe mistletoe infections, stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay and mistletoe is affecting stand vigor. Even-aged clearcutting with reserves for visuals and wildlife (15 percent of acres) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for uphill cable yarding to the existing 51720 road. Retention will be located in groups of clumps during layout in the southern (upper and middle elevational) portion of the unit. In setting B41, concentrate retention in western portion above and below the road.

**ENGINEERING/ROADS:** None

**FISH/WATERSHED:**

There is a Class III, channel type HC5, stream that is adjacent to the unit with a section of AF2 that will affect the northeast corner of the unit. No harvest in the v-notch. Provide buffer on active portion of the alluvial fan. (BMP 13.9, 13.16).

There are at least five Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit will be seen from nearly the entire length of the Anita Bay viewshed, which has an adopted SIO of low, and an intermediate VAC rating. To meet scenic integrity objectives, retention should be divided into groupings or clusters, and located near the tops and middle portions of the unit, instead of the bottom portions which are not visible. This will effectively break up or reduce the unit's openings enough to ensure the SIO is met. Additional adjustments to the unit boundary layout will further reduce the visual impact of the straight lines for a more natural appearance.

**SOILS:** This unit has broken ground with short steep pitches; require at least partial suspension.

**WILDLIFE:** Retention should be larger green trees and snags.

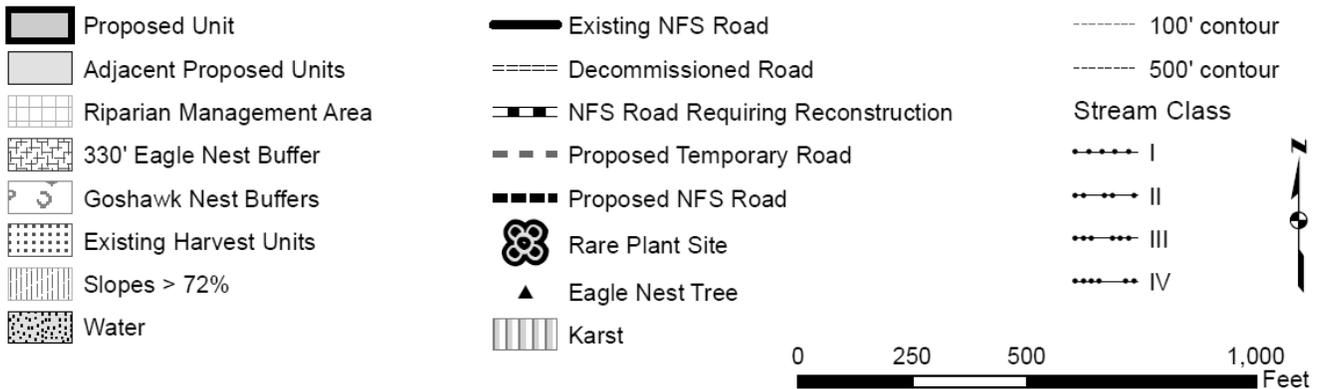
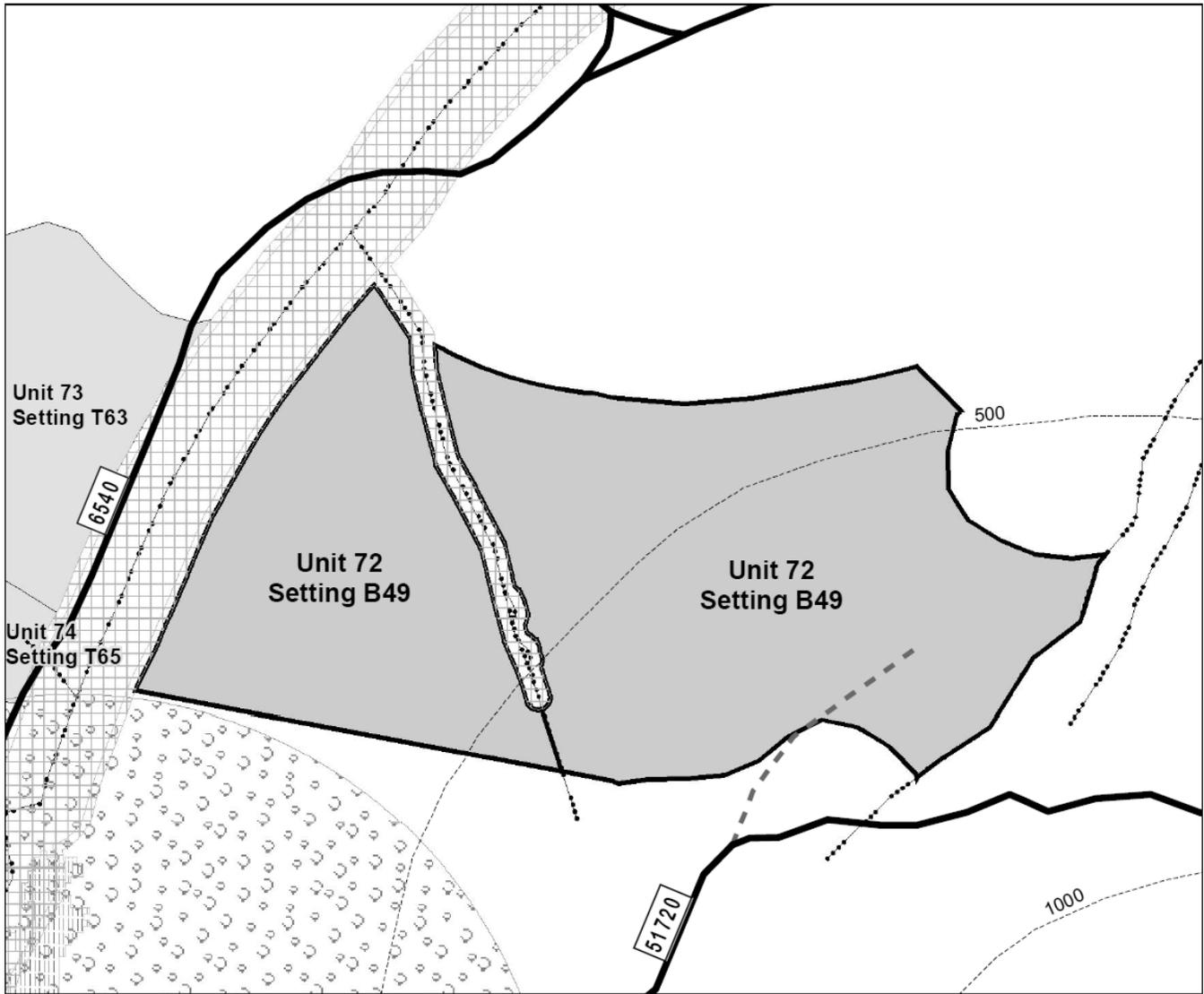
No resource concerns were identified for Roads, Botany, Geology, Heritage, Recreation.

# Appendix ROD-1

Unit 72

Navy Timber Sale Selected Alternative

39 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: TM	Logging Cable Systems:	Total Unit Acres: 39	Unit Number: 72
		Harvest Acres: 20	Net Harvest Volume (Saw) MBF: 327

**SILVICULTURE:**  
Existing Stand Condition/Vegetation: This unit has old-growth stand structure, west/northwest aspect with moderately severe levels of mistletoe in most western hemlock. Stem decay and defect is prevalent throughout the stand and is found in all tree species. Windthrow risk rating for the stand is low.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe mistletoe infections, stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay and mistletoe is affecting stand vigor. Even-aged clearcutting with reserves for visuals and wildlife (50 percent of acres) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for uphill cable yarding to a temporary spur off of the 51720 road. Retention will be located in the western portion of the unit.

**ENGINEERING/ROADS:** Construct 0.13 mile of temporary road. The road will be decommissioned after the timber sale. The material source is located on Road 51720, mp 0.74.

**FISH/WATERSHED:**  
 There is a Class II, channel type MM1, stream adjacent to the west side of the unit. No harvest within 120 feet of the channel (BMP 12.6).  
 There is a Class III, channel type HC5, stream in the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16). Channel type verification may be necessary to determine alluvial characteristics of channel.  
 There is a Class IV, channel type HC5, portion of stream. Fall timber away from stream if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).  
 RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** The unit is seen from the Anita Bay viewshed, which has an adopted SIO of very low. The proposed prescription will meet moderate SIOs.

**SOILS:** This unit has 3 acres with slopes steeper than 72 percent; this area is will be included in the 50 percent reserve.

**WILDLIFE:** This unit is near a 230-acre goshawk nesting habitat buffer. No commercial timber harvest is permitted within the identified buffer. Permit no continuous disturbance that is likely to result in nest abandonment within the surrounding 600 feet from March 15 to August 15. Noise disturbance (timing) restrictions are removed for active nests that become inactive or unsuccessful. Retention in western part of unit will help maintain connectivity.

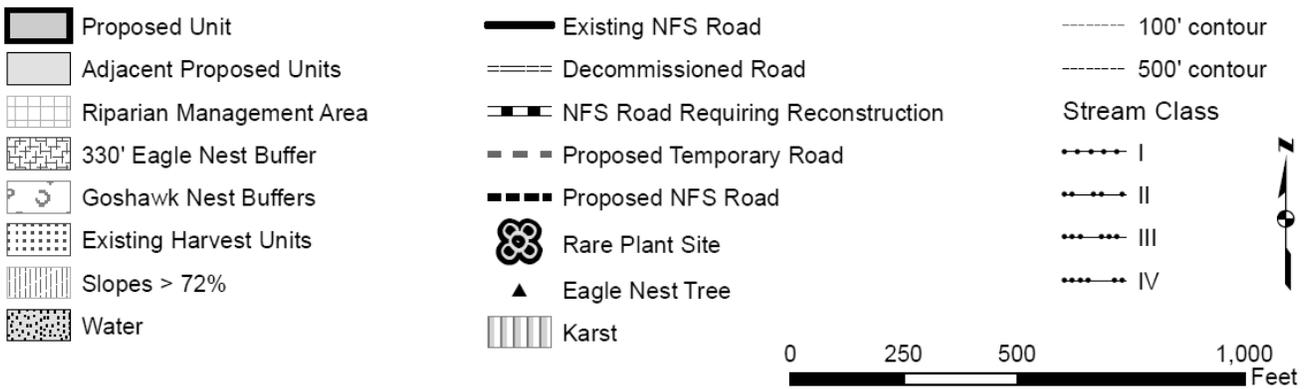
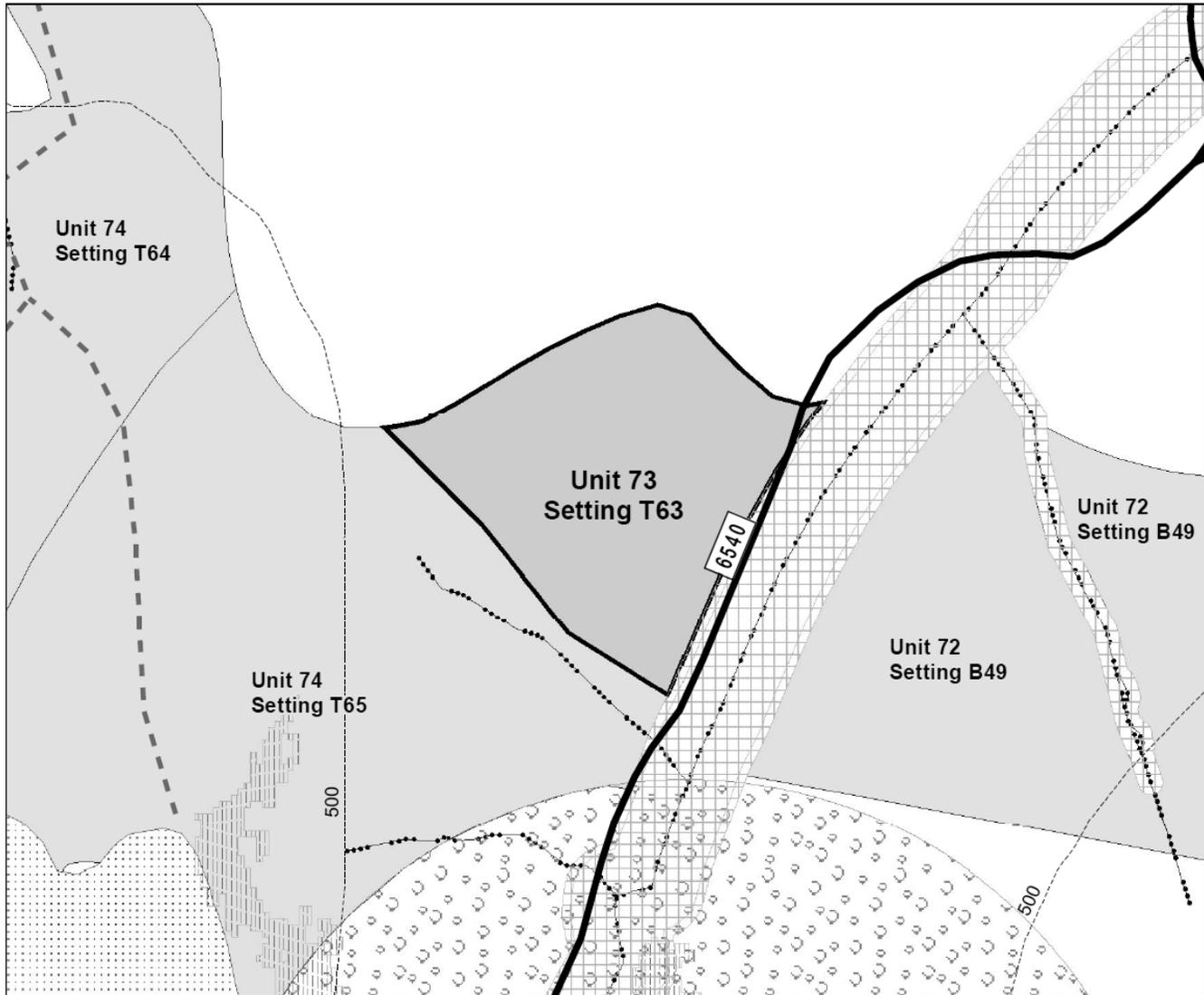
No resource concerns were identified for Geology, Heritage, Recreation, and Botany.

# Appendix ROD-1

Unit 73

## Navy Timber Sale Selected Alternative

12 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM	<b>Logging Systems:</b> Cable & Shovel	<b>Total Unit Acres:</b> 12	<b>Unit Number:</b> 73
		<b>Harvest Acres:</b> 10	<b>Net Harvest Volume (Saw) MBF:</b> 163

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit has old-growth stand structure, an east/southeast aspect and prevalent stem decay and defect throughout the stand. The windthrow risk rating for the stand is moderate.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay and the light infections mistletoe may be affecting stand vigor. Even-aged clearcutting with reserves (15 percent of the unit for wildlife habitat connectivity) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to the existing 6540 road. If landings cannot be identified outside of the RMA, then a short temporary road may be required. Retention will be located along the west/southwest boundary during layout.

**FISH/WATERSHED:**

There is a Class II, channel type MM1, stream on the southeast side of the unit. No harvest within 120 feet of the channel (BMP 12.6, 12.6a, 13.16). No harvest below the road.

RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** Mitkof/Nakwasina soils, limit shovel operations to areas with slopes less than 25 percent; shovel yarding will follow BMPs 12.5, 13.2 and 13.9; tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.

**WILDLIFE:**

This unit is near a 230-acre goshawk nesting habitat buffer around several known goshawk nests. No commercial timber harvest is permitted within the identified buffer. New road construction is permitted if no other reasonable roading alternatives outside the mapped nesting habitat exist. Permit no continuous disturbance likely to result in nest abandonment within the surrounding 600 feet from March 15 to August 15. Noise disturbance (timing) restrictions are removed for active nests that become inactive or unsuccessful. Retaining a travel corridor along the boundary between Units 73 and 74 will provide minimal connectivity.

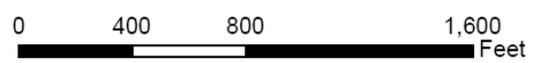
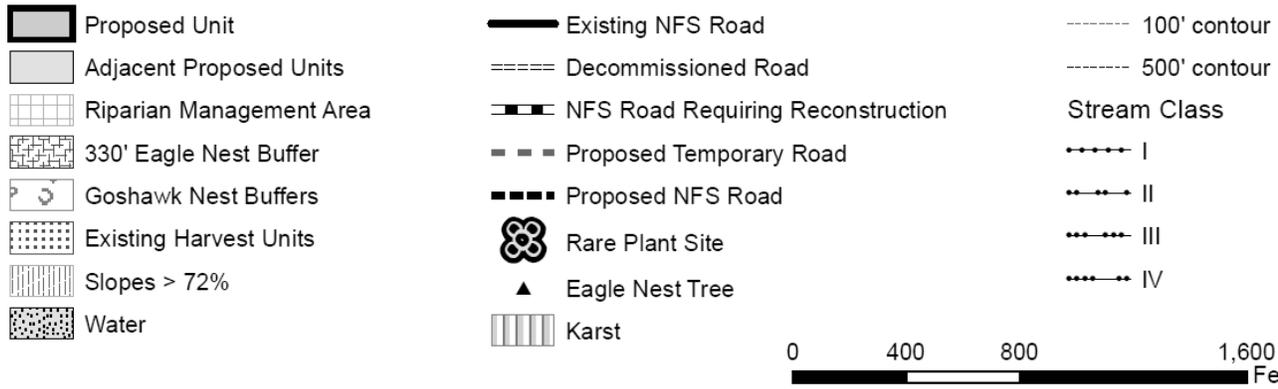
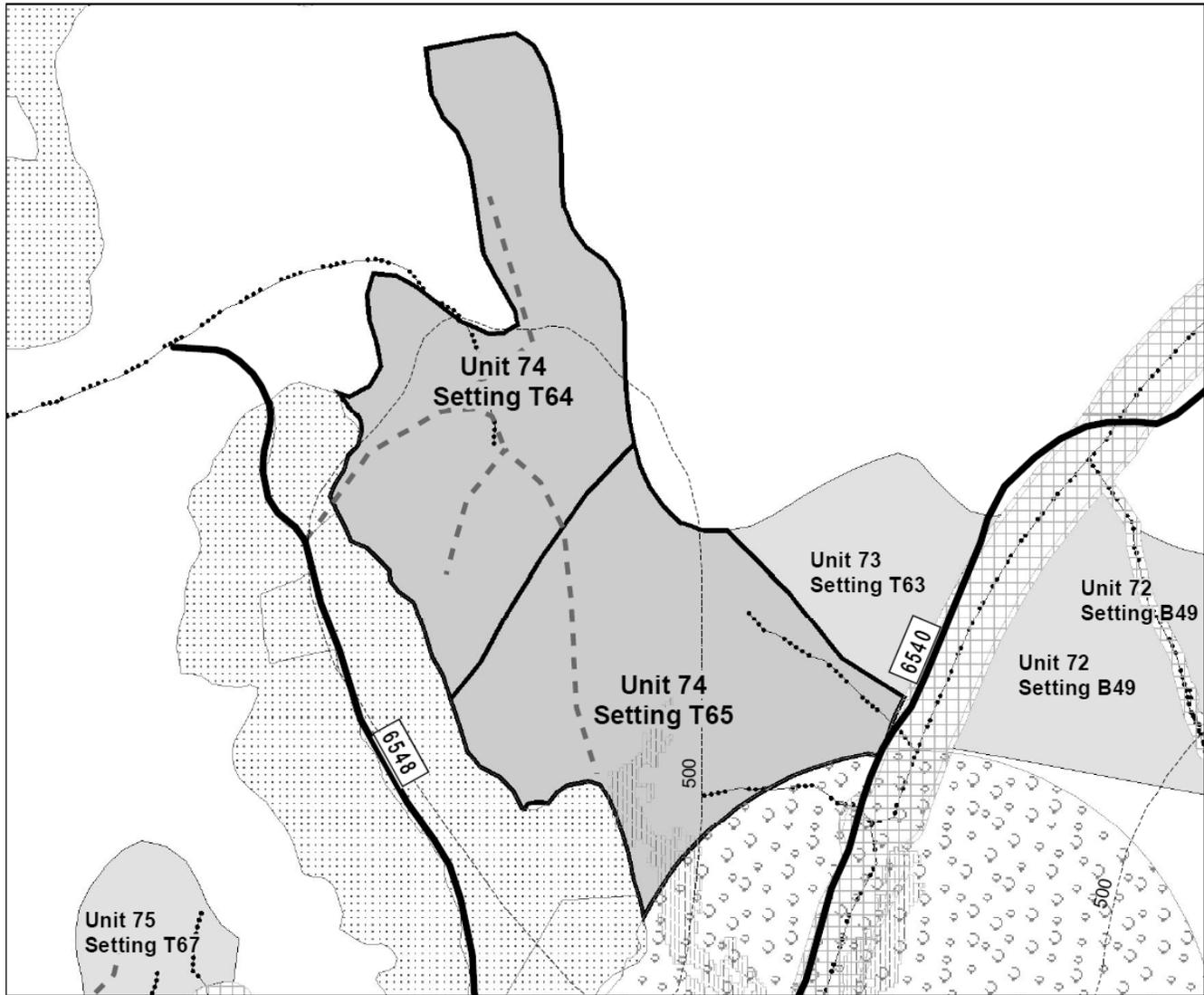
No resource concerns were identified for Roads, Geology, Heritage, Recreation, Botany and Soils.

# Appendix ROD-1

Unit 74

Navy Timber Sale Selected Alternative

70 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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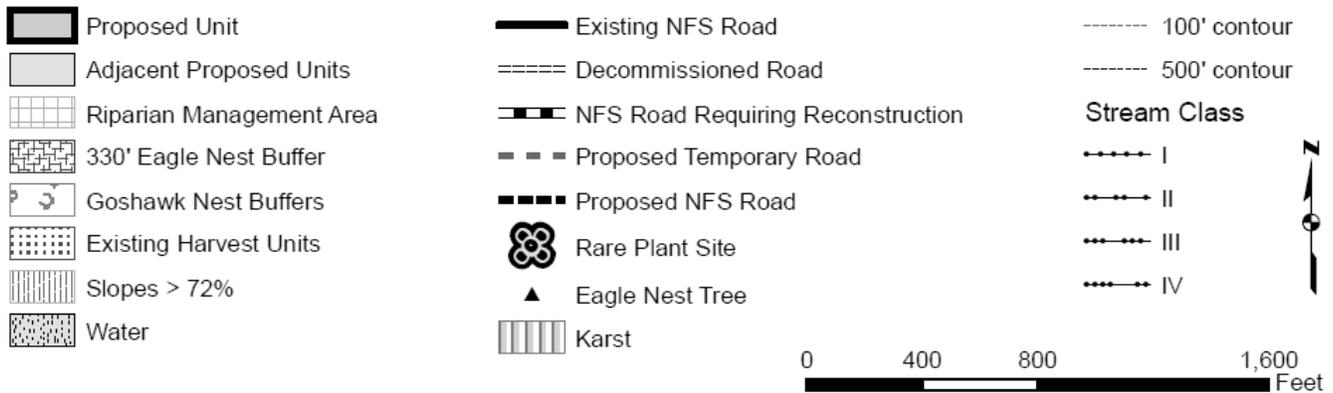
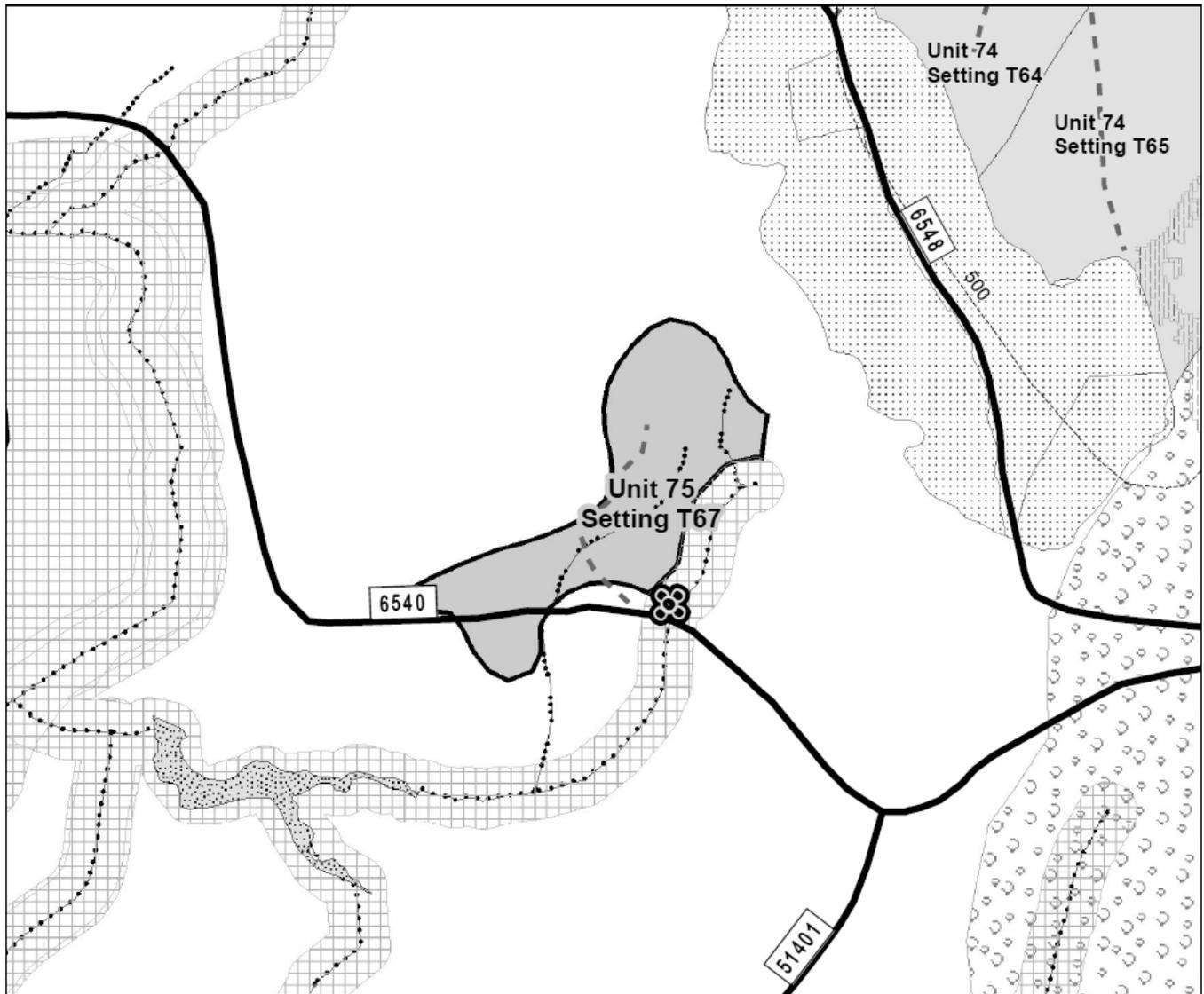
<b>LUD: TM</b>	<b>Logging Systems:</b> Cable & Shovel	<b>Total Unit Acres:</b> 70	<b>Unit Number:</b> 74
		<b>Harvest Acres:</b> 60	<b>Net Harvest Volume (Saw) MBF:</b> 992
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> This unit has old-growth stand structure and has variable site productivity throughout. The unit covers a knob and therefore has varied aspects. The unit contains prevalent stem decay and defect throughout the stand. The windthrow and mistletoe rating for the stand is low.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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><u>Silvicultural Prescription:</u> This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with moderately severe stem decay and defect resulting in a situation where stand growth is being offset or exceeded by decay and the light infections mistletoe may be affecting stand vigor. Even-aged clearcutting with reserves (15 percent of the unit for wildlife habitat connectivity) 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. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.</p>			
<p><b>TIMBER/LOGGING:</b> The unit is designed for a combination of shovel and uphill cable yarding. Setting T64 is designed for shovel yarding to a proposed temporary road extension of the 6548 road. Setting T65 is designed for both cable and shovel yarding. Retention will be located along the eastern boundary during layout.</p>			
<p><b>ENGINEERING/ROADS:</b> Three temporary roads are needed to access the entire unit. The primary temporary road is 0.47 mile in length. The second temporary road intersects the primary temporary road at mp 0.14 and travels north for 0.20 mile. The third temporary road intersects the primary temporary road at mp 0.21 and travels south west for 0.10 mile. A total of 0.77 mile of temporary road will be constructed. The roads will be decommissioned after the timber sale. The material source is located on Road 6548 mp 0.06, Road 6548 mp 0.67, and Road 6540 mp 3.14.</p>			
<p><b>FISH/WATERSHED:</b>  There are three Class IV, channel type HC5, streams within the unit. Fall timber away from stream if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).  There is a small portion of a Class II, channel type MM1, stream near the the unit. No harvest within 120 feet of the channel (BMP 12.6).</p>			
<p><b>SCENERY:</b> Setting T64 is not seen. Only T65 is seen from the Anita Bay viewshed, and has an adopted SIO of very low. The proposed prescription will meet this SIO.</p>			
<p><b>SOILS:</b> This unit includes 3 acres of slopes over 72 percent gradient. A slope stability assesment is included in the project record. (BMP 13.5) Based on the field review, slopes over 85 percent gradient are not suitable for timber harvest and harvest on slopes over 72 percent gradient will require full suspension to minimize soil disturbance and landslide potential. (BMP 13.9) Forested wetlands occur in the northern portion of the unit. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks may need to be supported by slash (BMP 13.9) to minimize soil disturbance.</p>			
<p><b>WILDLIFE:</b>  This unit is adjacent to a 230-acre goshawk nesting habitat buffer containing several known nests. No commercial timber harvest is permitted within the identified buffer. New road construction is permitted if no other reasonable roading alternatives outside the mapped nesting habitat exist. Permit no continuous disturbance likely to result in nest abandonment within the surrounding 600 feet from March 15 to August 15. Noise disturbance (timing) restrictions are removed for active nests that become inactive or unsuccessful. Retaining a travel corridor along the boundary between Units 73 and 74 will provide minimal connectivity.</p>			
<p>No resource concerns identified for Geology, Heritage, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 75

Navy Timber Sale Selected Alternative

15 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD: TM</b>	<b>Logging Systems:</b> Shovel	<b>Total Unit Acres:</b> 15	<b>Unit Number:</b> 75
		<b>Harvest Acres:</b> 15	<b>Net Harvest Volume (Saw)</b> MBF: 76

**SILVICULTURE:**  
Existing Stand Condition/Vegetation: The stand is a wind-generated, multicanopy, uneven-aged stand. The stem decay, physical defect and mistletoe infections are low. There is evidence of some cedar decline in patches. The windthrow risk rating for the stand is high.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.

**TIMBER/LOGGING:** This unit is designed for shovel yarding to a temporary spur off the existing 6540 road. This unit is prescribed for a single-tree selection partial harvest. Leave trees will not impair yarding activities or pose a safety risk.

**ENGINEERING/ROADS:** Construct 0.17 mile of temporary road. The road will be decommissioned after the timber sale. The material source is located on Road 6548 mp 0.06, Road 6548 mp 0.67, and Road 6540 mp 3.14. Spur road will be located so as to not impact stream flow. The spur road has been relocated to avoid rare plants.

**BOTANY:** Ten individuals of lesser round-leaved orchid (*Platanthera orbiculata*) are located within the RMA buffer on the east side of this unit. The proposed spur road was relocated to establish a 100-foot windfirm buffer to avoid impacts.

**FISH/WATERSHED:**  
 There is a Class I, channel type HC1, stream on the east side of the unit. No harvest within 100 feet of the channel (BMP 12.6, 12.6a, 13.16).  
 The temporary road in the unit crosses a mapped Class IV stream, adequate size structures will be necessary for all stream crossings and will be removed immediately following timber sale activities (BMP 13.16, 14.20).  
 There are two Class IV, channel type HC, streams in the unit. Fall timber away from stream if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16)

**WILDLIFE:** This unit is an 'island' of old growth in the dense scrub timber in this part of the area between Anita Bay and Burnett Inlet. Maintaining 70 percent retention would provide a 'stepping stone' for old-growth dependent species.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** The unit harvests 15 acres of forested wetlands. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.

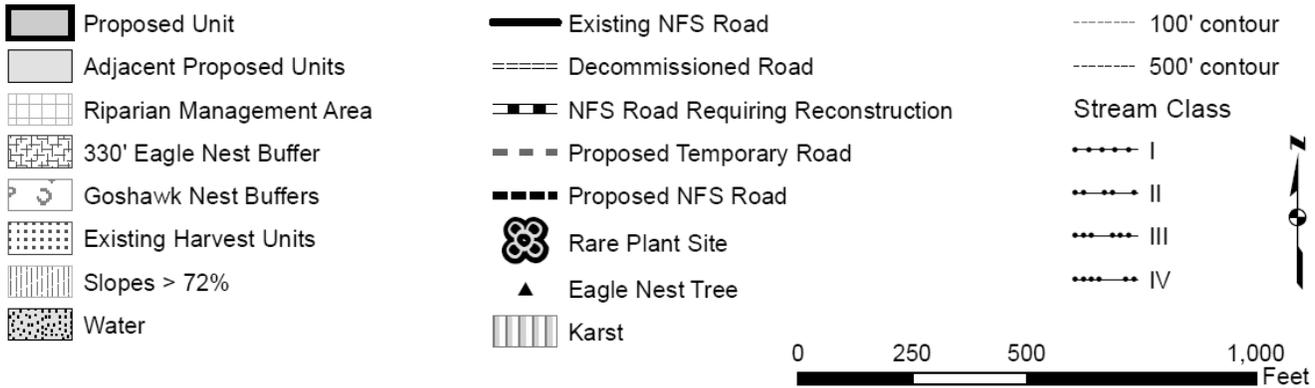
No resource concerns identified for Geology, Heritage, and Recreation.

# Appendix ROD-1

Unit 76

Navy Timber Sale Selected Alternative

15 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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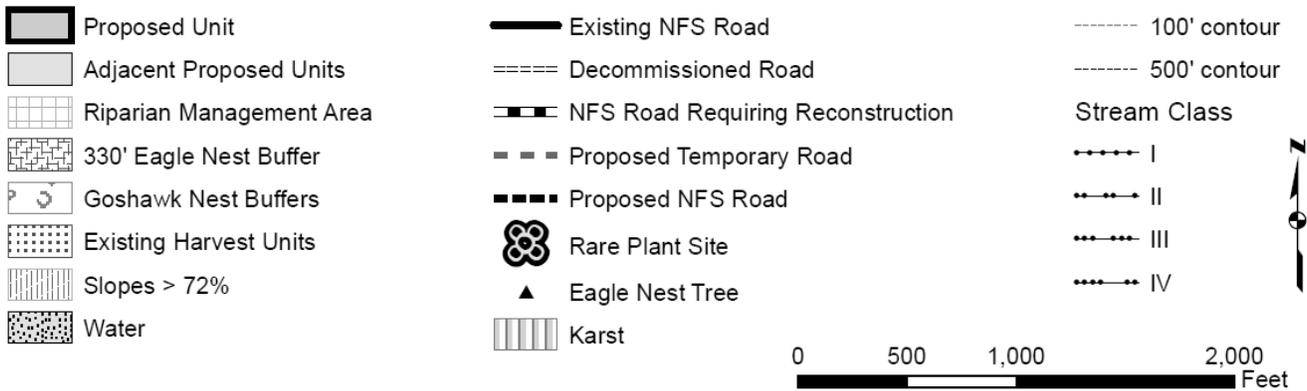
<b>LUD:</b> TM,SV	<b>Logging Systems:</b> Shovel	<b>Total Unit Acres:</b> 15	<b>Unit Number:</b> 76
		<b>Harvest Acres:</b> 15	<b>Net Harvest Volume (Saw) MBF:</b> 74
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated, multicanopy, uneven-aged stand with varied site productivity. The stem decay, physical defect and mistletoe infections are low. There is evidence of some cedar decline in patches. The windthrow risk rating for the stand is low.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b>  This unit is designed for shovel yarding to the existing 6540 road. This unit is prescribed for a single tree selection partial harvest. Minimize harvest near the Class I stream to maintain security cover for brown bears. Leave trees will not impair yarding activities or pose a safety risk.</p>			
<p><b>FISH/WATERSHED:</b>  There is a Class I, channel types MC1, MC2, and FP4 streams (Pump Creek) on the east side of the unit. No harvest within 130 feet (FP4) or 100 feet (MC) of the channel; partial-harvest prescription should be windfirm (BMP 12.6, 12.6a, 13.16).</p>			
<p><b>WILDLIFE:</b> This stand receives a lot of use by black and brown bears attracted to the spawning salmon in Pump Creek. Leave trees should be concentrated adjacent to the RMA to help maintain bear security as well as windfirmness of the stream buffer.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> The unit includes 15 acres of forested wetlands. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.</p>			
<p>No resource concerns were identified for Roads, Botany, Geology, Heritage, and Recreation.</p>			

# Appendix ROD-1

Unit 77

Navy Timber Sale Selected Alternative

53 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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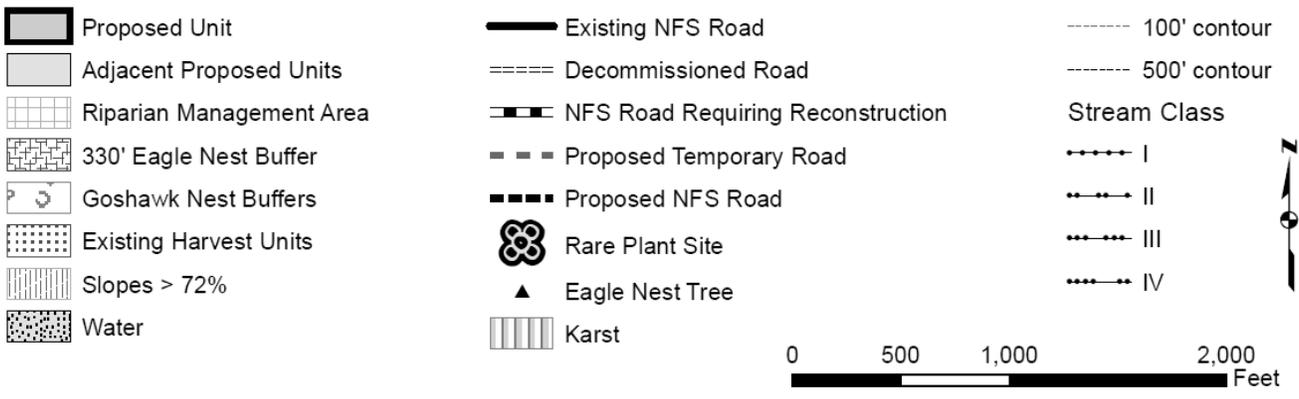
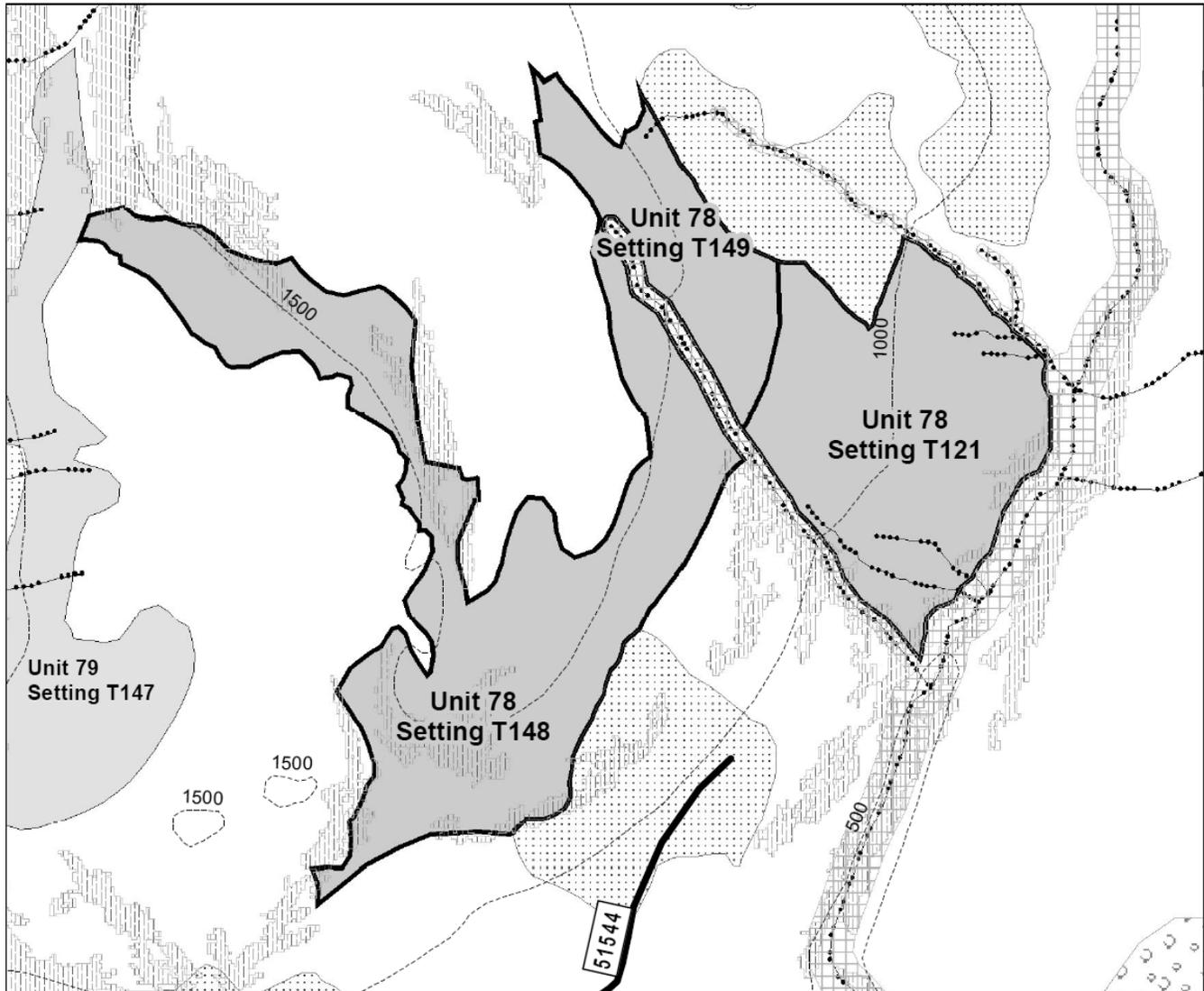
<b>LUD: TM</b>	<b>Logging Systems:</b> Shovel	<b>Total Unit Acres: 53</b>	<b>Unit Number: 77</b>
		<b>Harvest Acres: 53</b>	<b>Net Harvest Volume (Saw) MBF: 266</b>
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated, multicanopy, uneven-aged stand. The stem decay is moderately severe, physical defect is high, whereas mistletoe infections and windthrow risk are low.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for shovel yarding to the existing 51544 road. This unit is prescribed for a single-tree selection partial harvest. Minimize harvest near the Class I stream to maintain security cover for brown bears. Leave trees will not impair yarding activities or pose a safety risk.</p>			
<p><b>FISH/WATERSHED:</b>  There is a Class I, channel type FP4, stream (Pump Creek) on the east side of the unit. No harvest within 130 feet of the channel, individual tree mark prescription should be windfirm (BMP 12.6, 12.6a, 13.16).  There is a Class II, channel types MC1 and PA5, stream on the west side of the unit. No harvest within 100 feet of channel; individual tree mark prescription should be windfirm (BMP 12.6, 12.6a, 13.16).  There are three Class IV, channel type HC5, streams within the unit. Fall timber away from stream if feasible. Full suspension or split yard away from streams if feasible; a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> The unit includes 44 acres of forested wetlands. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.</p>			
<p><b>WILDLIFE:</b>  This unit is near a 100-acre goshawk nesting habitat buffer. No commercial timber harvest is permitted within the identified buffer. Permit no continuous disturbance that is likely to result in nest abandonment within the surrounding 600 feet from March 15 to August 15. Noise disturbance (timing) restrictions are removed for active nests that become inactive or unsuccessful.  This stand receives a lot of use by black and brown bears attracted to the spawning salmon in Pump Creek and Class I tributaries. Leave trees should be concentrated adjacent to the RMA to help maintain bear security as well as windfirmness of the stream buffer.</p>			
<p>No resource concerns were identified for Roads, Geology, Heritage, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 78

Navy Timber Sale Selected Alternative

139 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM, ML	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 139	<b>Unit Number:</b> 78
		<b>Harvest Acres:</b> 139	<b>Net Harvest Volume (Saw)</b> MBF: 695

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated, multicanopy, uneven-aged stand. The stem decay is moderately severe, physical defect is high, whereas mistletoe infections and windthrow risk are low. There is evidence of porcupine damage in western hemlock and Sitka spruce. Yellow cedar decline was found in moderate severity in scattered patches.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.

