



United States
Department of
Agriculture

Forest Service

Tongass
National Forest
R10-MB-632a

Navy Timber Sale

Record of Decision

**Wrangell Ranger District
Wrangell, Alaska**

March 2009



Key Acronyms and Other Terms

ANILCA	Alaska National Interest Lands Conservation Act
AHMU	Aquatic Habitat Management Unit
ASQ	Allowable Sale Quantity
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
DBH	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
EFH	Essential Fish Habitat
EVC	Existing Visual Condition
FACTS	Forest Service Activity Tracking System
FEIS	Final Environmental Impact Statement
Forest Plan	Tongass Land and Resource Management Plan, 2008
FSM or FSH	Forest Service Manual or Forest Service Handbook
GIS	Geographic Information System
GMU	Game Management Unit
HSI	Habitat Suitability Index
HUC	Hydrologic Unit Code
IDT	Interdisciplinary Team
LTF	Log Transfer Facility
LUD	Land Use Designation
LWD	Large Woody Debris
MAF	Marine Access Facility
MBF	Thousand Board Feet
MIS	Management Indicator Species
MMBF	Million Board Feet
NEAT_R	NEPA Economic Analysis Tool Residual Value
NEPA	National Environmental Policy Act of 1969
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
OGR	Old-growth Reserve
POG	Productive old-growth (forest)
RAW	Reasonable Assurance of Windfirmness
RCS	Road Condition Survey
RMA	Riparian Management Area
RMO	Road Management Objective
ROS	Recreation Opportunity Spectrum
SRA	Sediment Risk Assessment
TES	Threatened, Endangered, Sensitive [species]
TPIT	Tongass Plan Implementation Team
TTRA	Tongass Timber Reform Act
VAC	Visual Absorption Capability
VCU	Value Comparison Unit
VQO	Visual Quality Objective
WAA	Wildlife Analysis Area
WCA	Wrangell Cooperative Association

Cover photo: view of Navy Peak and Cannery Point

Record of Decision

Navy Timber Sale

USDA Forest Service
Wrangell Ranger District
Tongass National Forest
Alaska Region

Summary

The Navy Timber Sale Record of Decision (ROD) describes my decision on the Selected Alternative, which incorporates all of Alternative D and selected units and roads from Alternatives C and E, for implementation in the Navy project area.

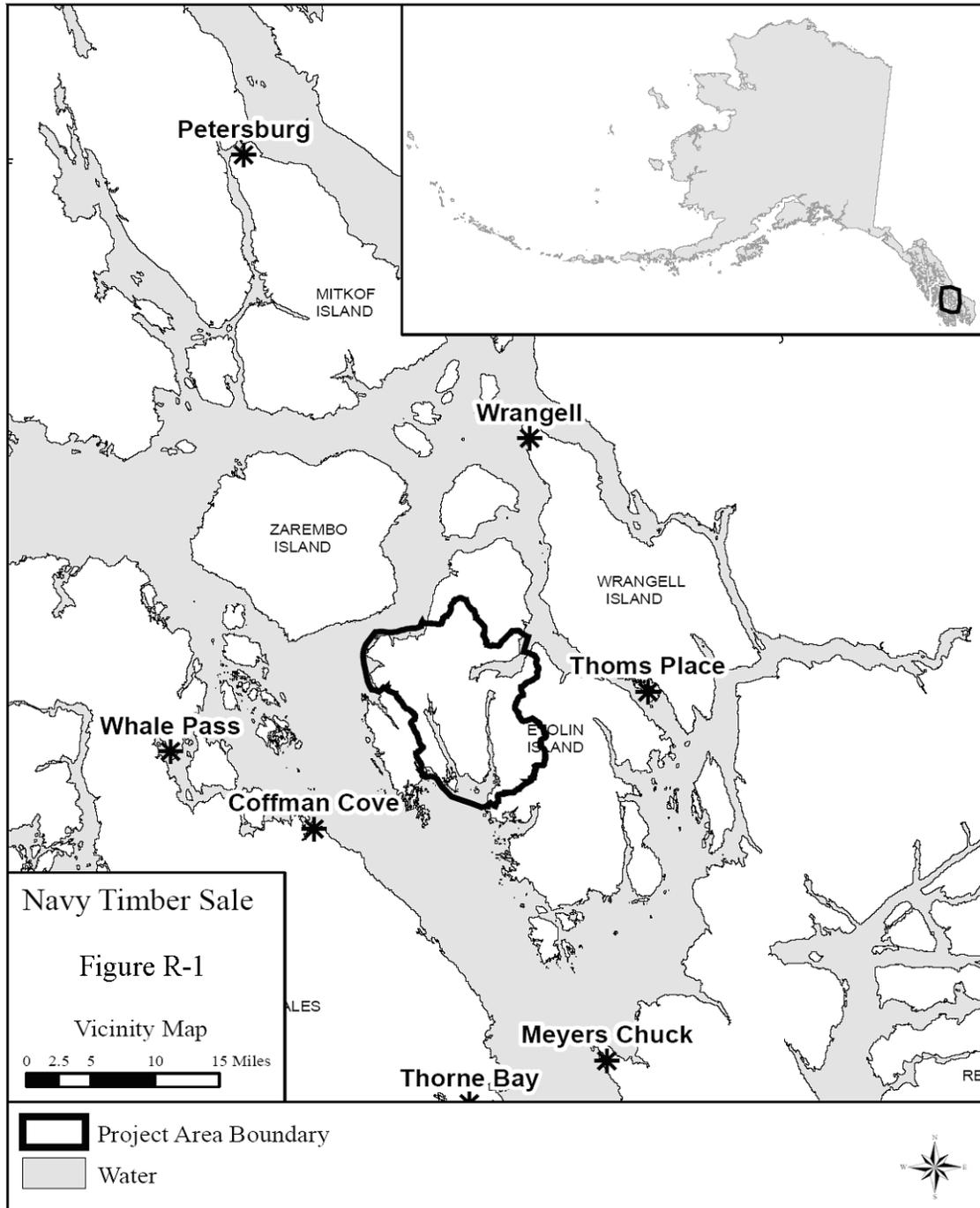
The Selected Alternative will harvest timber from 5,435 acres of commercial forest land to contribute approximately 72.8 million board feet (MMBF) of sawlog and utility timber volume to the Tongass National Forest timber sale program. The timber will be harvested by ground-based logging systems or by helicopter. The even-aged management (clearcut) and uneven-aged management (partial harvest) will be used. The Selected Alternative includes construction of 8.1 miles of National Forest System (NFS) road and associated access management objectives and 8.8 miles of temporary road. Design features of timber harvest units in this decision are described in detail on the unit cards in Appendix 1 of this ROD.

Project Location

The Navy Timber Sale project area (77,500 acres) is located in the central part of Etolin Island approximately 22 air miles south of Wrangell, Alaska. Previous timber harvest has taken place in the area and there are two existing log transfer facilities (LTFs) with associated roads. The Anita Bay road system, approximately 50 miles of National Forest System roads, is not connected to any community. There are no other land ownerships within the project area boundary.

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Figure R-1
Navy Timber Sale Vicinity Map



Source: GIS, Wrangell Ranger District

Decision

My decision includes timber harvest and the associated roads from Alternative D and the units and roads (listed below) from Alternatives C and E as the Selected Alternative for implementation in the Navy project area.

Considerations made in the selection for this decision include:

- responding to the Tongass Adaptive Management Strategy and incorporating direction in the 2008 decision of the Tongass Land and Resource Management Plan (Forest Plan);
- maximizing the amount of ground-based logging while minimizing the effects on resources; and
- including enough volume that would be harvested by helicopter and focusing on timber value through single-tree selection to attempt to offset the costs of the staging and use of helicopter for logging.

Description of the Selected Alternative

The Selected Alternative will harvest timber on 5,345 acres of commercial forest land to contribute approximately 72.8 million board feet (MMBF) of sawlog and utility volume to the Tongass National Forest timber sale program. Timber harvest will be either even-aged management (clearcuts or clearcuts with reserves) or uneven-aged management (single-tree selection). Design features of timber harvest units in this decision are described in detail on the unit cards in Appendix 1 of the ROD.

The Selected Alternative includes construction of 8.1 miles of National Forest System (NFS) road and 8.8 miles of temporary road. All new NFS roads will be placed in storage after timber sale activities are completed. Temporary roads will be decommissioned and allowed to revegetate after harvest. Design features of the NFS roads for this decision are described in detail on the road cards in Appendix 2 of this ROD. Temporary roads are included on the unit cards, Appendix 1. The Anita Bay LTFs will be used to transport the timber using barging and/or rafting. About 19.5 MMBF from 2,000 acres will be transferred by helicopter from the harvest units directly to saltwater locations near the units.

The Selected Alternative includes all units and roads from Alternative D. The following modifications were made to the units shown in the Final EIS:

- Unit 44 - two settings were added, using the configuration from Alternative C
- Unit 48 - added the eastern setting, using the configuration from Alternative C
- Unit 57 - added the western setting, using the configuration from Alternative C
- Unit 58 - changed prescription from clearcut to clearcut with 15 percent reserves
- Unit 72 - dropped the western setting and changed the prescription to clearcut
- Unit 107 - added a temporary road to the eastern setting

The following units and roads from Alternative C were included:

- Units 34, 35, 36, 39, 40, 53, 55, 56, 82, 83 (northern four settings only), 93, 102, 119, 123, 128, 129, 136, 137, 138, 139
- Units 130 and 131 and existing Road 51543 with temporary road extension

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- Units 109, 110 and 111; extended Road 51009; and relocated temporary road to Unit 111
- Unit 97 and extended Road 6540
- Unit 91 and 92 and temporary road
- Unit 90 and reconstruct Road 6543
- Units 51 and 89 changed logging system to helicopter and the prescription to single-tree selection
- Units 80, 81, and 82 and reconstruct Road 6544 and Road 51442
- Unit 107 and the addition of a temporary road to eastern setting

In addition, the following units and roads from Alternative E were added:

- Units 44, 62, 112 and 113

Rationale for the Decision

In making my decision, I considered the objectives to meet the Purpose and Need for this project as well as the issues and concerns raised during scoping, and comments on the Draft EIS, both in support and opposing this project. I considered Forest Plan direction relevant to this project and the competing interests and values of the public. I considered all viewpoints and incorporated them where feasible and consistent with the Purpose and Need of the project.

I evaluated the trade-off between resource protection and social values. The Selected Alternative provides a beneficial mix of resources for the public, within a framework of existing laws, regulations, policies, public needs and desires, and the capabilities of the land, while meeting the stated Purpose and Need for this project. My decision to implement the Selected Alternative conforms to the Forest Plan and National Forest Management Act (NFMA).

I considered the need to manage this timber resource on the Tongass in order to produce an even-flow of sawtimber and other wood products. Appendix A in the FEIS describes the process that maintains a steady supply of timber and how each project goes through a series of steps before timber can be offered from the National Forest. I considered the concerns for providing economical timber sale offerings and the need to meet annual demand for timber. By including additional units and roads analyzed in Alternatives C and E with Alternative D, I have increased the harvest volume that could be possibly harvested in the future depending on the markets. This decision provides about 72 MMBF toward meeting the timber industry needs in Southeast Alaska timber industry. This volume includes both sawtimber volume and utility volume. Although there are few markets within Southeast Alaska for utility volume at this time, this component may meet future needs, especially if the need for alternate fuels increases.

I realize that the financial efficiency of this particular project has decreased substantially since the project was proposed and that there continues to be a current downward trend in the timber markets. The Selected Alternative as a whole appraises deficit and not all of the timber is economical to offer, at this time. I also needed to consider the fluctuation of timber markets, the length of time that it takes to do field

review and analyses on a project of this size, the timber volume available and the relative effects of each alternative. The first sale of 18 mmbf of timber is planned to be offered in FY 09. Subsequent sales will be added to the five-year timber sale plan, as described in Appendix A of the Navy Final EIS.

Potential annualized jobs that could be supported are estimated between 253 and 359. The range of these jobs accounts for possible differences if the purchaser elects to ship material to the lower 48 states under the limited interstate shipping policy or export policies. The higher end of this range accounts for all material processed locally including Alaska yellow-cedar and western redcedar. The purchasers may elect to process all the sawlogs, including Alaska yellow-cedar and western redcedar locally, which is the upper range of these jobs. Shipping up to 50 percent of the total sawlog volume of all species and 100 percent of the utility volume to markets, may reduce support for local sawmilling jobs and represents the low end of the range. For this project, this could be primarily interstate shipment to the lower 48 of unprocessed Sitka spruce and western hemlock sawlogs that are a) smaller than 15 inches in diameter at the small end of a 40-foot log, or b) grade 3 or grade 4 logs of any diameter. Currently, western redcedar identified as surplus to Alaska's domestic needs and all Alaska yellow-cedar may be exported to domestic and foreign markets at the purchaser's options.

I considered the potential for increased fragmentation within a naturally fragmented area, the reduction of productive old growth, and the effects on wildlife. The Forest Plan Conservation Strategy with its system of reserves and matrix of old-growth forest is designed to provide population viability across the Tongass in accordance with NFMA. In addition, the single-tree selection prescription, which retains 70 percent of the basal area of the trees within a unit, will retain old-growth characteristics on 3,700 of the harvested acres. The road that was proposed in the Navy Draft EIS within the beach buffer to access Units 53 and 55 has been relocated and the beach buffer will retain its integrity as wildlife habitat.

Although the 2008 decision on the Forest Plan included the allocation for the Old-growth reserves in the Navy project area, I considered all of the comments about Old-growth reserves on the Draft EIS that were received prior to that 2008 decision.

- I considered the relocation of the small OGR within the Anita Bay pinch point with an allocation of a small OGR. This area contains a high amount of natural non-forest and scrub forest lands, and very little high-volume old-growth that is not already protected by standards and guidelines and a goshawk nest buffer. The main access roads for the Anita Bay road system pass through the pinch point and cannot be closed and there is extensive past harvest, making this area less desirable for a small Old-growth Reserve. An unharvested area to the north of Anita Bay, which meets the small Old-growth Reserve criteria for amount of old growth and has no roads, was selected with the 2008 Forest Plan decision. The natural lack of productive old growth in the pinch point causes marginal connectivity for old-growth associated species. The best connection through the pinch point is along the beach around the head of Burnett Inlet. It has been modified by past partial harvest but is now protected by the Forest Plan beach fringe standard and guidelines. I also decided to drop the western setting of Unit 72 along the stream to facilitate wildlife passage.
- Based on the comments on the Navy Draft EIS and subsequent conversations with ADF&G, I considered a modification of the Steamer medium Old-growth

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Reserve (OGR) in VCU 4660. Modification of this OGR would necessitate re-evaluating all the adjacent small OGRs, a process recently completed with the Forest Plan. I decided that the construction of the Mosman Inlet LTF and associated road system is not warranted at this time and units are not proposed with this decision in the area to the west of Mosman Inlet. This allows for future discussions on the design of Steamer OGR.

I considered the need for elevational corridors for deer and other species for seasonal travel patterns. The silvicultural prescriptions for Units 107, 112, and 113 will maintain this function in the Kindergarten Bay-Quiet Harbor area.

The effects to the goshawk nest found in late summer of 2008 have been considered. Unit 84 and the southern settings of Unit 83 are not included in the Selected Alternative.

This project avoids the higher-value roadless areas. Only roads that are logical extensions of the existing road system and allocated to development LUDs were used to access harvest units. This project is consistent with the Tongass Adaptive Management Strategy in regards to the roadless areas. Only activities on lands designated as Phase 1 by the decision on the Tongass Forest Plan are part of the Selected Alternative. Units and roads within the Navy watershed were not considered for the Selected Alternative, since that area is part of those lands considered for Phase 2. In addition, the harvest units near Cooney Cove and the associated roads and Mosman Inlet LTF are not included in the Selected Alternative and, therefore, a new road system will not enter the Mosman Inventoried Roadless Area.

I considered the cumulative watershed effects of this project combined with past harvest. The project design and implementation guidelines will limit the cumulative resource effects of this project combined with past harvest.

Areas adjacent to streams with high windthrow concerns have been identified on the unit cards. Reasonably, assurance of windfirmness (RAW) zones will be designed to protect the forested riparian management areas where additional protection for windfirmness is needed.

To minimize the potential effects of sediment to streams, I have not included the roads to Units 44 and 51 in the Selected Alternative, these units will be accessed by helicopter. The feasibility of the temporary road that extends north from the terminus of Road 51543 to access Units 130 and 131 will be reviewed at time of implementation to assess the possible effects on Fishtrap Creek.

While the Selected Alternative would result in some changes to the Navy project area, such as closed roads and more harvested stands, the effects would not noticeably decrease or change the recreational opportunities for established recreation activities. The Selected Alternative would not restrict recreation users' ability to pursue new recreation opportunities.

The effects on scenery when viewed from the Visual Priority Routes and Use Areas (Forest Plan, Appendix F) were evaluated. The silvicultural prescriptions, which leave more than 50 percent of the trees, and unit design for units (83, 107, 112, and 113) near Kindergarten Bay and Quiet Harbor, have been incorporated into the Selected Alternative to meet the Scenery Integrity Objectives. The single-tree selection harvest proposed for the helicopter harvest units along Burnett and Mosman Inlets will minimize the effects to scenery from those waterways.

Areas with slopes greater than 72 percent either have been avoided or will have a slope stability analysis completed prior to implementation. If the slope is found to be unstable, retention of trees is planned as stated on the unit cards, such as for Unit 58.

Forest health will improve by removing dwarf mistletoe-infected trees and by creating younger, more-vigorous growing forest. Timber lost to windthrow will be minimized with the use of even-aged management and windfirm buffers, or by single-tree selection, which retains enough canopy to be wind resistant. Measures, including the retention of cedar seed-trees and cedar interplanting, are included as part of the silvicultural prescriptions for fourteen units (Units 37, 43, 45, 46, 47, 60, 61, 66, 80, 106, 109, 110, 111, and 130) to ensure establishment of a cedar component in regenerated stands. Establishment of cedar regeneration reduces the potential for future porcupine damage in young-growth stands since these species are not preferred for food by porcupines, especially where the percent of the cedar component is low or lacking in existing stands. Long-term productivity, growth, and yield would be enhanced through the development of young, vigorously growing stands.

The revision of the Alaska Region sensitive species list occurred in February 2009. The effects to those species recently listed as sensitive were analyzed and this information was added to the Navy Final EIS. The plants species that were added to the Regional sensitive list had been previously analyzed as rare plants for the Navy Draft EIS. Two wildlife species, the black oystercatcher and the Aleutian tern, were added to the revised sensitive species list. These species are unlikely to be affected by the activities from the Selected Alternative.

I considered the comments received about climate change on the 2008 Forest Plan Draft EIS and reviewed the analysis in the 2008 Forest Plan Final EIS. That forest-wide analysis discusses 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 happening regionally and nationally. Any needs for a different course of action that might affect this decision will be addressed through existing procedures.

Effects of the Selected Alternative on Key Issues

Two issues were resolved between the Navy Draft EIS and the Final EIS. As previously mentioned, the 2008 decision on the Forest Plan included the placement of the small Old-growth Reserves in the Navy project area (Issue 2 in the Navy Draft EIS), and the Tongass Adaptive Management Strategy, which does not allow timber harvest in the Navy watershed (Issue 5 in the Navy Draft EIS) at this time.

Results of the Selected Alternative analyses are listed below.