**TIMBER/LOGGING:** This unit is designed for helicopter yarding to landings on the existing 51544 road.

**FISH/WATERSHED:**

There is a Class II, channel type MC3, portion of mainstem stream (Pump Creek) on the southeast corner of the unit. No harvest within 100 feet of the channel, (BMP 12.6, 12.6a, 13.16).

There is a Class III, channel type HC6, stream that bisects the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

There are at least five Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

Partial harvest helicopter treatment will reduce impacts associated with windthrow.

**SCENERY:** Setting T121 is unseen. Setting T149 is partially visible in the distance from the head of the Burnett Inlet viewshed, and setting T148 is partially visible from the heads of the Burnett and Mosman Inlet viewsheds. The adopted SIO for these settings is very low. The proposed prescription, along with the great distances from where parts of this unit can be seen, will meet a high SIO.

**SOILS:** Unit contains areas with slopes >72 percent. Prior to harvest a slope stability analysis will be done and documented in the change analysis report; it is anticipated that these areas can be avoided with the STS prescription.

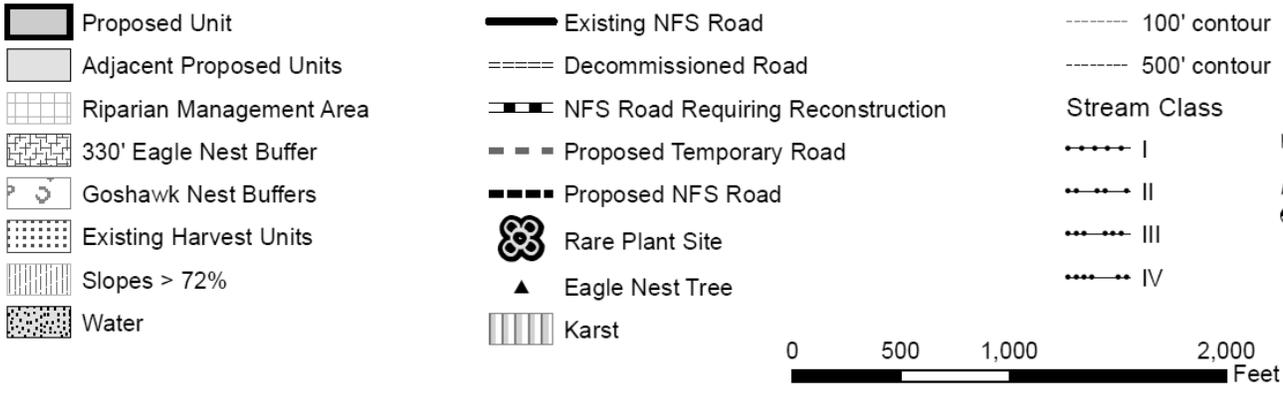
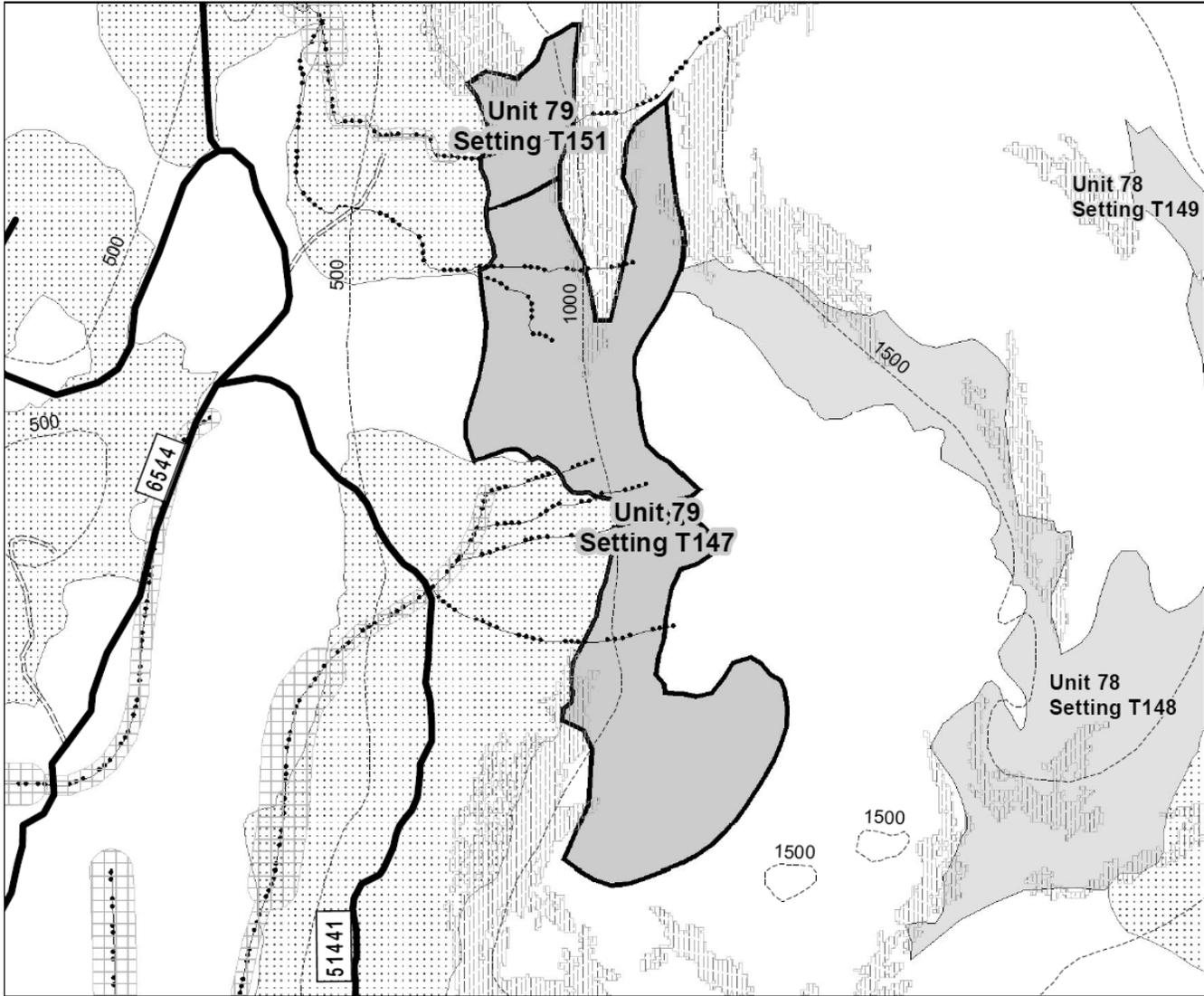
No resource concerns were identified for Roads, Geology, Heritage, Wildlife, Botany and Recreation.

# Appendix ROD-1

Unit 79

Navy Timber Sale Selected Alternative

65 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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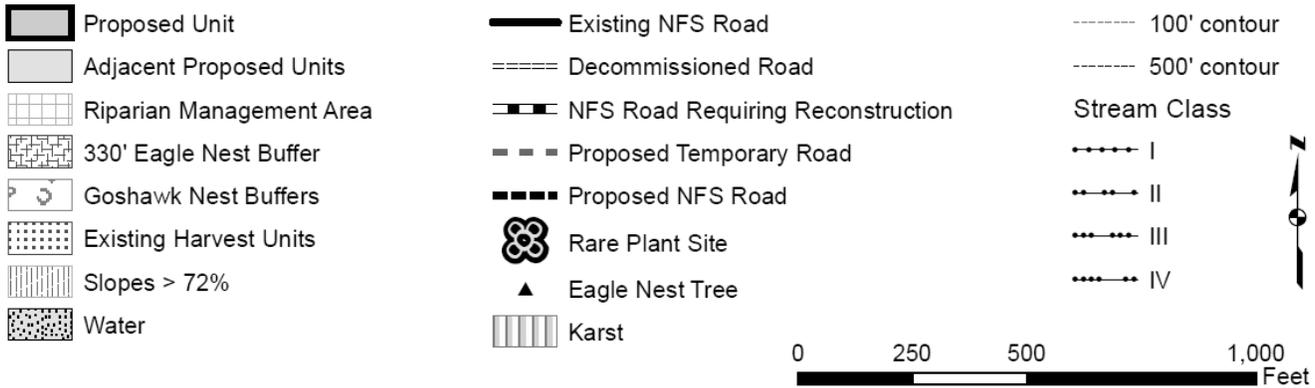
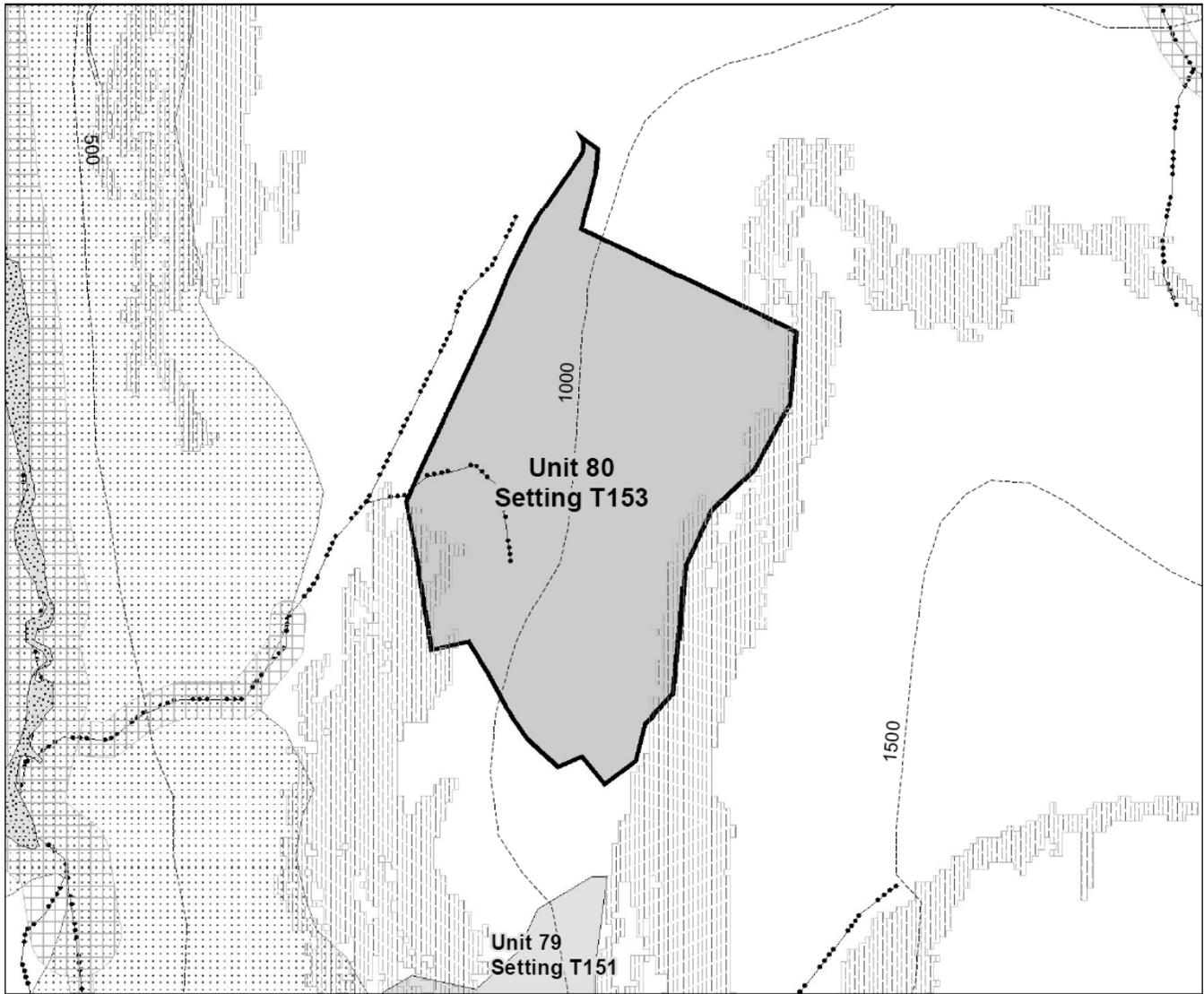
<b>LUD:</b> ML	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 65	<b>Unit Number:</b> 79
		<b>Harvest Acres:</b> 65	<b>Net Harvest Volume (Saw) MBF:</b> 326
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated, multicanopy, uneven-aged stand that is fairly high elevation and fairly productive. The stem decay and physical defect in moderately severe, whereas mistletoe infections and windthrow risk are low. There is evidence of recent, severe porcupine damage in western hemlock and Sitka spruce. Yellow cedar decline was found in moderate severity in scattered patches.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings on the existing 6544 and 51441 roads.</p>			
<p><b>FISH/WATERSHED:</b>  There are seven Class IV, channel type HC, streams that run through the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).</p>			
<p><b>SCENERY:</b> Setting T151 is unseen. Parts of setting T147 are slightly visible from Clarence Strait, and it has an adopted SIO of low. Since so little of T147 can be seen from this distance, the proposed prescription will meet a high SIO.</p>			
<p><b>SOILS:</b> The unit includes 7 acres with slope over 72 percent gradient. A slope stability assessment was conducted and found these areas suitable for harvest with proposed prescription. (BMP 13.5).</p>			
<p><b>WILDLIFE:</b> The 70 percent retention prescription will allow for the elevational migration of wildlife by maintaining an elevational travel corridor between the two existing clearcuts.</p>			
<p>No resource concerns were identified for Roads, Geology, Heritage, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 80

Navy Timber Sale Selected Alternative

18 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> ML, SV	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 18	<b>Unit Number:</b> 80
		<b>Harvest Acres:</b> 18	<b>Net Harvest Volume (Saw) MBF:</b> 92

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a high elevation, productive, multicanopy, uneven-aged stand. The stem decay and physical defect in trees is moderately severe, whereas mistletoe infections and windthrow risk are low. No cedar decline was recorded.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.

**TIMBER/LOGGING:** This unit is designed for helicopter yarding to landings located on the existing 6544 road.

**ENGINEERING/ROADS:** None

**FISH/WATERSHED:**

There is at least one Class IV, channel type HC, stream within the unit. Fall timber away from stream if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** The unit includes 3 acres with slopes over 72 percent gradient. A slope stability assessment was conducted and found these areas suitable for harvest with proposed prescription (BMP 13.5).

**ROADLESS AREAS:** Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).

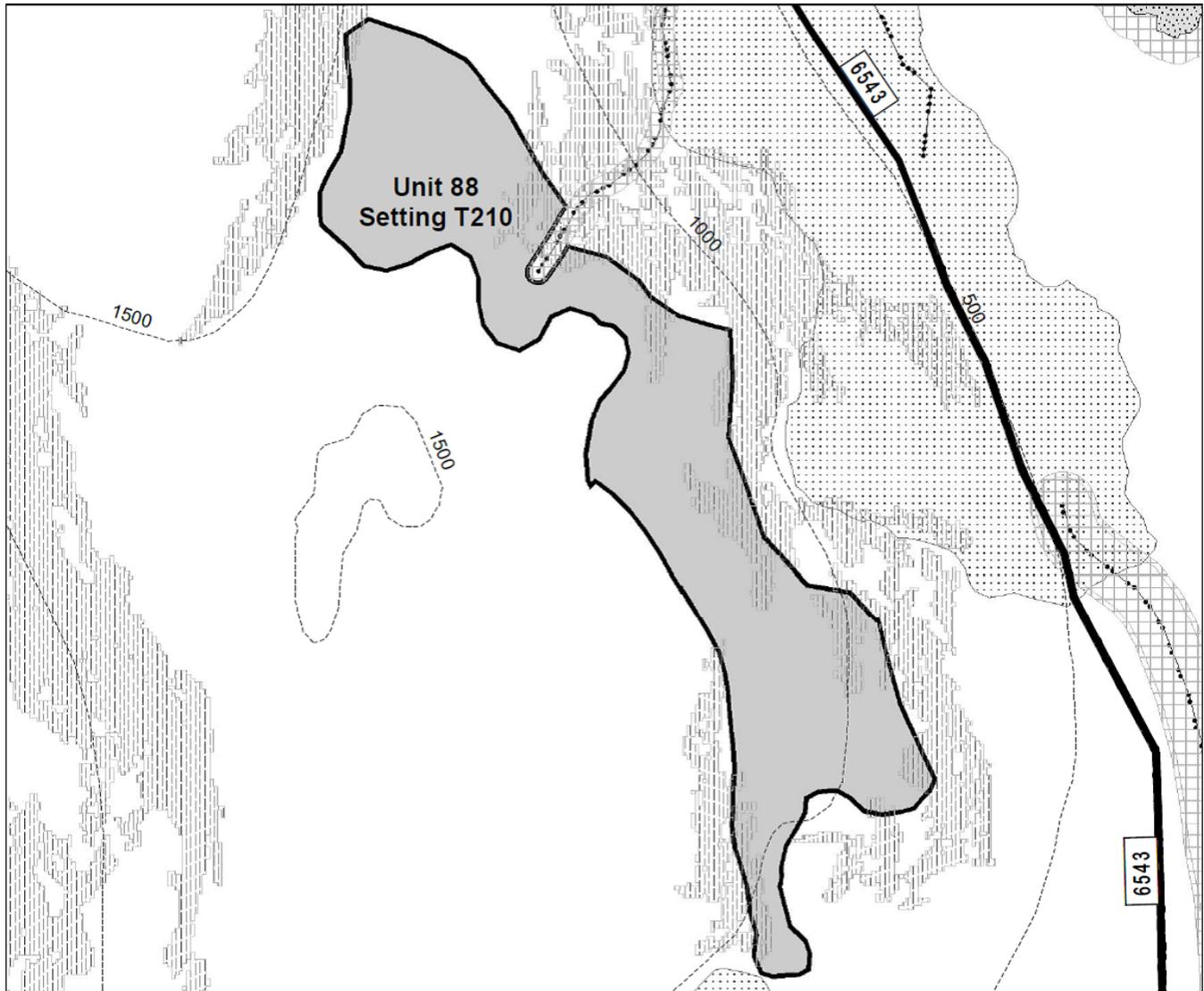
No resource concerns were identified for Geology, Wildlife, Botany, Recreation, and Heritage.

# Appendix ROD-1

Unit 88

Navy Timber Sale Selected Alternative

46 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> ML	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 46	<b>Unit Number:</b> 88
		<b>Harvest Acres:</b> 46	<b>Net Harvest Volume (Saw) MBF:</b> 231
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a high elevation multicanopy, uneven-aged stand with widely variable productivity. The stem decay is moderately severe and physical defect in trees was rated as severe. Mistletoe infections and windthrow risk are low. No cedar decline was recorded. Some recent porcupine damage was noted.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings on the existing 6543 road.</p>			
<p><b>FISH/WATERSHED:</b>            There is a Class III, channel type HC6, stream on the northeast boundary of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).            Partial harvest helicopter treatment will reduce impacts associated with windthrow.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> Unit includes approximately 7 acres with slopes over 72 percent gradient. These areas will be avoided with the partial harvest prescription.</p>			
<p><b>WILDLIFE:</b> The 70 percent retention prescription will allow for the elevational migration of wildlife between this unit and nearby existing clearcuts.</p>			
<p>No resource concerns were identified for Roads, Geology, Heritage, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 90

Navy Timber Sale Selected Alternative

9 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD: ML</b>	<b>Logging Systems:</b> Cable & Shovel	<b>Total Unit Acres: 9</b>	<b>Unit Number: 90</b>
		<b>Harvest Acres: 9</b>	<b>Net Harvest Volume (Saw) MBF: 153</b>

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This unit is a low lying, gently sloped unmanaged stand with old-growth stand structure. It is a moderately productive site that has moderately severe levels of stem defect, moderate windthrow risk and light, but widespread mistletoe infections.

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.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with stem decay and widespread mistletoe infections, resulting in a situation where stand growth is being offset or exceeded by decay. Even-aged clearcutting 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 remove/minimize defect and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable logging to a landing located on the existing reconstructed 6543 road. Shovel yarding is planned for the eastern side of the unit.

**FISH/WATERSHED:**

There is a Class II, channel type PA5/MM1, stream on the eastern boundary of the unit. No harvest within 100 feet (PA5) or 120 feet (MM1) of the channel. (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** The unit harvests 9 acres of forested wetlands. Shovel yarding will follow BMPs 12.5, 13.2 and 13.9; shovel tracks need to be supported by slash (BMP 13.9). Special consideration is needed to minimize soil disturbance due to downslope stream.

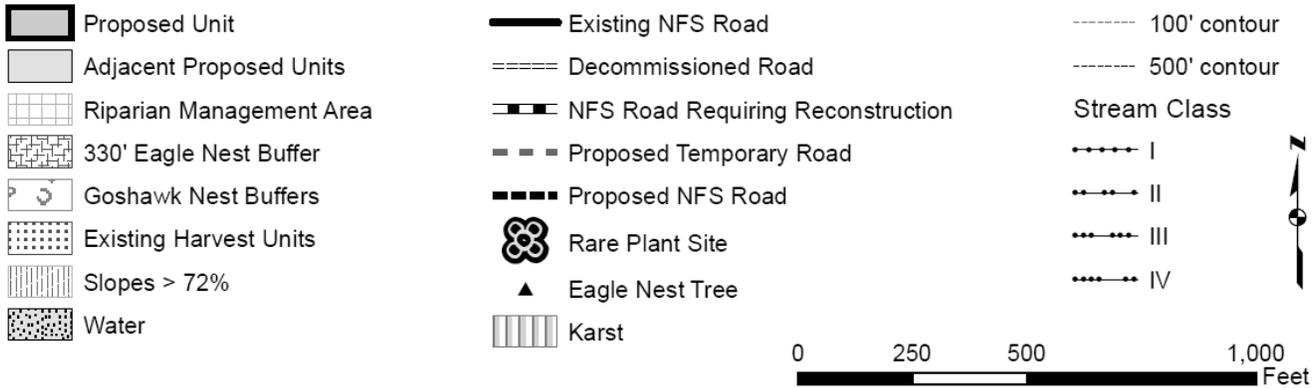
No resource concerns were identified for Roads, Geology, Heritage, Recreation, Botany and Wildlife.

# Appendix ROD-1

Unit 91

## Navy Timber Sale Selected Alternative

33 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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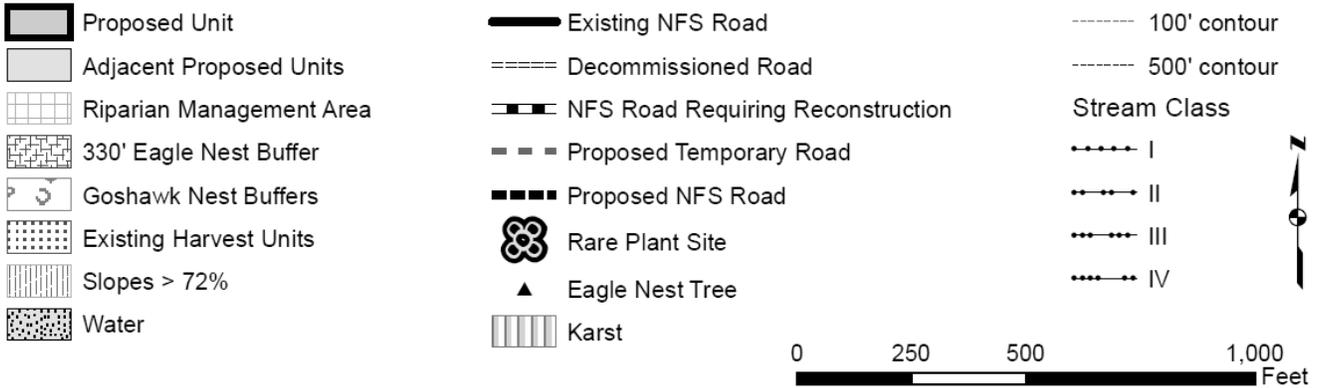
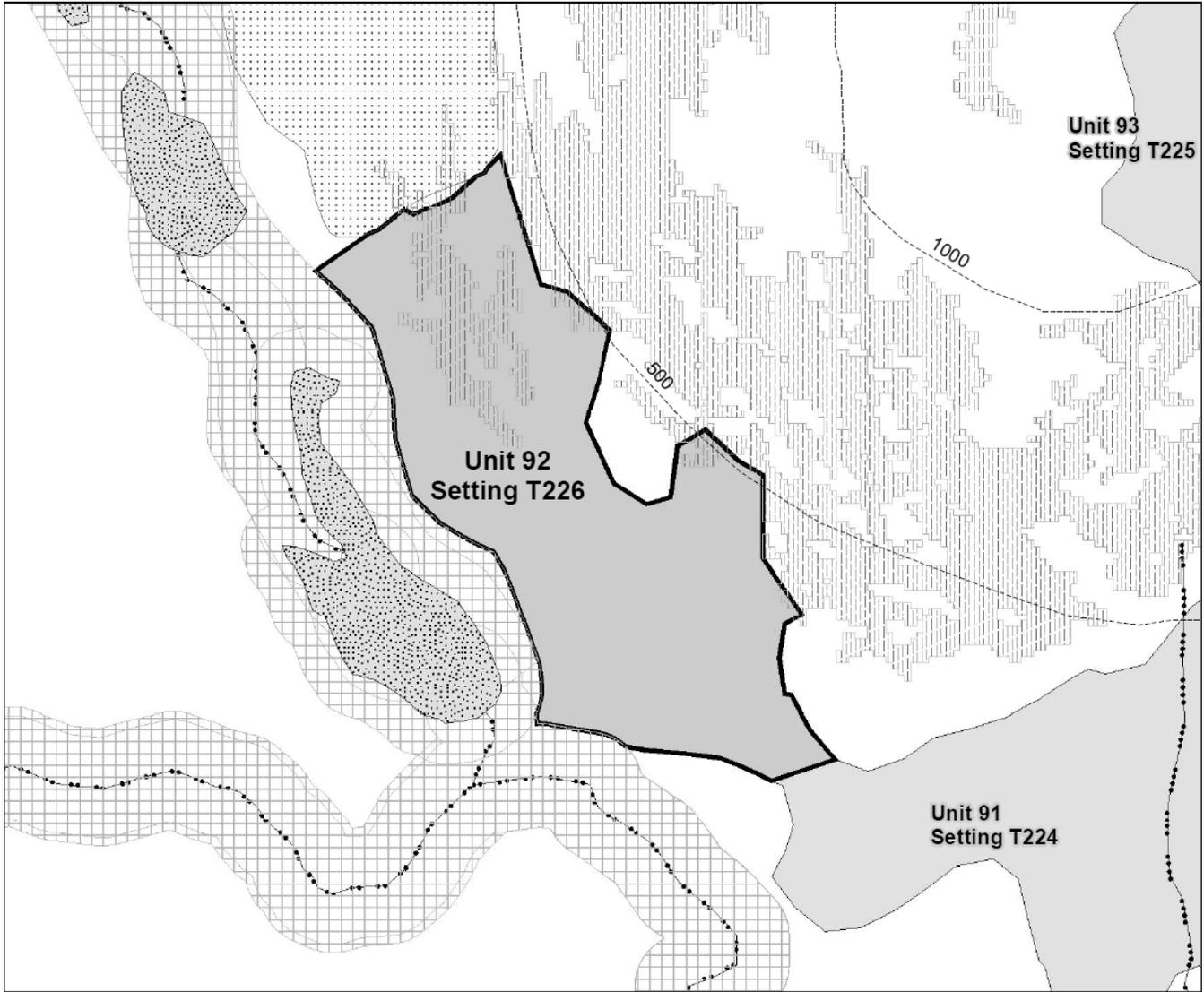
<b>LUD: TM</b>	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 33	<b>Unit Number:</b> 91
		<b>Harvest Acres:</b> 33	<b>Net Harvest Volume (Saw) MBF:</b> 168
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is southern exposed, multicanopy, uneven-aged stand that extends from 200 feet elevation to approximately 1,200 feet elevation. The stem decay and physical defect in trees is moderately severe. Mistletoe infections were light but widespread throughout the unit. Windthrow risk was rated as high. No cedar decline was recorded.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings on the 6540 road.</p>			
<p><b>ENGINEERING/ROADS:</b> None.</p>			
<p><b>FISH/WATERSHED:</b>  There are two Class II, channel type HC1, streams on the southern boundary of the unit. No harvest within 100 feet of channel. (BMP 13.9, 13.16).  There are three Class IV, channel type HC5, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).  RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> This unit includes 1 acre with slopes over 72 percent gradient; this area will be avoided with the partial harvest prescription.</p>			
<p><b>WILDLIFE:</b> The 70 percent retention prescription will allow for the elevational migration of wildlife.</p>			
<p>No resource concerns were identified for Geology, Roads, Heritage, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 92

## Navy Timber Sale Selected Alternative

18 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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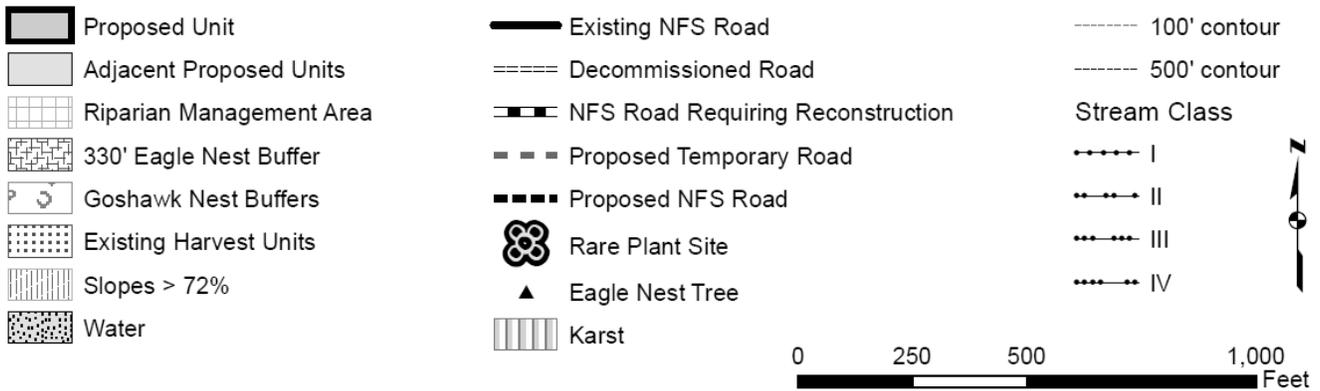
<b>LUD: TM</b>	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 18	<b>Unit Number:</b> 92
		<b>Harvest Acres:</b> 18	<b>Net Harvest Volume (Saw) MBF:</b> 92
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a productive, multicanopy, uneven-aged stand with a southwestern exposure. The stem decay and physical defect in trees is moderately severe. Mistletoe infections were light but widespread throughout the unit. Windthrow risk was rated as high. No cedar decline was recorded.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings on the 6540 road.</p>			
<p><b>ENGINEERING/ROADS:</b> None</p>			
<p><b>FISH/WATERSHED:</b>  There is a Class II, channel type PA1 and LC1, stream on the southwest side of the unit. No harvest within 100 feet of channel. (BMP 13.9, 13.16).  There is a Class II lake/pond on the west side of the unit. No harvest within 100 feet of shoreline. (BMP 13.9, 13.16).  RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.</p>			
<p><b>GEOLOGY/KARST:</b> Potential for limestone bedrock in the unit.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> This unit includes 2 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided.</p>			
<p><b>WILDLIFE:</b> The 70 percent prescription will allow for the elevational migration of wildlife: If possible, leave elevational travel corridor within/between Unit's 91/92.</p>			
<p>No resource concerns were identified for Heritage, Roads, Wildlife, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 93

## Navy Timber Sale Selected Alternative

14 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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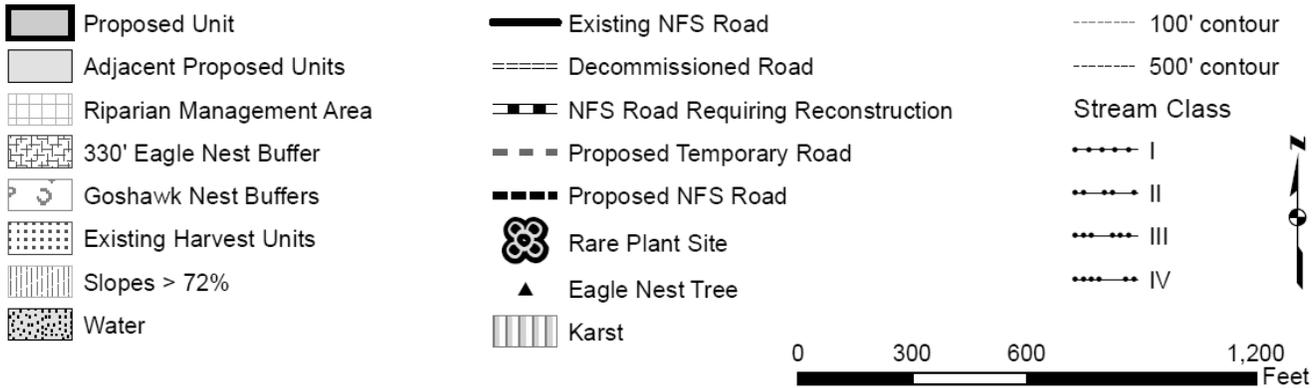
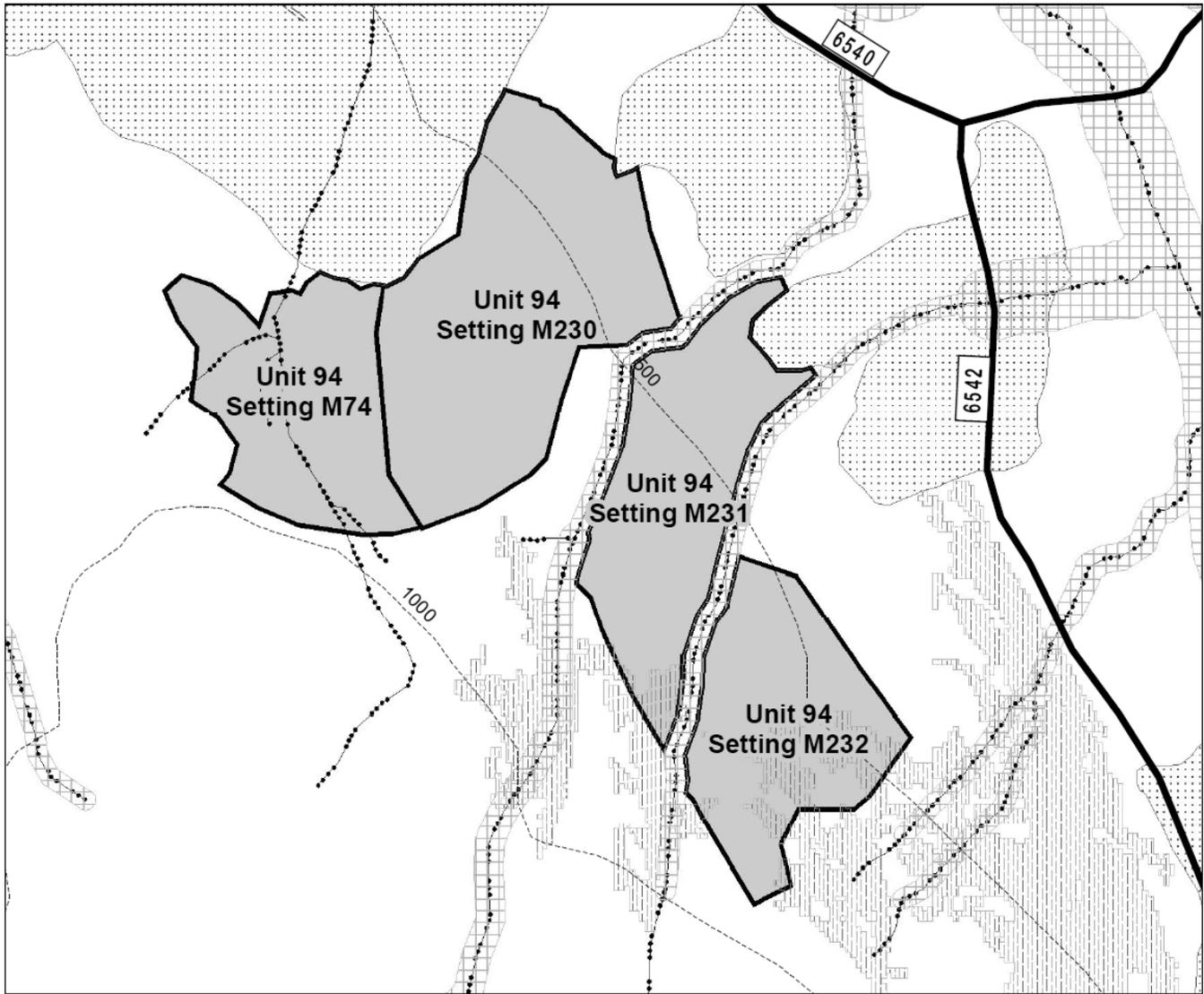
<b>LUD: TM</b>	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 14	<b>Unit Number:</b> 93
		<b>Harvest Acres:</b> 14	<b>Net Harvest Volume (Saw) MBF:</b> 70
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand has moderately low site productivity, and is a high elevation, uneven-aged stand with a southeastern exposure. The stem decay and physical defect in trees is light. Mistletoe infections are severe and affecting nearly all western hemlock. Windthrow risk was rated as moderately high. No cedar decline was recorded.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to a temporary road in the adjacent managed stand.</p>			
<p><b>ENGINEERING/ROADS:</b> To reduce the helicopter yarding distance, a temporary road (0.44 mile) may be constructed on an existing road prism to save costs and reduce environmental effects.</p>			
<p><b>SCENERY:</b> This unit is partially visible from the Mosman Inlet viewshed, and has an adopted SIO of very low. The proposed prescription will meet a high SIO due to the distance the unit can be seen from and the aspect visible.</p>			
<p><b>SOILS:</b> This unit includes 1 acre with slopes over 72 percent gradient; this area will be avoided with the partial harvest prescription.</p>			
<p>No resource concerns were identified for Roads, Fish/Watershed, Heritage, Recreation, Botany and Wildlife.</p>			

# Appendix ROD-1

Unit 94

Navy Timber Sale Selected Alternative

41 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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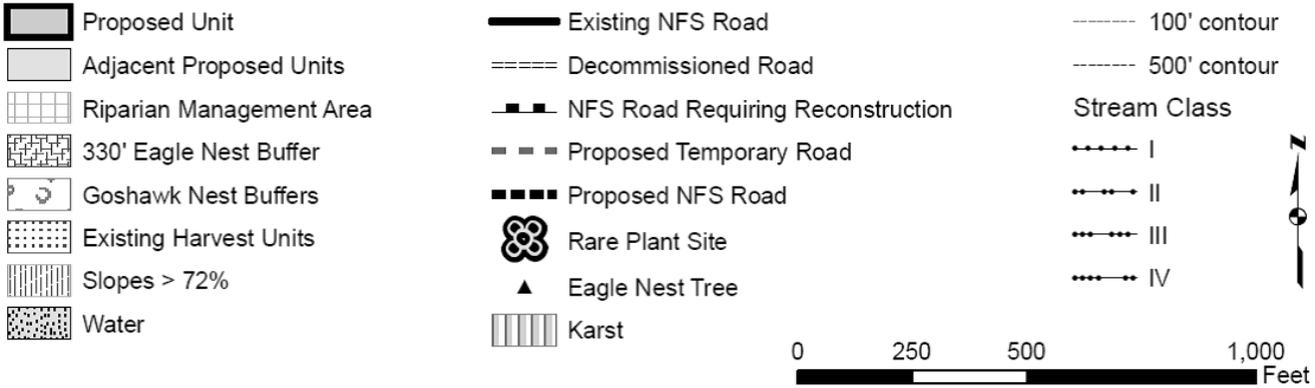
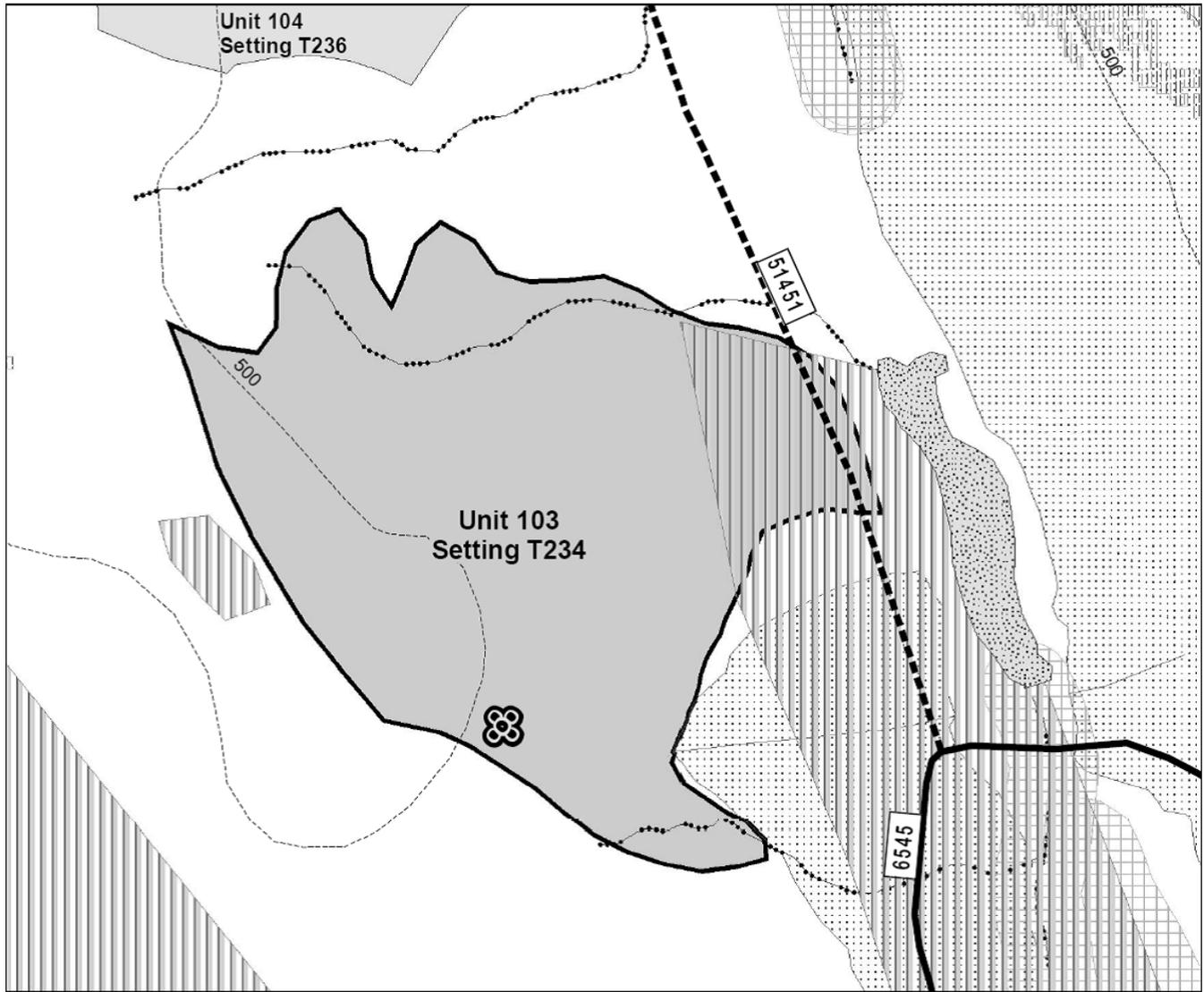
<b>LUD:</b> TM	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 41	<b>Unit Number:</b> 94
		<b>Harvest Acres:</b> 41	<b>Net Harvest Volume (Saw) MBF:</b> 204
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> Uneven-aged stand. The stand is a wind-generated multicanopy stand of moderately low site productivity, and is high elevation, uneven-aged, with a northeastern exposure. The stem decay and physical defect in trees is moderately high. Mistletoe infections are absent. Windthrow risk was rated low. No cedar decline was recorded.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings located on the existing 6542 and 6540 roads.</p>			
<p><b>FISH/WATERSHED:</b>  There are two Class III, channel types HC5 and HC6, streams that flow between settings. Do not harvest in the v-notch. (BMP 12.6, 12.6a, 13.16).  There are at least four Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).   RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> This unit has 5 acres with slopes &gt;72 percent; a slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided.</p>			
<p><b>WILDLIFE:</b> The prescription of 70 percent retention would allow for the elevational migration of wildlife.</p>			
<p>No resource concerns were identified for Roads, Geology, Heritage, Botany and Recreation.</p>			