Issue 1: Timber Supply and Economics

Concerns were expressed from the public regarding the validity of this sale due to a perceived lack of demand, questionable economic viability, the amount of economically viable timber offered by the Forest Service, and the need to provide jobs and support for the local economy.

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The financial efficiency analysis of the Selected Alternative resulted in:

- Harvest volume – about 63.0 MMBF sawlog and 9.8 MMBF of utility
- Indicated bid rate value - (\$138.00)/MBF
- Projected employment figures (total) – ranges from 253 to 359 annualized job years, depending on application of interstate shipping.

There is less timber volume from the Selected Alternative than Alternative C (87.5 MMBF) and more volume than Alternatives B, D, E and F. Alternative F would provide 18.3 MMBF. The financial efficiency of all of the alternatives is currently deficit when evaluated as a whole; Alternative F is the least negative at (\$88.47) and Alternative C is the most negative at (\$163.00). The number of jobs potentially supported by the Selected Alternative would be less than Alternative C but more than the other action alternatives. Therefore, the Selected Alternative is within the range of the alternatives analyzed in the Final EIS. Alternative F was not selected although it has the least negative indicated bid value since it also has the least amount of volume.

Issue 2: Wildlife Habitat Fragmentation

Concerns were expressed about the effects of fragmentation on wildlife habitat and wildlife populations by removing old-growth habitat and/or connectivity.

The Selected Alternative will reduce productive old growth from 60,750 acres to 58,566 acres, causing further fragmentation to an area already fragmented from natural and human causes. Some old-growth corridors would lose connectivity, which may affect travel patterns for old-growth associated wildlife. The western setting of Unit 72 was modified to provide a travel corridor along the stream. Elevational corridors for deer and marten would be provided in Units 107, 112, and 113.

The Selected Alternative affects about 890 less acres of productive old-growth habitat than Alternative C, although, more than Alternatives B, D, E, and F. Alternative F would have the least effect of all action alternatives and would affect 844 acres. Therefore, the Selected Alternative is within the range of the alternatives analyzed in the Final EIS.

Alternative E has the least effect on the old-growth corridors and provides the retention of most of the habitat within the Anita Bay pinch point and Alternative C would have the most effect. This alternative was selected since the decision on the 2008 Forest Plan allocated an undeveloped area with no previous harvest or existing roads north of Anita Bay as the small Old-growth Reserve.

Issue 3: Inventoried Roadless Areas

Concerns were expressed that timber harvest and road construction in inventoried roadless areas could affect the characteristics of the area.

The proposed activities within the roadless areas are consistent with the direction in the 2008 decision of the Forest Plan. The proposed timber harvest and road building in all action alternatives will increase the developed acres by further extensions into the roadless areas, but overall large portions will remain intact. At most 4 percent of the total roadless areas in the Navy project area will be affected by the Selected Alternative and 2 percent of the total roadless acres on Etolin Island. There are no unique characteristics within the roadless areas that will be affected by this project.

The Selected Alternative uses cable harvest on about 720 acres within the roadless areas, more than Alternative E, but less than half of the cable harvest acres in

Alternative C with 1,650 cable acres. The Selected Alternative uses helicopter harvest on almost 3,100 acres - about 100 acres more than Alternative C. The total harvest in roadless areas is over 800 acres less in the Selected Alternative, than in Alternative C. Because the units harvested by helicopter are single-tree selection with 70 percent of the trees reserved and no roads associated with these units, the overall effects to the roadless character will be less in the Selected Alternative than in Alternative C. The effects of the Selected Alternative are therefore within the range of effects considered in the Navy Final EIS.

Alternative F has the least effect on the inventoried roadless areas but was not selected since the decision on the 2008 Forest Plan allocated parts of the roadless areas to Land Use Designations where timber harvest and road construction is allowed.

Other Environmental Consequences

All resources were evaluated for the effects of the Selected Alternative; none of the effects for any resource was outside the range of the alternatives analyzed in detail for the EIS. Analyses of the effects on other resources for the Selected Alternative, including the cumulative effects with other projects, are located in the project record.

Alternatives Considered

Six alternatives were considered in detail in the Draft EIS released for public comment. When preparing the Final EIS, these alternatives were modified to include aspects of the 2008 Forest Plan. The analysis was consistent with the transition language of the 2008 Forest Plan and these changes are described in Chapter 2 of the Final EIS.

Due to the reallocation of the small Old-growth Reserves, the replacement of the Marten Standard and Guideline (1997 Forest Plan, WILD112, XVIA2) for retention of stand structure with the Legacy Standard and Guideline (Forest Plan, WILD1, IV), and other changes in the Forest Plan decision, the action alternatives changed between the Navy Draft EIS and Final EIS. However, all the action alternatives are within the range of effects of the alternatives proposed in the Draft EIS. See Chapter 2, Table 2-2 of both Draft EIS and Final EIS. See Table R-1 for a comparison of the Final EIS alternatives with the Selected Alternative.

All alternatives, with the exception of Alternative A, respond to the Purpose and Need. All action alternatives respond to the issues identified in varying degrees as displayed in Table R-1 and discussed in the Navy FEIS.

The Final EIS analyzed the following alternatives in detail:

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. Council on Environmental Quality (CEQ) regulations require that a “No Action” alternative be analyzed in every EIS (40 CFR 1502.14(d)). This alternative represents the existing condition. It serves as a baseline for comparing the action alternatives and responds to the issues of protection of inventoried roadless areas and protection of wildlife habitat.

Alternative B was the proposed action. Due to the reallocation of the small Old-growth Reserves in the Forest Plan decision, the proposed action changed between the Navy

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Draft EIS and Final EIS, and the outputs and effects of the proposed action decreased. This alternative proposed to harvest 3,212 acres producing 45.5 MMBF of timber.

Alternative C proposed to harvest 6,107 acres producing 87.5 MMBF of timber. This alternative emphasized Issue 1 by maximizing the amount of timber harvested.

Alternative D, the preferred alternative for the Draft EIS, proposed to harvest 2,369 acres producing 37.2 MMBF of timber. This alternative emphasized Issue 1 but focused on trying to select the more economical units, with greater use of conventional yarding methods than Alternative B. However, this did not result in an overall economic alternative.

Alternative E proposed to harvest 3,326 acres producing 38.4 MMBF of timber. This alternative emphasized Issue 2, Wildlife Fragmentation, by avoiding harvest in the Anita Bay pinch point and reducing the size of created openings, using uneven-aged management on more of the units, and reducing the amount of road construction.

Alternative F proposed to harvest 1,251 acres producing 18.3 MMBF of timber. This alternative emphasized to Issue 3, Roadless Areas, by avoiding all timber harvest and roads within the inventoried roadless areas.

Several additional alternatives were proposed internally or by the public either during scoping or during the comment period on the Navy Draft EIS. A discussion of these alternatives is located in Chapter 2 of the Final EIS, Alternatives Considered but Eliminated from Detailed Study.

Environmentally Preferred Alternative

Alternative A, the No-action Alternative, would result in no environmental disturbance and is therefore the environmentally preferred alternative. Of the action alternatives, Alternative F is the environmentally preferred alternative for the project area, although Alternative E has less effect on the Anita Bay pinch point area.

Table R-1
Comparison of Alternative Design and Issues by Alternative, Including the Selected Alternative

Category	Alt. A	Selected Alt.	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Harvest acreage and volume¹:							
Total acres of harvest	0	5,435	3,212	6,107	2,369	3,326	1,251
Acres of cable/shovel yarding	0	1,738	1,273	2,505	1,247	554	626
Acres of helicopter yarding	0	3,697	1,939	3,602	1,122	2,772	625
Total net volume (sawlog and utility, MMBF)		72.8	45.5	87.5	37.2	38.4	18.3
Cable/shovel yarding (sawlog only, MMBF)	0	32.6	24.4	47	23.7	10.3	10.9
Helicopter yarding (sawlog only, MMBF)	0	33.6	14.9	28.8	8.3	22.8	4.9
Acres harvested by silvicultural system²:							
Even-aged management	0	1,654	1,207	2,185	1,180	487	559
Two-aged management	0	0	0	268	0	0	0
Uneven-aged management	0	3,781	2,005	3,654	1,189	2,839	692
Roads and log transfer facilities (LTFs):							
Miles of NFS road	0	8.1	6.6	12.0	4.8	2.2	0.5
Miles of temporary road	0	8.8	6.3	15.7	5.4	2.3	4.0
Miles of proposed road reconstruction	0	3.5	0.9	3.2	0.4	2.2	2.2
Proposes construction of Mosman Inlet LTF?	No	No	No	Yes	No	No	No
Issue 1: Timber supply and economics							
Total net volume (sawlog and utility) MMBF) ^{1,2}	0	72.8	45.5	87.5	37.2	38.4	18.3
Indicated bid value (\$/MBF) ³	0	(\$138.00)	(\$142.00)	(\$163.00)	(\$143.06)	(\$160.31)	(\$88.47)
Direct employment (job equivalent) ⁴	0	253-359	158-224	303-429	127-180	131-187	63-89
Road and LTF costs (const/reconst)/MBF ⁵ costs	0	\$61	\$72	\$90	\$85	\$56	\$33
Logging costs (stump to mill costs) (\$/MBF)	0	\$453	\$459	\$483	\$451	\$479	\$400
Issue 2: Wildlife habitat fragmentation							
Acres of POG habitat in WAA 1901 post harvest	60,750	58,566	59,169	57,689	59,263	59,889	59,906
Acres of interior POG habitat in WAA 1901 post harvest	24,642	22,725	23,051	22,013	23,280	23,702	24,044
Acres of coarse canopy (SD67) old growth in WAA 1901 post harvest	3,654	3,279	3,286	3,255	3,341	3,421	3,583
Issue 3: Inventoried roadless areas (IRA)							
Acres of IRA affected by timber harvest and road construction ^{6,7}	0	3,348	2,416	5,383	2,181	953	273
Miles of road proposed in IRAs ⁷	0	6.7	7.0	17.0	5.0	1.9	0

¹ MMBF = million board feet; this volume includes sawlog and utility.

² Even-aged RX = Clearcut, Clearcut w/ 15% reserves, Clearcut w/ 50% reserves; Uneven-aged RX = Single-tree Selection; and Two-aged is Clearcut w/ 15% reserves

³ () indicate a negative value. Thousand board feet (MBF).

⁴ Job equivalents are based on a range from 50 percent of net volume shipped to markets outside Alaska, to all sawlogs processed locally. Based on sawlog volume

⁶ Acres affected by alternative includes the zone of influence defined as 1,200 feet from existing and proposed roads, and the cable/shovel harvest units plus 600 feet from those units, but does not include helicopter units since these are single-tree selection with no associated roads.

⁷ Includes NFS and temporary road.

Source: GIS; NEAT_R v. 2.15, 3rd Qtr. 2007 - Numbers may not exactly match totals and unit cards due to rounding.

2008 Forest Plan

The 2008 Forest Plan was completed with the signing of the Record of Decision (ROD) on January 23, 2008, while the Navy project was being planned. The ROD for the 2008 Forest Plan adopts the Timber Sale Program Adaptive Management Strategy, under which portions of the suitable land base become available for project-level planning in three phases. The Navy project area is within the Phase 1 portion of the suitable land base with the exception of the Navy watershed, which is in Phase 2. Only the planning for the activities within the Phase 1 portion of the Navy project area is allowed to continue for this project and implementation once the planning process is completed. All activities in the Navy watershed were deleted from the alternatives between the Navy Draft EIS and Final EIS.

The 2008 Forest Plan ROD also contains transition language for timber sale projects, like Navy (Category 2), that were already being planned. For Category 2 projects, the ROD for the 2008 Forest Plan directs me “...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”.

Navy is one of the 36 projects in Category 2 that the Responsible Official reviewed and determined “...are consistent with the goals and objectives of the amended Plan” (p. 69). 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 of Alternatives 5 and 6 in the 2008 Forest Plan Final EIS. “Because the Final EIS considered these projects in its effects analysis, their implementation is not in conflict with the amended Plan.” (p.70)

The ROD for the 2008 Forest Plan highlights the Legacy Standard and Guideline for goshawk foraging and marten habitat, and the new direction regarding probable goshawk nests as changes to be considered. I directed the Navy IDT to incorporate the Legacy Standard and Guideline changes for the Navy ROD. The Legacy Standard and Guideline does not apply to VCU in the project area because they contain enough old-growth forest to provide habitat for old-growth associated species (including marten). Therefore, trees will not be retained for marten habitat in high volume strata.

Standards and guidelines were applied to confirmed (known and documented) goshawk nests. There are no “probable nests” (stands where goshawks have been observed but a confirmed nest has not been documented) in the project area and, therefore, this new direction does not apply to the Navy project area. The direction for new confirmed nests has been applied to the nest near Unit 83.

Another change in the Forest Plan was to use total road density instead of open road density where human-caused wolf mortality has been determined to be the significant contributing factor to unsustainable wolf mortality. Although there has been no determination that this is the case in the Navy project area, based on wolf harvest data for Wildlife Analysis Area (WAA) 1901 and in consultation with ADF&G, total road density was calculated and disclosed in the Navy Timber Sale Final EIS, Chapter 3, Wildlife.

The ROD for the 2008 Forest Plan also states that Category 2 timber sale projects do not require changes to the scenery management program. The 2008 Forest Plan and 1997 Forest Plan programs are essentially the same in their environmental effects.

However, the analysis for the Navy Final EIS was updated to use the Scenery Management System instead of the Visual Management System.

I have determined that this decision and the Navy Final EIS are consistent with the transition language of the decision for the 2008 Forest Plan Amendment.

Public Involvement

Public involvement has been instrumental in identifying issues and creating alternatives for this project and assisting me in making a more-informed decision for the Navy Timber Sale project. Public meetings, Federal Register notices, newspaper ads, government-to-government consultation, group and individual meetings, and the Tongass National Forest Schedule of Proposed Actions were used to seek input for this project. See Chapter 1 of the Navy Final EIS for information and timing of public involvement activities. A complete list of all members of the public, groups, and agencies that received a copy of the Draft EIS for review is in Chapter 4, Navy Draft EIS.

Comments received regarded subsistence, roads and access, wildlife species and habitat, fish, cumulative effects, roadless areas, wilderness, timber supply, demand and economics, karst and caves, soil stability, water quality, wetlands, old-growth habitat and reserves, recreation, harvest methods and prescriptions, and windthrow. Responses to these comments are in Appendix B of the Navy Final EIS.

Project Record

The project record for this project includes the Draft EIS and Final EIS, Forest Plan, all material incorporated by reference and other critical materials produced during the environmental analysis of this project. The project record is available for review at the Wrangell Ranger District.

Mitigation

The analysis documented in the Final EIS discloses the possible adverse effects of implementing the actions proposed under each alternative. Forest Plan Standards and Guidelines were formulated to mitigate or reduce these effects. This direction was applied in the development of the project alternatives, including the Selected Alternative, and in the design of the harvest units and roads. Appendix 1 (Unit Cards) and Appendix 2 (Road Cards) of the Record of Decision discuss any specific mitigation measures for the Selected Alternative.

To reduce the spread of invasive plants into new areas, the following 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.

Monitoring

Monitoring of the Selected Alternative will be done during implementation and as part of the Forest Plan monitoring program. In addition, two project-specific monitoring activities will be done:

- Four units (37, 58, 60, and 61) will be planted with western red and Alaskan yellow-cedar to minimize the effects of porcupine damage. Survival surveys will be conducted on these units after the first and third full growing season following completion of planting.
- 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.

Findings Required By Law

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

Subsistence Evaluation and Findings: 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.

This evaluation indicates that the potential foreseeable effects from the Selected Alternative may have a significant possibility of a significant restriction of subsistence use of deer. The potential foreseeable effects from the Selected Alternative will not have a significant possibility of a significant restriction of subsistence uses for bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots (see Chapter 3, Subsistence section, in the Final EIS).

Bald Eagle Protection Act

The Selected Alternative complies with the Bald Eagle Protection Act. An Interagency Agreement between the Forest Service and the U.S. Fish and Wildlife Service (USFWS) restricts management activities within 330 feet of an eagle nest site.

Clean Air Act of 1970 (as amended)

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).

Clean Water Act (1977, as amended)

Project activities meet all applicable State of Alaska Water Quality Standards. Congress intended the Clean Water Act of 1972 (Public Law 92-500) as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4) to protect and improve the quality of water resources and maintain their beneficial uses. Section 313 of the Clean Water Act and Executive Order 12088 of January 23, 1987 address 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."

The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) provide a protection and improvement emphasis for soil and water resources and water-related beneficial uses. Soil and water conservation practices (BMPs) are recognized as the primary control mechanisms for nonpoint source pollution on National Forest System lands. The EPA supports this perspective in their guidance, "Nonpoint Source Controls and Water Quality Standards" (August 19, 1987).

The Forest Service must apply BMPs that are consistent with the Alaska Forest Resources and Practices Act (AFRPA) to achieve Alaska Water Quality Standards. The site-specific application of 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 (2007). In 1997, the State approved the BMPs in the Forest Service Soil and Water Conservation Handbook (FSH 2509.22, October 1996) as consistent with AFRPA. This handbook is incorporated by reference into the Forest Plan and this project.

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 qualify for this exemption only 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 Soil and Water Conservation Handbook under BMP 12.5.

The design of harvest units for the Selected Alternative was guided by standards, guidelines and direction in the Forest Plan and applicable Forest Service Manuals and Handbooks. The unit cards and road cards (Appendices 1 and 2) contain specific details on practices prescribed to prevent or reduce nonpoint sediment sources.

Coastal Zone Management Act (CZMA) of 1972 (as amended)

Under the Coastal Zone Management Act, Federal activities that affect any land or water use or any natural resource of the coastal zone must be conducted in a manner that is consistent to the maximum extent practicable with the enforceable policies of the applicable state coastal management program. On December 4, 2006, the State of Alaska issued a final consistency response concurring with the Forest Service's General Consistency Determination (GCD) for Tongass National Forest Timber Sales (State I.D. No. AK 0608-10J). Under this GCD, all timber harvest and associated activities conducted on the Tongass National Forest - except for those that require State or Federal permits - have been determined to be consistent with the enforceable policies of the Alaska Coastal Management Program (ACMP). The Selected Alternative for the Navy project area does not include any activities that require a State or Federal permit. Accordingly, it is entirely within the scope of the GCD. Consequently, no individual consistency determination or review is required.

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

A biological assessment was prepared and sent to the U.S. Fish and Wildlife Service (USFWS) and to the National Marine Fisheries Service (NMFS) as part of the Section 7 consultation under the Endangered Species Act. USFWS and NMFS concurred with the findings of “not likely to adversely affect” the federally listed species. The biological assessment is included in the project record.

Federal Cave Resource Protection Act of 1988

There are few occurrences of carbonate rock and associated cave resources in the Navy project area. Field reconnaissance identified areas of concern. Forest Plan Standards and Guidelines will provide protection of these areas. The activities of the Selected Alternative will not have a direct, indirect, or cumulative effect on any significant cave in the Navy project area.

Forest Service Transportation Final Administrative Policy (Roads Rule)

The Final EIS and this ROD are prepared to be consistent with the Forest Service Transportation Final Administrative Policy and the Tongass National Forest Level Road Analysis (January 2003), Wrangell Ranger District Road Analysis (August 2006) and the Wrangell Ranger District Access Travel Management Plan (July 2007). I have determined that 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 potential effects of the project on Essential Fish Habitat (EFH) are discussed in Chapter 3 of the Final EIS. This discussion includes reference to the Magnuson-Stevens Fisheries Conservation Act that requires the Forest Service to consult with the National Marine Fisheries Service on projects that may affect EFH. It 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.