# Appendix ROD-1

Unit 103

Navy Timber Sale Selected Alternative

35 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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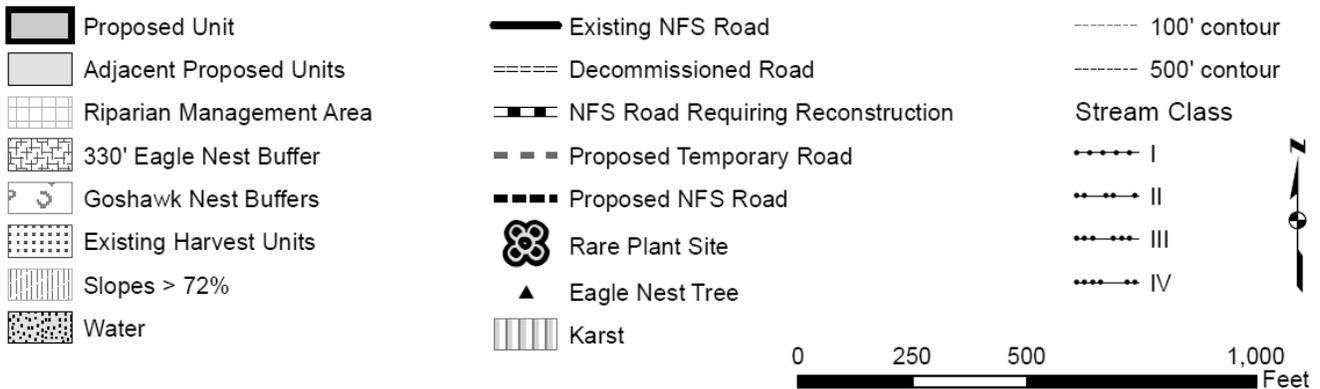
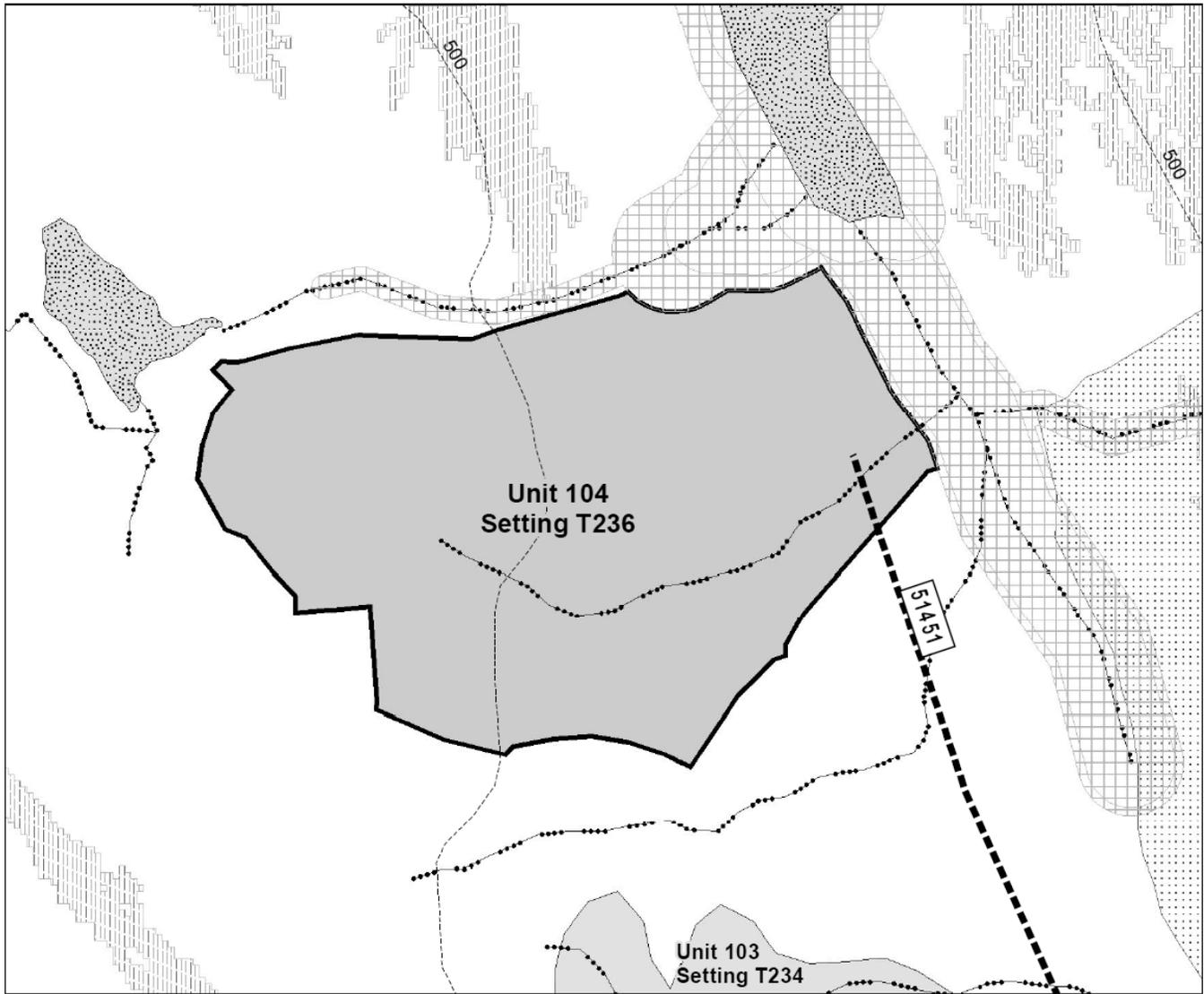
<b>LUD:</b> ML, TM	<b>Logging Cable Systems:</b>	<b>Total Unit Acres:</b> 35	<b>Unit Number:</b> 103
		<b>Harvest Acres:</b> 35	<b>Net Harvest Volume (Saw) MBF:</b> 582
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> This is a wind-generated multicanopy eastern aspect uneven-aged stand of moderate/high productivity. Mistletoe infections are light throughout all western hemlocks. Stem decay and physical defect are light. Wind hazard is moderately high. Cedar decline is moderate and patchy throughout the stand.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with stem decay and widespread mistletoe infections, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the moderately high windthrow risk, even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for downhill cable yarding to landings located on the proposed extension of the 6545 road (road 51451).</p>			
<p><b>ENGINEERING/ROADS:</b> Refer to road card 51451.</p>			
<p><b>BOTANY:</b> One population of broad-lipped twayblade (<i>Listera convallarioides</i>), 16 individuals, is documented in the unit. Lay out the unit boundary to exclude this population.</p>			
<p><b>FISH/WATERSHED:</b>  There are two Class IV, channel type HC, streams that run through unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16)</p>			
<p><b>GEOLOGY/KARST:</b> Mapped moderate-vulnerability karst area in eastern portion of unit was not found to contain any features requiring protection within the unit or along the proposed road line accessing the unit.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> This unit harvests 2 acres of forested wetlands; cable yarding will minimize soil disturbance.</p>			
<p>No resource concerns were identified for Geology, Wildlife, Recreation, and Heritage.</p>			

# Appendix ROD-1

Unit 104

Navy Timber Sale Selected Alternative

33 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> ML, TM	<b>Logging Cable Systems:</b>	<b>Total Unit Acres:</b> 33	<b>Unit Number:</b> 104
		<b>Harvest Acres:</b> 33	<b>Net Harvest Volume (Saw) MBF:</b> 544

**SILVICULTURE:**

Existing Stand Condition/Vegetation: This is a wind-generated multicanopy eastern aspect uneven-aged stand of moderate/low productivity. Mistletoe infections are light and scattered throughout all western hemlocks. Stem decay and physical defect are light. Wind hazard is moderately high. Cedar decline is heavy throughout the stand.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with stem decay and widespread mistletoe infections, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the moderately high windthrow risk even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to landings located on the proposed extension of the 6545 road (road 51451).

**ENGINEERING/ROADS:** Refer to road card 51451.

**FISH/WATERSHED:**

There are two Class II, channel types AF1 and MM1, adjacent to the unit. No harvest within 140 feet (AF) or 120 feet (MM) of the stream channels. (BMP 13.9, 13.16). The stream has sensitive channel types that may need large RAW buffers in this high risk windthrow area.

There is a Class III, channel type HC5, stream on the northern unit boundary. No harvest in the v-notch. (BMP 13.9, 13.16). There is a Class IV, channel type HC, stream within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** This unit harvests 1 acre of forested wetlands; cable yarding will minimize soil disturbance.

**ROADLESS AREAS:** Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).

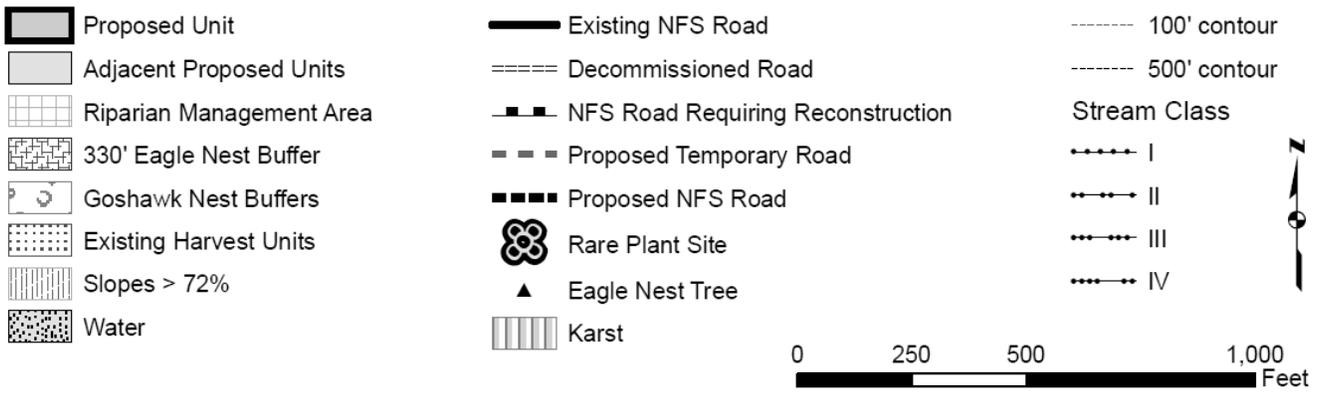
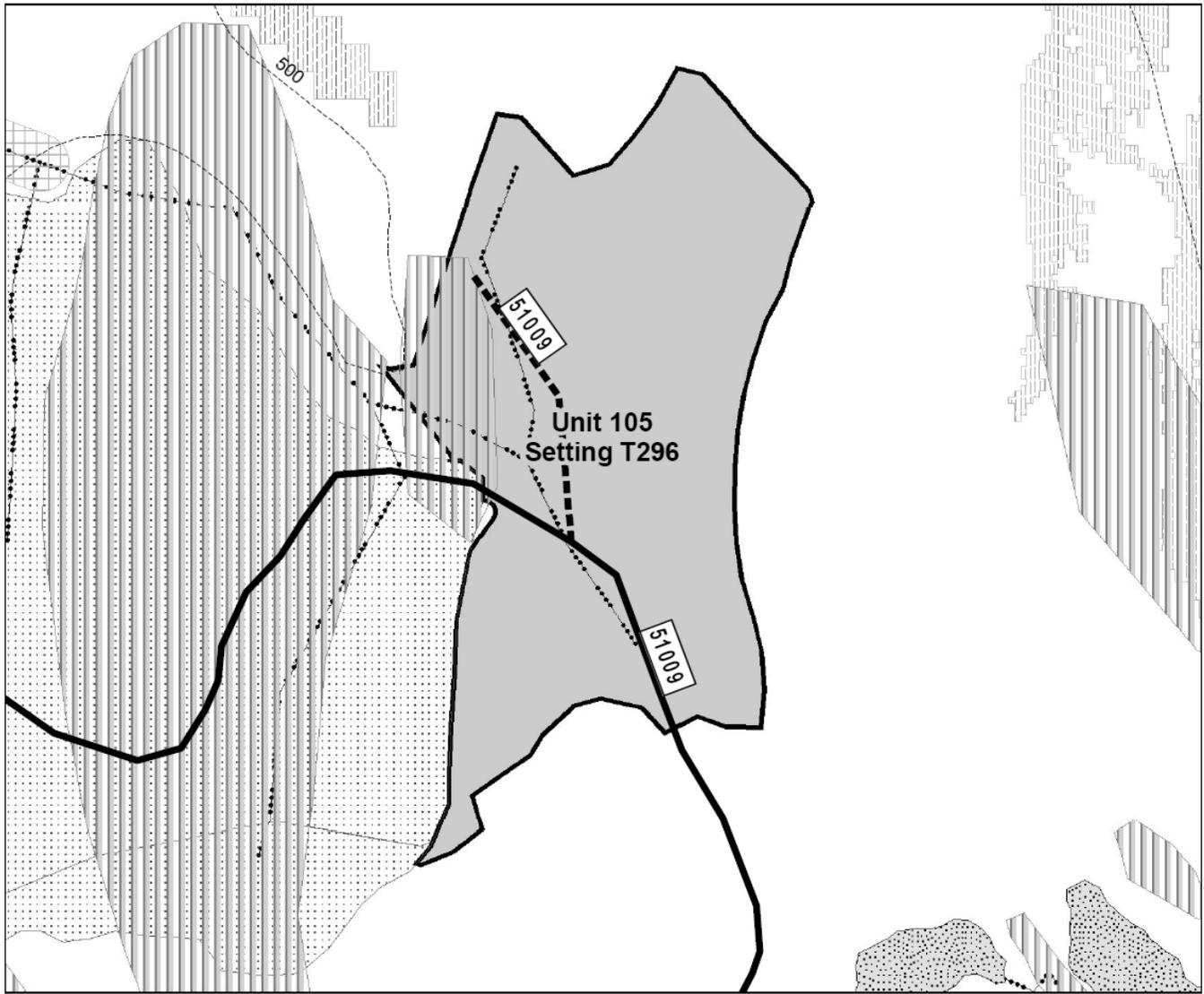
No resource concerns were identified for Geology, Heritage, Botany, Recreation, and Wildlife.

# Appendix ROD-1

Unit 105

Navy Timber Sale Selected Alternative

26 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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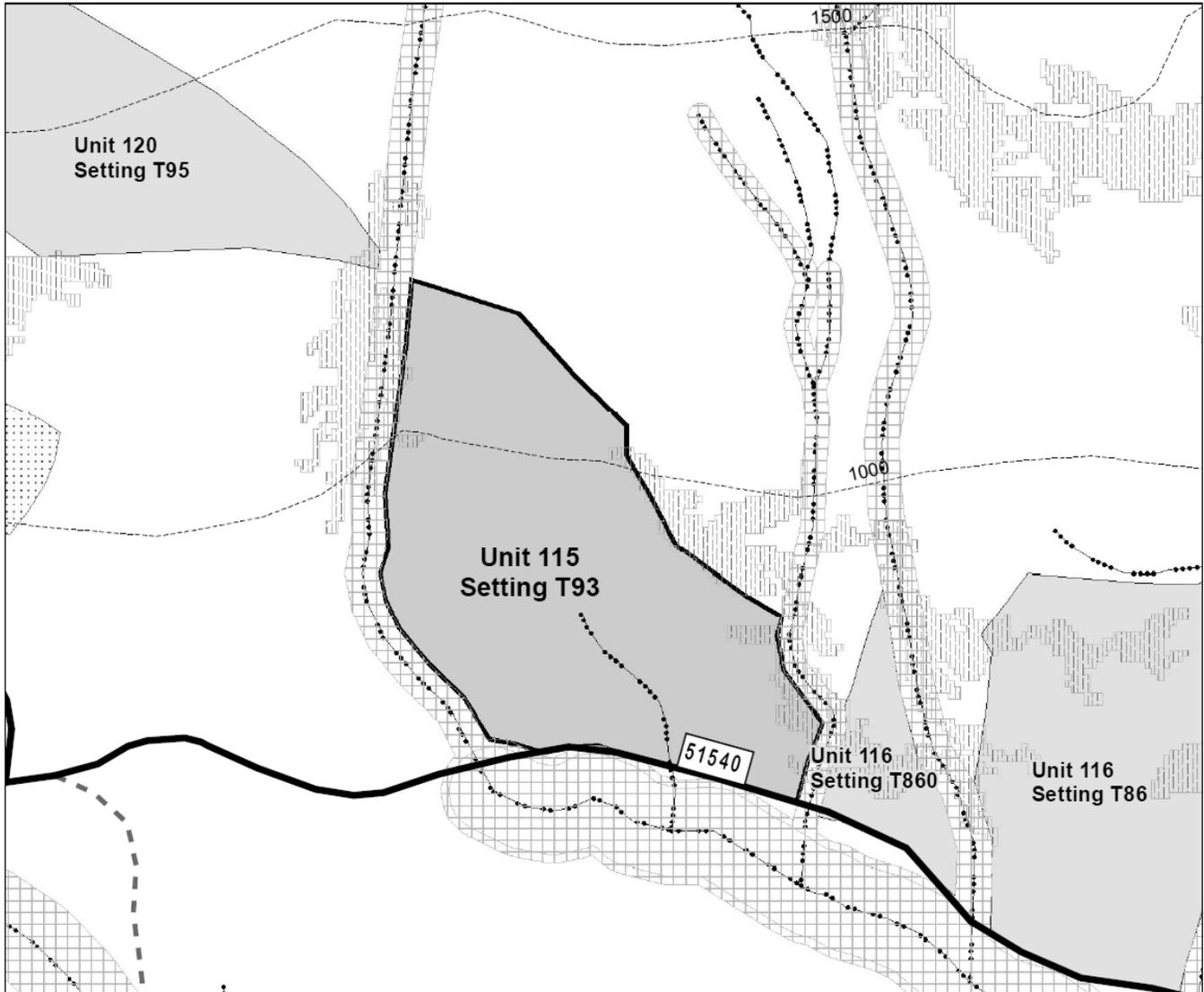
<b>LUD:</b> ML, TM	<b>Logging Cable Systems:</b>	<b>Total Unit Acres:</b> 26	<b>Unit Number:</b> 105
		<b>Harvest Acres:</b> 26	<b>Net Harvest Volume (Saw) MBF:</b> 430
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated multicanopy stand of high site productivity, and is high elevation, uneven-aged, with a southwestern exposure. The stem decay and physical defect in trees is low. Mistletoe infections are light, distributed in most western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as light and patchy. Porcupine damage was noted as recent and severe.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with stem decay and widespread mistletoe infections, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the moderately high windthrow risk even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, disease, and porcupine damage in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for downhill cable yarding to landings on the existing road and proposed extension of the 51009 road. Some shovel yarding may occur in the southwest portion of the unit.</p>			
<p><b>ENGINEERING/ROADS:</b> Construct 0.12 mile of new NFS road. Refer to road card 51009. The material source is located on Road 51009, mp 0.86.</p>			
<p><b>FISH/WATERSHED:</b>  There are at least two Class IV, channel type HC, streams that run through unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).</p>			
<p><b>GEOLOGY/KARST:</b> Moderate vulnerability karst west of proposed spur road. Small solution (karst) features found along proposed road location contributing water to Class IV stream. Unit needs review prior to approving shovel logging to ensure karst protection. Limit soil disturbance to minimize potential sediment delivery to downslope karst area.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> This unit harvests 1 acre of forested wetlands; cable yarding will minimize soil disturbance. .</p>			
<p>No resource concerns were identified for Botany, Heritage, Recreation, Wildlife.</p>			

# Appendix ROD-1

Unit 115

## Navy Timber Sale Selected Alternative

17 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD: TM</b>	<b>Logging Cable Systems:</b>	<b>Total Unit Acres: 17</b>	<b>Unit Number: 115</b>
		<b>Harvest Acres: 17</b>	<b>Net Harvest Volume (Saw) MBF: 289</b>

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of high site productivity, and is high elevation, uneven-aged, with a southern exposure. The stem decay and physical defect in trees is moderately high. Mistletoe infections are light, distributed in most western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as light and patchy. Porcupine damage was noted as recent and severe.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with high levels of stem decay and physical defect, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the moderately high windthrow risk even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, disease, and porcupine damage in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to landings located on the existing 51540 road.

**FISH/WATERSHED:**

There is a Class II, channel type MM1, stream adjacent to the southern unit boundary and Road 51540. No harvest within 120 feet of the channel. (BMP 12.6, 12.6a, 13.16). No harvest permitted below the 51540 road.

There are two Class III, channel types HC5 and HC6, streams on both sides of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

There is a Class IV, channel type HC1, stream within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from stream if feasible, a minimum of partial suspension is required. Remove logging debris from stream (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** The unit is designed to avoid harvest on unstable soils. It includes 1 acre of slopes over 72 percent gradient midslope; full suspension is required. Partial suspension is required on the remainder of the unit. (BMP 13.5, 13.9).

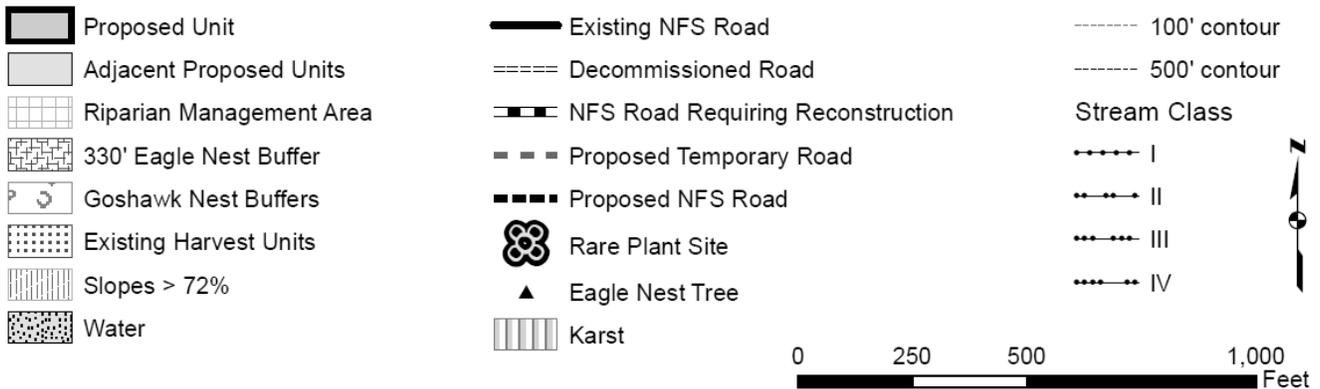
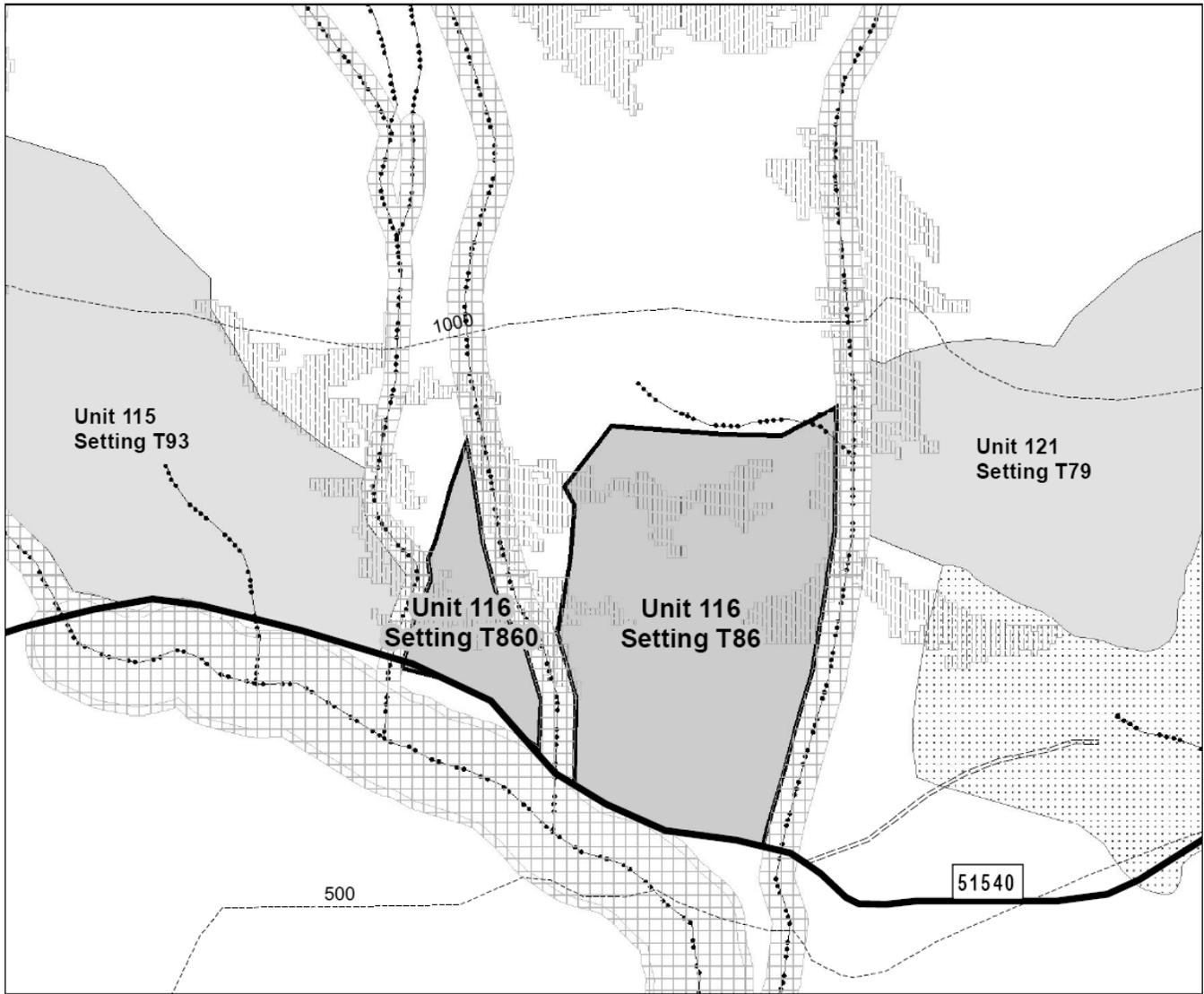
No resource concerns were identified for Roads, Botany, Geology, Heritage, Wildlife, and Recreation.

# Appendix ROD-1

Unit 116

Navy Timber Sale Selected Alternative

17 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD: TM</b>	<b>Logging Cable Systems:</b>	<b>Total Unit Acres: 15</b>	<b>Unit Number: 116</b>
		<b>Harvest Acres: 15</b>	<b>Net Harvest Volume (Saw) MBF: 254</b>

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of moderate to high site productivity, and is high elevation, uneven-aged, with a southern exposure. The stem decay and physical defect in trees is moderately high. Mistletoe infections are light, distributed in most western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as light and patchy. Porcupine damage was noted as recent and severe.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with high levels of stem decay and physical defect, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the moderately high windthrow risk even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, disease, and porcupine damage in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to landings located on the existing 51540 road.

**FISH/WATERSHED:**

There is a Class II, channel type MM1, stream adjacent to the southern unit boundary and Road 51540. No harvest within 120 feet of the channel. (BMP 12.6, 12.6a, 13.16). No harvest permitted below the 51540 road.

There are three Class III, channel types HC5 and HC6, streams within or adjacent to the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

There is a Class IV, channel type HC5, stream within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from stream if feasible, a minimum of partial suspension is required. Remove logging debris from stream (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is not seen from any visual priority travel route or use area.

**SOILS:** Unit includes scattered patches of slopes over 72 percent gradient. A slope stability assessment is included in the project record. (BMP 13.5) Based on the field review, slopes over 72 percent gradient will require full suspension to minimize soil disturbance and landslide potential. (BMP 13.9) This unit harvests 7 acres of forested wetlands; cable yarding will minimize soil disturbance.

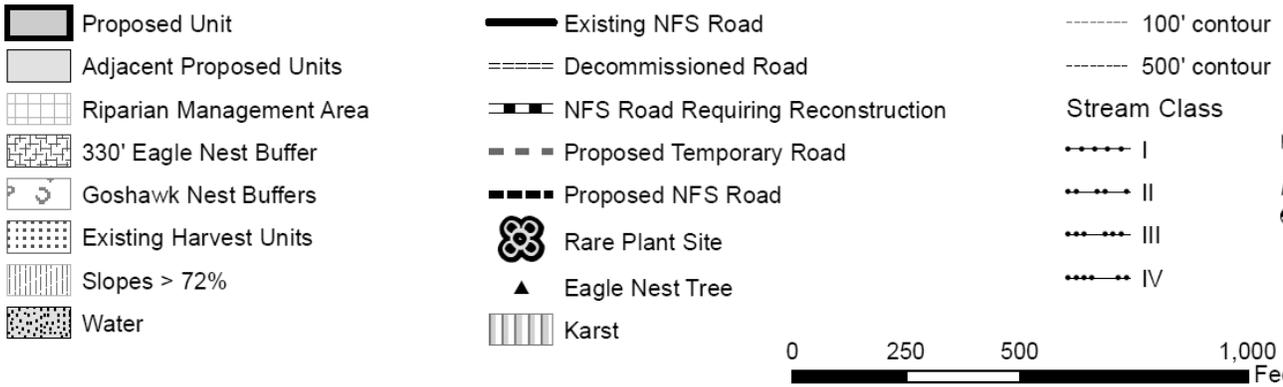
No resource concerns were identified for Roads, Botany, Heritage, Wildlife and Recreation.

# Appendix ROD-1

Unit 117

Navy Timber Sale Selected Alternative

11 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: TM	Logging Cable Systems:	Total Unit Acres: 11	Unit Number: 117
		Harvest Acres: 11	Net Harvest Volume (Saw) MBF: 181

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of moderate site productivity, and is low elevation, uneven-aged, with a southeastern exposure. The stem decay and physical defect in trees is moderately high. Mistletoe infections are light, distributed in most western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as absent.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with high levels of stem decay and physical defect, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the moderately high windthrow risk, even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to a landing located on the existing 51540 road. A short temporary spur may be necessary if the 51540 road is not outside of the beach buffer.

**FISH/WATERSHED:**

There is a Class III, channel type HC6, stream on the southern boundary of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** The relatively straight backline and squared off western corner of this unit will be seen from the head of Anita Bay. The SIO in this area is very low. Small unit size and location low on the slope will enable it to meet the very low SIO.

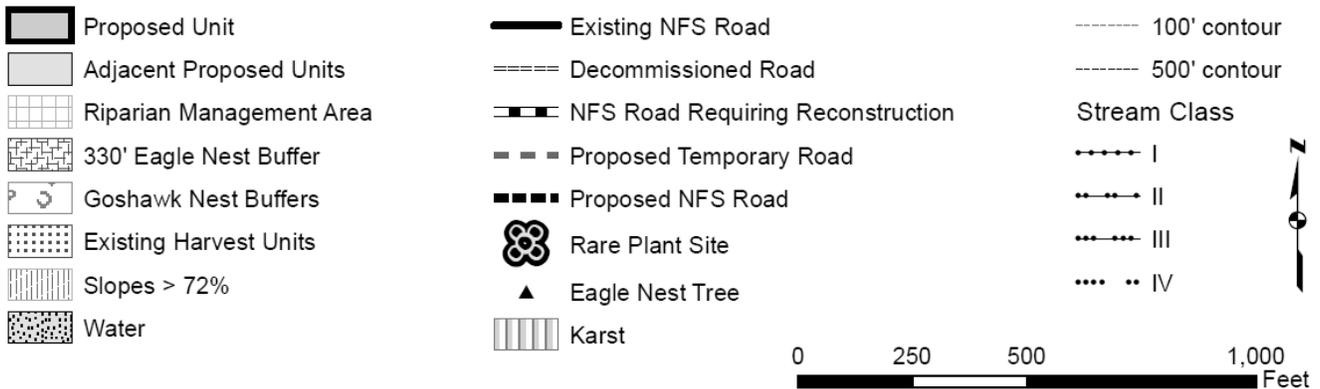
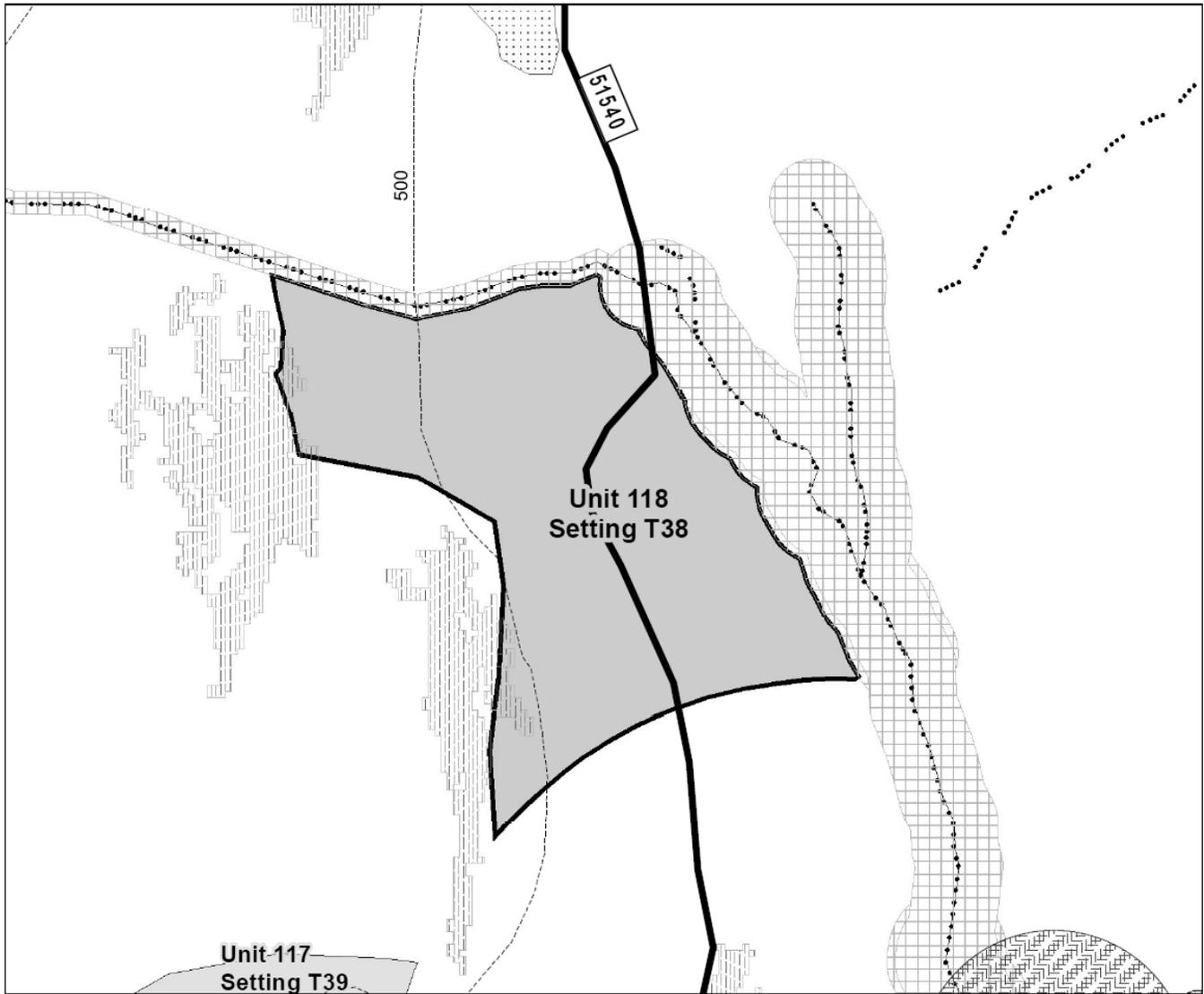
No resource concerns were identified for Roads, Geology, Heritage, Recreation, Botany, Wildlife, and Soils.

# Appendix ROD-1

Unit 118

Navy Timber Sale Selected Alternative

20 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM	<b>Logging Cable Systems:</b>	<b>Total Unit Acres:</b> 20	<b>Unit Number:</b> 118
		<b>Harvest Acres:</b> 20	<b>Net Harvest Volume (Saw) MBF:</b> 334

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of moderate site productivity, and is low elevation, uneven-aged, with a northeastern exposure. The stem decay and physical defect in trees is moderately high. Mistletoe infections are absent. Windthrow risk was rated as low. Cedar decline was recorded as absent.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with high levels of stem decay and physical defect, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the risk of windthrow, even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to landings located on the existing 51540 road. Shovel yarding may occur on the east side of the unit.

**FISH/WATERSHED:**

There is a Class II, channel types HC1 and MM1, stream on the east and north end of the unit. No harvest within 100 feet (HC) or 120 feet (MM) of the channel (BMP 13.9, 13.16).

There is a Class III, channel type HC5, section of stream adjacent to the northern unit boundary. No harvest in v-notch. (BMP 13.9, 13.16).

RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** Unit is seen from the head of the Anita Bay viewshed, and has an adopted very low SIO. The unit is barely seen, and the proposed prescription will meet a moderate SIO.

**SOILS:** Unit includes 0.5 acre on the backline with slopes over 72 percent gradient. A slope stability assesment is included in the project record. (BMP 13.5) Based on the field review, over 72 percent gradient will require full suspension to minimize soil disturbance and landslide potential. (BMP 13.9)

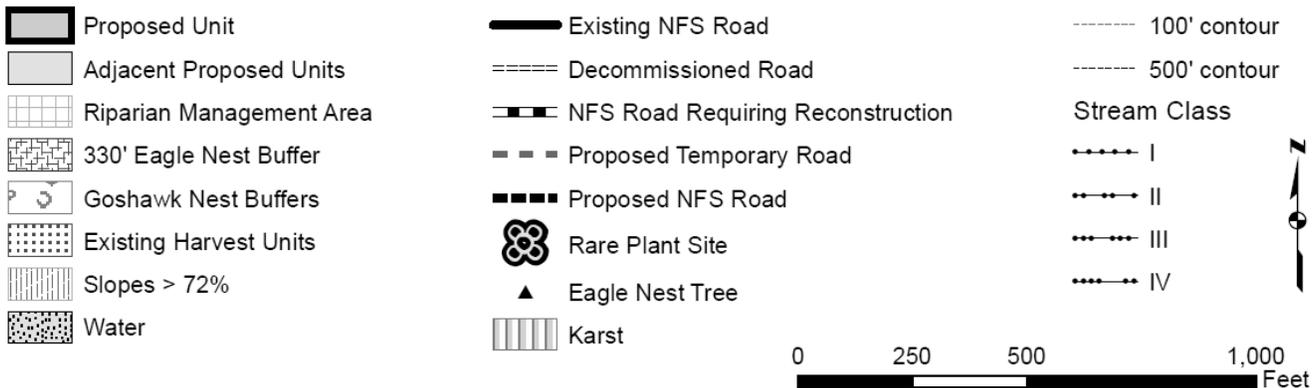
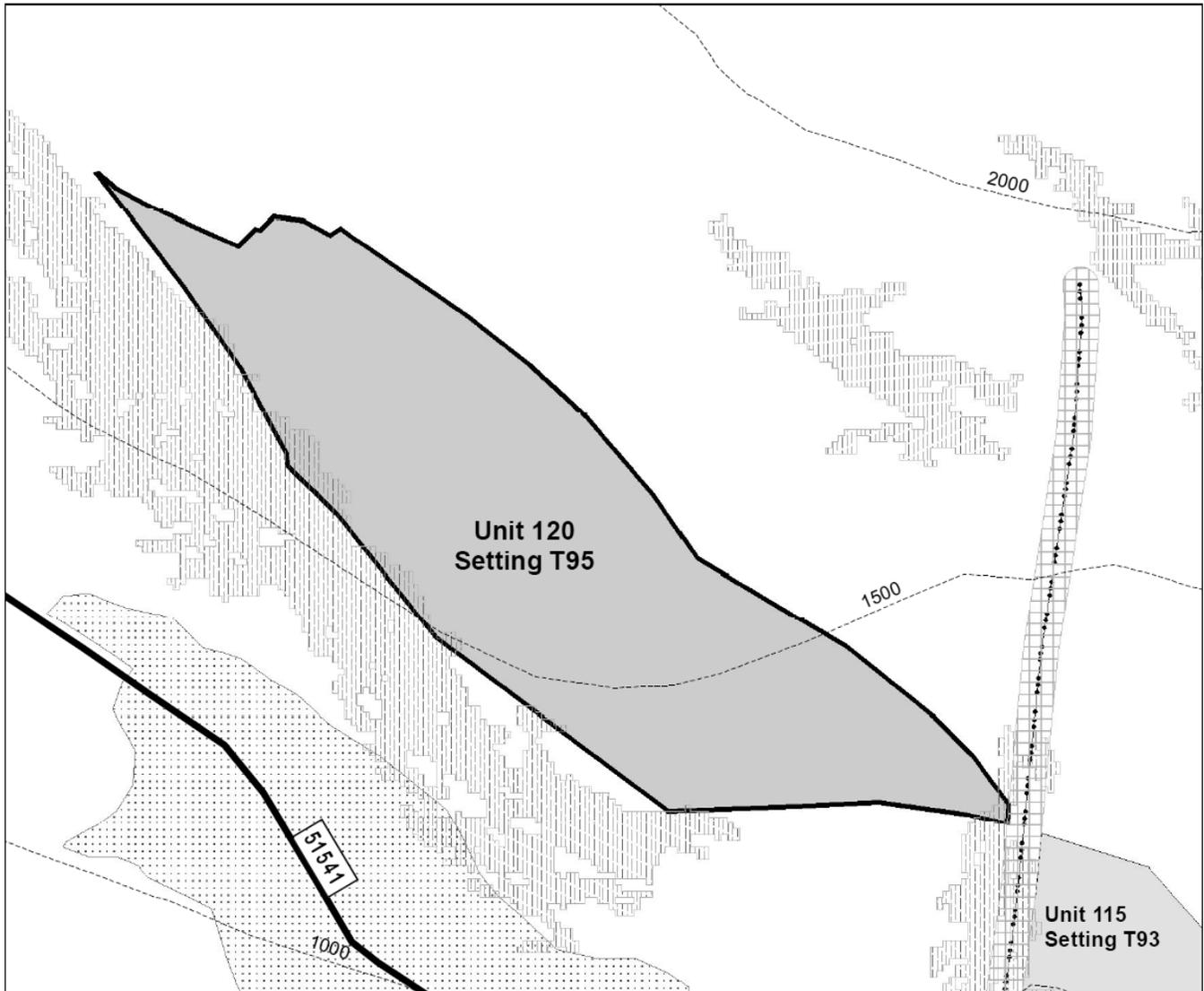
No resource concerns were identified for Roads, Botany, Geology, Heritage, Wildlife and Recreation.