The Draft EIS was provided to the National Marine Fisheries Service to initiate formally the consultation process according to the agreement dated June 26, 2007 between the Forest Service and the National Marine Fisheries Service on the method to complete EFH consultation using National Environmental Policy Act Procedures. NMFS concurred with the findings that the Navy Timber Sale “may adversely affect EFH because of cumulative effects of past harvest” and submitted recommendations. These recommendations and the responses are located in Appendix B of the Navy Final EIS. These factors were considered in evaluating the potential effects of the alternatives on EFH and the development of mitigation measures. Information on the mitigation measures and applicable Standards and Guidelines to minimize effects to EFH are discussed in Chapter 3 of the Final EIS and Appendices 1 and 2 of this ROD. A copy of the Final EIS, which includes the specified assessment, has been sent to NMFS for review.

Marine Mammal Protection Act of 1972

Actions authorized in the Selected Alternative will not have a direct, indirect, or cumulative effect on marine mammals. Marine mammal viewing guidelines administered by the National Marine Fisheries Service (NMFS) and enforced by the Coast Guard are sufficient for their protection. Contractors, purchasers and employees will be required to follow provisions on Marine Wildlife Guidelines, including special

prohibitions on approaching humpback whales in Alaska as defined in 50 CFR 224.103. NMFS administers the Marine Mammal Protection Act (MMPA), which prohibits the “take” of all marine mammal species in U.S. waters. “Take” is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal”. Harassment is defined in the MMPA as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal stock in the wild by causing disruption of behavior patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”

National Forest Management Act (NFMA) of 1976 (as amended)

The National Forest Management Act (NFMA) requires specific determinations in the Record of Decision: consistency with existing Forest Plans and FSM 2410.3, R10 Supp. 2400-2002-1 (5/7/2002), a determination of clearcutting as the optimal method of harvesting, if used, and specific authorizations to create openings over 100 acres in size (Forest Plan, p. 4-72). Information and rationale used to develop unit prescriptions is shown on unit cards (Appendix 1 of the ROD), in Chapter 3 of the Final EIS, and in the project record.

Clearcutting as the Optimal Method of Harvesting

The Forest Plan (p. 4-71 to 4-72) and 1997 Forest Plan EIS (Appendix G, p. G-7 to G-9) give guidance on when to use even-aged management. Clearcutting (an even-aged method) is used in this project to preclude or minimize the occurrence of potentially adverse impacts from wind, where the wind damage potential is moderate to high. Clearcutting is also used to remove or reduce mistletoe infestations, logging damage or other factors affecting forest health. Specific information and rationale for use of this prescription is shown in the silvicultural prescriptions (which are a part of the project record), in the introduction to the unit cards and in the individual unit cards (ROD Appendix 1), and in Chapter 3 of the Final EIS. Where used, this prescription has been deemed optimal related to site-specific considerations as described above.

Harvest Openings Over 100 Acres in Size

The Navy Timber Sale project complies with all resource integration and management requirements of 36 CFR 219, through application of Forest Plan Standards and Guidelines at the project level. An opening may be created in excess of 100 acres with the combination of Units 96 and 97; this will be determined at time of implementation. The effects of this opening were considered in the analysis for the Selected Alternative.

Tongass Land and Resource Management Plan as Amended

This decision complies with the Forest Plan for the Tongass National Forest. The activities authorized in this decision are consistent with the transition language of the decision of the 2008 Forest Plan, as previously explained.

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 of various intensities were conducted in the analysis area in accordance with the Regional Inventory Strategy. By following the provisions of the Programmatic Agreement, signed July 29, 2002, between the Forest Service, Alaska

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State Historic Preservation Officer, and the Advisory Council on Historic Preservation, this action complies with Section 106 of the National Historic Preservation Act.

The State Historic Preservation Officer has been consulted, in accordance with Section 106 of the NHPA and 36 CFR Part 800. The Forest Service has satisfied the consultation process with the State Historic Preservation Officer. Native communities have been contacted and public comment encouraged. No effects on known heritage resources are anticipated.

Tongass Timber Reform Act (TTRA) of 1990

Forest Plan Riparian Standards and Guidelines apply to the Selected Alternative and 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. The design and implementation direction for the Selected Alternative incorporates best management practices (BMPs) and Forest Plan Standards and Guidelines for the protection of all stream classes.

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."*

Executive Orders

Executive Order 11988 (Floodplains)

Executive Order 11988 directs Federal agencies to take action to avoid, to the extent possible, the long- and short-term adverse effects associated with the occupancy and modification of floodplains. The numerous streams in the Navy project area make it essentially impossible to avoid all floodplains during timber harvest and road construction. Forest Plan Standards and Guidelines limit riparian harvest, to the extent feasible, to facilitate road construction and logging operations. The amount of road in floodplains will be minimized whenever possible as stated in the BMPs. Roads may be constructed in or through floodplains subject to the design requirements of the BMPs.

Executive Order 11990 (Wetlands)

Executive Order 11990 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse effects associated with the destruction or modification of wetlands. Techniques and practices required by the Forest Service serve to maintain the wetland attributes including values and functions. There will be minimal loss of wetlands with the Selected Alternative, primarily due to road construction. 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 functions as wetlands in the ecosystem.

Road construction through wetlands is avoided to the extent practicable. Where wetlands cannot be avoided, road construction will adhere to State-approved BMPs, which include at a minimum the Federal baseline provisions in 33 Code of Federal Regulation (CFR) 323.

Executive Order 12898 (Environmental Justice)

Executive Order 12898 directs Federal agencies to state clearly in the EIS whether a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribes is 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. Environmental justice has been addressed in Chapter 3 of the Final EIS.

Environmental justice was not identified as an issue for the project because: 1) No communities are identified as being adversely affected in this area. 2) None of the alternatives would have a disproportionately high and adverse effect on the health of the environment of the minority or low-income populations that use the Navy Timber Sale area.

Executive Order 12962 (Aquatic Systems, Recreational Fisheries)

Executive Order 12962 requires Federal agencies to evaluate the effects of proposed activities on aquatic systems and recreational fisheries. 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 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 buffers.

Executive Order 13007 (Indian Sacred Sites)

Executive Order 13007, Indian Sacred Sites, provides presidential direction to 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. Tribal governments or their authorized representatives have not identified any specific sacred site locations in the project area.

Executive Order 13112 (Invasive Species)

Executive Order 13112 requires Federal agencies (in part) to:

- evaluate whether the proposed activities will affect the status of invasive species;
- not carry out activities that promote the introduction or spread of invasive species unless it has determined that the benefits of such action outweigh the potential harm caused by invasive species; and
- take all feasible and prudent measure to minimize risk of harm in conjunction with the actions.

The Selected Alternative implements specific measures to minimize the introduction and spread of invasive species.

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.

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The following federally recognized tribal governments and organizations were consulted or provided information about this project:

- Wrangell Cooperative Association
- Central Council of the Tlingit and Haida Indian Tribes of Alaska
- Sealaska Corporation
- Kake Tribal Corporation
- Organized Village of Kake
- Petersburg Indian Association

Tribal concerns were considered in the environmental analysis. Tribal consultation does not imply that the tribes endorse the Proposed Action or any of the alternatives.

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.

The decision will not have a significant direct, indirect, or cumulative effect on any migratory bird species in the project area. There may be direct moderate 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. The Selected Alternative will maintain the current 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 Final EIS.

Implementation Process

Implementation of this decision may occur no sooner than 50 days following publication of the legal notice of the decision in the *Ketchikan Daily News*, published in Ketchikan, Alaska.

Timber harvest activities in the project area will take place on lands found suitable for timber production under provisions of the National Forest Management Act. The timber may be offered in one or more sales.

This project will be implemented in accordance with Forest Service Manual (FSM) and Forest Service Handbook (FSH) direction for Timber Sale Project Implementation in FSM 2430 and FSH 2409.18. 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 TTRA and other laws. All applicable best management practices (BMPs) will be applied to the Selected Alternative.

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

Appendices 1 and 2 to this Record of Decision contain the unit and road cards for the Selected Alternative. 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 assure that all aspects of the project are implemented within applicable standards and guidelines and that resource effects will not be greater than those described in the Final EIS. Similar cards will be updated to document any changes to the planned unit and road cards, which may occur during implementation. Any proposed changes to the design, location, standards and guidelines, or other mitigation measures for the project will also be documented at time of implementation.

Process for Change During Implementation

Proposed changes to the authorized project actions will be subject to the requirements of the National Environmental Policy Act (NEPA), the National Forest Management Act of 1976, Section 810 of the Alaska National Interest Lands Conservation Act, the Tongass Timber Reform Act, the Coastal Zone Management Act, and other laws concerning such changes.

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. The Forest Supervisor 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. Connected or interrelated changes to particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

Minor changes are expected during implementation to meet better on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout to improve logging system efficiency. This will usually entail adjusting the boundary to coincide with logical logging setting boundaries. Changes made during implementation will be reviewed, documented, and approved by the Responsible Official.

Right to Appeal

This decision is subject to administrative review (appeal) pursuant to Title 36 Code of Federal Regulations (CFR) Part 215. Individuals or organizations who submitted comments during the comment period specified at CFR 215.6 may appeal this decision. The notice of appeal must be in writing, meet the appeal content requirements at CFR 215.14 and be filed with the Appeal Deciding Officer:

Denny Bschor, Regional Forester
Alaska Region
US Department of Agriculture
709 W. 9th Street
P.O. Box 21628
Juneau, AK 99802-1628

Email address: appeals-alaska-regional-office@fs.fed.us
Fax (907) 586-7840

The Notice of Appeal, including attachments, must be filed (regular mail, fax, e-mail express delivery or messenger service) with the Appeal Deciding Officer at the correct location within 45 calendar days of the date that the legal notification of this 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 appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source.