# Appendix ROD-1

Unit 120

Navy Timber Sale Selected Alternative

26 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD: TM</b>	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 26	<b>Unit Number:</b> 120
		<b>Harvest Acres:</b> 26	<b>Net Harvest Volume (Saw) MBF:</b> 131

**SILVICULTURE:**  
Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of moderate site productivity, and is high elevation, uneven-aged, with a northeastern exposure. The stem decay and physical defect in trees is light. Mistletoe infections are light and scattered throughout western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as heavy distributed throughout the stand.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.

**TIMBER/LOGGING:** This unit is designed for helicopter yarding to landings along the existing 51541 road.

**FISH/WATERSHED:**  
 There is a portion of one Class III, channel type HC5 stream adjacent to the unit on the southeast side. Do not harvest in the v-notch (BMP 13.9, 13.16).

**SCENERY:** The unit is seen in the background from the head of the Burnett Inlet viewshed. It is not visible from Anita Bay. The adopted SIO for the unit is very low. The proposed prescription will meet a moderate SIO.

**SOILS:** Unit includes 2 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided.

**WILDLIFE:** The 70 percent retention would allow for the elevational migration of wildlife in conjunction with Unit 116.

**ROADLESS AREAS:** Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).

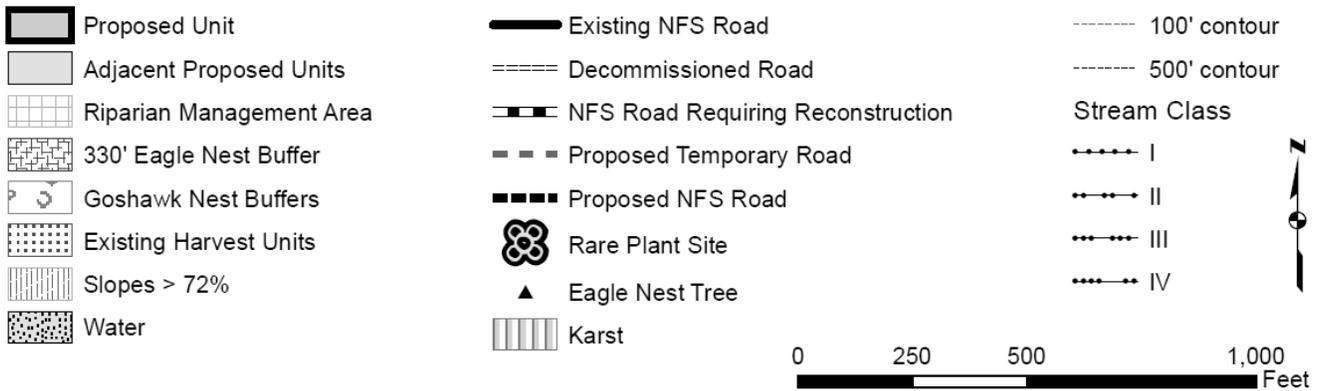
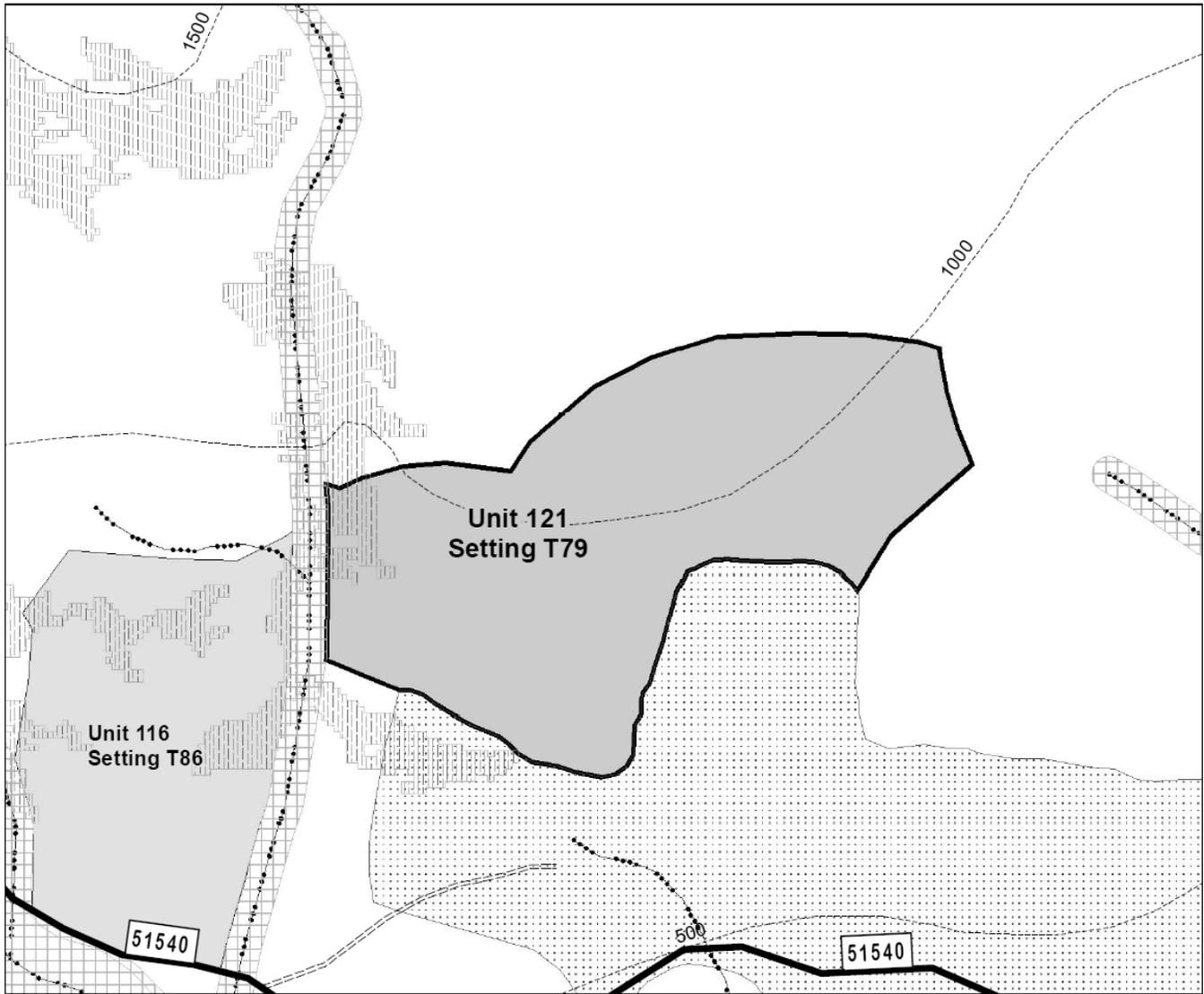
No resource concerns were identified for Roads, Wildlife, Geology, Botany, Recreation, and Heritage.

# Appendix ROD-1

Unit 121

Navy Timber Sale Selected Alternative

22 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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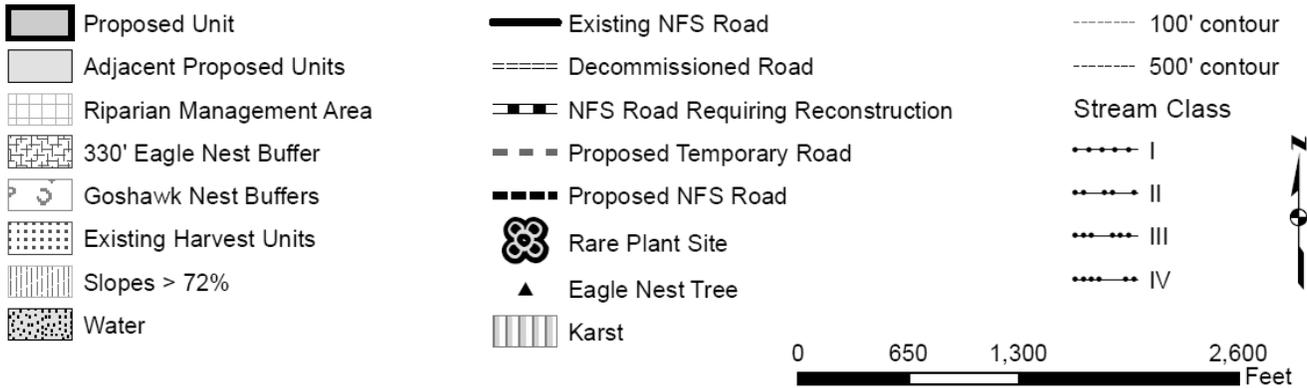
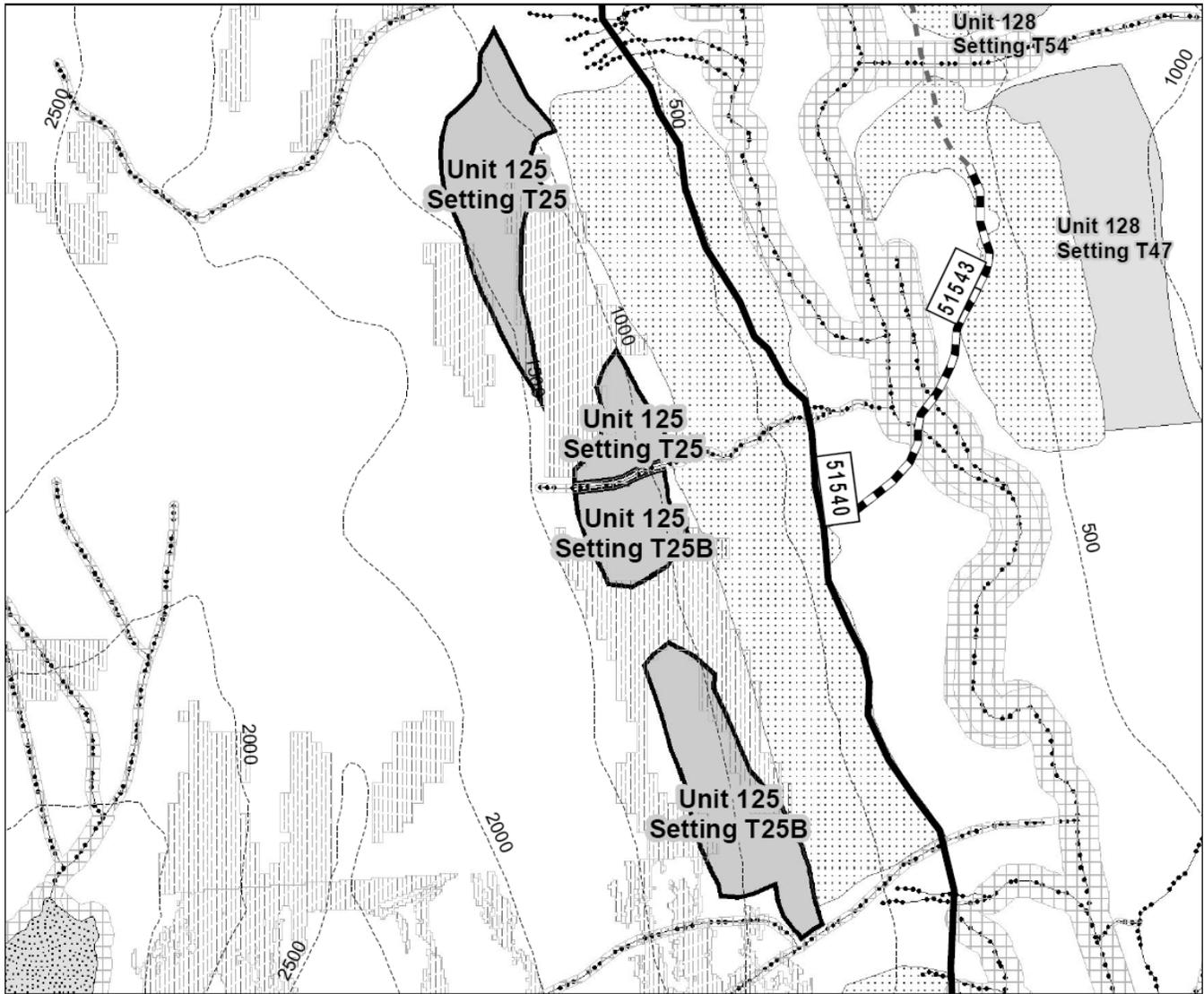
<b>LUD:</b> TM	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 22	<b>Unit Number:</b> 121
		<b>Harvest Acres:</b> 22	<b>Net Harvest Volume (Saw) MBF:</b> 108
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated multicanopy stand of moderate site productivity, and is high elevation, uneven-aged, with a southeastern exposure. The stem decay in trees is light, while physical defect is moderate. Mistletoe infections are light and scattered throughout western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as light and scattered throughout the stand.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings along a temporary road off of the existing 51540 road.</p>			
<p><b>ENGINEERING/ROADS:</b> Construct 0.15 mile of temporary road that enters an existing managed stand to shorten helicopter turn distances. Road will be decommissioned after the timber sale. The material source is located on Road 51540, mp 6.3. The temporary road will be constructed on an old road prism to minimize environmental impact.</p>			
<p><b>FISH/WATERSHED:</b>            There is one Class III, channel type HC5 stream on the unit boundary. Do not harvest in the v-notch (BMP 13.9, 13.16).</p>			
<p><b>SCENERY:</b> The unit is seen from the head of the Burnett Inlet and Anita Bay viewsheds. The adopted SIO is very low. The proposed prescription will meet a moderate SIO.</p>			
<p><b>SOILS:</b> This unit includes 3 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation; unit boundary will be adjusted to harvest on unstable slopes adjacent to the stream. (BMP 13.5)</p>			
<p><b>ROADLESS AREAS:</b> Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).</p>			
<p>No resource concerns were identified for Geology, Heritage, Botany and Wildlife.</p>			

# Appendix ROD-1

Unit 125

Navy Timber Sale Selected Alternative

54 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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<b>LUD:</b> TM	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 54	<b>Unit Number:</b> 125
		<b>Harvest Acres:</b> 54	<b>Net Harvest Volume (Saw)</b> MBF: 271

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of moderate site productivity, and is high elevation, uneven-aged, with an eastern exposure. The stem decay and physical defect in trees is heavy. Mistletoe infections are light and scattered throughout western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as absent.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.

**TIMBER/LOGGING:** This unit is designed for helicopter yarding to landings along the existing 51540 road.

**FISH/WATERSHED:**

There are two Class III, channel type HC5, streams adjacent to or within the unit. No harvest in the v-notch (BMP 13.9, 13.16).

**SCENERY:** The unit is seen in the distance from the head of the Burnett Inlet viewshed, and is not visible from Anita Bay. The adopted SIO is very low. The proposed prescription will meet a moderate SIO.

**SOILS:** The unit boundary was modified to remove unstable soils. The unit still includes 6 acres with slopes over 72 percent gradient; these acres were determined to be suitable for partial harvest based on the slope stability assessment.

**ROADLESS AREAS:** Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).

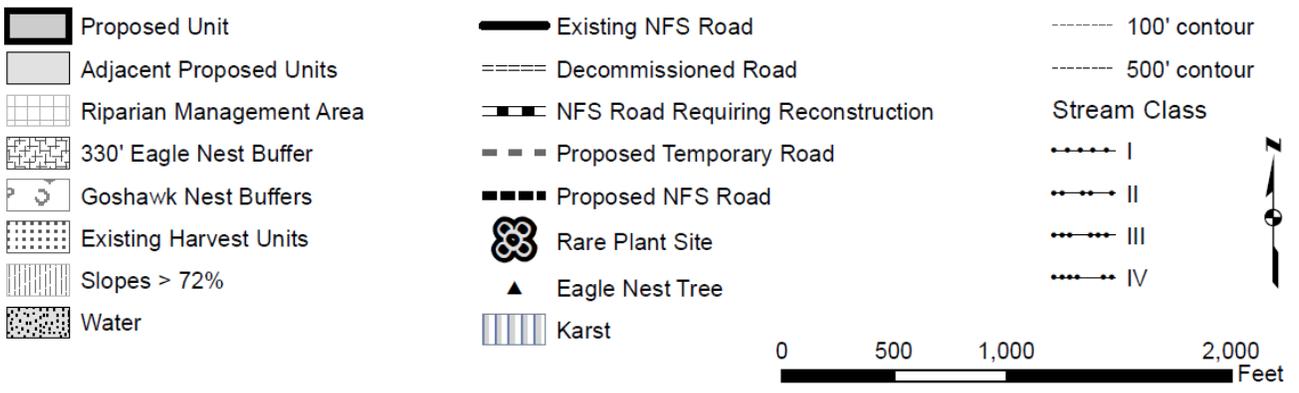
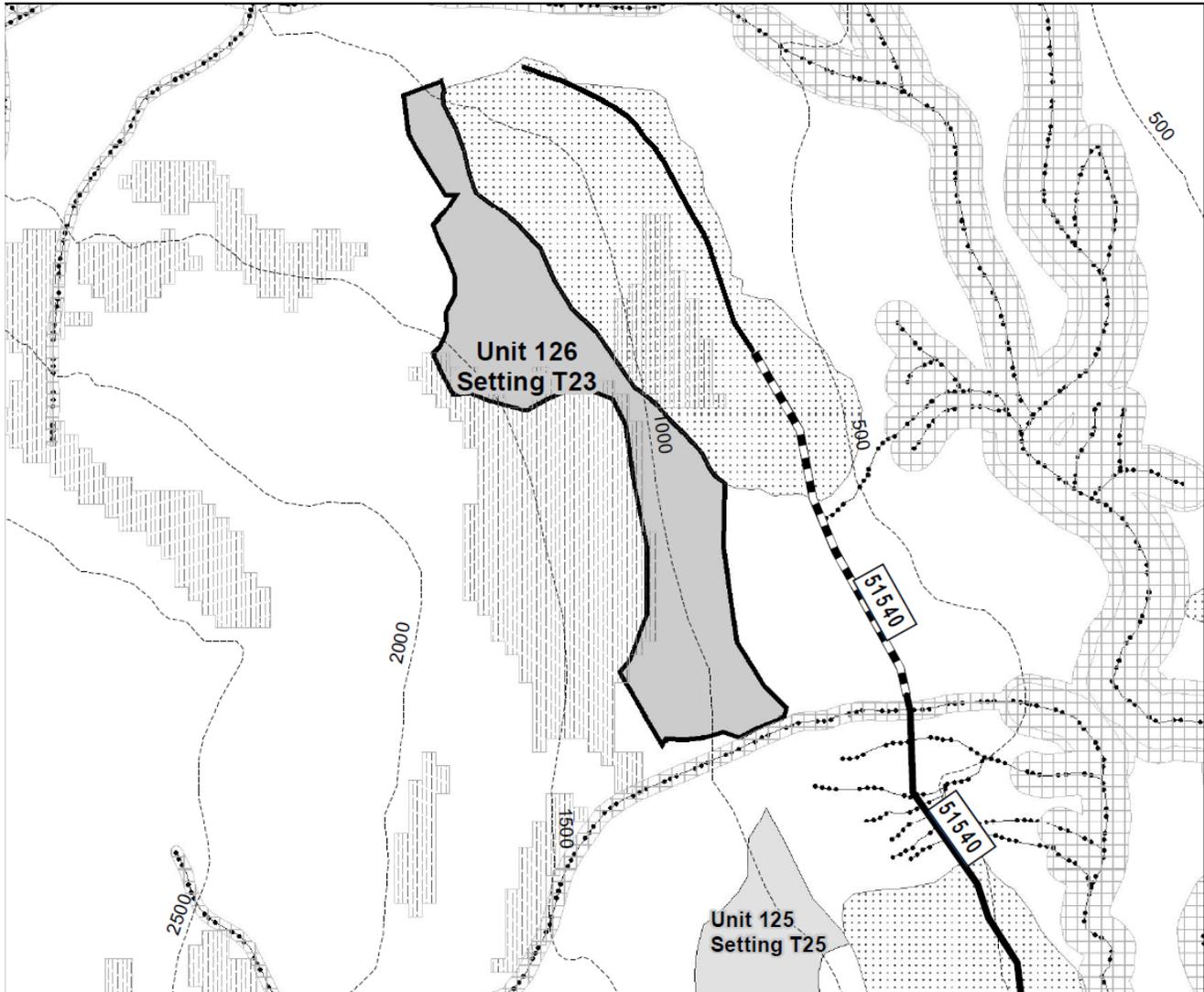
No resource concerns were identified for Roads, Wildlife, Geology, Botany, Recreation, and Heritage.

# Appendix ROD-1

Unit 126

Navy Timber Sale Selected Alternative

32 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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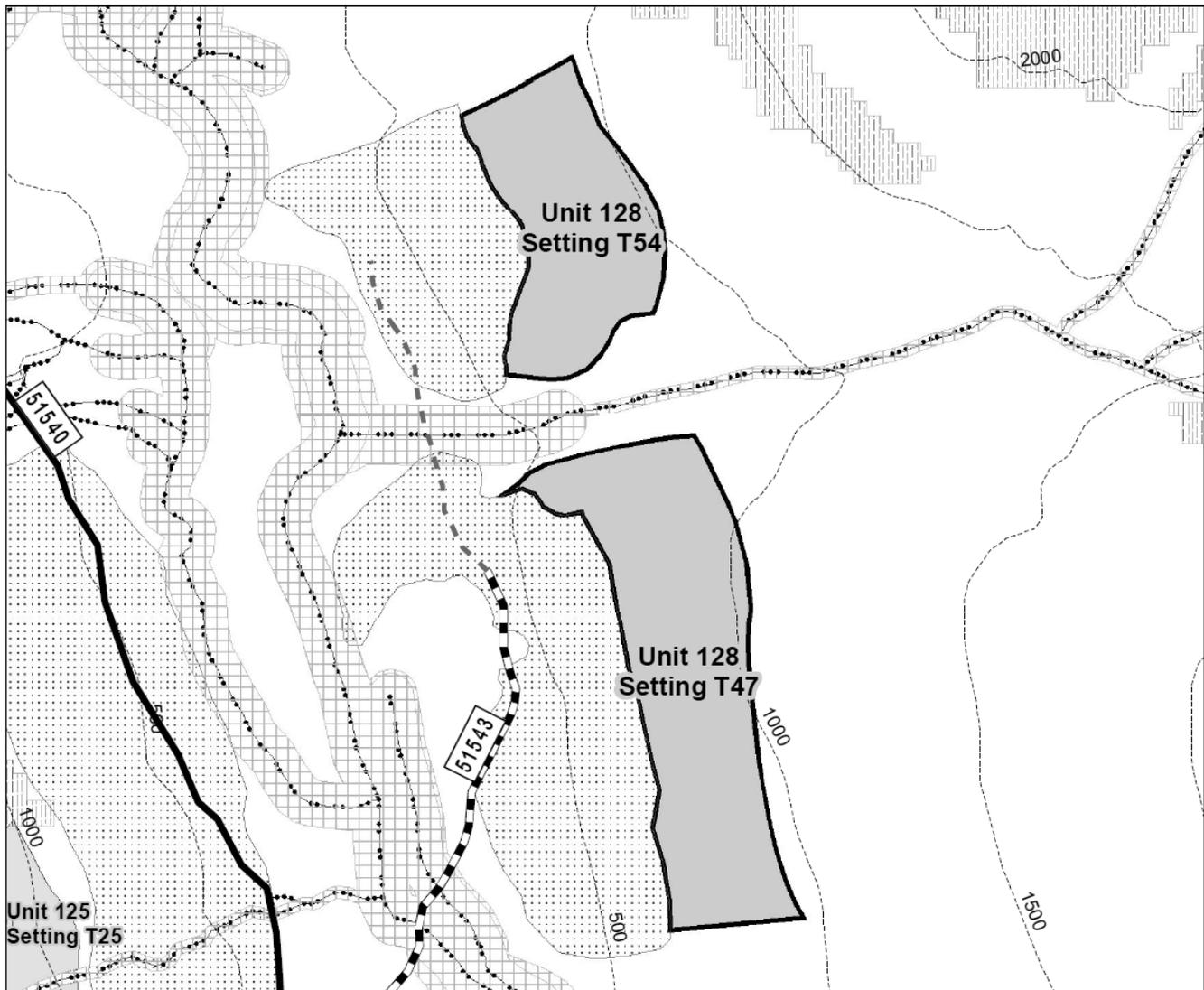
<b>LUD:</b> TM	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres:</b> 32	<b>Unit Number:</b> 126
		<b>Harvest Acres:</b> 32	<b>Net Harvest Volume (Saw) MBF:</b> 162
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated multicanopy stand of moderate to low site productivity, and is high elevation, uneven-aged, with an eastern exposure. The stem decay and physical defect in trees is moderate. Mistletoe infections are light and scattered throughout western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as light and scattered throughout the stand in patches.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings along the existing 51540 road.</p>			
<p><b>FISH/WATERSHED:</b>  There is a Class III, channel type HC6, stream on the unit boundary. No harvest in the v-notch (BMP 13.9, 13.16).</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> Unit includes 3 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided.</p>			
<p><b>ROADLESS AREAS:</b> Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).</p>			
<p>No resource concerns were identified for Roads, Wildlife, Geology, Botany, Recreation, and Heritage.</p>			

# Appendix ROD-1

Unit 128

Navy Timber Sale Selected Alternative

55 Acres



- |                          |                                   |                     |
|--------------------------|-----------------------------------|---------------------|
| Proposed Unit            | Existing NFS Road                 | 100' contour        |
| Adjacent Proposed Units  | Decommissioned Road               | 500' contour        |
| Riparian Management Area | NFS Road Requiring Reconstruction | <b>Stream Class</b> |
| 330' Eagle Nest Buffer   | Proposed Temporary Road           | I                   |
| Goshawk Nest Buffers     | Proposed NFS Road                 | II                  |
| Existing Harvest Units   | Rare Plant Site                   | III                 |
| Slopes > 72%             | Eagle Nest Tree                   | IV                  |
| Water                    | Karst                             |                     |



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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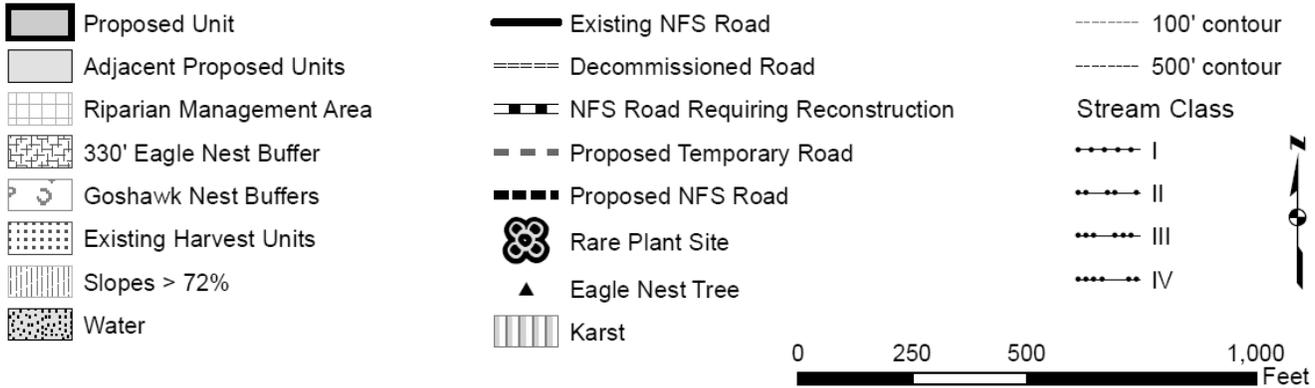
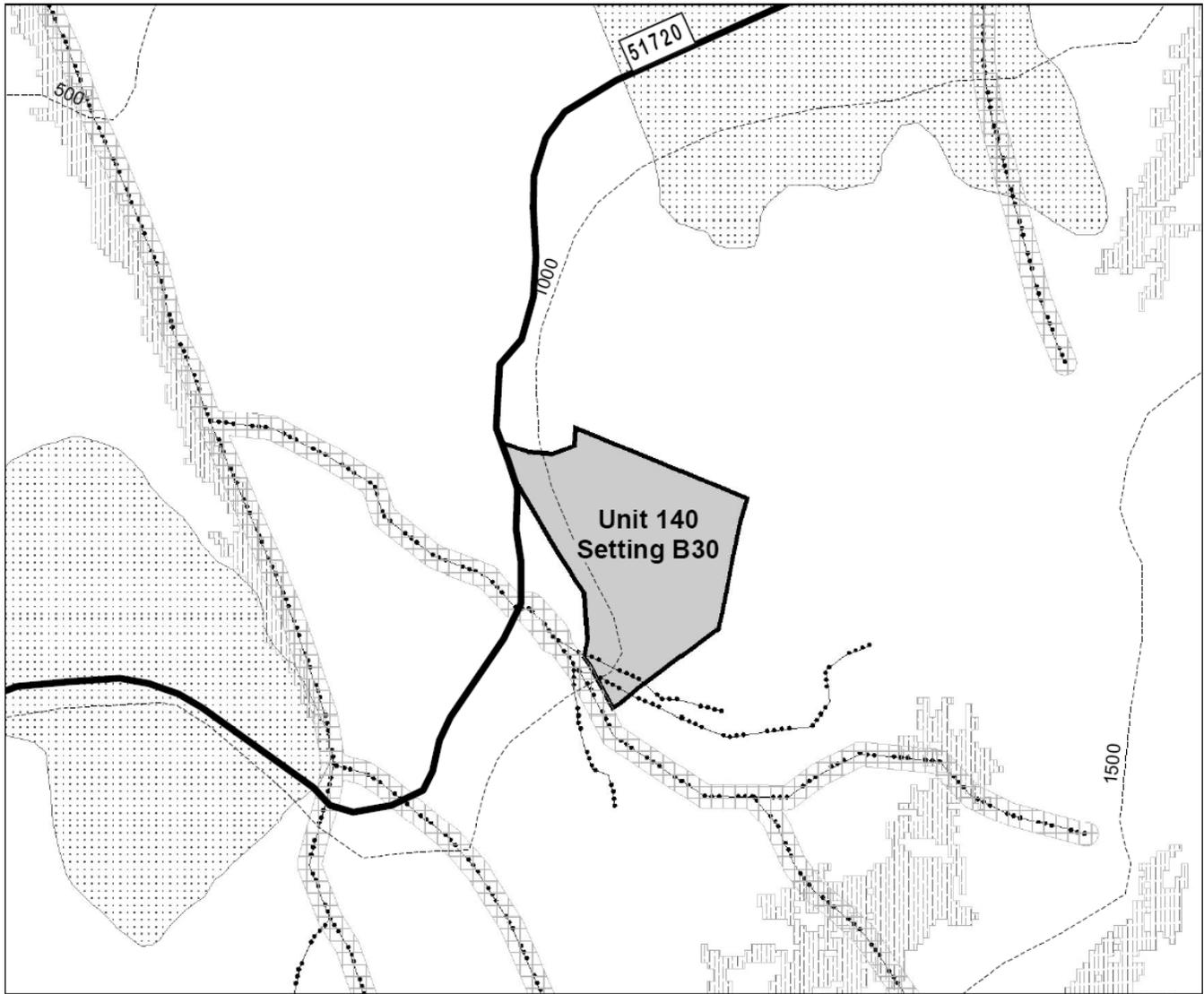
<b>LUD: TM</b>	<b>Logging Systems:</b> Helicopter	<b>Total Unit Acres: 55</b>	<b>Unit Number: 128</b>
		<b>Harvest Acres: 55</b>	<b>Net Harvest Volume (Saw) MBF: 273</b>
<p><b>SILVICULTURE:</b>  <u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated multicanopy stand of moderate to low site productivity, and is high elevation, uneven-aged, with a western exposure. The stem decay and physical defect in trees is moderate. Mistletoe infections are light and scattered throughout western hemlock. Windthrow risk was rated moderately high. Cedar decline was recorded as light and scattered throughout the stand in patches.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit 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 1 acre but may occasionally go up to 2 acres in size where needed to address insect and disease issues or capitalize on existing advanced regeneration of desirable tree species. Retain at least 50 percent of the cedar and spruce BA to ensure species diversity.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for helicopter yarding to landings along the existing 51543 road (reconstructed) or a temporary extension of this road.</p>			
<p><b>ENGINEERING/ROADS:</b> Construct 0.31 mile of temporary road. New temporary road construction will take place on an old road prism. Road will be decommissioned after the timber sale. The material source is located on Road 51540 mp 6.3.</p>			
<p><b>SCENERY:</b> Unit is not seen from any visual priority travel route or use area.</p>			
<p><b>SOILS:</b> Unit includes 3 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided.</p>			
<p><b>ROADLESS AREAS:</b> Part of this unit is adjacent to the North Etolin Inventoried Roadless Area (#232).</p>			
<p>No resource concerns were identified for Roads, Fish/Watershed, Wildlife, Geology, Botany, Recreation, and Heritage.</p>			

# Appendix ROD-1

Unit 140

Navy Timber Sale Selected Alternative

33 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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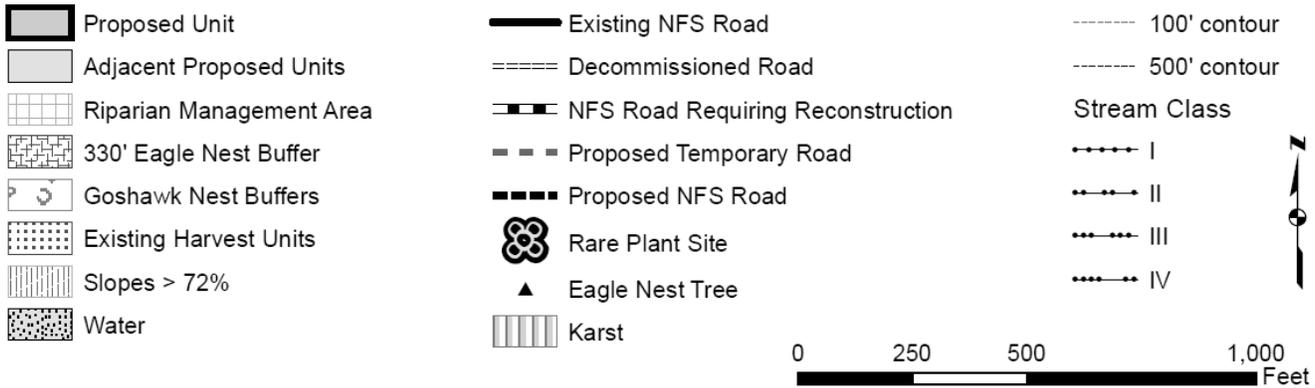
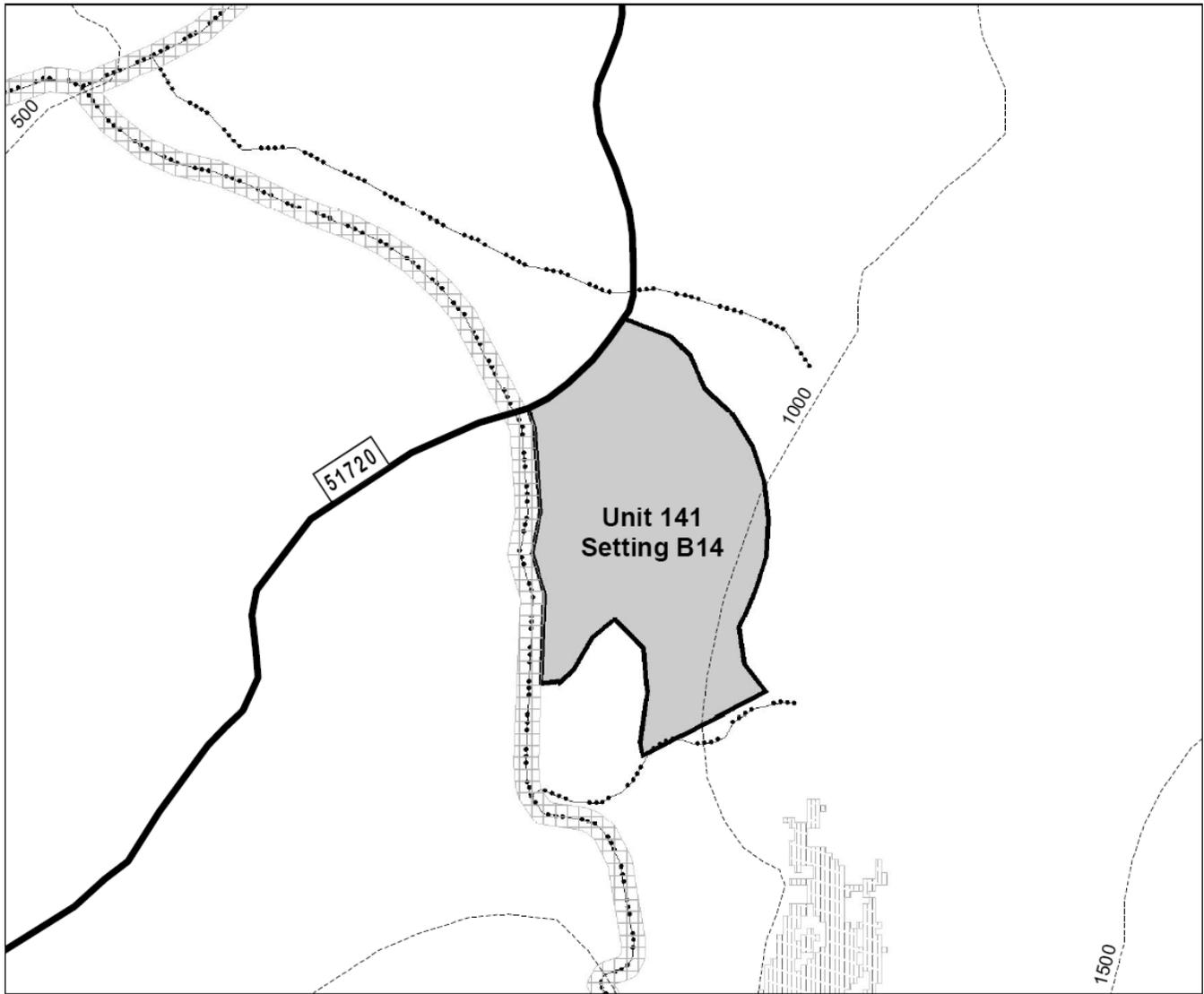
LUD: ML	Logging Cable Systems:	Total Unit Acres: 5	Unit Number: <b>140</b>
		Harvest Acres: 5	Net Harvest Volume (Saw) MBF: 83
<p><b>SILVICULTURE:</b></p> <p><u>Existing Stand Condition/Vegetation:</u> The stand is a wind-generated multicanopy stand of moderate site productivity, and is low elevation, uneven-aged, with a western exposure. The stem decay and physical defect in trees is light. Mistletoe infections are light and distributed throughout most western hemlock. Windthrow risk was rated as moderately high. Cedar decline was recorded as absent.</p> <p><u>Silvicultural Objective/Desired Condition:</u> 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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.</p> <p><u>Silvicultural Prescription:</u> This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with high levels of stem decay and physical defect, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the risk of windthrow even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.</p>			
<p><b>TIMBER/LOGGING:</b> This unit is designed for downhill cable yarding to a landing on the existing 51720 road.</p>			
<p><b>FISH/WATERSHED:</b></p> <p>There is a Class III, channel type HC5, stream adjacent to the southern portion of the unit. No harvest in the v-notch. (BMP 13.9, 13.16).</p> <p>There are two Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).</p> <p>RAW buffers may be necessary for RMA buffers, especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.</p>			
<p><b>SCENERY:</b> This unit will be visible from Anita Bay viewshed where the adopted SIO is low. The small unit size and irregular terrain will enable this unit to meet a moderate SIO.</p>			
<p><b>WILDLIFE:</b> Consider opportunities to allow for connectivity to the beach buffer.</p>			
<p>No resource concerns were identified for Roads, Geology, Heritage, Recreation, Botany and Soils.</p>			

# Appendix ROD-1

Unit 141

Navy Timber Sale Selected Alternative

10 Acres



<b>Unit Data Card – Navy Timber Sale Record of Decision</b>
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LUD: ML	Logging Cable Systems:	Total Unit Acres: 10	Unit Number: <b>141</b>
		Harvest Acres: 10	Net Harvest Volume (Saw) MBF: 158

**SILVICULTURE:**

Existing Stand Condition/Vegetation: The stand is a wind-generated multicanopy stand of moderate site productivity, and is high elevation, uneven-aged, with a western exposure. The stem decay and physical defect in trees is light. Mistletoe infections are light and distributed throughout most western hemlock. Windthrow risk was rated as moderately high. Cedar decline was recorded as absent.

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 that retains residual trees as needed to meet standards and guides for scenery as well as other objectives.

Silvicultural Prescription: This stand is being recommended for harvest at this time because it's not expected to obtain the desired condition given the current stand condition and growth trajectory. Trees are over-mature with high levels of stem decay and physical defect, resulting in a situation where stand growth is being offset or exceeded by decay. Due to the risk of windthrow even-aged clearcutting is being prescribed to preclude or minimize the risk of post harvest windthrow, to promote natural regeneration by opening up the canopy, to improve site productivity through increased soil temperature and to remove/minimize defect, and disease in the future stand to the maximum extent possible. Refer to the introduction to unit cards, marking guidelines and silvicultural prescription for more information.

**TIMBER/LOGGING:** This unit is designed for downhill cable yarding to a landing on the existing 51720 road.

**FISH/WATERSHED:**

There is a Class III, channel type HC5, stream adjacent to the western portion of the unit. No harvest in the v-notch. (BMP 13.9, 13.16).

There is a Class IV, channel type HC, stream within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RAW buffers may be necessary for RMA buffers, especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

**SCENERY:** This unit will be visible from the Anita Bay viewshed where the adopted SIO is low. The unit's small size and irregular shape combined with irregular terrain will enable it to meet a moderate to low SIO.

**SOILS:** This unit includes 2 acres with slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. The unit harvests 2 acres of forested wetlands; cable yarding will minimize soil disturbance.