Hand-delivered appeals will be accepted at the Regional Office during normal business hours (8:00 am through 4:30 pm) Monday through Friday, excluding holidays.

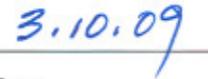
Implementation of decisions subject to appeal pursuant to 36 CFR Part 215, may occur on, but not before, 5 business days from the close of the appeal-filing period, if no appeals are received.

For additional information concerning this decision, contact Mark Hummel, District Ranger, Wrangell Ranger District, P.O. Box 51, Wrangell, AK 99929, or call (907) 874-7595.



FORREST COLE

Forest Supervisor

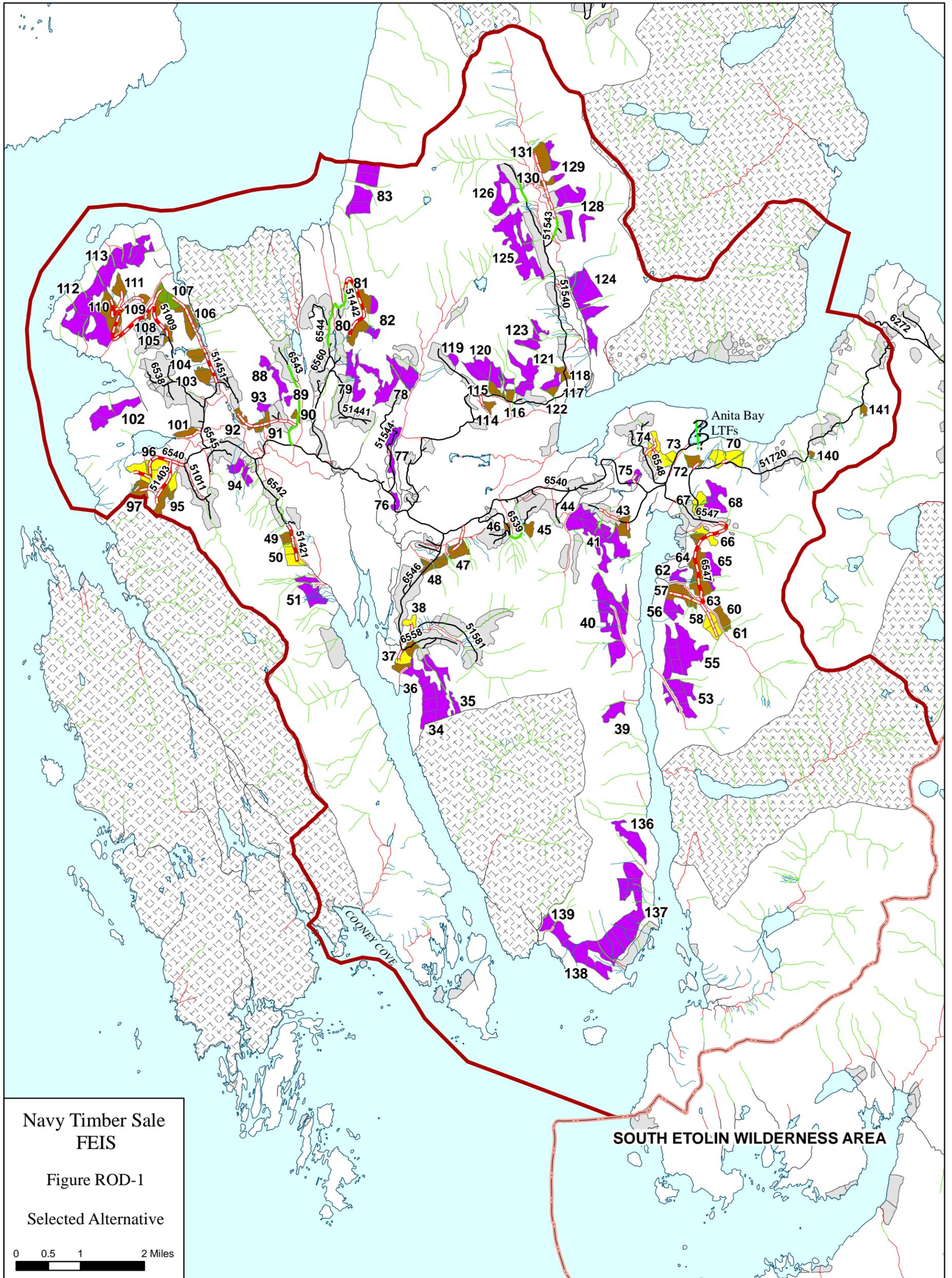


Date

Insert Navy ROD Map Here

Record of Decision

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Project Area Boundary	New NFS Road	Stream Class	Selected Alternative Prescription
Existing Harvest Units	New Temporary Road	I	Clearcut
Revised Forest Plan OGRs	Reconstructed NFS Road	II	Clearcut, 15% reserves, clumped
Wilderness	Existing Roads	III	Clearcut, 50% reserves
Water	Existing LTFs	IV	Single tree selection, 70% reserves



Appendix 1

Selected Alternative Unit Cards

Appendix 1

Unit Cards

Appendix 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 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 several settings, which are labeled in the Setting Number block; each setting has one harvest method and one prescription assigned to it. However, when units 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. Due to rounding, these totals may not exactly match the sum of the number of acres by volume strata.

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.

Volume Strata Acres: This is the approximate number of acres broken out by volume strata. Three volume strata (high, medium, and low) are recognized in the Forest Plan and defined in Chapter 4.

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).

Photo Number: This number references the aerial photograph that corresponds with the location of the unit.

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

Appendix 1

Setting Number: A contiguous area that has a unique logging system and silvicultural prescription accessed by one landing. A harvest unit may be comprised of several settings.

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 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.

Silvicultural Prescription: This provides detailed direction about the methods, techniques, timing, and monitoring of vegetative treatments.

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 units 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. Although Units 96 and 97 lie adjacent and have a total combined acreage greater than 100 acres, reserve areas will be placed within units to break up total opening size. 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 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.

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 basal area 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.

Two-aged Systems

Under two-aged systems, a majority of the trees are removed in one entry and the rest (at least 15 percent of the pre-treatment basal area) are left as reserve trees either singly or in patches. The residual trees remain unharvested to provide structural diversity and older-aged trees within the young-growth stand. Two-aged clearcutting with reserves is a prescription that can be implemented to obtain this stand structure.

Two-aged Clearcutting with reserves: This treatment results in stands that have two distinct cohorts, with the retention of reserve trees comprising at least 15 percent of the stand's original basal area. In these stands, standing green trees constitute a distinct age class separated in age by more than 20 percent of the rotation. Some of the stands in this project are prescribed with 15 percent reserve trees and others 50 percent. Reserve trees are usually selected in aggregations, individually tree marked, or designated by description. Aggregations and individual reserve trees must be somewhat well distributed; a majority of the reserves cannot be clumped along the unit boundary. This resulting stand structure is similar to stands that develop naturally from completely regenerating because of two distinct disturbance events such as windthrow. Two-aged management can produce stands of greater structural diversity than even-aged management. This method may be used where windthrow or disease are not major threats or can be tolerated (Forest Plan, p. 4-98). In some areas, windthrow or damage to residual trees can be tolerated because the dead or fallen trees would continue to provide structure and wildlife habitat. In the Navy project area, reserve trees would be retained for wildlife habitat, and/or reduce visual impact of

Appendix 1

timber harvest. 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.

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: 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 than 50 percent of the original stand basal area of spruce or cedar will be removed in this entry. No understocked 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.

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 A1-2) and stream value class (Table A1-1).

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 Assuredness 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 Floodplain (FP), High Gradient Contained (HC), Large Contained (LC), Moderate Gradient Contained (MC), Moderate Gradient/Mixed Control (MM), and Palustrine (PA) areas, manage an

appropriate distance beyond the no-harvest zone to provide for a reasonable assurance of windfirmness of the RMA. Site-potential tree heights vary according to the channel type as follows:

FP - 130 feet

HC - 120 feet

LC - 100 feet

MC - 100 feet

MM - 120 feet

PA - 85 feet or less

Additional trees should also be retained in marten habitat retention areas to provide reasonable assurance of windfirmness.

Best Management Practices

Best management practices are fully described in FSH 2509.22. They are translated into timber harvest and road contract provisions to ensure implementation during contract inspection.

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).

Process Groups and Stream Classes

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 A1-2 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 A1-1.

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Table A1-1
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).

Table A1-2
Channel Types In or Adjacent to Proposed 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	FP3	Narrow Low Gradient Flood Plain Channel
	FP4	Low Gradient Flood Plain Channel
High Gradient Contained	HC1	Shallowly Incised Muskeg Channel
	HC2	Shallowly to Moderately Incised Footslope 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 drainage ways (“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).

McGilvery soils areas require harvest systems capable of at least partial suspension over the entire length of the yarding distance.

Scenery

The following Scenic Integrity Objectives 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 to 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.

Heritage Resources

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

Botany

When rare or sensitive plant species are identified in a proposed road corridor or harvest unit, 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 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.

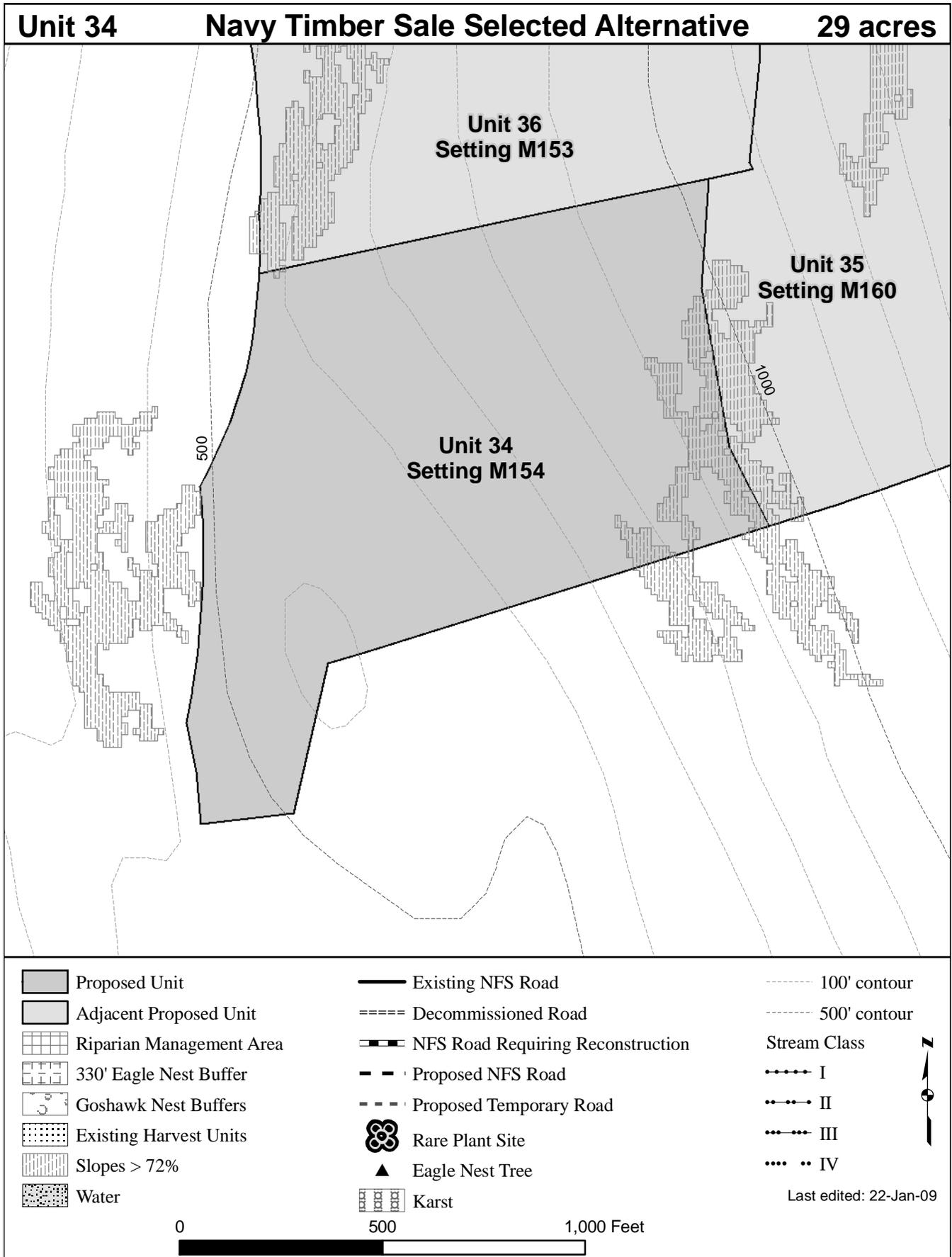
Other Acronyms Used in the Unit Cards

PCT: Precommercial thinning

BA: Basal area. 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.

STS: Single Tree Selection

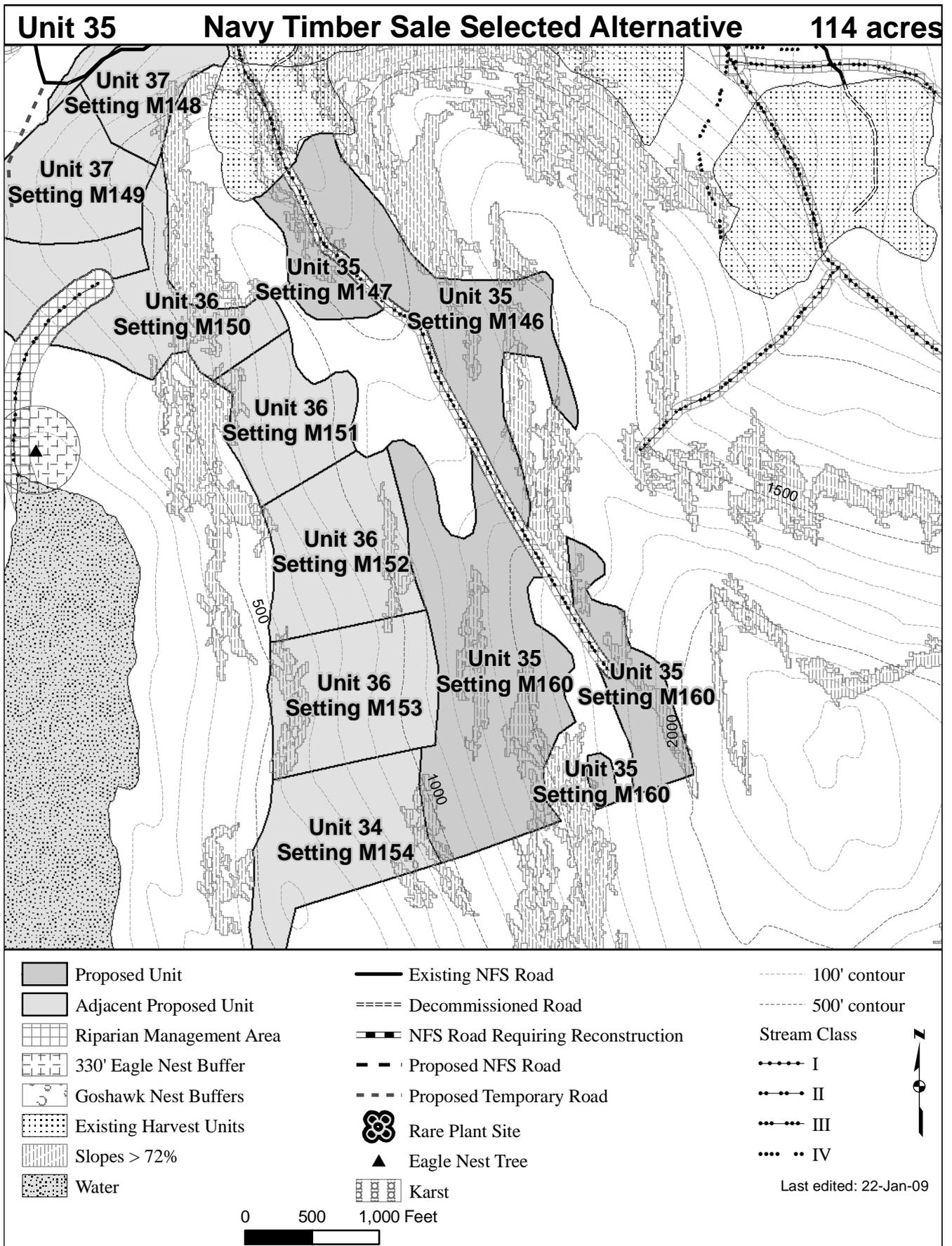
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM, SV		Total Unit Acres: 29	Unit Number: 34
	Logging Helicopter Systems:	Harvest Acres: 29	
Setting Number(s): M154		Volume Strata Acres: High: 5 Medium: 19 Low: 6 Non-forested:	Net Harvest Volume (Saw): MBF: 213
Photo Number: 1198-81			
<p>SILVICULTURE: <u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 15 percent western hemlock, 22 percent red cedar and 63 percent yellow cedar. BA=369. Site Index based on PA is 55 (Sitka spruce, Farr 50) <u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
<p>TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.</p>			
<p>RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).</p>			
<p>SCENERY: The unit sits low and is mostly masked by beach buffer trees as seen from the Mosman Inlet viewshed. Approximately 25 percent (35 acres) is visible. Only the very top openings are evident. The adopted SIO for this unit is low and the proposed prescription will result in a SIO of low to moderate. To ensure SIO is met, locate retention along the top of the unit.</p>			
<p>SOILS: This unit includes about 2 acres of slopes over 72 percent gradient along the backline in an area of bedrock cliffs. A slope stability analysis has been completed (BMP 13.5). Full suspension (helicopter) yarding and 70 percent stand retention will have little effect on inherent slope stability (BMP 13.9). Full suspension will be used to harvest trees on 6 acres of wetlands in the unit (BMP 12.5).</p>			
<p>No resource concerns were identified for Fish/Watershed, Roads, Botany, Geology, Wildlife and Heritage.</p>			

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Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM, SV		Total Unit Acres: 114	Unit Number: 35
	Logging Helicopter Systems:	Harvest Acres: 114	
Setting Number(s): M146, M147, M160		Volume Strata Acres: High: 17 Medium: 80 Low: 17 Non-forested:	Net Harvest Volume (Saw): MBF: 852
Photo Number: 1198-80 & 1198-81			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 55 percent western hemlock, 20 percent Sitka spruce, 17 percent yellow cedar, and 8 percent mountain hemlock. BA=238. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) with retention of approximately 70 percent of the stand BA with no more than 50 percent BA of the cedar and spruce being removed to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: Settings M146 and M147 are designed for helicopter yarding to landings located on the 6558 road. Operability may be difficult due to slopes; these areas may be removed during layout. Setting M160 would be helicopter yarded directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

FISH/WATERSHED:

There is a Class III, channel type HC6 flowing through or adjacent to most of the unit. No harvest in the v-notch (BMP 13.16, 13.19).

RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).