No resource concerns were identified for Roads, Geology, Heritage, Recreation, Botany and Wildlife.

## Appendix ROD-1

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# Appendix ROD-2

## Road Cards

### Road Management Objectives

#### Purpose and Use

The road management objectives (RMOs) presented in this appendix establish the intended purpose and display design maintenance and operation criteria (as per FSH 7709.55) for each proposed (51451, 51009) and reconstructed (51540, 51543) National Forest System (NFS) road in the Navy project area. The information on the RMO form will be part of the Forest Transportation Atlas, a permanent database that can be updated periodically as access needs, issues, and budgets change (FSM 7711.03). The information on the site-specific design criteria form will be used during design, construction, and initial monitoring of any road work proposed in this document.

#### General Design Criteria

The general design criteria provide various descriptions of the type of road and the intended purpose and future use of the road. From this information, the maintenance and operation criteria can be developed. All Navy Timber Sale roads are constructed and maintained for silvicultural purposes. Wetlands will be avoided to the extent practicable. The practices described in BMP 12.5 will be applied to minimize impacts to wetlands where avoidance is not practicable. Therefore, all proposed roads meet the criteria for a silvicultural exemption from permitting under the Clean Water Act Section 404.

General Design Criteria and Elements are shown on the RMO portion of the road cards and are defined as follows:

- Functional Class: Local (L), Collector (C), and Arterial (A) classifications
- Service Life: Long (L) or Short (S), Constant (C) or Intermittent (I)

#### Operation Criteria

The operation criteria section includes a presentation of each of the five traffic management strategies identified in FSM 7731 (encourage, accept, discourage, prohibit, and eliminate) to be applied to different traffic classes on each road. The traffic management narrative describes what actions will be taken in order to apply each strategy. For example, if the strategy “eliminate” is prescribed for standard passenger and high-clearance vehicles, the narrative describes the method to accomplish this, such as removal of stream crossing structures, gating, etc.

#### Site-specific Design Criteria

The site-specific design criteria include road location objectives, wetland information, erosion control, proposed rock borrow sources, and all streams within the project area with proposed construction or rehabilitation of stream crossing structures.

#### Best Management Practices

The Forest Service recently issued National Core BMPs (USFS 2012). Directives for using these BMPs are currently in development. The Navy Timber Sale will implement the most up-to-date BMP guidance. Currently, this ROD cites the Alaska Region BMPs, which are fully described in FSH 2509.22 (USFS 2006). A crosswalk between the Alaska Region BMPs and the national BMPs has been placed in the project planning file for reference.

## Appendix ROD-2

### Operational and Objective Maintenance Levels

Some BMPs are implemented through the location of roads; others are translated into timber harvest and road contract provisions to ensure implementation.

Operational Maintenance Levels indicate the level of road maintenance, Maintenance Level (ML) 2, during sale-related activities. Objective Maintenance Levels indicate the long-term maintenance plan for the roads as described in the following definitions. Applicable maintenance levels for the project area are:

- **Maintenance Level 1 (ML 1):**  
Roads are placed in storage between intermittent uses. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level.  
After timber harvest is completed, roads would be evaluated for erosion potential and measures would be implemented to reduce sediment delivery from the road surface and fills and reduce the risk of crossing failure and stream diversion.  
Road storage may include the removal of drainage structures and bridges, and construction of water bars, rolling dips and other necessary measures to protect resources including soils, water quality, fisheries, and wildlife. This is typically a long-term condition. The road remains in the NFS and may be reopened at a later date.
- **Maintenance Level 2 (ML 2):** Roads are maintained for high-clearance vehicles and monitored for resource protection. Traffic would be minor, consisting of logging trucks during sale operations, and administrative uses.

### Alaska Forest Resources and Practices Act

Under the Alaska Forest Resources and Practices Act (AFRPA) all roads will be maintained as "Active" during harvest-related activities. After these activities are completed, the roads will be maintained as AFRPA class "Inactive" as shown on the road cards. These classes include:

- **Active:** A forest road being actively used for hauling logs, pulpwood, chips, or other major forest products, or rock and other roadbuilding materials.
- **Inactive:** A forest road on which commercial hauling is discontinued for one or more logging seasons, and the forest landowner desires continuation of access for fire control, forest management activities, occasional or incidental use for forest products harvesting, or similar activities. Not open to motorized vehicles, but may be accessible to non-motorized users. Road drainage structures may or may not be removed.

One more AFRPA class, "Closed" is not used in this project:

- **Closed:** A road is closed when the following activities have been completed: a road is outslopped or waterbarred, or is left in a condition suitable to control erosion. The ditches are also left in a condition suitable to control erosion, and bridges, culverts, and fills are removed from surface waters.

The road segments are described using mileposts (MP) as beginning and ending points (Beginning milepost = Bmp; Ending milepost = Emp). Lengths are given in miles (mi). Road width is given in feet. Culverts are identified as cmp.

**Blasting Restrictions** Seasonal restrictions on blasting are required within ½ mile of active bald eagle nests. All nests are considered active from March 1-May 31; restrictions continue through August 31 unless nests are proven to be inactive.

During road construction, blasting operations will be designed to reduce the risk of mass failure on potentially unstable or saturated soils (BMP 14.6). Blasting and/or excavation under saturated soil conditions are restricted.

### **Erosion Control**

All erosion control measures are required to be in place before the end of the normal operating season, and maintained during operations outside the normal operating season.

See the project area map (below) showing location of all existing and proposed project area roads.

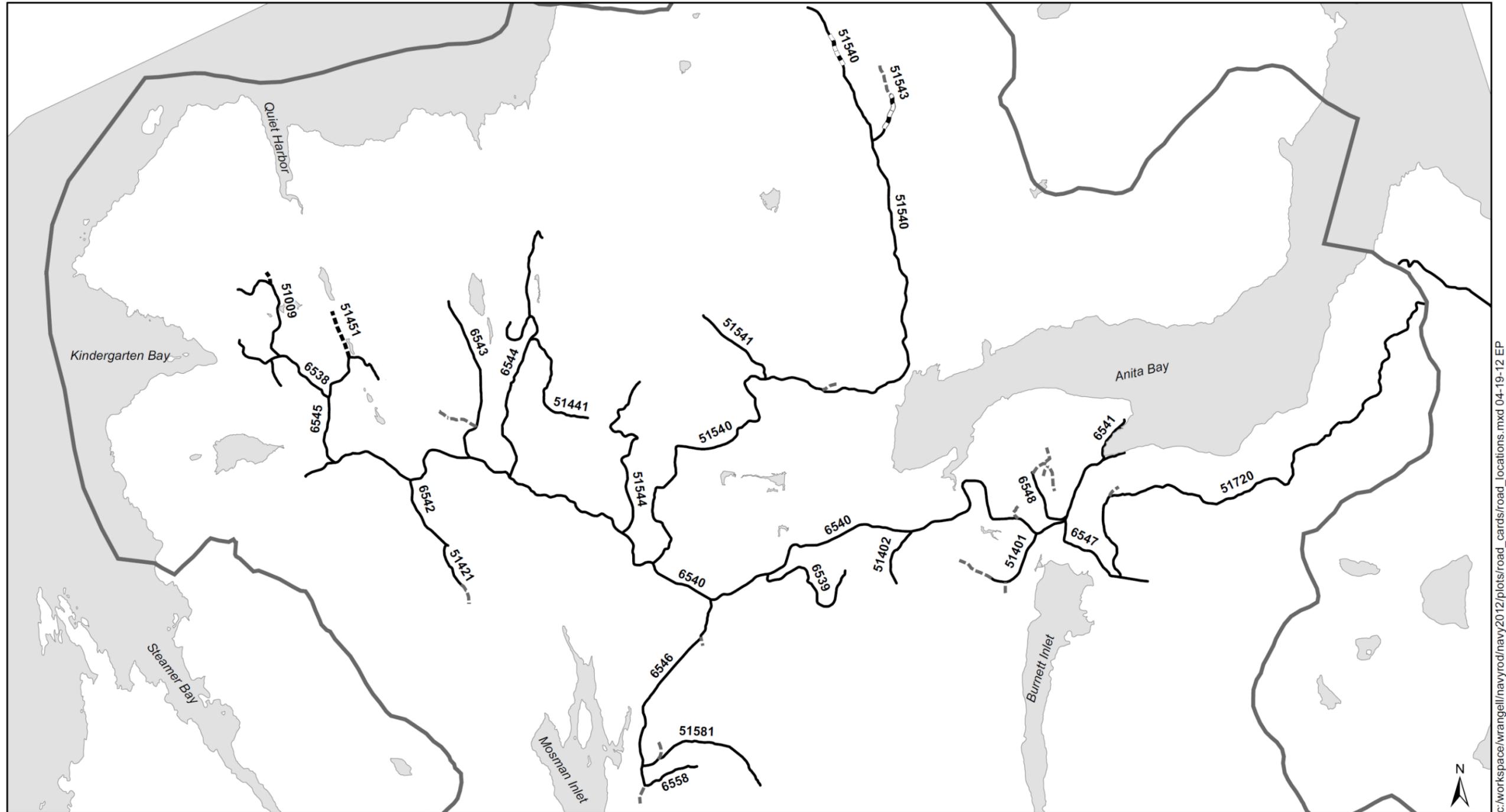
### **Temporary Roads**

Temporary roads are decommissioned after harvest activities are completed. Decommissioning automatically involves pulling any culverts that were installed. Decommissioning activities result in the stabilization and restoration of unneeded roads to a more-natural state. They will not be driveable by motorized vehicles, but may be accessible to non-motorized users. Road drainage structures are removed and stream channels restored to their original contours. These roads are not part of the NFS road system.

Temporary roads are shown on the roadcard location map (below) but do not have individual road cards. Temporary roads are shown on and described in the unit cards in Appendix ROD-1.

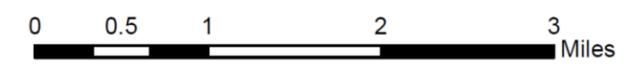
## Appendix ROD-2

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- |                       |                                   |
|-----------------------|-----------------------------------|
| Project Area Boundary | NFS Road Requiring Reconstruction |
| Water                 | Proposed Temporary Road           |
| Existing Roads        | Proposed NFS Road                 |

Navy Timber Sale  
 ROD  
 Roadcard  
 Location Map



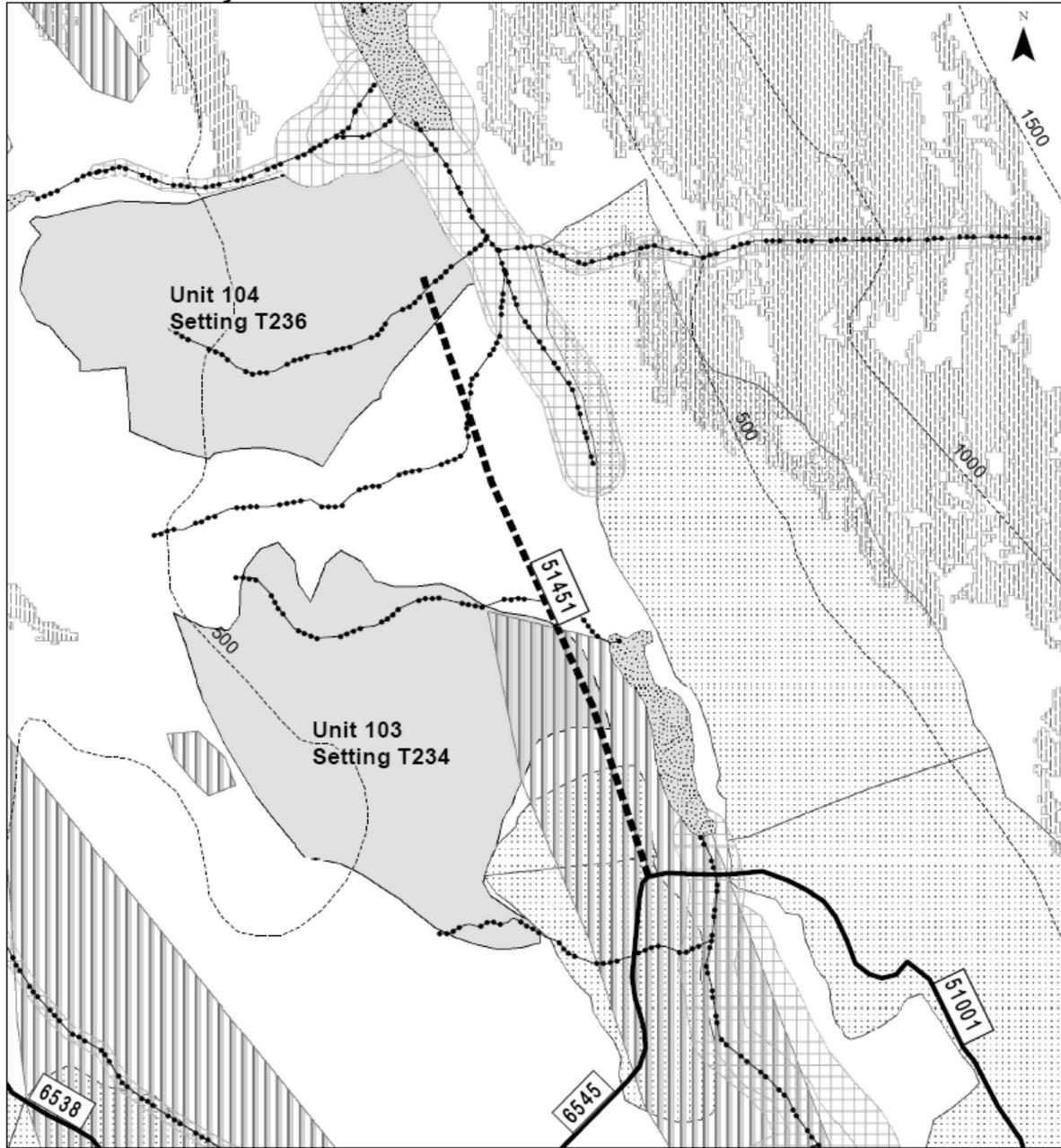
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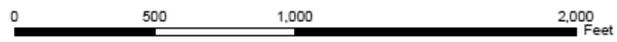
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# Appendix ROD-2

## Navy Timber Sale Selected Alternative Road 51451



- |                          |                                   |                  |
|--------------------------|-----------------------------------|------------------|
| Adjacent Proposed Units  | Existing Roads                    | Stream Class I   |
| Existing Harvest Units   | NFS Road Requiring Reconstruction | Stream Class II  |
| Slopes > 72%             | Proposed Temporary Road           | Stream Class III |
| Karst                    | Proposed NFS Road                 | Stream Class IV  |
| Goshawk Nest Buffers     | 100' contour                      |                  |
| Riparian Management Area | 500' contour                      |                  |
| Water                    |                                   |                  |



## Road Management Objectives

<b>Project/FEIS:</b> Navy		<b>System:</b> Anita Bay		<b>Land Use Designation:</b> TM, ML	
<b>Route Number:</b> 51451		<b>Route Name:</b> Lunch Time		<b>Status:</b> Planned	
<b>Begin M.P.:</b> 0.00	<b>Length (miles):</b> 0.48		<b>Begin Termini:</b> MP 1.18 of the 6545 Rd.	<b>End Termini:</b> MP 0.48 in Unit 104	

## General Design Criteria and Elements

<b>Functional Class:</b> Local	<b>Service Life:</b> I	<b>Traffic Service Level:</b> D	<b>Surface:</b> Shot rock
<b>Width:</b> 14 feet	<b>Critical Vehicle:</b> Yarder	<b>Design Vehicle:</b> Log truck	<b>Design Speed:</b> 10 mph

**Intended Purpose/Future Use:** The intended purpose of this road is for timber management in Units 103 and 104. The road will be used for future timber management and administration.

## Maintenance Criteria:

Bmp	Emp	Operational Maintenance Level Existing Condition	Objective Maintenance Level Desired Condition	AFRPA Class:
0.00	0.48	2		Active
0.00	0.48		1	Inactive

## Operation Criteria

<b>Highway Safety Act:</b> No	<b>Jurisdiction:</b> National Forest System ownership
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## Travel Management Strategies:

Encourage:	NA
Accept:	Non-motorized use after timber harvest.
Discourage:	Public use during the timber harvest.
Prohibit:	Motorized vehicles after the timber harvest.
Eliminate:	NA

**Travel Management Narrative:** During the period of timber harvest, the road will be managed as closed to motorized vehicles unless provided with a written authorization or for administrative activities (Maintenance Level 2). The road will be closed to public motorized use. After the timber sale the road will be managed as Maintenance Level 1. The road provides opportunity for current and future harvest. It is part of the minimum road system necessary for management in the Timber Production and Modified Landscape LUD.

**District Ranger Approval (signature)** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Appendix ROD-2

### Site-specific Design Criteria Road No. 51451

**Road Location:** The purpose of this road is to access Units 103 and 104. The road travels northwest as it hugs the base of a ridge while avoiding the RMA buffer at the lower portion of the valley. Downhill yarding will be used for both units. The road maintains a relatively constant elevation along its length.

**Wetlands:** The road is located in forested wetlands between MP .20 and MP .45 due to alignment and grade constraints.

**Erosion Control:** An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

**Rock Pits:** Rock pits will require site-specific erosion control plans (BMP 14.18). The rock pit at MP 1.2 of the 6545 road was noted as a potential initial rock source. After construction of the initial road segment, it is expected that another small rock pit will be required, most likely near the end of this road.

Resource Information (If applicable):

**Timber/Logging:** N/A

**Soils/Water:** Adequate structures will be necessary for all unmapped crossings (BMP 14.17). After the timber sale, all crossings would be evaluated and treated as needed during road storage to reduce risk of failure.

**Silviculture:** N/A

**Wildlife/Botany:** Off-road equipment will be cleaned to remove seeds, vegetative matter and other debris, according to the timber sale contract, to help reduce the spread of invasive plant species.

**Lands/Minerals/Geology/Karst:** Mapped moderate-vulnerability karst in the eastern portion of the unit was not found to contain any features requiring protection within the unit or along the proposed road line accessing the unit.

**Scenery/Recreation:** N/A

**Heritage:** N/A

**Stream Crossings  
Road No. 51451**

<b>A.) Mi: 0.22</b>	<b>AHMU: 4</b>	<b>Channel Type: HC5</b>	<b>BF Width: 2-4 feet</b>	<b>BF Depth: NA</b>	<b>Substrate: Cobble, gravel, silt</b>
<b>Gradient: 18%</b>	<b>Structure: 18-24" CMP</b>	<b>Passage Req'd: No</b>	<b>Timing Dates: None</b>		

Narrative: N/A

<b>B.) Mi: 0.37</b>	<b>AHMU: 4</b>	<b>Channel Type: HC5</b>	<b>BF Width: 1-3 feet</b>	<b>BF Depth: NA</b>	<b>Substrate: gravel, cobble</b>
<b>Gradient: 15%</b>	<b>Structure: 18-24" CMP</b>	<b>Passage Req'd: No</b>	<b>Timing Dates: None</b>		

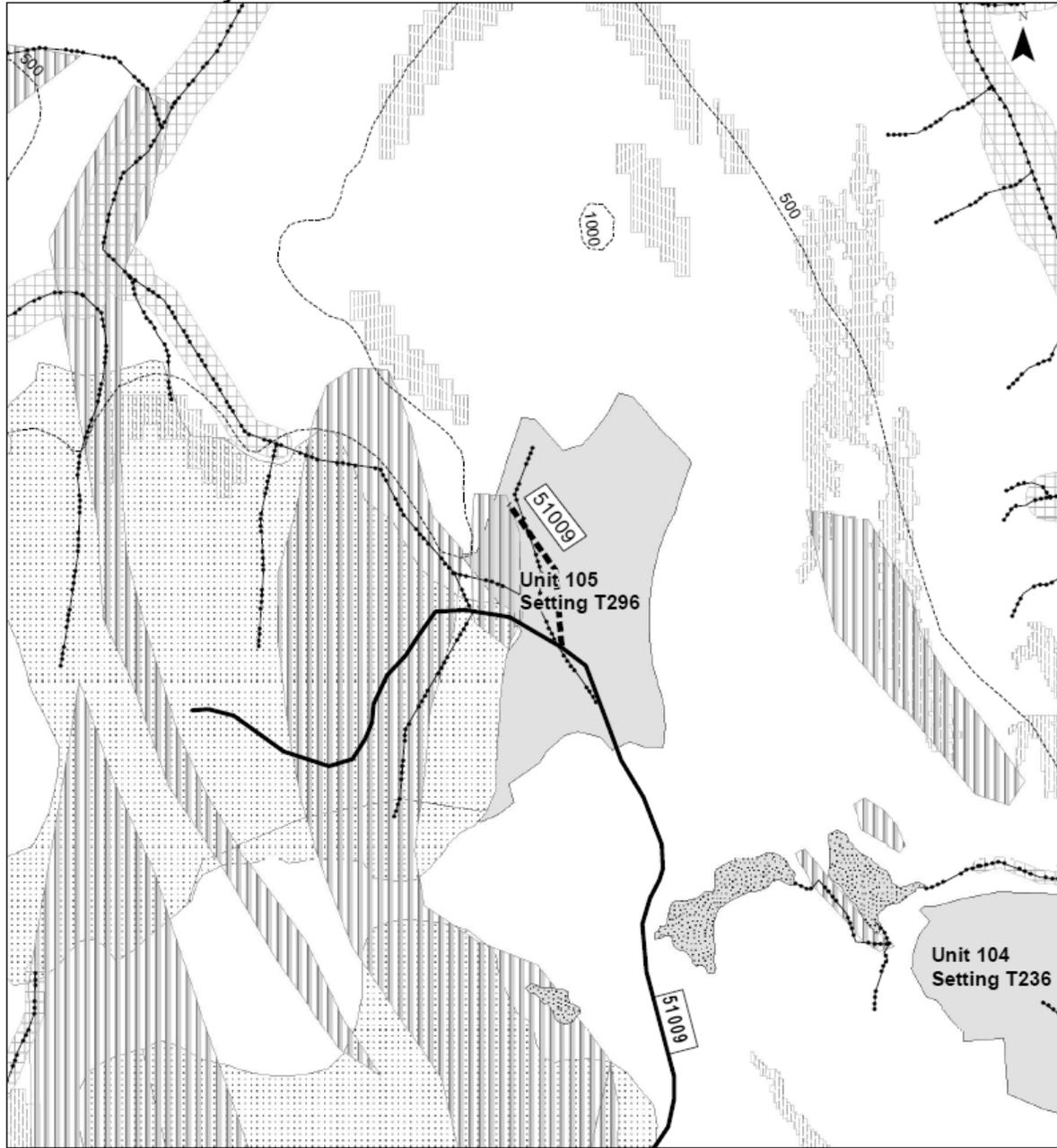
Narrative: N/A

<b>C.) Mi: 0.47</b>	<b>AHMU: 4</b>	<b>Channel Type: HC5</b>	<b>BF Width: 1-3 feet</b>	<b>BF Depth: NA</b>	<b>Substrate: gravel, cobble</b>
<b>Gradient: 19%</b>	<b>Structure: 18-24" CMP</b>	<b>Passage Req'd: No</b>	<b>Timing Dates: None</b>		

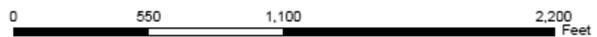
Narrative: N/A

# Appendix ROD-2

## Navy Timber Sale Selected Alternative Road 51009



- |                          |                                   |                  |
|--------------------------|-----------------------------------|------------------|
| Adjacent Proposed Units  | Existing Roads                    | Stream Class I   |
| Existing Harvest Units   | NFS Road Requiring Reconstruction | Stream Class II  |
| Slopes > 72%             | Proposed Temporary Road           | Stream Class III |
| Karst                    | Proposed NFS Road                 | Stream Class IV  |
| Goshawk Nest Buffers     | 100' contour                      |                  |
| Riparian Management Area | 500' contour                      |                  |
| Water                    |                                   |                  |



## Road Management Objectives

<b>Project/FEIS:</b> Navy		<b>System:</b> Anita Bay		<b>Land Use Designation:</b> ML	
<b>Route Number:</b> 51009		<b>Route Name:</b> Kindergarten Pass		<b>Status:</b> Planned	
<b>Begin MP:</b> 0.80	<b>Length (miles):</b> 0.12		<b>Begin Termini:</b> MP 0.67 of the 6538 Rd.	<b>End Termini:</b> MP 0.92 in Unit 105.	

### General Design Criteria and Elements

<b>Functional Class:</b> Local	<b>Service Life:</b> I	<b>Traffic Service Level:</b> D	<b>Surface:</b> Shot rock
<b>Width:</b> 14 feet	<b>Critical Vehicle:</b> Yarder	<b>Design Vehicle:</b> Log truck	<b>Design Speed:</b> 10 mph

**Intended Purpose/Future Use:** The intended purpose of this road is for timber management in Unit 105. The road will be used for future timber management and administration.

### Maintenance Criteria:

Bmp	Emp	Operational Maintenance Level Current Condition	Objective Maintenance Level Desired Condition	AFRPA Class
0.00	0.80	2	2	Active
		<b>Planned Condition</b>		
0.80	0.92	2		Active
0.80	0.92		1	Inactive

### Operation Criteria

<b>Highway Safety Act:</b> No	<b>Jurisdiction:</b> National Forest System ownership
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### Travel Management Strategies (MP 0.80-0.92):

Encourage:	NA
Accept:	Non-motorized use after timber harvest.
Discourage:	Public use during the timber harvest.
Prohibit:	Motorized vehicles after the timber harvest.
Eliminate:	NA

**Travel Management Narrative:** During the period of timber harvest, the road will be managed as closed to motorized vehicles unless provided with a written authorization or for administrative activities (Maintenance Level 2). The road will be closed to public motorized use. After the timber sale, the road from MP 0.80 to 0.92 will be managed as Maintenance Level 1. The road provides opportunity for current and future harvest. It is part of the minimum road system necessary for management in the Modified Landscape LUD.

**District Ranger Approval (signature)** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Appendix ROD-2

### Site-specific Design Criteria

#### Road No. 51009

**Road Location:** The purpose of this road is to access Unit 105.

**Wetlands:** The road has been located to avoid as much wetlands as possible.

**Erosion Control:** An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

**Rock Pits:** Rock pits will require site-specific erosion control plans (BMP 14.18). The rock pit at MP 0.9 of the 51009 road was noted as a potential rock source. Other potential rock sources are the nearby existing rock pits.

Resource Information (If applicable):

**Timber/Logging:** N/A

**Soils/Water:** Adequate structures will be needed for all unmapped stream crossings (BMP 14.17). After the timber sale, all crossings would be evaluated and treated as needed during road storage to reduce risk of failure.

**Silviculture:** N/A

**Wildlife/Botany:** Off-road equipment will be cleaned to remove seeds, vegetative matter and other debris, according to the timber sale contract, to help reduce the spread of invasive plant species.

**Lands/Minerals/Geology/Karst:** Moderate-vulnerability karst west of proposed road. Small solution (karst) features found along proposed road location contributing to Class IV stream. Limit soil disturbance to minimize potential sediment delivery to downslope karst area (BMPs 14.3, 14.5, 14.10, 14.12, 14.19).

**Scenery/Recreation:** N/A

**Heritage:** N/A

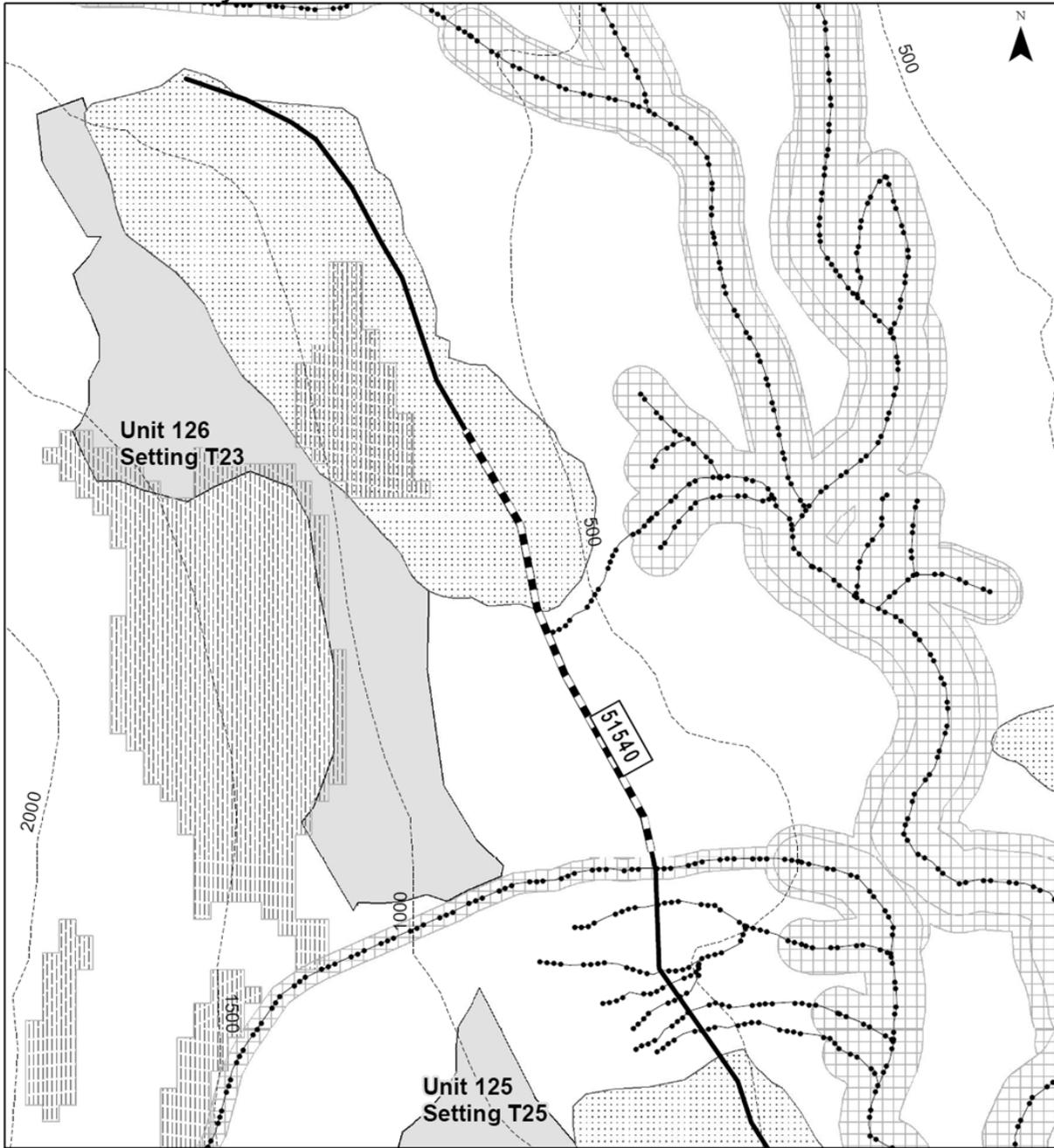
**Stream Crossings**  
**Road No. 51009**

<b>A.) Mi: 0.918</b>	<b>AHMU: 4</b>	<b>Channel Type: HC1</b>	<b>BF Width: 1-3'</b>	<b>BF Depth:</b>	<b>Substrate: bedrock, gravel, cobble</b>
<b>Gradient: 8-10%</b>	<b>Structure: 18-24" CMP</b>	<b>Passage Req'd: No</b>	<b>Timing Dates: None</b>		

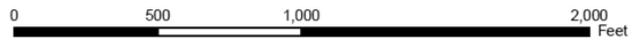
**Narrative: N/A**

# Appendix ROD-2

## Navy Timber Sale Selected Alternative Road 51540



- |                          |                                   |                  |
|--------------------------|-----------------------------------|------------------|
| Adjacent Proposed Units  | Existing Roads                    | Stream Class I   |
| Existing Harvest Units   | NFS Road Requiring Reconstruction | Stream Class II  |
| Slopes > 72%             | Proposed Temporary Road           | Stream Class III |
| Karst                    | Proposed NFS Road                 | Stream Class IV  |
| Goshawk Nest Buffers     | 100' contour                      |                  |
| Riparian Management Area | 500' contour                      |                  |
| Water                    |                                   |                  |



### Road Management Objectives

<b>Project/FEIS:</b> Navy		<b>System:</b> Anita Bay		<b>Land Use Designation:</b> TM	
<b>Route Number:</b> 51540		<b>Route Name:</b> Fishtrap		<b>Status:</b> Existing	
<b>Begin MP:</b> 7.64	<b>Length (miles):</b> 0.42	<b>Begin Termini:</b> MP 6.16 of 6540 Rd.	<b>End Termini:</b> MP 8.38 in Section 11		

**General Design Criteria and Elements**

<b>Functional Class:</b> Local	<b>Service Life:</b> I	<b>Traffic Service Level:</b> D	<b>Surface:</b> Shot rock
<b>Width:</b> 14 feet	<b>Critical Vehicle:</b> Yarder	<b>Design Vehicle:</b> Log truck	<b>Design Speed:</b> 10 mph

**Intended Purpose/Future Use:** The intended purpose of this road is for timber management in Unit 126. The road will be used for future timber management and administration.

**Maintenance Criteria:**

Bmp	Emp	Operational Maintenance Level Existing	Maintenance Condition	Objective Maintenance Level Desired	Condition	AFRPA Class
7.64	8.06	1				Inactive
			<b>Planned Condition</b>			
7.64	8.06	2				Active
7.64	8.06			1		Inactive

**Operation Criteria**

<b>Highway Safety Act:</b> No	<b>Jurisdiction:</b> National Forest System ownership
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**Travel Management Strategies (MP 7.64 -8.06):**

Encourage:	NA
Accept:	Non-motorized use after timber harvest.
Discourage:	NA
Prohibit:	Public motorized vehicles during and after the timber harvest.
Eliminate:	NA

**Travel Management Narrative:** During the period of timber harvest, the road will be managed as closed to motorized vehicles unless provided with a written authorization or for administrative activities (Maintenance Level 2). The road will be closed to public motorized use. After the timber sale the road will be managed as Maintenance Level 1. The road provides opportunity for current and future harvest. It is part of the minimum road system necessary for management in the Timber Production LUD. After the timber harvest the road from MP 7.64 -8.06 will be closed and the structure at MP 7.64 will be removed, which will eliminate motorized access.

**District Ranger Approval (signature)** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Appendix ROD-2

### Site-specific Design Criteria Road No. 51540

**Road Location:** The purpose of this road reconditioning is to access Unit 126. The existing 51540 road should be adequate for hauling with minimal maintenance up to MP 7.6. From MP 7.6 to MP 8.1 the road needs a couple of stream crossing structures replaced and minor maintenance, including replacing shot rock.

**Wetlands:** Wetlands exist along the proposed road reconditioning from MP 7.8 to MP 8.1. Reconditioning will avoid placing fill in wetlands.

**Erosion Control:** An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

**Rock Pits:** Due to the relatively minor nature of the road reconditioning, pit development will not be needed for this road. It is likely that rock will be needed to replace shot rock where necessary. The rock will most likely come from an existing rock pit.

Resource Information (If applicable):

**Timber/Logging:** N/A

**Soils/Water:** At MP 7.64, a removed bridge needs to be replaced with a structure. There are several blocked culverts on the existing road; culvert cleaning will be necessary to remove accumulated debris. There are also several erosion features that need to be corrected and ditches that need to be cleaned (BMPs 14.17, 14.20, and 14.5). After the timber sale, the bridge would be removed and all other crossings would be evaluated and treated as needed during road storage to reduce risk of failure.

**Silviculture:** N/A

**Wildlife/Botany:** Off-road equipment will be cleaned to remove seeds, vegetative matter and other debris, according to the timber sale contract, to help reduce the spread of invasive plant species.

**Lands/Minerals/Geology/Karst:** N/A

**Scenery/Recreation:** N/A

**Heritage:** N/A

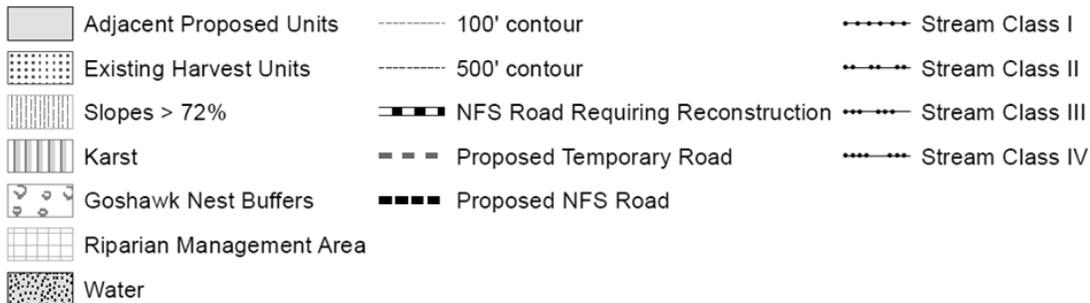
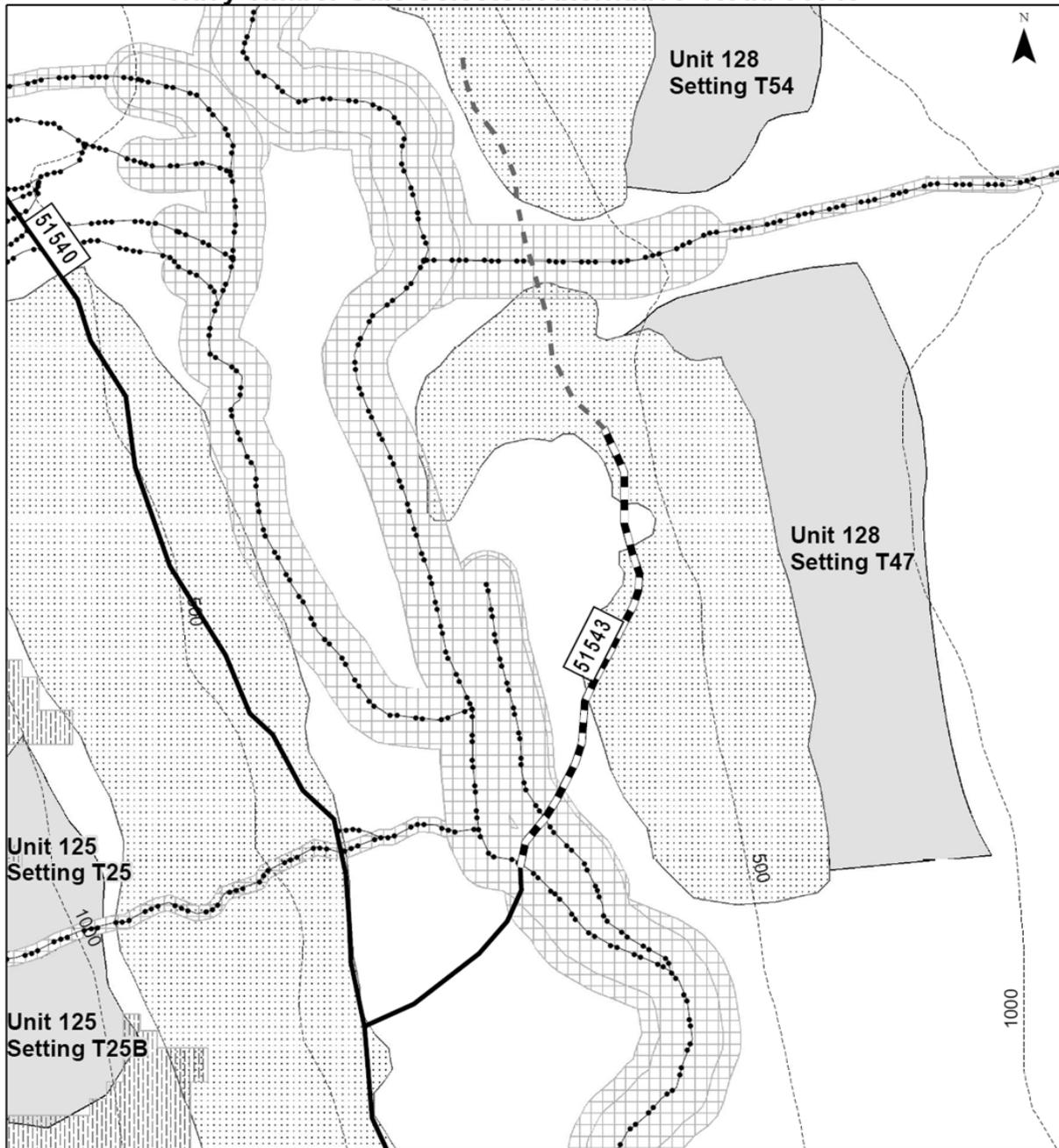
**Stream Crossings**  
**Road No. 51540**

<b>A.) Mi: 7.64</b>	<b>AHMU: 3</b>	<b>Channel Type: HC6</b>	<b>BF Width: 29 feet</b>	<b>BF Depth: Not noted</b>	<b>Substrate: boulder, cobble</b>
<b>Gradient: 23%</b>	<b>Structure: Bridge</b>	<b>Passage Req'd: No</b>	<b>Timing Dates: None</b>		

**Narrative: N/A**

# Appendix ROD-2

## Navy Timber Sale Selected Alternative Road 51543



### Road Management Objectives

<b>Project/FEIS:</b> Navy		<b>System:</b> Anita Bay		<b>Land Use Designation:</b> TM	
<b>Route Number:</b> 51543		<b>Route Name:</b> East Fishtrap		<b>Status:</b> Existing	
<b>Begin MP:</b> 0.18	<b>Length (miles):</b> 0.35		<b>Begin Termini:</b> MP 6.91 of the 51540 Rd.	<b>End Termini:</b> MP 0.53 in Section 12	

**General Design Criteria and Elements**

<b>Functional Class:</b> Local	<b>Service Life:</b> I	<b>Traffic Service Level:</b> D	<b>Surface:</b> Shot rock
<b>Width:</b> 14 feet	<b>Critical Vehicle:</b> Yarder	<b>Design Vehicle:</b> Log truck	<b>Design Speed:</b> 10 mph

**Intended Purpose/Future Use:** The intended purpose of this road is for timber management in Unit 128. The road will be used for future timber management and administration.

**Maintenance Criteria:**

Bmp	Emp	Operational Maintenance Level Existing Condition	Objective Maintenance Level Desired Condition	AFRPA Class
0.18	0.53	1		Inactive
		<b>Planned Condition</b>		
0.18	0.53	2		Active
0.18	0.53		1	Inactive

**Operation Criteria**

<b>Highway Safety Act:</b> No	<b>Jurisdiction:</b> National Forest System ownership
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**Travel Management Strategies:**

Encourage:	NA
Accept:	Non-motorized use after timber harvest.
Discourage:	NA
Prohibit:	Public motorized vehicles during and after the timber harvest.
Eliminate:	NA

**Travel Management Narrative:** During the period of timber harvest, the road will be managed as closed to motorized vehicles, unless provided with a written authorization or for administrative activities (Maintenance Level 2). The road will be closed to public motorized use. After the timber sale the road will be managed as Maintenance Level 1. The road provides opportunity for current and future harvest. It is part of the minimum road system necessary for management in the Timber Production LUD. After the timber harvest, the road from MP 0.18-0.53 will be closed and the bridge at MP 0.18 will be removed, which will eliminate all motorized access.

**District Ranger Approval (signature)** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Appendix ROD-2

### Site-specific Design Criteria Road No. 51543

**Road Location:** The purpose of this road reconditioning is to access Unit 128. At MP 0.18, a large bridge has been removed.

**Wetlands:** Wetlands exist along proposed road reconditioning from MP 0.18 to MP 0.3. No additional fill will be placed in the wetlands. These wetlands will not be affected by the proposed road reconditioning.

**Erosion Control:** An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

**Rock Pits:** Due to the relatively minor nature of the road reconditioning, pit development will not be needed for this road. It is likely that rock will be needed to replace shot rock where necessary. The rock will most likely come from an existing rock pit.

Resource Information (If applicable):

**Timber/Logging:** N/A

**Soils/Water/Fish:** At MP 0.18, the bridge over Fishtrap Creek will need to be replaced. This is a Class II resident fish stream (Dolly Varden char verified) with a suggested construction timing window of June 1<sup>st</sup> to September 15<sup>th</sup> (BMP 14.6). At MP 0.22, a Class II stream has an existing 36" culvert. There are several culverts left on the existing road; culvert cleaning will be necessary to remove accumulated debris. The ditches will also need to be cleaned where necessary (BMPs 14.17, 14.20, and 14.5). After the timber sale, the bridge would be removed and the culvert at MP 0.22 evaluated and treated as needed to ensure fish passage. All other crossings would be evaluated as well, and treated as needed during road storage to reduce risk of failure.

**Silviculture:** N/A

**Wildlife/Botany:** Off-road equipment will be cleaned to remove seeds, vegetative matter and other debris, according to the timber sale contract, to help reduce the spread of invasive plant species.

**Lands/Minerals/Geology/Karst:** N/A

**Scenery/Recreation:** N/A

**Heritage:** N/A

**Stream Crossings  
Road No. 51543**

<b>A.) Mi: 0.18</b>	<b>AHMU: 2</b>	<b>Channel Type: LC1</b>	<b>BF Width: 35 feet</b>	<b>BF Depth: Not noted</b>	<b>Substrate: bedrock, boulder</b>
<b>Gradient: 2%</b>	<b>Structure: Bridge</b>	<b>Passage Req'd: Yes</b>	<b>Timing Dates: June 1<sup>st</sup>-September 15th</b>		

**Narrative: N/A**

<b>B.) Mi: 0.22</b>	<b>AHMU: 2</b>	<b>Channel Type: MM1</b>	<b>BF Width: 3-5 feet</b>	<b>BF Depth: Not noted</b>	<b>Substrate: cobble, gravel</b>
<b>Gradient: 2%</b>	<b>Structure: 36" CMP existing</b>	<b>Passage Req'd: NA</b>	<b>Timing Dates: NA</b>		

**Narrative: 36" Pipe is present and will be evaluated at end of timber sale and treated as needed to ensure fish passage and reduce risk of failure. If it is removed, timing windows may apply.**

## Appendix ROD-2

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# Appendix ROD-3

## Additional Information since the Navy Final Environmental Impact Statement

### Introduction

The 2015 Record of Decision (ROD) replaces the 2009 Record of Decision for this project. The 2009 Record of Decision selected a modified Alternative D and subsequently was remanded on appeal. The Responsible Official was directed to either select an alternative that was analyzed in detail in the Final Environmental Impact Statement (FEIS), or supplement the Draft EIS (DEIS) to provide detailed analysis for the Selected Alternative. The Responsible Official intends to select Alternative F, which was analyzed in detail in the FEIS, ensuring that the public has had adequate opportunity to review and comment on the alternative, in compliance with the direction in the Regional Forester's letter of remand.

Before making his decision in the Navy Timber Sale project, the Forest Supervisor, the Responsible Official for this decision, directed an interdisciplinary team (IDT) to review and analyze any changes in information since the 2009 FEIS. The interdisciplinary team identified and analyzed new or updated information and compared the effects to the FEIS.

This report summarizes the analysis of the new and updated information since the release of the Navy Timber Sale FEIS in 2009. It was used to inform the Responsible Official in making his decision for the Navy Timber Sale project on the significance of new information. Further analysis was included to address or clarify issues raised in the 2009 appeal points that also pertain to activities proposed by the 2015 Decision. The results of this analysis are documented in the addendums and updates to the resource reports in the Navy project record, and summarized in this appendix by resource. The project record also includes all of the 2009 appeal points and responses.

### New Information

The Council of Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) require Federal agencies to prepare supplements to a draft or final EIS if “[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns” or “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 CFR § 1502.9(c)(1). To comply with this requirement, the Forest Service Handbook (FSH) 1909.15-2012-3, Chapter 10, 18.1 provides the following direction:

## Appendix ROD-3

If new information or changed circumstances relating to the environmental impacts of a proposed action come to the attention of the responsible official after a decision has been made and prior to completion of the approved program or project, the responsible official should review the information carefully to determine its importance. Consideration should be given to whether or not the new information or changed circumstances are within the scope and range of effects considered in the original analysis.

The FSH addresses new information arising **after** a decision has been made. The new and additional information for Navy Timber Sale has undergone interdisciplinary review and is available to the Responsible Official **prior** to the 2015 Decision, enabling a better-informed decision.

Appendix ROD-3, “Additional Information since the Navy Final Environmental Impact Statement”, summarizes the results of this interdisciplinary review. This review of new information and direction did not disclose any “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts” that would require a supplemental EIS under NEPA (40 CFR § 1502.9(c)). The Navy project has not made substantial changes in the proposed action that are relevant to environmental concerns. There are no changes, new information, or circumstances that may result in significant environmental impacts in a manner not previously evaluated or considered. The new information or changed circumstances are within the scope and range of effects considered in the original analysis.

### Relationship to the 2008 Forest Plan

The Navy FEIS and March 2009 Decision incorporated direction from the Forest Plan (January 2008). The decision in the Forest Plan contains transition language for the Navy Timber Sale project. The direction in the decision for the 2008 Forest Plan was “to review these projects, and incorporate the new direction in the amended Forest Plan to the extent this can be done without causing major disruptions in the implementation of these projects.” This project began under the direction of the 1997 Forest Plan in 2006, and the Navy DEIS was released November 2, 2007. Direction between the 1997 Forest Plan and the 2008 Forest Plan Amendment did not significantly change the management direction of the project area for this project. Navy and the other projects in Category 2 were also assumed to be implemented in the environmental analysis in the 2008 Forest Plan Amendment FEIS. Therefore, because the FEIS considered these projects in its effects analysis, their implementation is not in conflict with the amended Plan.

Although there have been non-significant amendments to the Forest Plan since it was signed in 2008, none of these amendments would affect the Navy project.

## Amendment to the 2008 Forest Plan

The 2008 Forest Plan is currently undergoing an amendment, including public involvement, and release of the DEIS which is expected to be available for public comment around mid-2015. Some of the issues being considered in the current amendment include the transition to young-growth management, renewable energy opportunities, roadless area considerations, and wildlife habitat and the conservation strategy.

As described above, since Navy and the other projects in Category 2 were assumed to be implemented in the environmental analysis in the 2008 Forest Plan Amendment FEIS, their implementation is not in conflict with either the 2008 Plan Amendment or the current Forest Plan Amendment direction.

## Changes in Policy/Agency Direction since 2009

### Project-Level Pre-decisional Administrative Review Process

The Consolidated Appropriations Act of 2012, Section 428, directed the Secretary to establish a project-level pre-decisional administrative review process (“objection process”) for projects and activities implementing land management plans, in place of the post-decisional appeals process used by the agency since 1993. The Navy Timber Sale project will go through the objection process (36 CFR 218) which replaced the appeals process (36 CFR 215) on March 27, 2013. Under the objection process, rather than filing appeals after a decision document (Record of Decision, or Decision Notice) is signed, individuals and entities may now file objections after the environmental analysis and the draft decision are complete, but before the final decision is signed. The purpose of the objection process is to encourage collaboration in project planning between the Responsible Official and interested publics, with the goal of resolving issues and coming to a better-informed decision before a final decision is made.

A 45-day objection filing period begins when a legal notice is published in the newspaper of record, and an EA or FEIS is issued, along with a draft decision. A letter or email stating that these documents are available (hard copy, DVD, and/or on the Forest Service public website) will be sent out to individuals and organizations who submitted specific written comments. The Navy FEIS was distributed to the mailing list in 2009 and will not be redistributed; however, it is available online

at [http://www.fs.fed.us/nepa/nepa\\_project\\_exp.php?project=14556](http://www.fs.fed.us/nepa/nepa_project_exp.php?project=14556) or available for review at Forest Service District offices. Objections must be filed in writing with the Reviewing Officer within the objection filing period, as specified in the draft Record of Decision (ROD).

To be eligible to object to a project, individuals and entities need to have previously submitted timely, specific written comments during the public comment periods, unless the objection concerns an issue that arose after

## Appendix ROD-3

designated opportunities for comment were over. Comments must be within the scope of the project, have a direct relationship to the proposed action, and include supporting reasons for the Responsible Official to consider.

After the 45-day objection filing period ends, a 45-day objection review period begins. Prior to a written response by the Reviewing Officer, the Reviewing Officer or the objector may request to meet, along with the Responsible Official, to discuss the issues raised and any possible resolution. At the end of the 45-day objection reviewing period, the Reviewing Officer will issue a written response detailing how the objections have been addressed, which may also include instructions to the Responsible Official (36 CFR 218.11(b)). The final decision document will not be signed until all concerns and instructions identified by the Reviewing Officer in the objection response have been addressed by the Responsible Official (36 CFR 218.12(b)).

Implementation of decisions subject to the objection process may commence immediately after a final decision is signed. There is not a requirement to publish notification of the decision. See the Navy ROD “Administrative Review-Opportunity to Object” for more discussion of the objection process and eligibility to object.

### **Inventoried Roadless Areas (2001 Roadless Rule)**

When the project decision was signed in March 2009, the Tongass National Forest was exempt from the 2001 Roadless Rule. The effects analysis for the Navy FEIS was based on the 2008 Forest Plan roadless inventory. All action alternatives in the FEIS, except for Alternative F, proposed activities within inventoried roadless areas. These proposed activities were consistent with the direction in the 2008 decision of the Forest Plan.

The March 4, 2011 ruling by the Federal District Court for the District of Alaska in *Organized Village of Kake v. USDA* vacated the Tongass exemption from the Roadless Rule. The State of Alaska appealed that decision to the Ninth Circuit Court of Appeals which on March 26, 2014 reversed the District Court decision concerning the exemption of the Tongass from the Roadless Rule. The three-judge panel of the Ninth Circuit Court determined that the USDA was reasonable, in 2003, when it exempted the Tongass from the Roadless Rule. The Ninth Circuit Court also remanded the case to the District Court to decide whether a supplemental EIS is required for the Tongass exemption. In August 2014, however, the Ninth Circuit Court of Appeals granted another hearing, held in December 2014 before an eleven-judge panel to rehear the State of Alaska’s appeal. The eleven-judge panel has not yet issued a decision. Currently, the Roadless Rule remains in effect in Alaska, pending the outcome of the Court’s decision. The Forest Service will comply with all court orders.

Effects to roadless area values were analyzed by alternative in the Navy Timber Sale FEIS using the Forest Plan’s 2008 roadless inventory. However, the analysis update for the 2015 ROD is based on the 2001 Roadless Rule inventory, which is slightly different than the Forest Plan’s 2008 roadless

inventory used in the Navy FEIS. See Figure 2 in this appendix. Alternative F, the Selected Alternative, proposes no timber harvest or road building in any inventoried roadless area under either the 2001 or 2008 inventory. See also “Issue 3 – Inventoried Roadless Areas” in this appendix. The outcome of litigation with regard to the Tongass exemption would not alter the effects or change the analysis as a result of the project.

### **USDA Strategic Plan 2010-2015**

The USDA Strategic Plan 2010-2015 provides the long-term objectives for the agency. One of the goals of the USDA Strategic Plan FY2010 – 2015 is to “Assist Rural Communities to create Prosperity so they are Self-sustaining, Repopulating and Economically Thriving”. To help achieve this goal, the Alaska Region’s development of a Transition Framework program is intended to build upon current assets and economic sectors and develop other opportunities within the communities within the Tongass National Forest.

As part of this strategy, there is a gradual shift of Tongass forest management from primarily old-growth timber harvest to young-growth forest management. On May 26, 2010, Tom Vilsack, the USDA Secretary of Agriculture, put out a news release (Release No. 0288.10) highlighting the increasing emphasis the Forest Service, in cooperation with USDA Rural Development and Department of Commerce’s Economic Development Administration, is putting on this management shift. The Secretary issued Memorandum 1044-009 on July 2, 2013, “Addressing Sustainable Forestry in Southeast Alaska” which reaffirms the USDA’s high priority for this transition and the goal that in 10-15 years, the majority of timber sold by the Tongass will be young growth.

Although there is currently no young-growth timber of merchantable (commercial) value available for harvest in the Navy project area, the Selected Alternative contributes to the supply of timber needed to maintain the timber industry during the transition to young-growth management, thus helping ensure that the infrastructure and job skills will be available when the young growth is ready for harvest.

### **USDA Investment Strategy for Creating Jobs and Healthy Communities in SE Alaska**

A primary goal of the administration is a sustainable, stable economy for Southeast Alaska’s communities. To this end, Forest Service officials have been working with local communities to encourage a diversity of forest-related jobs built around timber, renewable energy, forest restoration, tourism, subsistence, recreation, fisheries, and mariculture. Timber harvest remains a component of Southeast Alaska’s diversified economy and a stable and sustainable timber supply is essential for the continuing existence of the timber industry. The Navy Timber Sale project contributes to this goal by sustaining timber jobs and related opportunities. More information is available at [http://www.fs.usda.gov/detail/r10/home/?cid=FSBDEV2\\_038855](http://www.fs.usda.gov/detail/r10/home/?cid=FSBDEV2_038855).

### Climate Change Considerations

The Navy FEIS, pages 3-5 and 6, addresses climate change and the rationale for not discussing it in detail at the project level. Climate change is a topic that continues to be studied throughout the agency, including the Tongass National Forest.

The Forest Service is concerned with effectively integrating climate change issues into land management decisions and NEPA analysis. On January 13, 2009, the USDA Forest Service, Washington Office released a report called "Climate Change Considerations in Project Level NEPA Analysis". The paper addresses how climate change can and shall be discussed in project-level analysis, evaluating the cause and effect relationship between a proposed action and climate change, and whether a quantitative or qualitative analysis is warranted. The report states that "It is not necessary to calculate GHG emissions for most projects; however, in situations where the responsible official finds the information useful for decisionmaking, such data and conclusions developed through quantitative analysis would normally only be used for comparing alternatives related to direct effects or addressing any applicable regulatory requirements related to GHG emissions. Without enough scientific understanding to draw conclusions about the significance of the quantitative results, qualitative discussions about the potential for greenhouse gases sequestered and emitted are more appropriate for disclosing climate change implications. "

More recently, CEQ issued revised draft guidance in December of 2014 to "provide Federal agencies direction on when and how to consider the effects of greenhouse gas (GHG) emissions and climate change" in NEPA reviews (79 FR 77802; December 24, 2014). The draft guidance "recommends that agencies use a reference point to determine when GHG emissions warrant a quantitative analysis taking into account available GHG quantification tools and data that are appropriate for proposed agency actions." The guidance also states that "in addressing GHG emissions, agencies should be guided by the principle that the extent of the analysis should be commensurate with the quantity of the projected GHG emissions. When an agency determines that evaluating the effect of GHG emissions could not be useful to distinguish between the no-action and proposed alternatives and mitigations, the agency should document the rationale for that determination."

In 2011 and again in 2014, the Forest Inventory and Analysis (FIA) program, a subunit of the Pacific Northwest Research Station, made numerous carbon storage estimates and prepared the first national assessment of the storage and flux of carbon in down woody material (DWM) (Anderson 2011) and for live trees, snags and logs (Barrett 2014). The 2014 report indicates that the overall carbon mass stored in just aboveground trees, snags and logs in the Tongass is quite large: about 650 million tons, which is equivalent to 2.4 billion tons of CO<sub>2</sub>. This above-ground carbon storage does not include belowground pools such as carbon in non-forested wetlands, alpine, grass and shrublands, roots, soil, litter and other organic materials - which is estimated to be as large as the aboveground stores (Barrett 2014). "Although there is substantial amount of

recent literature about the effects of forest management on carbon stores, different authors have reached widely different conclusions about net sequestration because of different assumptions about the timeframe of interest, initial volume, post-harvest residuals, decay rates, the amount of energy expended in harvest and transport, utilization rates, lifespan of wood products, future growth rates of young growth stands, temporal discounting and substitution effects” (Barrett 2014). Because of these differing perspectives, this information was not deemed essential to make a reasoned decision for this project.

Many proposed projects and programs will emit greenhouse gases (direct effect) and, thus, contribute to the global concentration of greenhouse gases which affect climate (indirect effect). Because the Navy Timber Sale is extremely small in the global atmospheric CO<sub>2</sub> context, it is not necessary to conduct a quantitative analysis of actual climate change effects.

For the Navy project, all the action alternatives would result in an initial net release of carbon into the atmosphere above that of the No-action Alternative, although over time, regenerating young growth could result in greater net sequestration of carbon than the No-action Alternative. Alternative C proposes the most timber harvest (62.0 million board feet (MMBF)) and roadbuilding (25.7 miles National Forest System (NFS) and temporary road) and would thus have a greater immediate effect on carbon sequestration than Alternative F, which proposes the least harvest (13.1 MMBF) and roadbuilding (3.3 miles NFS and temporary road). At the Navy project scale, the magnitude of the project is so small compared to the factors that contribute to climate change that foreseeable effects would be small, if measurable at all, for all alternatives. It is estimated that the forests of the Tongass represent approximately only one quarter of one percent of the stored carbon in forests worldwide (Forest Plan 3-19). Within the Navy project area, this percentage is considerably smaller. Therefore, it is reasonable to conclude that small, if even measurable, changes in carbon sequestration under any of the action alternatives, whether positive or negative, would not be a relevant factor for choosing among alternatives. Additionally, the task of understanding all the factors that influence climate change and how carbon is sequestered continues to be subject to substantial uncertainty and for these reasons is not essential to a reasoned choice among alternatives. None of the action alternatives are predicted to measurably contribute to the cumulative effects on climate change.

The Tongass National Forest currently monitors climate change in several ways, one of which is formally assessed in the annual Forest Plan Monitoring and Evaluation Report under the following question: “*What are the long-term changes to the permanent snowpack and how does it affect the physical and biological environment?*” The 2013 Tongass National Forest Monitoring and Evaluation Report identifies a number of activities in its Action Plan for 2014-2015 which include continued coordination with other agencies supporting climate change research, staff and employee training, completion of vulnerability assessments, and continued monitoring of snowpacks, glaciers,

and stream information. In addition, the regeneration of Alaska yellow-cedar is being monitored in order to maintain or increase this species in regenerating stands on sites judged to be suitable for the species' long-term persistence.

The Forest Plan FEIS discusses climate change factors (p. 3-11 to 3-20) and discloses the risk of possible effects and the considerable uncertainty concerning specific predictions of how the climate may change, and even more uncertainty regarding the effects of climate change on the resources of the Tongass National Forest. The Tongass National Forest will continue to monitor potential effects of climate change through the existing Forest Plan monitoring programs, and other studies that are occurring regionally and nationally. Any need for a different course of action that might affect this decision will be addressed through existing procedures to determine whether changes are warranted (Navy FEIS p. 3-5).

Based on the current understanding of climate change in Southeast Alaska and action alternatives associated with the Navy Timber Sale project, specific adaptation actions are not necessary to meet Forest Plan objectives at this time.

### **Forest Service National Core Best Management Practices**

In April 2012, the Forest Service issued a memo initiating implementation of the National Core Best Management Practices (BMP) program, which integrates water resource protection into management activities conducted across the landscape. Directives for using these BMPs are currently in development. The National BMP Program will enable the agency to readily document compliance with the management of nonpoint source pollution at local, regional, and national scales and address the new planning rule requirement for national BMPs (36 CFR 219.8(a)(4)). The Navy project will implement the most up-to-date BMP guidance.

### **Forest Service National Core Best Management Practices Monitoring Program**

The Forest Service is developing a National Core BMP Monitoring Program that addresses implementation and effectiveness of BMPs. The draft National Core BMP Monitoring Technical Guide is currently in review. The Tongass National Forest has tested the national protocols for timber harvest and road activities and has adopted them as part of Forest Plan Monitoring. Results will be reported in the Annual Tongass National Forest Monitoring and Evaluation Report.

### **National Pollutant Discharge Elimination System (NPDES)**

On March 20, 2013, in *Decker v. NEDC*, the Supreme Court reversed the Ninth Circuit Court's decision in *NEDC v. Brown* and held that the Clean Water Act and its implementing regulations do not require the NPDES permits for stormwater discharges from logging roads into the navigable waters of the United States. However, should it be determined that an NPDES permit is required for this project, the Forest Service will comply with any applicable

permitting requirements prior to project implementation.

## **Updates to the Analysis and Information in the Navy Timber Sale FEIS**

### **Chapter 1**

The issues were reviewed and no additional issues were identified. No public involvement has occurred specifically for the Navy project since 2009; however, comments on other timber harvest projects were considered at the time of the review.

No changes have been made to the proposed action, Alternative B (FEIS p. 1-2), and there are no changes that are relevant to environmental concerns. However, as described below under Issue 1: Timber Supply/Sale Economics, updated timber volume estimates based on timber cruise plot data resulted in lower net volume estimates than the volume estimates in the FEIS which were based on stand exam data. This has resulted in lower net volume estimates in the updated analysis for the proposed action, as well as the other action alternatives.

### **Chapter 2**

#### **Alternatives Considered but Eliminated from Detailed Analysis**

Refer to Chapter 2, pages 2-17 and 2-18 of the FEIS which discusses the action alternatives which were considered but eliminated during the planning process. During the informal resolution meetings for the appeal on the 2009 Decision, three proposals were received from the appellants and are discussed below.

Four appeals to the 2009 Navy ROD, under the 36 CFR 215 appeal regulations, were submitted by several organizations, including The Wilderness Society (TWS), SEACC et al., Greenpeace et al., and Juneau Sierra Club. Forest Service personnel and appellants met to discuss possible appeal resolutions. Three of the appellants presented proposals, all subsets of the 2009 Selected Alternative, which only included the units in the roaded area. The Wilderness Society (TWS) and SEACC et al. both submitted a proposal that avoided inventoried roadless areas, omitted the units in the area between Anita Bay and Burnett Inlet and units with an Alaska yellow-cedar component, and stipulated removal of culverts rather than installation of waterbars from National Forest System (NFS) roads that would be put into storage upon sale completion. The Sierra Club submitted a proposal that included all the aspects of the TWS and SEACC proposals, plus deleting Units 114-120 along the 51540 road, and Unit 94. Like the TWS/SEACC proposal, it also stipulated removal of culverts, rather than installation of waterbars for NFS roads associated with the timber sale.

## Appendix ROD-3

The Navy IDT considered these proposals and compared potential effects by resource to the other alternatives in the FEIS. The IDT found that the issues addressed by the appellants' proposals are already addressed in other alternatives considered in detail, primarily Alternatives E and F. Alternative E addressed the wildlife habitat concern with harvest in the area between Anita Bay and Burnett Inlet by avoiding harvest in that area, and Alternative F partially addresses this concern by reducing harvest in the area. Alternative F addresses effects to inventoried roadless areas by avoiding all harvest and road construction in inventoried roadless areas. All alternatives include seed tree retention in some units to help maintain or increase the cedar component in regenerating stands.

The appellants' suggestion during the informal resolution meetings to remove culverts from roads which will be put into storage was also considered. The disposition of the roads after harvest activities are complete is determined by the Objective Maintenance Level and the Alaska Forest Resources and Practices Act (AFRPA) Class, shown on the road cards, and the site-specific needs of the road, consistent with the Wrangell Access and Travel Management Plan (ATMP). The decision whether or not to remove culverts from NFS roads will be made at the time of road storage. The roads will be evaluated for erosion potential, and measures will be implemented to reduce sediment delivery and reduce the risk of crossing failure and stream diversion. This may include the removal of drainage structures and bridges, or construction of water bars, rolling dips or other measures necessary to protect resources. The language of "Where feasible, culverts will be left in place with adequate protection, typically waterbars" has been removed from the road cards.

After the March 4, 2011 Federal District Court, District of Alaska ruling in *Organized Village of Kake, et al. v. US Department of Agriculture (D.C. No. 1:09-cv-00023 JWS)* that the Tongass is no longer exempt from the 2001 Roadless Rule, the IDT also considered a modification of Alternatives B through E that dropped proposed units and roads within 2001 IRAs.

FASTR was run to assess the effects on financial efficiency of this possible modification to Alternatives B through E. Alternatives B, C, and D, originally designed to respond to **Issue 1: Timber Supply and Economics** (including varying emphases), have cruised volume ranging from 26.6 MMBF sawlog and utility (Alternative D) to 62.0 MMBF (Alternative C) (see Table 2). Alternative E's volume is 24.5 MMBF. When only the units within the roaded portion of Alternatives B through E were considered, the range in volumes was considerably narrowed, with reduced volumes ranging from 8.4 MMBF (Alternative E) to 16.6 MMBF (Alternative C). Alternative F's volume (13.1 MMBF) falls within the middle of the range of volumes of the roaded portion of the alternatives.

While all alternatives are currently showing as deficit, Alternative F's indicated bid value is about \$28.74/MBF to \$61.49/MBF more economical than the other FEIS action alternatives (see Table 2). Although considering only roaded units improved the indicated bid value per MBF for Alternatives B though E,

FASTR still indicates that they may appraise deficit. An economic comparison showed Alternative F's indicated bid value/MBF about \$5.55 to \$8.46 more economical than Alternatives B, C, or E if modified, and about \$9.46 less economical than Alternative D if modified. As explained in the FEIS, alternatives which show as deficit in current FASTR runs may become more economical in future markets or a portion of the units may become economical. Timber sales on the Tongass are not advertised until they appraise with positive values.

Alternative E, which included harvest in inventoried roadless areas, was designed to respond to **Issue 2: Wildlife Habitat Fragmentation** by not harvesting timber in the area between Anita Bay and the head of Burnett Inlet. Modifying Alternatives B through E to exclude harvest activities in inventoried roadless areas would result in less effect on interior habitat, coarse canopy, and patches of old-growth habitat than these alternatives in the FEIS, due to fewer acres of harvest and roadbuilding. However, Alternatives B, C, and D still harvest units within the roaded portion of the Anita Bay area. Alternative F still has less harvest in the Anita area than would Alternative B, C, or D if modified, retaining part of the low-elevation POG corridor due to greater retention (50 percent) in Unit 67, and deleting a portion of Unit 70.

The volume and economic results of modifying Alternatives B through D were similar to Alternative F, and they would not address any issues not already addressed by Alternative F. Modifying Alternative E was most similar to the TWS and SEACC proposals, which were considered but eliminated during the informal appeals resolution process. Therefore, this modification was not analyzed in further detail.

### **Alternatives Considered in Detail**

Alternatives considered in detail are described in the FEIS, pp. 2-9 to 2-15. Four of the five action alternatives considered in detail include timber harvest in inventoried roadless areas, while one action alternative (Alternative F) and the no-action Alternative A do not. Resolution of the Tongass exemption from the Roadless Rule is ongoing in the courts; at the present time the Roadless Rule remains in effect in Alaska.

Although the Tongass at this time can only implement timber harvest and road construction activities within the roaded area, the Responsible Official could select Alternative F or Alternative A, or choose an action alternative that proposes activities in an IRA and then defer any timber harvest units and road construction within an IRA pending resolution of the Tongass exemption in the courts. Deferring timber harvest and road construction in IRAs in Alternative B, C, D, or E differs from modifying these alternatives, since deferred activities could still be implemented in IRAs should the Tongass exemption be reinstated. Selecting Alternative F at this time eliminates the uncertainty of waiting on the outcome of roadless area litigation of an unknown duration, and ensures that no IRA will be entered as a result of this decision.

### Chapter 3

#### Land Divisions

The FEIS, pp. 3-1 to 3-2, lists the land divisions used in the FEIS as well as in the updated resource analyses. However, when the additional analyses were done on the new information as described in this appendix, additional levels of land divisions were sometimes used for analysis areas, and are described in this appendix.

#### Cumulative Effects - Past, Present, and Reasonably Foreseeable Projects

The IDT reviewed the status of other projects within the project area since 2009. These projects were considered in the section “Cumulative Effects” on pages 3-2 to 3-4 of the Navy FEIS, and are updated here.

**Fishtrap Salvage Timber Sale** authorized the harvest of approximately 208 MBF of cedar decline and blown down sawtimber and utility volume from 240 acres adjacent to existing roads. This sale was sold in 2007 and harvested in 2011.

**North Etolin Salvage Timber Sale** authorizes the harvest of approximately 200 thousand board feet (MBF) of cedar decline, blown down sawtimber and utility volume along the existing road system. This sale, which had a decision in August 2008, is located to the north on the Honeymoon road system (Road 6549), outside the project area but is within the wildlife analysis area. This sale has not been offered for purchase at this time of the analysis.

The decision on **Wrangell District Roadside Timber Sales** (March 2011) authorizes salvage harvest of dead, dying, and blown down timber, and green sawtimber sales of less than 50 MBF each and green fuelwood sales within 1,200 feet of the existing road systems of Wrangell, Zarembo, and Etolin Islands. There may be multiple small sales whose total combined volume would not exceed 500 MBF on an annual basis from the three islands combined. No sales have been identified on the Anita Bay road system that accesses the Navy project area at this time.

**Road reconditioning on Road 6539** was completed and addressed the sediment concerns in the Thrucut/Goose Lakes Creek watershed. Periodic maintenance including brushing, ditch clearing, and some resurfacing where needed has been completed for Road 6543.

The resurfacing of **Burnett Inlet Portage Trail** at the head of Burnett Inlet was completed in the summer of 2013. As stated in the FEIS (page 3-3), this project is not expected to contribute to cumulative effects to any resource.

In 2014, the **Sealaska land bill** land legislation was passed by Congress as a rider to the National Defense Authorization Act for FY2015 (PL 113-291, Sec. 3002). Previous versions of the Sealaska bill had been introduced but not passed for the past several years, and the proposed acquisition was not

considered as a “reasonably foreseeable future action” in the FEIS. This bill allowed Sealaska Corporation to acquire 70,075 acres of roaded, managed National Forest System (NFS) timberlands, and “futures sites” including bays, shorelines, and other areas for economic development on the Tongass, in place of their final Alaska Native Claims Settlement Act (ANCSA) entitlements which they filed for conveyance in June 2008 with the Bureau of Land Management (BLM). There are no acquisition areas in the vicinity of the Navy project area that are anticipated to affect or be affected by timber harvest operations on the Navy Timber Sale.

The **deer model reanalysis** analyzed effects to wolves by considering deer density at the Etolin Island and Vicinity biogeographic province level. Projects considered at the biogeographic province level analysis included Baht, Backline, and Wrangell Island projects.

### **Issue 1 - Timber Supply/Sale Economics**

This section updates the Timber Supply and Economics section in Chapter 3 of the FEIS (pgs. 3-7 to 3-18).

Since 2009, there have been changes regarding direction on the Regional export policy, changes in mill infrastructure affecting the projected costs and revenues of the project alternatives, and the development of a new financial efficiency model, among other changes, as described below.

#### **Region 10 Limited Export Policy**

Direction in export of timber sale volume has changed since the FEIS has been completed.

The Navy FEIS financial efficiency analysis included adjustments for the limited interstate shipping policy at that time. Since then, the Regional Forester approved time-limited shipment of unprocessed hemlock and Sitka spruce logs and provided additional options for purchasers. Export increases timber sale value due primarily to lower manufacturing costs. On February 28, 2014, the Regional Forester reaffirmed the 2012 memo approving increased export for timber purchasers supplying Alaska yellow-cedar for domestic processing. Purchasers who provide Alaska yellow-cedar to small business operators who will process the timber locally may be approved, on a case-by-case basis, to increase export of an equivalent amount of hemlock and spruce volume from the sale(s) involved, over and above existing policy limits. This approval will support businesses by improving access to timber and promoting the manufacture of products in the State of Alaska.

#### **Changes to Southeast Alaska’s Mill Infrastructure**

Since the publication of the FEIS, there have been changes to the Southeast Alaska mill infrastructure, as mentioned above. The original Navy financial efficiency analysis appraisal point destination was the Silver Bay Mill on Wrangell Island. However, Silver Bay Logging dismantled their mill in 2010.

## Appendix ROD-3

Another potential destination, the Pacific Log and Lumber Company's mill in Ketchikan, closed in 2011. The financial efficiency analysis was recalculated to the Viking Mill in Klawock on Prince of Wales Island. As a result, the round-trip tow distance increased, increasing the stump-to-mill cost for all alternatives. On average, the barging costs were estimated to be \$99/MBF, a \$19/MBF increase over previous analysis.

### Timber Volume Estimates

The volumes in the following Comparison of Alternatives in Table 1, below, have been updated with more-precise estimates based on cruised net timber volume, as compared to the volume estimates in Table 3-6 in the FEIS, even though the total harvest acres by alternative are unchanged, except as noted below under "Harvest Acres Totals". Timber volume estimates in the FEIS were based on stand exam data. Stand exams are measured on a one plot to 10 acre intensity, with at least three plots per unit being installed. Stand exam plots are useful for stand characteristics, including species composition and forest health, and estimating volumes for comparison between alternatives at the EIS stage. Timber volume for the 2015 ROD uses updated volumes based on a more-intensive inventory - a timber cruise - of a subset of the units. In a timber cruise, more measurement plots per acre are installed (in this case one plot per 7 acres). In addition, individual (32-foot logs) logs are graded and defects removed from each, which further refines the volume estimates, resulting in a more-accurate portrayal of timber found in each of the units and hence a better comparison of the alternatives. The relative ranking by volume of the alternatives has changed very slightly – in the FEIS, Alternative E was higher than Alternative D by 1.2 MMBF, and in the update Alternative D is 2.1 MMBF higher than Alternative E. During implementation, minor adjustments may be made to the number of acres, and between acres of conventional and helicopter yarding. Reduction of the volume estimates in the FEIS to the cruise data is not a change relevant to environmental concerns or on-the-ground implementation.

### Harvest Acres Totals

Minor adjustments in the acres by harvest system, as well as refinements in the geographic information system (GIS) information used, resulted in very slight changes in the overall number of harvest acres by alternative when they were rerun for the updated analysis. Alternatives B, C, and D were reduced by 9, 13, and 8 acres respectively, and Alternatives E and F showed an increase of 2 and 1 acres, respectively, as compared to the harvest system acres in Table 3-6 of the FEIS. See Table 1, below.

Acres by silvicultural system shown in the FEIS Table 3-24 reflect a difference of 1 to 13 acres (depending on alternative) as compared to the updated harvest system acres, due to mapping precision in GIS as explained above. This does not affect the effects analysis or conclusions.

Table 1 (updates p. 3-17 of Navy FEIS)  
Comparison of Alternatives – Harvest System, Harvest Volume and Roads

Harvest System	Unit of Measure	Alt A	Alt B	Alt C	Alt D	Alt E	Alt F (Sel. Alt.)
Conventional <sup>1</sup>	Acre	0	1,282	2,519	1,255	554	643
	Net Saw MMBF	0	18.4	36.6	18.2	8.0	8.6
Helicopter	Acre	0	1,922	3,575	1,106	2,772	609
	Net Saw MMBF	0	9.6	18.8	5.6	13.9	3.1
<b>Harvest Volume<sup>2</sup></b>							
Net Sawlog	MMBF	0	28.1	55.4	23.8	21.9	11.7
Utility	MMBF	0	3.3	6.6	2.8	2.6	1.4
<b>Total</b>	<b>MMBF</b>	<b>0</b>	<b>31.4</b>	<b>62.0</b>	<b>26.6</b>	<b>24.5</b>	<b>13.1</b>
<b>Roads</b>							
New System	Mile	0	6.6	12.1	4.8	2.2	0.6
New Temporary <sup>3</sup>	Mile	0	5.8	13.6	5.0	2.7	2.7
Reconstruction <sup>4</sup>	Mile	0	0.8	2.1	0.4	0.8	0.8
LTF <sup>5</sup> Construction	#	0	0	1	0	0	0

<sup>1</sup> Includes cable and shovel yarding systems

<sup>2</sup> Some volume totals may not exactly match their sums due to rounding.

<sup>3</sup> In some cases, old temporary roads that have been decommissioned still have a discernable road prism. These road beds will be reused to minimize environmental effects.

<sup>4</sup> Reconstruction (periodic maintenance) has occurred on some roads since the FEIS, resulting in fewer road miles planned for reconstruction.

<sup>5</sup> Log transfer facility

## Financial Efficiency Analysis

The NEPA Economic Analysis Tool Residual value (NEATR) program was used for financial analysis in the FEIS. On March 28, 2011, the Financial Analysis Spreadsheet Tool – RV (FASTR) was approved by the Regional Forester to replace the NEATR as a financial efficiency analysis tool for use in timber planning. The model version October 21, 2013 was used to compare alternatives for the Navy project. See Table 2, below.

The FASTR model is designed from the R10 RV-FM appraisal program using readily available or regional averages for data. FASTR outputs are useful to gauge current economic conditions for a timber sale and provide a relative comparison between alternatives. These results are not meant to serve as an actual appraisal or provide actual costs and values at the time of offering since these will fluctuate with timber markets. The FASTR tool should not be viewed as a complete answer but as one tool that can be used for information about timber resources, alternatives and trade-offs between costs and benefits. Actual salability is determined at Gate 4 (advertisement) using the Official R10 RV-FM Appraisal and statistically sound cruise data.

## Appendix ROD-3

The FASTR model uses the same logging costs and manufacturing costs per thousand board feet (MBF) developed for the Alaska Region timber sale appraisal program. Costs reflect production studies and data collected from timber sale purchasers in Southeast Alaska.

Table 2 (updates p. 3-11 of Navy FEIS)  
Financial Efficiency Analysis –Volumes, Costs, and Values<sup>1</sup>

	Alt A	Alt B	Alt C	Alt D	Alt E	Alt F (Sel. Alt.)
<b>Volume – Sawlog (MBF)</b>						
Sitka Spruce	0	6,997	13,885	5,876	5,715	2,916
Hemlock	0	15,393	29,416	13,166	11,557	6,416
Western Red Cedar	0	2,851	6,061	2,394	2,223	1,188
Alaska Yellow Cedar	0	2,810	6,083	2,360	2,390	1,171
<b>Total Sawlog Volume (MBF)</b>	<b>0</b>	<b>28,051</b>	<b>55,445</b>	<b>23,796</b>	<b>21,885</b>	<b>11,691</b>
<b>Utility Volume (MBF)</b>	0	3,324	6,597	2,793	2,588	1,386
<b>Total (Sawlog and Utility)</b>	<b>0</b>	<b>31,375</b>	<b>62,042</b>	<b>26,589</b>	<b>24,473</b>	<b>13,077</b>
<b>Pond Log Value \$/MBF</b>	\$0	\$629	\$637	\$626	\$645	\$629
<b>Stump to Mill Cost \$/MBF</b>	\$0	\$574	\$563	\$548	\$555	\$513
<b>Indicated Bid Value<sup>2</sup></b>	\$0	(\$2,122,721)	(\$3,145,327)	(\$1,226,945)	(\$938,925)	(\$165,567)
<b>Indicated Bid Value \$/MBF<sup>3</sup></b>	\$0.00	(\$75.68)	(\$56.73)	(\$51.56)	(\$42.90)	(\$14.16)

Source: FASTR version October 21, 2013

<sup>1</sup> ( ) Indicates negative value

<sup>2</sup> Indicated bid value

<sup>3</sup> Indicated bid value/MBF

Changes in the overall costs and values by alternative since the FEIS are due to various factors such as reductions in the estimated volume for all alternatives, changes in selling values by species, updates in the average Forest Service costs per MBF for sale preparation, administration, and engineering support, and updates in production costs and revenues. The cost of environmental analysis and documentation (NEPA) is no longer factored into the total project costs used to calculate indicated bid value, since that cost has already occurred. In addition, market fluctuations reflect an improvement in the current pond log value. Some costs, such as log haul, increased when the log destination was reappraised to Viking Mill in Klawock.

As in the FEIS (FEIS p. 3-11), all alternatives are shown to be deficit. The indicated bid value of the alternatives in the FEIS ranged from -\$88.47/MBF (Alternative F) to -\$163.65/MBF (Alternative C) (FEIS Table 3-2). The updated indicated bid values per MBF show an improvement for all alternatives, and now range from -\$14.16 (Alternative F) to -\$75.68/MBF (Alternative B). Alternative F is still the most economical alternative. The FEIS explains (FEIS p. 3-11) that alternatives which show as deficit may become more economical in future markets or a portion of the units may become economical in current markets, as markets fluctuate. For instance, in a recovering U.S. economy, widespread new home construction raises the

demand (and price) for sawn wood products. In Alaska, the species most sensitive to booms in housing construction is Western redcedar. When the range of alternatives includes differing amounts of Western redcedar, the ranking of alternatives can quickly change in 2 years due to the widely fluctuating Western redcedar market. A complete timber sale appraisal is needed to determine the actual economics of the timber offered for sale. As stated in the FEIS (p. 3-11), no timber sale would be offered if it appraises deficit.

**Forest Products Employment**

Data in the FEIS showed employment figures for years 2002 through 2006 (Table 3-1 FEIS p. 3-9) in the number of logging, sawmill, and related industry jobs across Southeast Alaska. This information has been updated to include data from 2007 through 2011 (see Table 3, below). Since 2006, forest products employment data show a downward trend until 2010 when it appears to have stabilized.

Table 3 (updates Table 3-1, p. 3-9 of Navy FEIS)  
 Forest Products Industry Employment in Southeast Alaska 2002-2011

Year <sup>1</sup>	Tongass Logging <sup>2</sup>	Tongass Sawmill <sup>2</sup>	Total Tongass-related Employment	Other Sawmill	Other Logging	Total Other Timber Employment	Total Industry Employment
2002	63	110	173	40	299	339	512
2003	108	91	199	64	298	362	561
2004	82	95	177	53	220	273	450
2005	88	96	184	52	263	315	499
2006	81	77	158	46	217	263	421
2007	44	70	114	63	225	288	402
2008	52	70	122	24	118	142	265
2009	48	39	87	19	110	129	216
2010	61	46	107	7	133	140	247
2011	62	47	109	3	150	153	262

<sup>1</sup>Calendar years

<sup>2</sup>Estimated based on the ratio of Tongass timber harvest to total timber harvest in SE Alaska. Source: Alaska Department of Labor, Kilbourn et al. 2014, Brackley et al. 2006b, Brackley and Crone 2009, Alexander and Parrent 2010, Alexander 2011, Alexander 2012, Alexander and Parrent 2012, and Parrent 2012. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628.

The number of timber-related jobs and income is related to the net harvest volume as well as how much timber is processed locally and how much the timber purchaser exports, under the terms of the Tongass Export Policy. More local sawmilling jobs are supported if a purchaser chooses to process logs locally, while more transportation/other services jobs are supported if a purchaser exports timber. The number of jobs and related income shown in the table below are based on assumptions that all units and volume will be

## Appendix ROD-3

harvested across each action alternative. These estimates will likely change as actual timber offerings are packaged that would include some or all of the units. The jobs per MBF used for this estimate are based on an average from operators and may vary depending on who buys the sale and how much volume is processed locally and how much is exported.

Table 4 below displays estimated direct logging, sawmilling, and transportation/other services-related employment and income for the alternatives, generated with FASTR Version October 21, 2013. Due to a lower estimated harvest volume, calculated using cruise runs for the project units, the number of potential jobs is lower than those estimated in the FEIS.

The first number in the range of Total Jobs in the table assumes that all Alaska yellow-cedar (AYC), plus hemlock-spruce export (50 percent total sale net sawlog volume) is exported (all allowable export). The second number in the range of Total Jobs assumes domestic processing of all the volume. Exporting all the timber allowable results in fewer domestic sawmilling jobs, but more transportation service jobs such as stevedoring.

The ranking of alternatives, in terms of potential jobs, has changed slightly since the FEIS. In the FEIS, Alternative C supported the greatest number of jobs, followed by Alternatives B, E, D, and F (in that order). The updated information shows Alternative D supports slightly more jobs than Alternative E, due to slightly greater volume. Alternative F supports the fewest potential jobs, the same ranking as in the FEIS.

Table 4 (updates p. 3-14 of Navy FEIS)  
Estimated Project Employment and Income in Alaska

Projected Alaskan Employment and Income <sup>1</sup>	Alt A	Alt B	Alt C	Alt D	Alt E	Alt F (Sel. Alt.)
Logging	0	63	125	54	49	26
Sawmilling	0	30-68	57-133	25-57	23-52	12-28
Transportation/Services	0	33-20	65-40	28-17	26-16	14-8
<b>Total Jobs<sup>2</sup></b>	<b>0</b>	<b>126-151</b>	<b>248-298</b>	<b>107-128</b>	<b>98-117</b>	<b>52-63</b>
Direct Income (\$ Millions) <sup>3</sup>	\$0	\$6,676,937	\$13,171,248	\$5,661,694	\$5,200,980	\$2,780,997
Direct Income (\$ Millions) <sup>4</sup>	\$0	\$7,152,369	\$14,119,764	\$6,068,408	\$5,573,655	\$2,981,335

Source: FASTR Version October 21, 2013)

<sup>1</sup> Memo Employment Coefficients and Indirect Effects, for NEPA planning: 2012 Update.

(Source: Susan Alexander, Alaska Region Economist)

<sup>2</sup> Number of jobs first number lists number of jobs with all allowable export, then number of jobs with 100 percent hem/spruce domestic processing. Total jobs, when summing logging and sawmill export manufacturing, may not add up exactly due to rounding.

<sup>3</sup> With Allowable Export, current export policy

<sup>4</sup> With 100% hem/spruce domestic processing

### Forest Service Costs

The Forest Service costs estimates are averages from the Alaska Region's budget allocation process. The totals of the average costs (which are based on alternative volume) are subtracted from indicated bid values to estimate net

present value of each alternative.

The Forest Service cost averages per MBF have changed slightly since the FEIS. Sale preparation cost has gone from \$23/MBF in the FEIS to \$20.78/MBF; sale administration cost has gone from \$9/MBF in the FEIS to \$12.18/MBF; and engineering support cost has gone from \$28/MBF in the FEIS to \$22.67/MBF.

In the FEIS, the analysis and documentation costs (\$1,634,753) were included in the total project costs for each alternative. However, in this updated analysis, FASTR assumes that the cost of environmental analysis, at \$47.97/MBF, has already incurred at Gate 2, and this figure is no longer factored into the present value of cost for the alternatives. The costs of processing the appeals received in 2009 and this supplemental analysis are also not factored into the cost of this project.

Table 5 (updates p. 3-13 of Navy FEIS)  
Estimated Forest Service Financial Costs and Revenues

Forest Service Costs <sup>1</sup>	Alt A	Alt B	Alt C	Alt D	Alt E	Alt F (Sel. Alt.)
Sale Preparation	\$0	\$582,879	\$1,152,144	\$494,471	\$454,767	\$242,964
Sale Administration	\$0	\$341,649	\$675,318	\$289,829	\$266,558	\$142,411
Engineering Support	\$0	\$635,893	\$1,256,935	\$539,444	\$496,130	\$265,062
<b>Total Project Costs</b>	<b>\$0</b>	<b>\$1,560,421</b>	<b>\$3,084,397</b>	<b>\$1,323,745</b>	<b>\$1,217,455</b>	<b>\$650,437</b>
<b>Indicated Bid Value<sup>2</sup></b>	<b>\$0</b>	<b>(\$2,122,721)</b>	<b>(\$3,145,327)</b>	<b>(\$1,226,945)</b>	<b>(\$938,925)</b>	<b>(\$165,567)</b>
<b>Net Present Value<sup>3</sup></b>	<b>\$0</b>	<b>(\$3,683,142)</b>	<b>(\$6,229,724)</b>	<b>(\$2,550,690)</b>	<b>(\$2,156,380)</b>	<b>(\$816,004)</b>

1 Based on Alaska Region's average budget allocation for cost centers.

2 ( ) indicates negative value.

3 Indicated bid value minus total project costs, ( ) indicates negative value.

Source: N Stearns, FASTR version October 21, 2013.

### Payments to the State of Alaska

On October 2, 2013, Congress passed a one-year reauthorization of the Secure Rural Schools (SRS) and Community Self Determination Act, as part of Public Law 113-40. The one-year reauthorization provided for payments to states, which are distributed to counties in which national forests are situated. SRS expired at the end of FY2013. More information is available at <http://www.fs.usda.gov/pts/>. As of April 16, 2015, a two-year reauthorization was passed by Congress and if signed into law, would provide about \$12 million to communities in Southeast Alaska over 2015 and 2016.

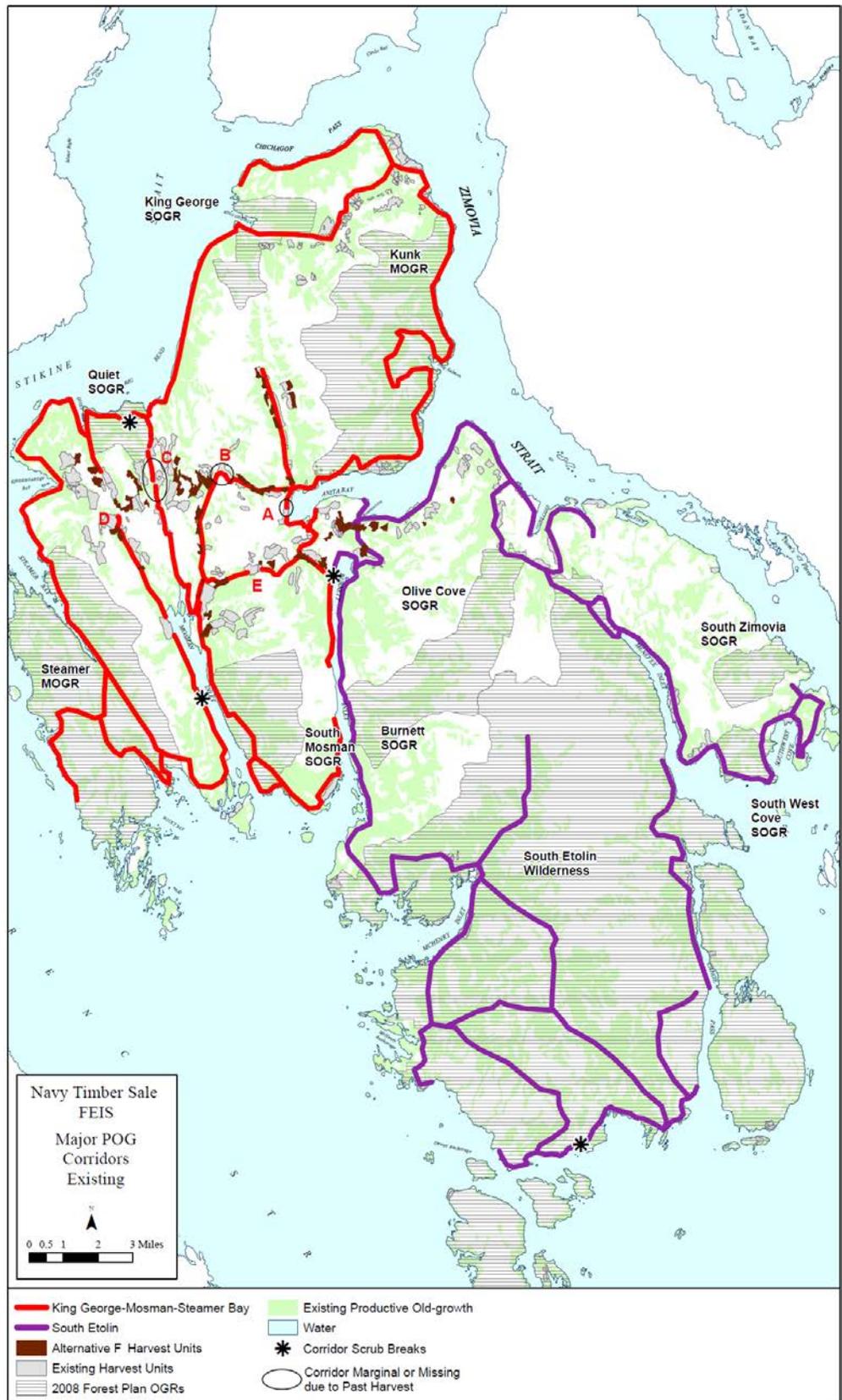
### Issue 2 – Wildlife Habitat Fragmentation

There is no new information for the Wildlife Habitat Fragmentation section in Chapter 3 of the FEIS (pp. 3-19 to 3-33). The FEIS included analysis on fragmentation, corridors and the area between Anita Bay and Burnett Inlet (FEIS pp. 2-3 and 3-20 thru 3-33). The FEIS analysis for patch sizes and fragmentation was reviewed and no new information was found that would further affect the fragmentation in the areas or the analysis of patch size or fragmentation.

Figure 3-5 on page 3-29 of the FEIS displays existing POG corridors with the locations of the units for all alternatives. The existing POG corridor map (Figure 1, following page) was rerun to display the location of only the Selected Alternative, Alternative F, units. The bold red letters A through E on the map refer to the discussion of corridors on page 3-28 in the FEIS.

The FEIS, p. 3-33 discloses that Alternative F proposes the least harvest of the action alternatives of interior habitat and coarse canopy, and has the least effect on large patches of old-growth habitat. It has less harvest in the Anita area than Alternatives B, C, and D, with 50 percent retention in Unit 67 to retain part of the low-elevation POG corridor which would be completely severed in Alternatives B, C, or D, and deleting a portion of Unit 70.

Figure 1. Existing Landscape-level POG Corridors on Etolin Island



### Issue 3 – Inventoried Roadless Areas

This section updates the Inventoried Roadless Area (IRA) section in Chapter 3 of the FEIS (pgs. 3-34 to 3-44). On March 4, 2011, the Federal District Court, District of Alaska ruled in *Organized Village of Kake, et al. v. US Department of Agriculture* (D.C. No. 1:09-cv-00023 JWS), that the Tongass is no longer exempt from the 2001 Roadless Rule. On appeal, the Ninth Circuit Court of Appeals reversed that decision on March 26, 2014, finding that the USDA was reasonable, in 2003, when it exempted the Tongass from the Roadless Rule. In August 2014, the Ninth Circuit Court of Appeals granted another hearing, held in December 2014, before an eleven-judge panel to rehear the appeal. The eleven-judge panel has not yet issued a decision. Currently, the Roadless Rule remains in effect in Alaska, pending the outcome of the Court's decision.

The current analysis considers effects to 2001 Roadless Rule inventory areas, rather than the 2008 Forest Plan inventory which was used in the 2009 FEIS analysis. The size and characteristics of the 2001 Roadless Rule roadless inventory (120,367 acres) and the 2008 Forest Plan roadless inventory on Etolin Island (127,176 acres) are similar (see Figure 2). A main difference is that the 2008 Forest Plan roadless inventory included many of the shoreline units harvested during the beach logging era (pre-1960s) since they had regained their roadless characteristics. Alternative F does not propose any timber harvest or road construction within either the 2008 Forest Plan roadless inventory areas or the 2001 Roadless Rule inventoried roadless areas.

The FEIS only considered the cable- and shovel-yarded units, but did not apply a buffer to helicopter units, consistent with the inventory done for the Forest Plan SEIS. This updated analysis includes the helicopter-yarded units as well, reflecting a more-conservative analysis that includes indirect effects such as noise or visual disturbance from helicopters. In addition to proposed roads and units themselves, an area within 1,200 feet of existing and proposed roads and 600 feet of proposed units was considered to assess indirect effects such as temporary disturbance from the sights and sounds of harvest-related activities, and the loss of interior habitat. Although there is no change to the activities proposed or to the effects from any alternative, including the helicopter units in the updated analysis increased the number of acres affected due to indirect effects for all action alternatives.

Alternative F indirectly affects about 1 percent of the zone inside of the IRA boundary, as a result of proposed units and roads adjacent to or nearby (but not within) the IRA boundary, even though there are no direct effects from harvest activities. The 566 “Total Acres Affected” for Alternative F (Table 6) reflects only indirect effects and reside solely in the zone of influence. The “Total Acres Affected” for the other action alternatives includes both direct effects (from units and roads themselves) and indirect effects (from the zone surrounding the units and roads). No unique features of the roadless areas would be affected under any alternative, and the areas would remain eligible for potential wilderness consideration.

Table 6 updates the information in Table 3-8 on page 3-39 of the Navy FEIS. The number of actual harvest acres in the FEIS’s 2008 Forest Plan roadless inventory, used in the FEIS Table 3-8, appears larger than the 2001 Roadless Rule inventory acres below. This is because some units fall in areas that are designated as roadless under the 2008 Forest Plan roadless inventory, but not designated as roadless under the 2001 Roadless Rule inventory. Conversely, the number of affected acres appears larger under the 2001 Roadless Rule inventory than the 2008 Forest Plan roadless inventory, because the updated analysis included the 600-foot zone around helicopter units as “affected” while the FEIS analysis did not include the zone around helicopter units.

When the March 2011 court ruling vacated the Tongass exemption from the Roadless Rule, the portions of Alternatives B through E that proposed activities in inventoried roadless areas were no longer viable to implement. However, the issue of the Tongass exemption from the Roadless Rule is at this time still awaiting resolution in the courts. If the Responsible Official were to select Alternative B, C, D, or E, he could choose to defer all activities in inventoried roadless areas pending final resolution of the Tongass exemption in the courts.

Table 6  
Effects to the 2001 Roadless Rule Inventory Acres by Alternative

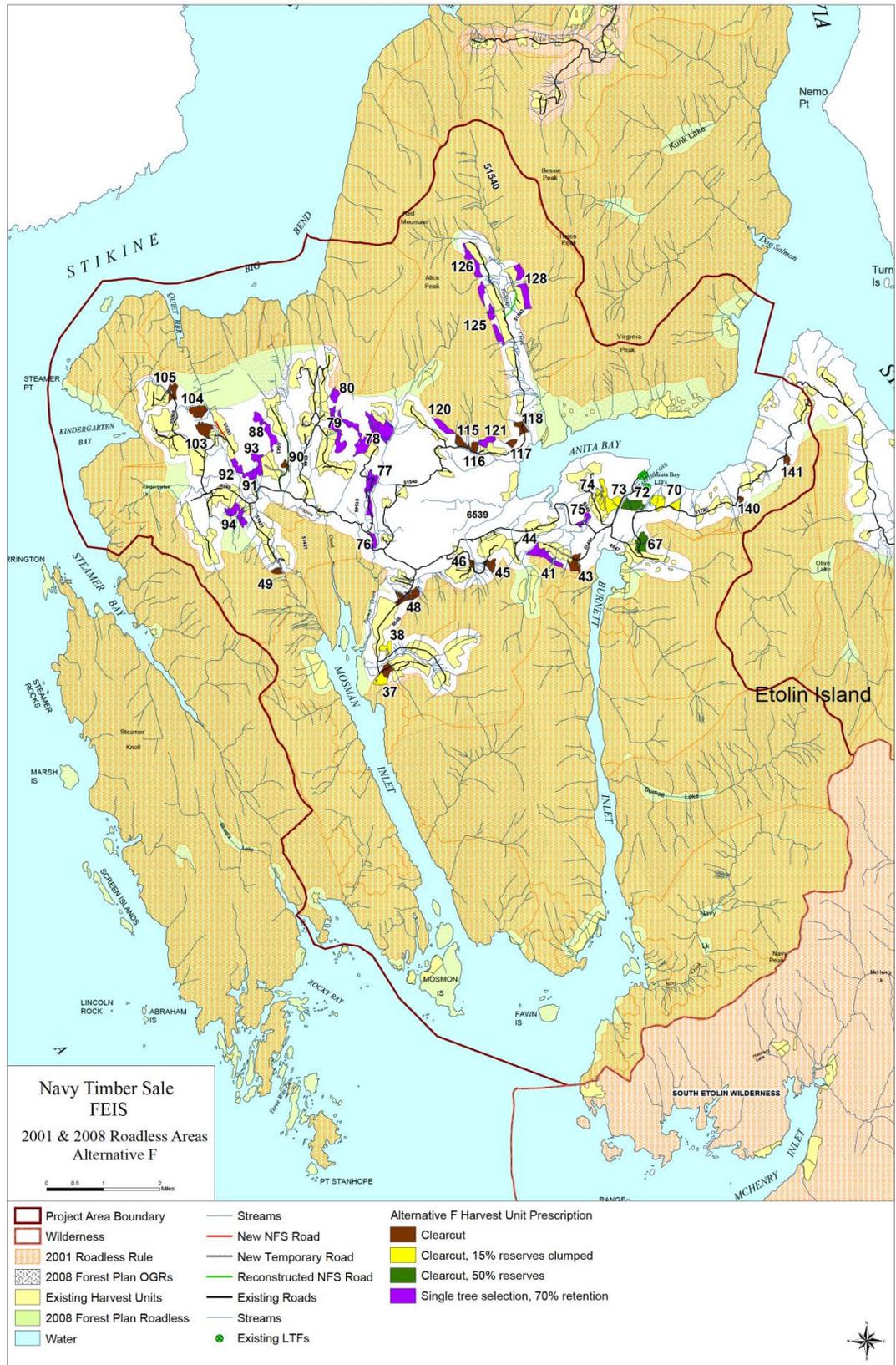
Roadless Acres	2001 Roadless Rule inventory	Percent of Roadless Acres in the Project Area Affected: 2001 Roadless Rule inventory
Total Roadless Acres <sup>1</sup>	120,367	
<b>Roadless Acres within project area</b>	<b>53,848</b>	
Acres Affected by Alternative	Total Acres Affected <sup>2</sup>	
Alt A	0	0
Alt B	5,963	11
Alt C	12,117	22
Alt D	3,120	6
Alt E	6,272	12
Alt F	566	1
	Proposed Timber Harvest within 2001 Roadless Areas	Proposed Total Miles in 2001 Roadless Areas <sup>3</sup>
Alt A	0	0
Alt B	2,200	6.3
Alt C	4,463	16.8
Alt D	1,094	4.3
Alt E	2,219	1.7
Alt F	0	0

<sup>1</sup>Mosman Roadless Area, North Etolin Roadless Area, and South Etolin Roadless Area.

<sup>2</sup> Acres affected by alternative includes the zone of influence defined as 1,200 feet from existing and proposed roads, and 600 feet from all harvest units including the helicopter units.

<sup>3</sup> Miles of new road proposed includes NFS roads and temporary roads.

Figure 2. 2001 and 2008 Roadless Areas with Alternative F



## Other Resources

### Botany

An updated biological evaluation (BE) for plants was prepared to more clearly disclose the effects by alternative for plants on the 2009 sensitive species list. There are no new effects disclosed.

The determination, for some sensitive plants, remains “May adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing” has not changed. Other plants will not be affected at all.

A resource report was prepared that focused on rare plants, and whether the project actions could result in the loss of viability for rare plants known to occur in the project area. Two plants which were analyzed as sensitive plants in the 2008 report are analyzed as rare in the 2013 updated report. There has been no new information to analyze and no other changes since the 2009 FEIS. The updated BE and resource report are in the project record.

No federally-listed threatened, endangered or proposed plants are known to occur in the project area.

### Heritage

There have been no changes to the heritage resource since the 2009 FEIS. In 2004, 2005 and 2006 Forest Service archaeologists conducted a cultural resource survey of the project area and determined a finding of No Historic Properties Affected. The State Historic Preservation Officer concurred with our recommendation.

### Recreation

There has been no new information to the recreation resource since the 2009 FEIS that would warrant reconsideration of the conclusions in that analysis. While current outfitter guide use information and reported use changes annually since the recreation resource report was written, this does not change any of the conclusions in the analysis. The Burnett Inlet Portage Trail at the head of Burnett Inlet (inventoried recreation place 62.01) had surfacing work completed in the summer of 2013.

### Scenery

Additional activities completed since 2009 include the Fishtrap Salvage Sale and road closures; neither adds significantly to the cumulative visual effects of Navy. The salvage sale is either not seen from any visual priority routes, or only seen at an angle in the background distance zone.

A map showing the project area’s scenic integrity objectives (SIO) adopted by the decision on the 2008 Forest Plan has been added to the project record to

## Appendix ROD-3

illustrate the previous report's discussion of SIOs within the project area. This map presents no additional information that would change the conclusions in the FEIS regarding scenery.

A review determined that the conclusions drawn for the 2009 Navy Timber Sale FEIS (see pages 3-90 to 3-97) are accurate and remain relevant to current issues. Additional analysis was done for Unit 70, which can be seen from Anita Bay and lies within the Modified Landscape LUD. Unit 70, which is 49 acres, meets the 40-60 acre opening Scenery Standard and Guideline for High Visual Absorption Capacity (Forest Plan p. 4-58), particularly as it is divided into two smaller settings and will have 15 percent of the stand retained. While the Forest Plan allows for harvest to dominate the characteristic landscape, it also states that units will be designed to borrow from naturally existing form and line. To achieve Forest Plan direction, the reserve trees will be grouped and located to reduce the straight borders of the settings. This will give the unit a more natural appearance.

The 1,157-foot Burnett Inlet Portage Trail runs from the head of Burnett Inlet to Road 51401. This portage route is not identified in the Forest Plan as a Visual Priority Route, and the Forest Plans Standards and Guidelines do not apply. While management activities proposed in the Selected Alternative could increase the degree of visual disturbance along this route, this increase is considered minimal because portage users are accustomed to seeing the effects of harvest activities and road-based motorized recreation use.

Other foreseeable future activities do not have viewpoints or viewsheds in common with Navy, have been considered in previous analysis, or will not increase the visual impact.

### **Silviculture**

There is no new information which would affect the silviculture analysis for the 2009 FEIS. The silviculture resource report was reviewed and included the following clarifications:

- The King George and Honey George sales, listed as previous timber sale acres harvested, are north of and outside the Navy project area so reference to these projects has been removed.
- The Etolin Porcupine precommercial thinning project in 2010 and 2011 resulted in 573 acres of thinned stands on the island,
- A thinning project done in the 1980s has been identified and information added to the report.
- A previous planting of Alaska yellow-cedar has been identified in the project area.

Also, more information on Alaska yellow-cedar harvest, regeneration, and post-thinning composition has been added to the resource report. Alaska yellow-cedar conservation and promotion strategies include retaining seed

trees, single-tree selection, favoring cedar during thinning, and inter-planting of cedar. Natural regeneration is prolific on the Tongass as average stocking conditions show all species regenerate 2,000 total trees per acre (TTPA) in the Central Zone (Draft Report *Exploring the Sustainable Yield Capacity of the Young Growth Lands on the Tongass National Forest while Evaluating the Impact of Acreage Reductions and Rotation Age*, prepared for USDA Forest Service and Juneau Economic Development Council, 2011). The Navy project area is located in the Central Zone, where regeneration survey data show Alaska yellow-cedar comprises 7 percent of the total TTPA. It is fully expected that all species, including Alaska yellow-cedar, will naturally regenerate following timber harvest in the Navy project area.

### **Soils, Karst, and Wetlands**

There are no changes to the soil, karst and wetland analysis for the 2009 FEIS. There have been minor changes in on-the-ground conditions, with the addition of three new landslides. However, all of these occurred in natural setting areas not associated with management activities and do not change the results of the landslide analysis, nor do they affect the proposed roads or units in the Selected Alternative.

The cumulative impact to wetlands in the project area will be very slightly higher due to the recent surfacing of the Burnett Inlet Trail, near the head of Burnett Inlet, completed in summer 2013. Trail improvements included fill on approximately 0.5 acre of wetlands.

### **Subsistence**

A subsistence evaluation was conducted for the six alternatives in accordance with Alaska National Interest Lands Conservation Act (ANILCA) Section 810. An ANILCA 810 subsistence hearing was conducted in Wrangell, Alaska in June 2008. Based on that evaluation, in the FEIS it was determined that in combination with other past, present, and reasonably foreseeable future actions, all of the action alternatives could result in a slight increase in the possibility of a significant restriction on subsistence use of deer. This is consistent with the Forest Plan's determination based on the cumulative effects of full implementation of the Forest Plan (FEIS, p. 3-122).

The wildlife and subsistence addendum (2012) updated deer model capability information and incorporated more-recent hunter harvest data (2005-2010) from Alaska Department of Fish and Game (ADFG) (Table 21, Wildlife and Subsistence ROD Addendum). Deer model results for all alternatives are shown in Tables 7 and 8 in the Wildlife: Sitka Blacktailed Deer section, below. For Alternative F, in wildlife analysis area (WAA) 1901, neither the direct 4 percent decline in deer habitat capability (DHC) from current condition at stem-exclusion phase, nor the 14 percent cumulative change in DHC from historic condition at stem-exclusion phase would constitute “a substantial reduction” or “large reductions in abundance or major redistribution”. Current deer density of just under 16.0 would be reduced to 15.4 at stem-

## Appendix ROD-3

exclusion phase.

Hunter demand at 0-25 years post-harvest (stand initiation phase) which was estimated to be 2.4 percent of DHC for WAA 1901 (FEIS, Table 3-29) has been updated to an estimated 7.0 percent of DHC for Alternative F. At stem-exclusion phase (after 25 years post-harvest), it is estimated at 7.2 percent of DHC. These figures are based on the updated assumption of 144 deer harvested per year (the FEIS assumption was 78 deer per year). Although the 2008 Forest Plan did not include a 36 percent reduction factor for predation at the request of the State of Alaska, these figures include this reduction factor, since it was used in the Navy DEIS and FEIS and produces a more-conservative result. Even with the 36 percent reduction for predation, hunter demand is below the 10 percent of winter carrying capacity that is considered sustainable and provides a reasonably high level of hunter success.

Based on the information in the FEIS and the new information analysis, at a project level, direct effects within the foreseeable future from the Navy Timber Sale project alone would not result in a significant possibility of a significant restriction on any subsistence resources, including deer.

However, since additional timber harvest may occur at some future time in the development LUDs in WAA 1901, cumulatively there may be a significant possibility of a significant restriction on subsistence use of deer in WAA 1901 in the future due to additional reductions in habitat capability. This is consistent with the Forest Plan finding that full implementation of the Plan could lead to a significant possibility of a significant restriction on subsistence use of deer. The potential foreseeable effects, directly and cumulatively, from the project alternatives will not have a significant possibility of a significant restriction on subsistence uses for other resources including bears, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots.

### **Transportation**

There is no new information regarding transportation policy since the FEIS was published; however, there are some minor updates and changes documented in the addendum to the transportation report in the project record.

Implementation of the 2008 Etolin Island Road Closure contract work included closing 1.5 miles (roads 6560 and 51011) and decommissioning 0.4 mile (road 51000) of road. Roads 6539 and 6543, identified for reconstruction in the FEIS, have since had this work completed, which consisted of reconditioning/periodic maintenance including resurfacing, compaction, and seeding.

### **Watershed**

In April 2012, the Forest Service issued National Core BMPs. Directives for using these BMPs are currently in development. The Navy Timber Sale will implement the most current BMP guidance at the time of implementation.

Currently, this project cites the Alaska Region BMPs, which are fully described in FSH 2509.22. A crosswalk between the current Alaska Region BMPs and these National BMPs has been placed in the project record for reference.

The addendum for the watershed resource report identified several items of updated or clarified information including:

- Road reconditioning on Road 6539 that addressed some sediment concerns in the Thrucut/Goose Lakes Creek watershed was completed in 2011. The condition of this road was identified in the resource report as a contributor to sediment risk in the Thrucut/ Goose Lakes Creek Watershed. Removal of landslide material, ditch-cleaning, and installation of a new culvert resolved these concerns.
- Updates identifying road storage, closure, and stormproofing work completed through implementation of the Wrangell Ranger District ATMP.
- Clarification of effects of road reconditioning in Fishtrap Creek watershed: Alternative F would recondition 0.35 mile of existing system road on Road 51543, including re-installation of one bridge at a Class II stream in the upper Fishtrap Creek watershed. Reconditioning would also occur on 0.42 mile of existing Road 51540. Road reconditioning would result in short-term increases in sediment. The temporary increase would not degrade water quality or fish habitat. Implementation of BMPs described in the road cards is expected to maintain water quality and minimize impacts to fish habitat. This correction would not change the relative ranking of alternatives.
- Clarification, FEIS page 3-153, Environmental Effects: Two of the eleven red pipes in the project area are located on Maintenance Level 1 roads that are used to access Alternative F units: Road 6544 MP 2.569 and Road 51544 MP 0.226. When these roads are stored, the removal of these red pipes would restore an estimated 4000 feet of mostly anadromous fish habitat access in Pump Creek and 4400 feet of resident fish habitat in Upper Big Bend watershed. The removal of these two pipes would substantially reduce the habitat affected by red pipes in the project area. An additional gray pipe at MP 0.586 (potentially affecting over 3,000 feet of anadromous fish habitat) could also be removed during storage of Road 6544. These roads would be high priority for storage and red pipe removal during implementation of the Access and Travel Management Plan (ATMP).
- Fish passage at road/stream crossings and removal or replacement of red pipes: In the Navy project area, eleven (not ten as stated in the FEIS) culverts did not meet current fish passage standards in 2009. One of the eleven culverts is mainly affected by beaver debris and may only be temporarily red (personal communication Dennis Reed, Wrangell RD Fish Biologist). Since 2009, an additional culvert was determined to be red and was replaced by a bridge in 2011. In addition, review of

## Appendix ROD-3

FEIS Table 40 determined that the column “Feet of Fish Habitat Affected” was displaying units in meters, not feet. New information from recently completed stream edits has also been added to update FEIS Table 3-40, shown here:

<b>Watershed Name</b>	<b># of Red Culverts</b>	<b>Feet of Fish Habitat Affected</b>
Kindergarten Lake	2	Class II - 2,650
Pump	5	Class I - 6,195 Class II – 6,565
South Anita Bay Frontal	1	Class II - 650
Duckbill Creek	1	Class II – 2,385
Upper Big Bend Frontal	1	Class II – 4,410
West Burnett Frontal	1	Class II - 590
<b>Total</b>	<b>11</b>	<b>Class I – 6,195</b> <b>Class II – 17,255</b>

### Wildlife

The wildlife and subsistence resource report has been reviewed and updated. The Navy biological assessment/biological evaluation (BA/BE) was also updated. Updated analysis is based on the Selected Alternative (Alternative F) unless otherwise noted.

No information that would affect the decision was revealed in these analyses. The FEIS states that the Alternative F would have the least effect on wildlife habitat of any action alternative, due to having the least acres of harvest and miles of roadbuilding. A summary of the updated analyses is included below.

#### Sitka Black-tailed Deer

The deer model was designed for use at the Forest Plan level and has undergone changes in the settings used as more information is known. These changes are described in the paper “Tongass Interagency Deer Winter Habitat Suitability Index Model” located in the project record.

Direction as to how the deer model is to be used for analysis was updated in 2011. This direction was used to reanalyze the effects for Navy FEIS, and the reanalysis is detailed in the Wildlife and Subsistence Addendum 2012 in the project record.

**Deer habitat capability:** Deer habitat capability was reanalyzed for all alternatives using the October 2011 direction for the deer model which was developed jointly by the interagency wildlife biologists. The differences between FEIS model run and the 2011-direction model run deer habitat capability (DHC) results are largely due to how partial harvest was treated in the analysis. In the FEIS, if volume removal was less than or equal to 30 percent, the stand was considered to have some remaining volume and an

adjustment was made to the results of the deer model. The reanalysis models all harvest, including partial cuts, as clearcut, to provide a more-conservative scenario. Also, in the FEIS, non-federal ownerships were included in the analyses for both direct and cumulative effects; the 2011 model runs used NFS-only lands in WAA 1901 for direct effects, and all lands on Etolin Island for cumulative effects analysis.

Table 7, below, updates Table 3-48 in the FEIS (p. 3-170) for deer habitat capability, including some minor formatting changes. In Table 3-48, the 26-150 year figures show the decline from 1900 (cumulative), but in updated Table 7, the figures for all years (0-25 and 26-150) show the decline from existing condition.

The reanalysis shows a greater percentage of decline than the FEIS. As in the FEIS, Alternative F has the least effect of the action alternatives, and Alternative C the greatest effect. Alternative F shows a 2 percent decline in deer habitat capability from existing condition at 0-25 years post harvest (the FEIS showed a 1 percent decline), and 4 percent decline from existing condition at 26-150 years.

**Table 7**  
**2012 Direct Effects on Sitka Black-tailed Deer Habitat Capability (DHC) by Alternative for WAA 1901<sup>1</sup> (updates Table 3-48 in the FEIS)**

Time frame	Deer Habitat Capability <sup>2</sup> (and percent change) by Alternative						
	Existing	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
0-25 years (% change) <sup>3</sup>	3,271 (N/A)	3,253 (-<1%)	3,105 (-5%)	2,991 (-9%)	3,146 (-4%)	3,087 (-6%)	3,199 (-2%)
26-150 years (% change) <sup>4</sup>	3,271 (N/A)	3,200 (-2%)	3,052 (-7%)	2,937 (-10%)	3,093 (-5%)	3,034 (-7%)	3,145 (-4%)

<sup>1</sup> National Forest System (NFS) lands only in WAA 1901 with partial harvest modeled as clearcut. Includes existing managed stands.

<sup>2</sup> Deer habitat capability expressed as number of deer

<sup>3</sup> 0 – 25 years represents the immediate effect of project implementation.

<sup>4</sup> 26 – 150 years represents the effects of the project once harvested areas are regenerated and the canopy closes, reducing the amount of understory forage for deer.

The cumulative effects were also reanalyzed to show the reduction in DHC from historic (1954) conditions on all lands (Table 8, below).

Table 8  
2012 Cumulative Effect on Sitka Black-tailed Deer Habitat Capability (DHC) by Alternative for WAA 1901 and Etolin Island<sup>1</sup>

Scale / Time Frame	Deer Habitat Capability <sup>2</sup> (DHC) by Alternative							
	Historic (1954)	Existing	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
WAA 1901 0-25 years (% change) <sup>3</sup>	3,675	3,271 (-11%)	3,253 (-11%)	3,105 (-16%)	2,991 (-19%)	3,146 (-14%)	3,087 (-16%)	3,199 (-13%)
WAA 1901 26-150 years (% change) <sup>4</sup>	3,675	3,271 (-11%)	3,200 (-13%)	3,052 (-17%)	2,937 (-20%)	3,093 (-16%)	3,034 (-17%)	3,145 (-14%)
Etolin Island 0-25 years (% change) <sup>3</sup>	6,557	6,024 (-8%)	6,006 (-8%)	5,859 (-11%)	5,744 (-12%)	5,899 (-10%)	5,840 (-11%)	5,952 (-9%)
Etolin Island 26-150 years (% change) <sup>4</sup>	6,557	6,024 (-8%)	5,953 (-9%)	5,805 (-11%)	5,690 (-13%)	5,846 (-11%)	5,787 (-12%)	5,899 (-10%)

<sup>1</sup> Includes both NFS and non-NFS lands with non-NFS land assigned zero habitat capability and partial harvest modeled as clearcut (most conservative scenario). Includes existing managed stands, present, and reasonably foreseeable actions.

<sup>2</sup> Deer habitat capability expressed as number of deer

<sup>3</sup> 0 – 25 years represents the immediate effect of project implementation

<sup>4</sup> 26 – 150 years represents the effect of the project once harvested areas are regenerated and the canopy closes, reducing the amount of understory forage for deer.

Similar to direct effects, the results for cumulative effects show a greater percentage of decline than does the FEIS; however, the relative ranking of the alternatives is almost the same as in the FEIS. Alternative F has the least effect of the action alternatives. At the WAA level, Alternative F shows a 13 percent decline in deer habitat capability from historic (1954) condition at 0-25 years post harvest, and 14 percent decline at 26-150 years (the FEIS showed a 8.7 percent decline from historic (1900) condition) at 26-150 years.

**Deep snow habitat:** Although winter habitat was considered by the project biologist during the analysis for the FEIS, the deer model was not designed to model deep snow winters (severe winters). Therefore, additional analysis was done for the Alternative F at both the WAA 1901 and also the all-Etolin Island scale to predict the results of the potential effects on deer for deep snow habitat. Deep snow habitat is classified as productive old-growth (high-POG) less than 800 feet in elevation on south aspects for this analysis. There would be a direct effect of 2 percent reduction of deep snow habitat in WAA 1901 from the current levels for Alternative F, which is proportional to the overall habitat capability reduction, and a cumulative effect of 24 percent reduction from historic conditions. At the Etolin Island scale, the current condition shows a 14 percent reduction from historic levels, with no measurable change resulting from Alternative F.

## Wolves

Deer density and road density were analyzed in the FEIS, with wolves considered in relation to road density. To more-thoroughly assess project effects on wolves, three analyses were recalculated, for: 1) Deer density to estimate the effects on the wolves' primary food source, including analysis at the biogeographic province scale for Alternative F, 2) Road density to evaluate the effect of increased roads on the potential hunting/trapping pressure, including recent road closures and removing non-NFS lands from direct effects, and 3) Consideration of wolf harvest data for a more-detailed analysis of potential effects to wolves.

Theoretical **deer density** (deer/mi<sup>2</sup>) was recalculated based on the deer habitat capability derived from the model using the 2011 direction for all alternatives (see discussion under Sitka black-tailed deer). This is an indicator to assess the ability of an area to support theoretical deer populations capable of maintaining sustainable wolf populations and meeting human harvest demands.

All deer densities for WAA 1901 are less than 18 deer/mi<sup>2</sup> (see Tables 9 and 10, below). Historically, neither WAA 1901 nor Etolin Island supported a very high deer density, approximately 18 deer/mi<sup>2</sup>, according to this analysis. As a result, the area may be at higher risk of not supporting deer populations capable of maintaining both wolf populations and meeting human harvest demands, where deer are the primary prey of wolves. Elk on Etolin Island may be fulfilling part of the role as prey for wolves. WAA 1910 on the south end of Etolin Island is dominated by the South Etolin Wilderness, which will maintain habitat into the future.

Results of the deer density by alternative reanalysis were somewhat lower (0.4 to 0.9 deer/mi<sup>2</sup> for direct effects at WAA 1901) than those shown in the FEIS; however, the ranking was the same, with Alternative F having the least effect of the action alternatives.

**Table 9**  
2012 Direct Effect on Sitka Black-tailed Deer Density (deer/square mile)  
WAA 1901<sup>1</sup> (updates portions of Table 3-51 in the FEIS)

	Existing	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
0-25 years (% change) <sup>2</sup>	16.0 (N/A)	16.0 (0%)	15.2 (-5%)	14.6 (-9%)	15.4 (-4%)	15.1 (-6%)	15.6 (-2%)
26-150 years (% change) <sup>3</sup>	16.0 (N/A)	16.0 (0%)	14.9 (-7%)	14.3 (-10%)	15.1 (-5%)	14.8 (-7%)	15.4 (-4%)

<sup>1</sup> Deer density based upon DHC / NFS land acres at all elevations; does not include freshwater. They do not reflect actual, known densities of deer.

<sup>2</sup> 0 – 25 years represents the immediate effect of project implementation

<sup>3</sup> 26 – 150 years represents the effect of the project once harvested areas go into stem exclusion.

## Appendix ROD-3

Table 10  
2012 Cumulative Effect on Sitka Black-tailed Deer Density (deer/square mile) WAA 1901 and Etolin Island<sup>1</sup> (updates Tables 3-51 and 3-54 on p. 3-177 and 3-179 of Navy FEIS)

Scale / Time frame	Deer Density by Alternative							
	Historic (1954)	Existing	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
WAA 1901 0-25 years (% change) <sup>2</sup>	17.9 (N/A)	15.9 (-11%)	15.8 (-11%)	15.1 (-16%)	14.6 (-19%)	15.3 (-15%)	15.0 (-16%)	15.6 (-13%)
WAA 1901 26-150 years (% change) <sup>3</sup>	17.9 (N/A)	15.9 (-11%)	15.6 (-13%)	14.8 (-17%)	14.3 (-20%)	15.0 (-16%)	14.8 (-17%)	15.3 (-15%)
Etolin Island 0-25 years (% change) <sup>2</sup>	18.1 (N/A)	16.6 (-8%)	16.6 (-8%)	16.2 (-11%)	15.8 (-12%)	16.3 (-10%)	16.1 (-11%)	16.4 (-9%)
Etolin Island 26-150 years (% change) <sup>3</sup>	18.1 (N/A)	16.6 (-8%)	16.4 (-9%)	16.0 (-11%)	15.7 (-13%)	16.1 (-11%)	16.0 (-12%)	16.3 (-10%)

<sup>1</sup> Deer density based upon DHC / **total NFS and State land acres** at all elevations; does not include freshwater. They do not reflect actual, known numbers of deer.

<sup>2</sup> 0 – 25 years represents the immediate effect of project implementation

<sup>3</sup> 26 – 150 years represents the effect of the project once harvested areas go into stem exclusion.

Further analysis, based on Alternative F, was used to examine the effects on the availability of deer for both wolf and human harvest by considering deer density at the **Etolin Island and Vicinity biogeographic province** level in accordance with the Forest Plan guideline. In 1954, there were four WAAs (1904, 1905, 1906, and 1910) in this biogeographic province where deer density was 18 deer/mi<sup>2</sup> or greater, with WAA 1901 just slightly below, at 17.9 deer/mi<sup>2</sup>. Currently there is one WAA (1906) with at least 18 deer/mi<sup>2</sup>; it would remain so into the foreseeable future. These results are similar to those predicted in the Forest Plan. While subsistence hunting could be affected sometime in the future, all WAAs in the Etolin biogeographic province are projected to remain above five deer/mi<sup>2</sup>, the level thought needed to sustain a viable wolf population. Therefore, deer densities on Etolin are expected to contribute to maintaining viable wolf populations on the Tongass (Suring et al. 1993 VPOP Strategy). Shown below are the deer densities for cumulative effects, based on Alternative F, on the WAAs in the Etolin Island and Vicinity biogeographic province. The Navy project is within WAA 1901; Etolin Island includes WAAs 1901 and 1910.

Table 11  
Cumulative Effects of Alternative F Timber Harvest on Deer Habitat<sup>1</sup>

WAA	Historic	Existing	Implementation 0-25 years	Stem Exclusion 26-150 years
1901	17.9	15.9	15.6	15.3
1903	12.0	10.3	9.5	9.4
1904	25.6	16.7	16.7	16.5
1905	18.5	14.4	14.1	13.9
1906	41.1	26.3	26.1	24.5
1910	18.4	17.5	17.5	17.5

<sup>1</sup> Includes other projects within the biogeographic province.

Source: DMRerunBioprovince13ResultsUpdate20120530.xlsx

### Roads and Wolf Harvest

To determine the effects of roads for the potential of increased hunting/trapping pressure on wolves, **road densities** were recalculated, based on Alternative F, to remove State and other non-NFS lands from direct effects and to reflect recent road closures. Results changed slightly from those shown in the FEIS, Table 3-52. Cumulative effects were analyzed for all ownerships on Etolin Island.

Except for the life of the sale, open road density below 1,200 feet elevation for WAA 1901 for Alternative F would remain the same as existing condition, at 0.39 mi/mi<sup>2</sup>. Total road density would increase, from 0.64 to 0.67 mi/mi<sup>2</sup> below 1,200 feet elevation for WAA 1901 with the implementation of Alternative F. Therefore, even during the life of the sale, road densities would continue to be below the Forest Plan wolf road density standard and guideline of 0.7 to 1.0 mi/mi<sup>2</sup>, recommended for “areas where road access and associated human-caused mortality has been determined...to be a significant contributing factor to locally unsustainable wolf mortality” (Forest Plan p. 4-95).

The open and total road densities were also recalculated for Etolin Island. The open road density would be 0.22 mi/mi<sup>2</sup> during the life of the sale and 0.21 mi/mi<sup>2</sup> after the roads are closed, same as the existing condition. The total road density for Etolin Island would be 0.41 mi/mi<sup>2</sup> with the implementation of Alternative F.

### Harvest Rate of Wolves

The methodology developed jointly by the Forest Service and ADFG was used to analyze mortality for individual wolf packs (Person and Logan 2012). This analysis estimated the following **harvest rate** of wolves:

Table 12  
Estimated average harvest rate of wolves for years 1986 through 2013

	Harvest rate of individual wolf packs
WAA 1901	2.2 individuals
WAA 1910	2.0 individuals
Etolin Island	2.1 individuals

Harvest (hunting and trapping) of  $\geq 7$  wolves in a pack in 1 year is considered “pack depletion” and “high risk of depletion” if this persists for 2 or more years. Harvest of  $\geq 3$  wolves per year (estimated to be about a third of the population) within an average pack home range (about 116 mi<sup>2</sup>) is considered unsustainable and “chronic unsustainable harvest” if this persists for 5 or more years. For the years between 1986 and 2013, WAA 1910, on the south end of Etolin Island, dominated by the South Etolin Wilderness and outside the project area, had unsustainable annual harvests of wolves 31 percent of the time during this time period (8 out of 26 years). WAA 1910 also had annual harvest rates of  $\geq 7$  wolves (pack depletion) three times or 12 percent of the time during the reporting period, probably since much trapping (over 75 percent) occurs on the shoreline from boats.

WAA 1901 has had an unsustainable annual harvest of wolves at least 27 percent of the time during this period (7 out of 26 years). WAA 1901 also had annual harvest rates of  $\geq 7$  wolves (pack depletion), only once, in 2010. This supports the concept that the Anita Bay road system is not used as much for trapping, since it is not connected to a community and is not snow-plowed. Neither WAA 1901 nor Etolin Island as a whole has met or exceeded the parameters for chronic unsustainable harvest or pack depletion.

Average wolf harvest has remained within sustainable levels (ADFG Navy DEIS comment letter 2008). This is attributed to the relatively low accessibility of this area by nearby communities; however, there may be a concern for potential overharvest during the active portion of the timber sale.

**Marten**

In the FEIS, marten were analyzed as an MIS species at the WAA scale (WAA 1901). Additional habitat analysis, based on Alternative F, has been conducted at the value comparison unit (VCU) scale since marten have smaller home ranges in this area, generally a third-order watershed or a 10,000-acre landscape approximately the size of an average VCU. For this additional analysis, all timber harvest was considered as clearcut, even though partially cut stands may provide habitat during some years since the stands would retain about 70 percent of the stand structure.

Two measures were used to analyze the effects to marten: high-value habitat at the VCU level, and road density using NFS-only lands less than 1,500 feet in elevation.

**High-value marten habitat** includes low-elevation (below 1,500 feet) high-volume old-growth stands. Direct impacts to high-value marten habitat for Alternative F would result in a decrease of 0 to 9 percent for all VCUs in the project area, and WAA 1901 would experience a 2 percent decrease.

Cumulative effects with past harvest are more substantial, with a decrease of 4 percent to 36 percent within the project area VCUs, with VCUs 4640 and 4670 showing a 35 and 36 percent decrease, respectively, and VCU 4650 showing a 25 percent decrease. VCUs where timber harvest has reduced high-value habitat by 25 percent or more are less capable of supporting marten during deep-snow winters and could lead to larger home ranges and higher rates of predation. Cumulative decrease is 19 percent for WAA 1901 (calculated as 17 percent in the FEIS) and 14 percent for Etolin Island.

Cumulative reduction in POG would range from 1 percent to 22 percent for project area VCUs under Alternative F. Total POG would continue to decline from historic habitat, but none of the individual VCUs or WAA 1901 would exceed the 25-30 percent of reduction in POG which research has determined to be a threshold in other areas of the country. Therefore, there may be affected individuals, but overall populations appear, and should remain, stable.

**Road density** effects were considered, since roads provide access to marten trapping. Road density for marten has been updated using NFS-only lands less than 1,500 feet in elevation. As stated in the FEIS, p. 3-180, marten densities begin to decline in areas where road density exceeds 0.2 mile of road per square mile ( $\text{mi}/\text{mi}^2$ ) of land and may be reduced as much as 90 percent when road density approaches 0.6  $\text{mi}/\text{mi}^2$  (Suring, et al 1992). Two of the five VCUs in the project area (4640 and 4670) exceed 0.6  $\text{mi}/\text{mi}^2$  for open road density, and three VCUs (4640, 4650, and 4670) exceed 0.6  $\text{mi}/\text{mi}^2$  for total road density, both for existing condition and under Alternative F. For WAA 1901, open road density under Alternative F would be 0.4  $\text{mi}/\text{mi}^2$  during the life of the sale, then revert back to 0.3  $\text{mi}/\text{mi}^2$  (existing condition). Both existing and Alternative F total road density is 0.6  $\text{mi}/\text{mi}^2$  (estimated at 0.4  $\text{mi}/\text{mi}^2$  in the FEIS, p. 3-183). However, roads on Etolin Island are not connected to a community and are not generally plowed during the winter trapping season. This may partially reduce the effects of road density on the Etolin Island marten population. Full implementation of the Wrangell ATM Plan will lower the open road density in WAA 1901 by roughly 50 percent; it would not change the total road density.

Cumulative impacts for road density are roughly the same for project area VCUs and for WAA 1901 as the direct effects, but lower for Etolin Island at 0.2  $\text{mi}/\text{mi}^2$ . While there may be localized effects, overall populations are less susceptible to overharvest from road density. Unroaded State parcels and National Forest System lands, plus the South Etolin wilderness augment marten chance of survival on Etolin Island.

Seasons and bag limits (unlimited) have remained unchanged in the past years and no closures of the marten trapping season have occurred within the last 90 years in GMU 3, except for Kuiu Island where marten trapping was closed in

## Appendix ROD-3

2008. ADFG has expressed concern that increasing road access on several islands in GMU 3 may necessitate future restrictions. No specific islands were mentioned and concerns most likely apply to areas accessible from communities.

### **Bald Eagle**

Bald eagle protection requirements (50 CFR Part 22.26) have changed from what was in the former Bald Eagle MOU and analyzed in the FEIS. Variances no longer exist; “take” permits in accordance with the Bald and Golden Eagle Protection Act would be required if disturbance to nesting bald eagles would occur. Listed below are the required distances to avoid disturbance to nesting eagles. All nests are considered active March 1 through May 31; protections extend until August 31 unless nests are proven to be inactive.

- Avoid clear-cutting or removal of overstory trees within 330 feet (100 meters) of both active and alternate nests at any time (same as MOU).
- Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the nesting season within 660 feet (200 meters) of the nest.
- Avoid construction of log transfer facilities and in-water log storage areas within 330 feet (100 meters) of active and alternate nests.
- Avoid operating helicopters or fixed-wing aircraft within 1,000 feet (305 meters) of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.
- Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests (or within 1 mile in open areas).

Bald eagle protection requirements have been updated in the unit cards.

### **Additional MIS**

As explained in the FEIS p. 3-165, other MIS (black and brown bears, brown creepers, red squirrels, hairy woodpeckers, red-breasted sapsuckers, river otters, Vancouver Canada goose, and mountain goats) were not analyzed in detail in the 2008 wildlife report or FEIS, mainly because much of their habitats are protected by Forest Plan Standards and Guidelines. However, some of the preferred habitat outside old-growth reserves and areas protected by Forest Plan Standards and Guidelines would be affected by the action alternatives. At an appellant’s request, analysis was expanded to include the MIS listed above, with the exception of mountain goats, which do not occur in the project area. All results are based on Alternative F, unless otherwise specified.

**Black and brown bears:** Black bears occur in the project area, and brown bears typically occur on the south end of Etolin outside the project area. Both bears use a variety of habitats from sea level to alpine. Estuaries, riparian areas, and forested coastal areas have the highest value; young clearcuts,

muskegs, small openings, and subalpine meadows provide high levels of forage. Riparian areas and salmon-bearing streams are important during the spring and late summer.

Direct effects (reduction of existing habitat) were calculated for WAA 1901 (NFS lands only), with POG representing black bear denning habitat, and all habitats except older young growth in stem exclusion as foraging habitat. Cumulative effects (reductions to historic 1954 condition) were calculated for both WAA 1901 and Etolin Island (NFS and non-NFS land). See table below. This level of change is not expected to limit overall bear populations.

Table 13  
Black and brown bear habitat direct (existing) and cumulative (historic) effects

Analysis Area	Habitat type	Percent reduction from existing/historic acres	
		Existing	Historic
WAA 1901	POG (denning)	2%	11%
WAA 1901	All habitat (forage)	1%	4%
Etolin Island	POG (denning)	-	7%
Etolin Island	All habitat (forage)	-	3%

**Brown creepers:** Brown creepers nest and forage in old growth. They are negatively affected by edge resulting from fragmentation from logging, and densities are consistently lower in edge habitat. Effects to brown creepers were analyzed using changes in interior POG habitat and patch size to represent changes in brown creeper habitat.

Alternative F would reduce current interior habitat by 2 percent. The 2 percent reduction in habitat could have localized impacts on nesting and dispersal, but is not likely to limit brown creepers at the WAA scale. The Navy DEIS (Chapter 3, pp. 16, 25-26) contained additional information on fragmentation effects.

**Red squirrels:** Red squirrels rely on mature conifer forests with large cone-producing trees and cavities for nest sites. Spruce trees in mature to old-growth forest provide the highest value, but red squirrels can survive fairly well in older cone-producing young growth. They are considered a “species of least concern” and there is no trapping or shooting harvest limit or closed season for squirrels in GMU3.

Direct effects (reduction of existing habitat) to red squirrels were calculated using changes to POG and older young-growth habitat both by VCU and overall to WAA 1901. Cumulative effects were calculated using changes to POG and older young-growth habitat by VCU, for WAA 1901, and for Etolin Island, from historic (1954) condition. See table below. While there may be localized changes in squirrel home ranges and /or density, minimal effects have

## Appendix ROD-3

occurred at the island scale, and habitat for red squirrels will improve as younger stands reach cone-producing age.

Table 14  
Red squirrel habitat direct (existing) and cumulative (historic) effects

Analysis Area	Habitat type	Percent reduction from existing/historic acres	
		Existing	Historic
VCUs (WAA 1901)	POG/older young growth	0 - 7%	0 - 21%
WAA 1901	POG/older young growth	2%	10%
Etolin Island	POG/older young growth	-	6%

**Hairy woodpeckers:** Hairy woodpeckers are uncommon on the Tongass, preferring high-volume POG stands with patches greater than 500 acres considered optimal habitat. Both hairy woodpeckers and red-breasted sapsuckers are cavity nesters preferring large trees for nesting. Effects to both species are similar except for the type of POG affected.

Direct effects (reduction of existing habitat) were analyzed for the percent reduction in high-POG by VCUs in the project area and also for WAA 1901. Cumulative effects (reductions to historic 1954 condition) were also analyzed for the percent reduction in high-POG by project area VCUs and for WAA 1901. See table below. Cumulative effects on preferred hairy woodpecker habitat may represent localized gaps in distribution.

Table 15  
Hairy woodpecker habitat direct (existing) and cumulative (historic) effects

Analysis Area	Habitat type	Percent reduction from existing/historic acres	
		Existing	Historic
VCUs (WAA 1901)	High-volume POG	0 - 8%	0 - 35%
WAA 1901	High-volume POG	2%	18%

**Red-breasted sapsuckers:** Red-breasted sapsuckers are common on the Tongass. This cavity excavator uses snags and partly dead trees in coniferous, deciduous, or mixed forests for nesting and forage. It prefers low-and-medium volume POG and can be found along clearcut edges as well.

Direct effects (reduction of existing habitat) were analyzed using the percent reduction for low and medium-POG by VCUs in the project area and overall for WAA 1901. Cumulative effects (reductions to historic 1954 condition) were also analyzed for low and medium-POG by project area VCUs and overall for WAA 1901. See table below. Impacts to red-breasted sapsucker

habitat are less than those to hairy woodpecker habitat, due to limited past logging in lower volume classes.

Table 16  
Red breasted sapsucker habitat direct (existing) and cumulative (historic) effects

Analysis Area	Habitat type	Percent reduction from existing/historic acres	
		Existing	Historic
VCUs (WAA 1901)	Low/med-volume POG	0 – 7%	0 – 11%
WAA 1901	Low/med-volume POG	2%	4%

**River otters:** In Southeast Alaska, river otters are associated with coastal and fresh water aquatic environments and the old-growth forest immediately adjacent (within 100-500 feet). Their primary habitat is protected by Forest Plan Standards and Guidelines, including Beach and Estuary Standards and Guidelines, and Riparian Standards and Guidelines. No harvest is scheduled in these habitats. All habitat within a minimum of 100 feet of Class I and II streams is protected by standards and guidelines and Tongass Timber Reform Act (TTRA).

For this analysis, effects to security and denning habitat were calculated based on the effects to POG within 100 to 500 feet of fish-bearing streams (Class I and II) for all ownerships and elevations. Since protected coastal areas provide the highest-quality habitat, direct project effects (reduction of existing habitat) are expected to be minimal.

Cumulative effects (reduction to historic 1954 condition) to otters are more substantial than direct effects. See table below. Freshwater riparian denning and foraging security cover has been previously reduced from historic condition. Past harvest has also occurred in beach habitat, and these older clearcuts may receive some use by otters, but are not considered optimal habitat. No formal population surveys have been conducted, but according to Lowell 2010, river otter trends appear stable.

Table 17  
River otter habitat direct (existing) and cumulative (historic) effects

Analysis Area	Habitat type	Percent reduction from existing/historic acres	
		Existing	Historic
VCUs (WAA 1901)	POG 100’-500’ from fish streams	0 - 6%	2 - 23%
WAA 1901	POG 100’-500’ from fish streams	2%	14%
Etolin Island	POG 100’-500’ from fish streams	-	10%

## Appendix ROD-3

**Vancouver Canada goose:** Vancouver Canada goose habitat on the Tongass includes low-productivity forest and wetlands in estuary, river, and upland areas (FEIS p. 3-165). They also use overstory canopy for cover. No harvest is scheduled in the majority of these habitats (FEIS p. 3-165) which are protected by Forest Plan Standards and Guidelines.

However, for this analysis, effects were calculated based on the reduction to forested muskeg, non-POG, SD5H, and SD4H lands. Direct effects (reduction of existing habitat) to these lands were calculated by VCU and overall for WAA 1901. Cumulative effects (reductions to historic 1954 condition) were calculated by VCU, overall for WAA 1901, and at the Etolin Island scale. See table below.

Table 18  
Vancouver Canada goose habitat direct (existing) and cumulative (historic) effects

Analysis Area	Habitat type	Percent reduction from existing/historic acres	
		Existing	Historic
VCUs (WAA 1901)	Forested muskeg, non-POG, SD5H and SD4H	0 - 2%	1 - 4%
WAA 1901	Forested muskeg, non-POG, SD5H and SD4H	1%	2%
Etolin Island	Forested muskeg, non-POG, SD5H and SD4H	-	1%

### Federally-listed Threatened, Endangered and Candidate species (TES) and Alaska Sensitive Species

A Biological Assessment (BA) was completed in 2009 and concurrence was obtained. The list for Threatened, Candidate and Endangered species was reexamined on the NMFS and USFWS Alaska websites on December 28, 2011, and includes both species managed by USFWS and those managed by NMFS. Species not occurring within Southeast Alaska inside waters and/or the southern portion of the Tongass National Forest were dropped from further analysis. Species occurring within the action area were analyzed further.

Three candidate species not previously analyzed in 2009 were considered in the 2012 Biological Assessment/Biological Evaluation. These species are Pacific herring, yellow-billed loon, and Kittletz's murrelet.

- Pacific herring (*Clupea pallasii*) within the Southeast Alaska DPS were designated a candidate species in April 2008 (Federal Register 2008a). A determination of “not likely to jeopardize candidate species, or adversely modify proposed critical habitat” was made for Pacific herring. Disturbance at Anita Bay LTFs and offshore barge locations would be unmeasurable compared to the range of the population. The

project may adversely affect individuals but is not likely to result in a loss of viability in the planning area nor cause a trend toward federal listing. Since that time, the National Oceanic and Atmospheric Administration (NOAA) Fisheries concluded on April 2, 2014 that listing of the Pacific herring is not warranted at this time.

- Yellow-billed loon (*Gavia adamsii*) was added as a candidate species (March 2009). A determination of “no effect” was made for yellow-billed loons due to incidental occurrence and lack of its habitat disturbance. Since that time, on October 1, 2014, the USFWS issued a 12-month finding on the petition to list the yellow-billed loon, and determined that listing as a threatened or endangered species is not warranted (79 FR 59195-59204).
- Kittlitz’s murrelet (*Brachyramphus brevirostris*), was proposed as a candidate species in May 2004. Found in glacial habitats, it has only incidental occurrence south of LeConte Bay, about 50 miles north of the project area. A determination of “no effect” was made for Kittlitz’s murrelet. Since that time, on October 3, 2013 the USFWS issued a 12-month finding on the petition to list the Kittlitz’s murrelet and determined that listing as a threatened or endangered species is not warranted (78 FR 61764-61801).

The updated BA was submitted to NMFS for review on August 29, 2012. The Forest Service is not required to consult with USFWS on the no effect determination for the candidate species, yellow-billed loon and Kittlitz’s murrelet. Concurrence was received on September 7, 2012. The 2009 determination that the Navy Timber Sale “may affect, but not likely to adversely affect” federally listed species (humpback whale and Steller sea lion) remains unchanged per that concurrence letter. Since that time, the eastern distinct population segment Steller sea lion was delisted per a Final Rule published in the Federal Register November 4, 2013 and effective December 4, 2013 (78 FR 66139), but will continue to be protected under provisions of the Marine Mammal Protection Act.

The Endangered, Threatened, and Candidate Species under NMFS authority in Alaska list was updated in March 2013, and includes two fish species not previously on the list: the Lower Columbia River coho salmon (*Oncorhynchus kisutch*) and the green sturgeon (*Acipenser medirostris*). The Navy BA addresses the coho among the “Fourteen stocks of salmon [that] have been identified as potentially migrating into the marine waters of the Tongass (Forest Plan FEIS Appendix F)”, with a “low probability that some may occasionally be present in inside waters”. The BA concludes there will be “no effect to listed salmon and trout species.” Critical habitat for the green sturgeon does not occur in Alaska and the species’ northernmost known range is British Columbia, although incidental marine presence could occur in the project area. A determination of “no effect” has been made for the green sturgeon, as well as the Lower Columbia River coho salmon. NMFS concurred on March 15, 2014 that due to the no-effect determination, no consultation was required.

## Appendix ROD-3

The Sensitive Species list for the Alaska Region was revised in February 2009 and the updated list was incorporated in the Navy FEIS. No updates have occurred since then.

On March 31, 2014 the USFWS published a Notice of Petition Finding and Initiation of Status Review in the Federal Register (79 CFR 17993) for the Alexander Archipelago wolf. Pursuant to a 2011 petition by Greenpeace to list the Alexander Archipelago wolf (*Canis lupus ligoni*) as a threatened or endangered species and to designate critical habitat under the Endangered Species Act of 1973, as amended (Act), the USFWS 90-day review found that the petition presents substantial scientific or commercial information indicating that listing the wolf may be warranted. As a result of a positive 90-day finding, the USFWS initiates a 12-month status review. Pursuant to an Agreement in *Center for Biological Diversity et al. v Jewell et al.* filed September 22, 2014, the USFWS will issue a decision by the end of 2015 on whether listing the wolf is warranted.

On April 10, 2015 the USFWS published a Notice of Petition Finding and Initiation of Status Review in the Federal Register (80 CFR 19263) for the Alaska yellow-cedar (*Callitropsis nootkatensis*). Pursuant to a 2014 petition by Center for Biological Diversity, The Boat Company, GSACC, and Greenpeace to list the *Callitropsis nootkatensis* as a threatened or endangered species under the Endangered Species Act of 1973, as amended (Act), the USFWS 90-day review found that the petition presents substantial scientific or commercial information indicating that listing the yellow-cedar may be warranted. As a result of a positive 90-day finding, the USFWS initiates a status review. At the conclusion of the status review, the USFWS will issue a 12-month finding as to whether the Service believes that listing is warranted.

## **Appendix A Reasons for Scheduling the Environmental Analysis of the Navy Timber Sale**

Portions of Appendix A have been deleted, updated, or added since 2009 to include current agency direction and information. Figures and tables have been updated with the most current Forest-wide timber program information. A complete, updated Appendix A is in the project record and online on the project website at [http://www.fs.fed.us/nepa/nepa\\_project\\_exp.php?project=14556](http://www.fs.fed.us/nepa/nepa_project_exp.php?project=14556).

# Appendix B - Updated Response to Comments

## Introduction

Appendix B of the FEIS includes responses to comments received for the Navy Timber Sale Draft Environmental Impact Statement (DEIS). As part of the interdisciplinary team review for the 2015 Decision for the Navy project, these responses were reviewed and updated as necessary. Only the portions of the comments which were updated are included in this appendix. The original response is included in Appendix B of the FEIS.

Comment letters are included in Appendix B of the FEIS and are annotated with an associated commenter acronym and a number. Responses to these comments are identified with a corresponding acronym and number in the Forest Service Response following each letter. Annotations (ie, "ACMP-7") precede each response and correspond to the annotations on the original letters of comment to the Draft EIS in Appendix B of the Navy FEIS.

Appendix B of the FEIS includes the annotated original letters and response to those comments.

## Forest Service Response to Alaska State Department of Natural Resources Division of Coastal and Ocean Management (ACMP) Comments:

ACMP-7

**Updated Response:** The response states "At this time, the Forest Service plans to replace one red culvert in the Pump Creek watershed during implementation of the Navy Timber Sale." This statement is an error. No red culverts will be replaced as part of the Navy Timber Sale. A 'red' culvert is a road crossing structure for a stream that does not allow juvenile fish passage during the full range of water flows. These culverts would be replaced through other funding mechanisms.

ACMP-30

**Updated Response:** Since 2009, roads 51011 and 51000 within the project area have been stored and road 6560 within the project area has been stormproofed. These roads are not planned for use in the Navy project.

## Forest Service Response to AK State Dept. of Fish and Game (ADFG) Comments:

ADFG-11

**Updated Response:** Limitations of the model were disclosed in the FEIS (pp. 3-168-169); discussions with ADFG on the deer model resulted in updated direction in 2011.

ADFG-12

**Updated Response:** Based upon 2011 direction, the deer model was re-run for the ROD with all units modeled as clearcut to model the most-conservative scenario. You are correct - since there are no agreed-upon coefficients for the other silvicultural prescriptions used from the Navy project. The 2011 direction was updated to be more in line with the

## Appendix ROD-3

how the deer model was run for the 2008 Forest Plan Amendment analysis and was done with input from USFWS and ADFG. The 2012 addendum to the wildlife and subsistence report for this ROD explains how the model was used for the updated analysis.

ADFG-13

**Updated Response:** Discussions with ADFG on the model resulted in updated direction in 2011. A separate analysis of deep snow winter habitat during severe winters was added in the 2012 addendum to the wildlife and subsistence report for this ROD.

ADFG-14

**Updated Response:** The wolf section was updated in the 2012 addendum to the wildlife and subsistence report for this ROD. The Forest Service acknowledges that current deer density of 16 deer/square mile is below the Forest Plan guideline of 18 deer/mi<sup>2</sup> recommended to sustain both wolves and meet estimated human deer harvest demands (where deer are the primary prey of wolves) and may be theoretically reduced by another 2 percent under the Selected Alternative. It is not known to what extent elk are being killed by wolves, but predation of elk by wolves is documented in the ADFG elk management report for GMU 3.

ADFG-17

**Updated Response:** Theoretical deer density was updated in the 2012 addendum to the wildlife and subsistence report for this ROD using the information of the updated deer model information.

ADFG-18

**Updated Response:** The 2012 addendum to the wildlife and subsistence report for this ROD includes additional risk analysis of wolf mortality based upon methodology in Person and Logan 2012.

ADFG-27

**Updated Response:** The Selected Alternative does not harvest timber in roadless areas; therefore no directly affected acres would be within an inventoried roadless area. Additional marten analysis was included in the 2012 addendum to the wildlife and subsistence report for this ROD, and includes analysis by VCU, WAA, and Etolin Island as a whole.

### **Forest Service Response to Environmental Protection Agency (EPA) Comments:**

EPA-2

**Updated Response:** The new NPDES permit was received, with an authorization effective date of April 15, 2009.

### **Forest Service Response to Glen Ith (GI) Comments:**

GI-4

**Updated Response:** The quartile method is no longer used to display the results of the deer model. Additional discussion is under ADFG 12 and 13.

GI-4c

**Updated Response:** The deer model was run again using the 2011 direction, and the results are in the 2012 addendum to the wildlife and subsistence report in the project record. Also discussed in response to comments ADFG-12 and 13.

GI-4f

**Updated Response:** Also discussed in response to comments ADFG-12 and 13.

GI-5

**Updated Response:** Although effects to individual patch size were not displayed in detail in the FEIS, the 2008 Old Growth resource report included changes to the number of blocks and average block size by category from historic to resulting condition (Table OG-6).

### **Forest Service Response to SE Alaska Conservation Council (SEACC) Comments:**

SEACC-1

**Updated Response:** Updated market demand is calculated annually, with the estimate used as a guideline in setting annual timber sale goals. Predicting likely timber purchases and offer levels on the Tongass for Fiscal Year 2014 can be referenced at [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5447816.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5447816.pdf) (Feb 3, 2014).

SEACC-3

**Updated Response:** The 5-year timber sale plan has information on when and how much estimated volume is planned from the Navy project; however, the preliminary timber cruise volume data for the Navy alternatives show a lower available volume. The information in Appendix A has been updated from FY 2009 to FY 2014 based on the estimated amount of market demand for FY 2014. See response to comments SEACC-1, and SEACC- 9 to SEACC-13. The market demand is updated annually.

SEACC-11

**Updated Response:** Brackley et al. was estimating timber demand and not the timber to be offered since the availability of timber to be offered is dependent on various factors. The FY 2013 timber demand was estimated at 143 MMBF. The volume that was offered was 115 MMBF.

SEACC-12

**Updated Response:** Although in 2009, Silver Bay Logging, Inc. had been in negotiations to sell the Wrangell mill; prospective purchasers had voiced reluctance due to lack of a steady timber supply, which is one of the reasons that this is a significant issue for this project. In 2010, Silver Bay Logging dismantled their mill. The indicated bid value was recalculated to the Viking Mill in Klawock on Prince of Wales Island in the updated FASTR analysis.

SEACC-13

**Updated Response:** Appendix A of the Navy FEIS has been updated with current information.

## Appendix ROD-3

### Forest Service Response to Sealaska Corporation (SC) Comments:

SC-2

**Updated Response:** The NEPA Economic Analysis Tool-Residual Value, or NEATR program, used for modeling financial analysis in the FEIS, has been superseded by the Financial Analysis Spreadsheet Tool – RV, (FASTR). Like NEATR, FASTR provides a relative comparison of anticipated project costs and revenues for a range of project alternatives. The FASTR model uses the same logging costs and manufacturing costs developed for the Alaska Region timber sale appraisal program. FASTR was used during the updated FEIS analysis to analyze and compare the alternatives. At this time, the action alternatives still show deficit returns. Inputs into the FASTR program are rough estimates and the output is not intended to be used as a timber sale appraisal.

SC-3

**Updated Response:** With the decision of the *Organized Village of Kake, et al. vs. US Department of Agriculture (1:09-cv-00023 JWS)*, the Tongass exemption for the Roadless Rule was vacated and the Roadless Rule's application to the Tongass was reinstated on March 4, 2011. A subsequent ruling on March 26, 2014 by the Ninth Circuit Court of Appeals reversed that District Court decision concerning the exemption of the Tongass from the Roadless Rule. The Ninth Circuit Court also remanded the case to the District Court to decide whether a supplemental EIS is required for the Tongass exemption. In August 2014, however, the Ninth Circuit Court of Appeals granted another hearing, held in December 2014, before an eleven-judge panel to rehear the appeal of the March 2011 decision. The eleven-judge panel has not yet issued a decision. At this writing, the Court's decision is still pending.

### Forest Service Response to Sitka Conservation Society et al (SCS) Comments:

SCS-2

**Updated Response:** See updated response to SC-3.

SCS-3

**Updated Response:** The Navy project presents a range of alternatives, including a no-action alternative, that responds to the issues identified. The range of volume among the action alternatives has been recalculated to be estimated at 13.1 MMBF (Alternative F) to 62.0 MMBF (Alternative C), with the other action alternatives falling in this range.

SCS-8

**Updated Response:** The referenced link has been updated to <http://www.fs.fed.us/pnw/pubs/brackley/index.shtml>.

SCS-9

**Updated Response:** Appendix A has been updated for FY 2014. The updated market demand estimate calculations for FY 2014 can be referenced at [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5447816.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5447816.pdf).

SCS-16

**Updated Response:** On March 28, 2011, Financial Analysis Spreadsheet Tool – RV (FASTR) was approved by the Regional Forester to replace the NEPA Economic Analysis

Tool Residual Value (NEAT\_R) version 2.16 as the Forest Service, Alaska Region, financial efficiency and economic analysis tool for use in modeling timber volume during planning. The Financial Efficiency Table (FEIS Table 3-5 TM-5) has been updated using the FASTR analysis modeling tool and is documented in the addendum to the timber economics report.

Forest Services cost averages per MBF have been updated as discussed under Issue 1, Timber Supply and Economics (see subsections Financial Efficiency Analysis and Forest Service Costs) in this appendix.

### SCS-18

**Updated Response:** In November 2009, the Regional Forester approved time-limited shipment of unprocessed hemlock and Sitka spruce logs and provided additional options for purchasers. The export policy is reviewed annually by the Regional Forester. An updated (February 2014) letter regarding the current export policy is in the project record.

### SCS-19

**Updated Response:** See also the updated response to comment SCS-18 regarding limited interstate shipment policy.

### SCS-20

**Updated Response:** FASTR, used in the updated analysis, reflects Alaska yellow-cedar export rates. Species selling values are incorporated from the most recent quarterly appraisal bulletin used for the residual value appraisal method. The Navy FEIS used the Residual Value 3<sup>rd</sup> Qtr., 2007 appraisal bulletin and the updated analysis used the FASTR version October 21, 2013 using the Residual Value 4<sup>th</sup> Qtr, 2012 to compare alternatives.

### SCS-21

**Updated Response:** Table 3-2 has been updated in the timber report addendum (Table 1), using data generated by FASTR and updated employment coefficients for logging and sawmilling.

Timber cruise data collected since the 2009 FEIS showed less volume than the stand exam volume estimates in the FEIS, with employment figure estimates decreased accordingly (Table 3 in the timber report addendum, in the project record).

### SCS-34

**Updated Response:** See updated response to SC-3.

### SCS-35c

**Updated Response:** Regarding the roadless component of the Navy project area, almost 54,000 acres are roadless (2001 Roadless Rule inventory) - about 80 percent of the total project area. Alternative C would directly affect the most vegetation by harvesting timber in cable-harvest units and clearing roads within the roadless acres, about 1,572 acres and 17 miles of new NFS and temporary roads within the inventoried roadless areas. To reflect a more conservative, complete analysis of direct and indirect effects to inventoried roadless areas, helicopter units were included in the updated analysis. Alternative C would harvest about 2,891 acres with helicopter yarding; however, these units leave 70 percent of the timber stand intact and do not require any roadbuilding.

## Appendix ROD-3

Alternative B would remove timber from over 583 acres with cable yarding and 7 miles of roads, and 1,617 acres by helicopters. Alternative D has a similar amount of cable yarding units, about 487 acres and 5 miles of road, but less than 607 acres of helicopter harvest. Alternative E has 0 acres of cable unit harvest with just under 2 miles of road, but 2,219 acres of helicopter harvest within the Navy project area (2012 roadless area analysis addendum). Alternative F, the Selected Alternative, does not harvest any timber or build any roads in IRAs.

With the decision of the *Organized Village of Kake, et al. vs. US Department of Agriculture (1:09-cv-00023 JWS)*, the Tongass exemption for the Roadless Rule was vacated and the Roadless Rule's application to the Tongass was reinstated on March 4, 2011. A subsequent ruling on March 26, 2014 by the Ninth Circuit Court of Appeals reversed that District Court decision concerning the exemption of the Tongass from the Roadless Rule. The Ninth Circuit Court also remanded the case to the District Court to decide whether a supplemental EIS is required for the Tongass exemption. In August 2014, however, the Ninth Circuit Court of Appeals granted another hearing, held in December 2014, before an eleven-judge panel to rehear the appeal of the March 2011 decision. The eleven-judge panel has not yet issued a decision. At this writing, the Court's decision is still pending.

### SCS-37

**Updated Response:** Appendix A to the FEIS annually updates the timber demand figure. Due to the export policy and good overseas markets, in addition to recovering domestic markets, in 2014 this is based on the "Expanded Lumber, Scenario 2", with the goal for volume of timber to be offered at 142 MMBF.

### SCS-41

**Updated Response:** The Navy project is fully compliant with the requirements of NFMA. The silvicultural prescriptions are designed to:

- The even-aged management prescriptions will regenerate cedar, and pre-commercial thinning will give preference to cedar young growth to maintain or increase the cedar composition.
- For the uneven-aged prescriptions, where 70 percent of the original basal area will be left, no more than 50 percent of the cedar and spruce basal area will be harvested. Species diversity and the cedar component will be maintained. Alaska yellow-cedar and western redcedar regeneration is considerable in many of the stands previously harvested. A summary of pre- and projected post-harvest conditions shows quantitative effects of single-tree selection for trees over 9" DBH for helicopter units in the Navy project area, found in the silviculture resource report, Table 6. Monitoring after harvest will be done via stocking surveys on all harvest units to verify the effectiveness of recruiting and retaining desired species in the managed stand.
- Several of the even-aged stands will have western redcedar and Alaska yellow-cedar retained as seed trees to provide a seed source for the future stand. This will minimize the effects of porcupine damage on the regenerated stands, as porcupines do not prefer these species as a source of food. This also will help establish and maintain a cedar component in the newly regenerated stand.

- The planting of Alaska yellow-cedar is an option that is in the silvicultural prescriptions and can be implemented if Alaska yellow-cedar is not regenerating in the stand. This is costly and usually not necessary with the prolific natural regeneration that occurs in Southeast Alaska. It is fully expected that all species, including Alaska yellow-cedar, will naturally regenerate following timber harvest in the Navy project area.
- At the time of precommercial thinning for even-aged stands, Alaska yellow-cedar and western redcedar are the first-priority species to be favored and selected as leave trees. This is both an effective and economical way to increase the percent of cedar within a managed stand.

The Navy project is not proposing any vegetation type conversion requiring justification by an analysis showing biological, economic, social, and environmental design consequences, and the relation of such conversions to the process of natural change.

### SCS-42

**Updated Response:** Alaska yellow-cedar (AYC) decline is recognized and discussed in the silviculture section of the FEIS on pages 3-99 to 104 and in the 2012 updated silviculture resource report. The silviculture report identifies the units where yellow-cedar decline was found to occur. As described in SCS-41, above, several measures can be taken to ensure that species mix, including Alaska yellow-cedar and western redcedar, is maintained, and these are specified on the unit cards where prescribed.

Paul Hennon et al.'s Dynamic Conservation Strategy discusses the complex causes of AYC decline and reduces it to two factors for landscape modeling: snow cover and drainage. AYC had reached its greatest competitive advantage in poorly and moderately drained soils but is now only healthy at these sites where snow-cover levels are adequate to offer protection. Within zones in which the snow cover is sufficient, AYC's niche has been limited to better-drained soils where its roots can penetrate deeper. Hennon et al identified dynamic maladapted, persistent, and migration zones for AYC. There is guidance and options for conservation and management in the paper, *Shifting Climate, Altered Niche, and a Dynamic Conservation Strategy for Yellow-Cedar in the North Pacific Coastal Rainforest* (Hennon et al 2012).

Ongoing efforts to develop a comprehensive conservation and management strategy for AYC in Southeast Alaska are nearly complete. This strategy provides:

- a thorough review of the knowledge on the extensive mortality to AYC, including the role of climate,
- options for the conservation and active management of AYC on lands that are considered either suitable or unsuitable for AYC,
- the use of risk models and yellow-cedar distribution to evaluate, quantify, and map areas of habitat suitability for AYC, both now and in the future century.

Risk of decline to AYC by the year 2080 varies considerably by geography in coastal Alaska. Some areas are already heavily impacted by decline and risk is not expected to increase appreciably; other areas are currently unimpacted, but are expected to develop decline; still other areas are expected to remain healthy.

## Appendix ROD-3

The coastal rainforest environment around the range of AYC in Alaska is divided into 33 geographic zones to produce a more fine-scale view of AYC's current and expected future health status and associated prospects for conservation and management. Within the Etolin Island Management Zone, where the Navy project is located, the percentage of AYC forests expected to be at high risk doubles from 11 to 23 percent between 2020 and 2080. High-risk areas are initially concentrated on southern, western, and eastern portions of this management area and then encroach to higher elevations and more-northerly latitudes. Several areas known to have AYC decline now do not show high risk until 2080 (e.g., the valley between Alice Peak and Helen Peak). AYC forests rated at low risk decrease from 67 percent in 2020 to 34 percent in 2080. Low-risk forests in 2080 are well distributed, but are mainly found at high elevations and interior areas of Etolin Island.

Conservation goals for AYC can be met in the large South Etolin wilderness area in the southern portion of the island. There, extensive AYC decline occurs now and is expected to progress upslope, but extensive areas of low to medium risk persist at higher elevations through 2080. Some areas that are currently impacted by decline are not projected to be at high risk to decline until 2080; therefore, relative risk may be underestimated somewhat for other parts of this management zone. Succession to other species, including western redcedar, is expected in these impacted forests. Within the Navy project area, there are good opportunities for active management, given road systems and land-use status. Additional AYC could be planted on well-drained soils, as was done in 1986 at Anita Bay (Hennon Et.al [n.d]). This is included as an option in the silvicultural prescriptions for the Navy project.

SCS-58

**Updated Response:** Open and total road density calculations were updated in the 2012 addendum to the wildlife and subsistence report for this ROD.

SCS-60

**Updated Response:** Since 2009, road maintenance work has been accomplished within the project area. In 2008, a road maintenance contract closed 1.5 miles of Roads 6560 and 51011 and decommissioned 0.4 mile of Road 51000. Sections of the 6539 and 6543 roads which were identified for reconditioning in the FEIS have had periodic maintenance work completed.

SCS-62

**Updated Response:** See updated response to SCS-60.

SCS-85

**Updated Response:** Although not required, additional MIS analysis was included in the 2012 addendum to the wildlife and subsistence report for this ROD. Information on TES species was updated in BA/BE for this ROD.

SCS-89

**Updated Response:** The single-tree selection prescriptions will not eliminate spruce from the stand. No more than 50 percent of the basal area of the spruce in the stand will be removed. Deal, et al (2001) found that partial cutting maintained stand structures similar to uncut old-growth stands, and the cutting had no significant effect on tree species composition (FEIS p. 4-27).

Deer modeling assumptions used for the FEIS are found in the Wildlife section in Chapter 3. The 2012 addendum to the wildlife and subsistence report outlines the assumptions used for the deer model as rerun using 2011 direction. See also updated response to ADFG-12 and 13.

SCS-113

**Updated Response:** See updated response ADFG 11-13.

The deer model was rerun using 2011 direction, as described in the 2012 addendum to the wildlife and subsistence report in the Navy project record.

SCS-115a and 115b

**Updated Response:** See updated response to ADFG-12 and 13.

SCS-116

**Updated Response:** See updated response to ADFG-12 and 13.

SCS-118

**Updated Response:** See updated response to ADFG& 12 and 13.

SCS-120

**Updated Response:** See updated response to ADFG-12.

SCS-121

**Updated Response:** See also updated response to ADFG-12.

SCS-122

**Updated Response:** See updated response to ADFG-12.

Uneven-aged stands are created through uneven-aged systems or small-scale natural periodic disturbances that allow for recruitment/release of understory trees resulting in a multi-storied stand structure.

SCS-123

**Updated Response:** See updated response to ADFG-12.

SCS-124

**Updated Response:** The silviculture resource report defines an uneven-aged stand and the objectives of uneven-aged management, the silviculture system implemented with the single-tree selection partial harvest prescription. See also updated response to ADFG-12.

SCS-126

**Updated Response:** See also updated response to ADFG 11 and the Forest Plan (pp. 3-231 to 232 and 3-265 through 3-268).

SCS-127

**Updated Response:** See updated response to ADFG 11-13 and SCS 126.

SCS-128

**Updated Response:** See updated response to ADFG 11-13 and SCS 126.

SCS-129

**Updated Response:** See updated response to ADFG-13.

## Appendix ROD-3

SCS-130

**Updated Response:** See updated response to ADFG 11-13 and SCS 126.

SCS-131

**Updated Response:** Since the 2009 FEIS, the quartile method is no longer in use. See additional discussion under ADFG-12 and 13.

SCS-132

**Updated Response:** See updated response to ADFG-14 and 18.

SCS-134

**Updated Response:** See also updated response to ADFG-14 and 18.

SCS-135

**Updated Response:** Total and open road densities were updated in the 2012 wildlife and subsistence report for the ROD.

### **Forest Service Response to The Wilderness Society (TWS) Comments:**

TWS-1

**Updated Response:**

See updated response to SC-3.

TWS-4

**Updated Response:** In November 2009, the Regional Forester approved time-limited shipment of unprocessed hemlock and Sitka spruce logs and provided additional options for purchasers. The February 2014 letter from the Regional Forester for the annual review of the export policy is in the project record. Timber markets are subject to the global marketplace and are very dynamic.

TWS-6

**Updated Response:**

See updated response to SC-3.

### **Forest Service Response to George Woodbury (GW) Comments:**

GW-1

**Updated Response:** While market fluctuations show an improvement in the economics of all alternatives, as compared to the FEIS, the modeled indicated bid value for all alternatives including the Selected Alternative is currently deficit, based on the historic market conditions and current cost collection numbers. However, these values may not reflect the future market conditions at the time of the contract offering. An alternative may or may not become more economical in future markets, or a portion of the units may be economical in current markets. If the contract appraises deficit at the future time of offering, it will not be advertised until market conditions improve.

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## Appendix ROD-3

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