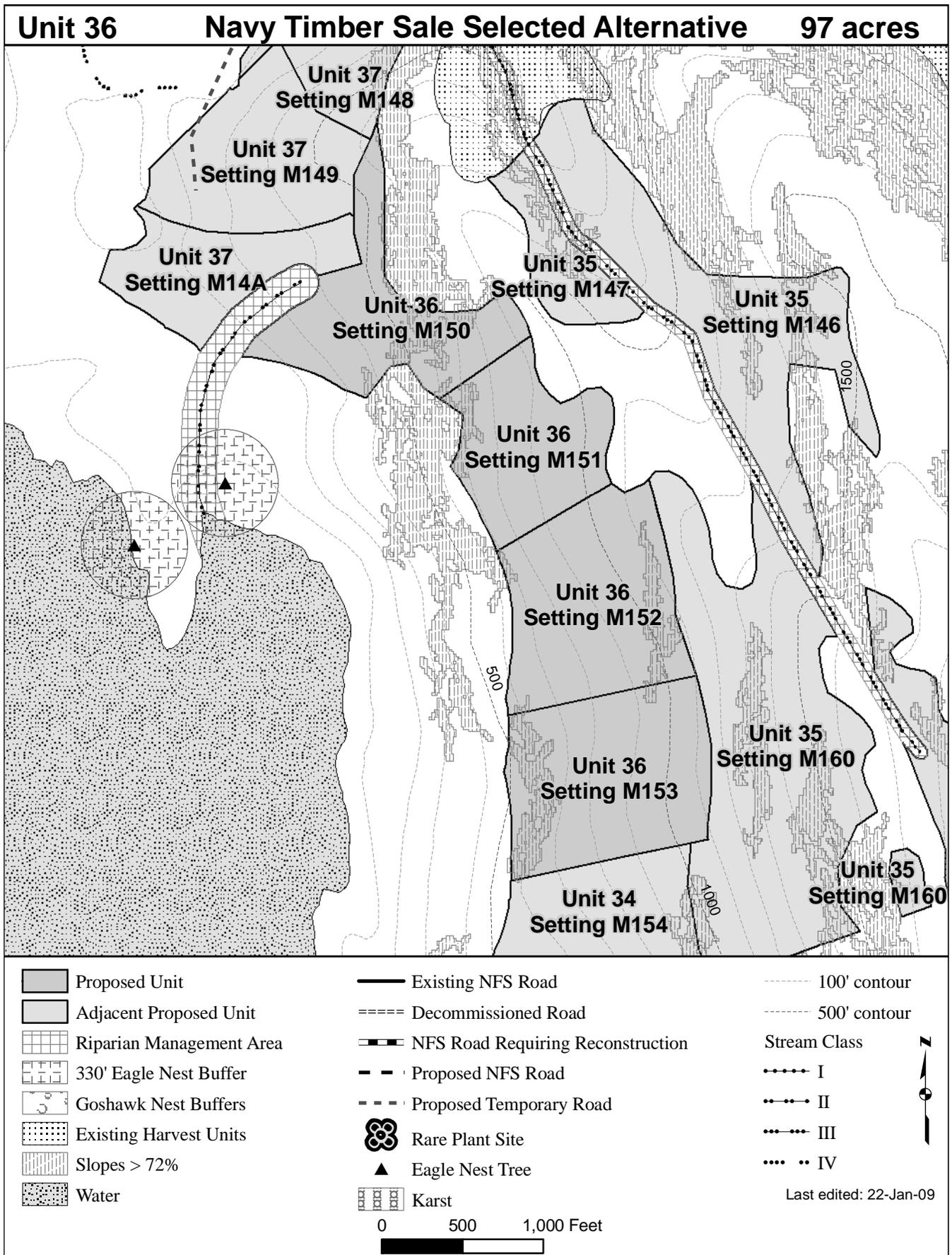
SCENERY: Only setting M147 is not seen. The other settings are visible from the Mosman Inlet viewshed, where the adopted SIOs are low and very low. The proposed prescription will meet a moderate SIO.

SOILS: This unit has 19 acres with slopes >72 percent scattered throughout the unit. During lay out, slopes steeper than 85 percent will be excluded. This unit includes 31 acres of wetlands.

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

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Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV ML TM		Total Unit Acres: 97	Unit Number: 36
	Logging Systems: Helicopter	Harvest Acres: 97	
Setting Number(s): M150, M151, M152, M153		Volume Strata Acres: High: 7 Medium: 59 Low: 31 Non-forested:	Net Harvest Volume (Saw): MBF: 654
Photo Number: 1098-82			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 55 percent western hemlock, 5 percent Sitka spruce, 15 percent red cedar and 22 percent yellow cedar. BA=241. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) with retention of approximately 70 percent of the stand BA with no more than 50 percent BA of the cedar and spruce being removed to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: All settings are included. Setting M150 is designed for helicopter yarding to a landing located in Unit 37. Setting M151, 152 and 153 are designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

FISH/WATERSHED:

There is a Class II, channel type HC3 stream adjacent to the northwest corner of the unit. No harvest within 100 feet of the channel. A RMA buffer has been built into unit design (BMP 12.6, 12.6a, 13.16).

High windthrow potential. RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident. Additional stream mapping may be necessary during layout.

RECREATION: Most of this unit is in the Mosman Inventoried Roadless Area (#233).

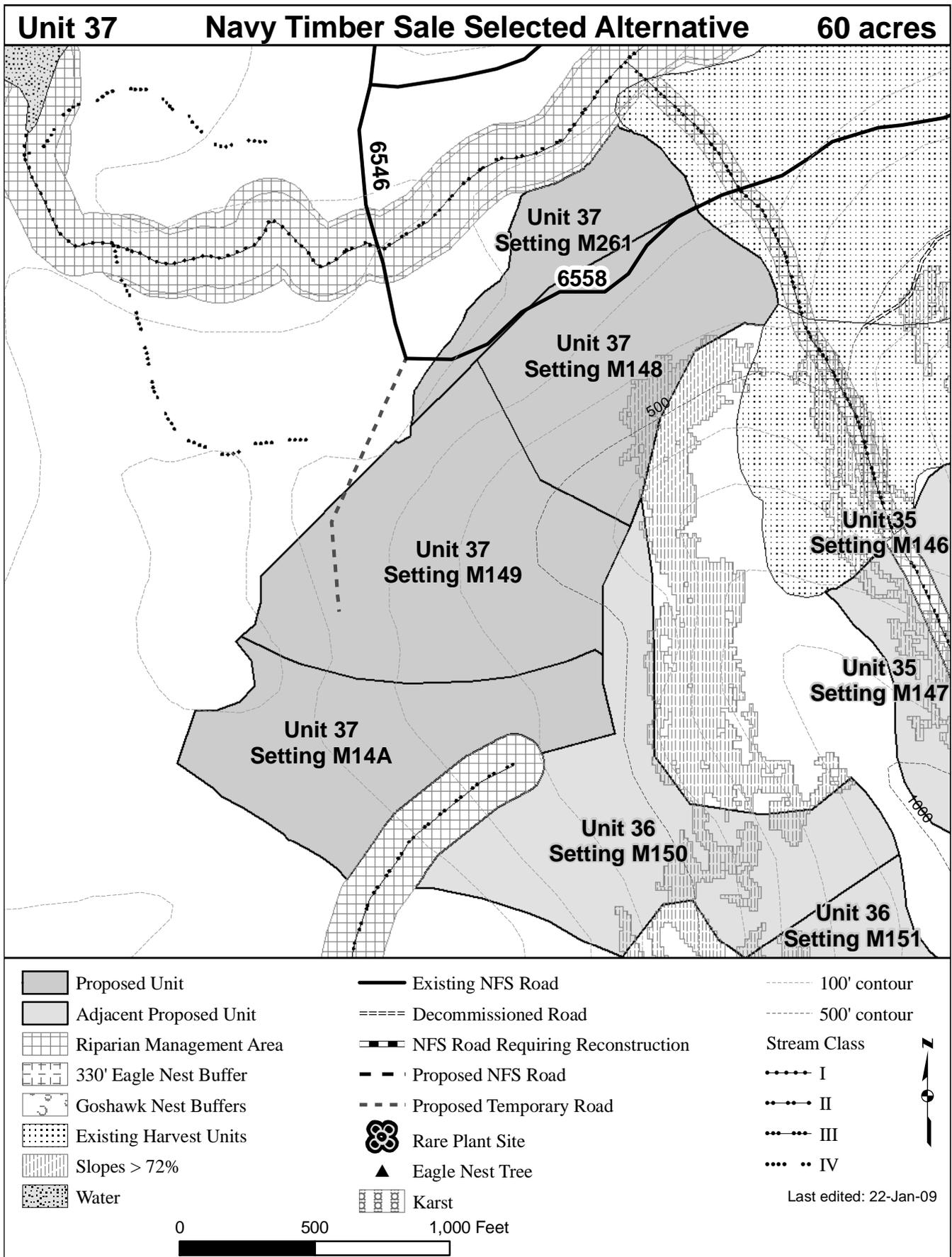
SCENERY: The unit is visible from the Mosman Inlet viewshed, where the adopted SIOs range from moderate to very low. The dominant SIO is moderate. The proposed prescription will meet a moderate SIO.

SOILS: This unit includes about 12 acres of 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. Full suspension will be used to harvest trees from 31 acres of wetlands in the unit. (BMP 12.5).

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

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Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM,SV		Total Unit Acres: 60	Unit Number: 37
	Logging Systems: Cable & Shovel	Harvest Acres: 56	
Setting Number(s): M14A, M148, M149, M261		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-82		High: 40 Medium: 20 Low: Non-forested:	MBF: 1,231

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 100 percent western hemlock. BA=173. Site Index based on PA is 70 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Planting of red and yellow cedar may be prescribed to minimize the effects of porcupine damage. Plan to PCT at 15-35 years of age depending on silvicultural need. Treat settings M148, M14A, and M261 with a clearcut, and treats setting M149 with a clearcut with reserves for visuals (15 percent of basal area located in upper portion of unit).

TIMBER/LOGGING: All settings are included. Setting M149 and M14A are 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 II, channel type HC3 stream adjacent to the southern unit boundary. No harvest within 100 feet of the channel. A RMA buffer has been built into unit design. (BMP 12.6, 12.6a, 13.16).

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).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

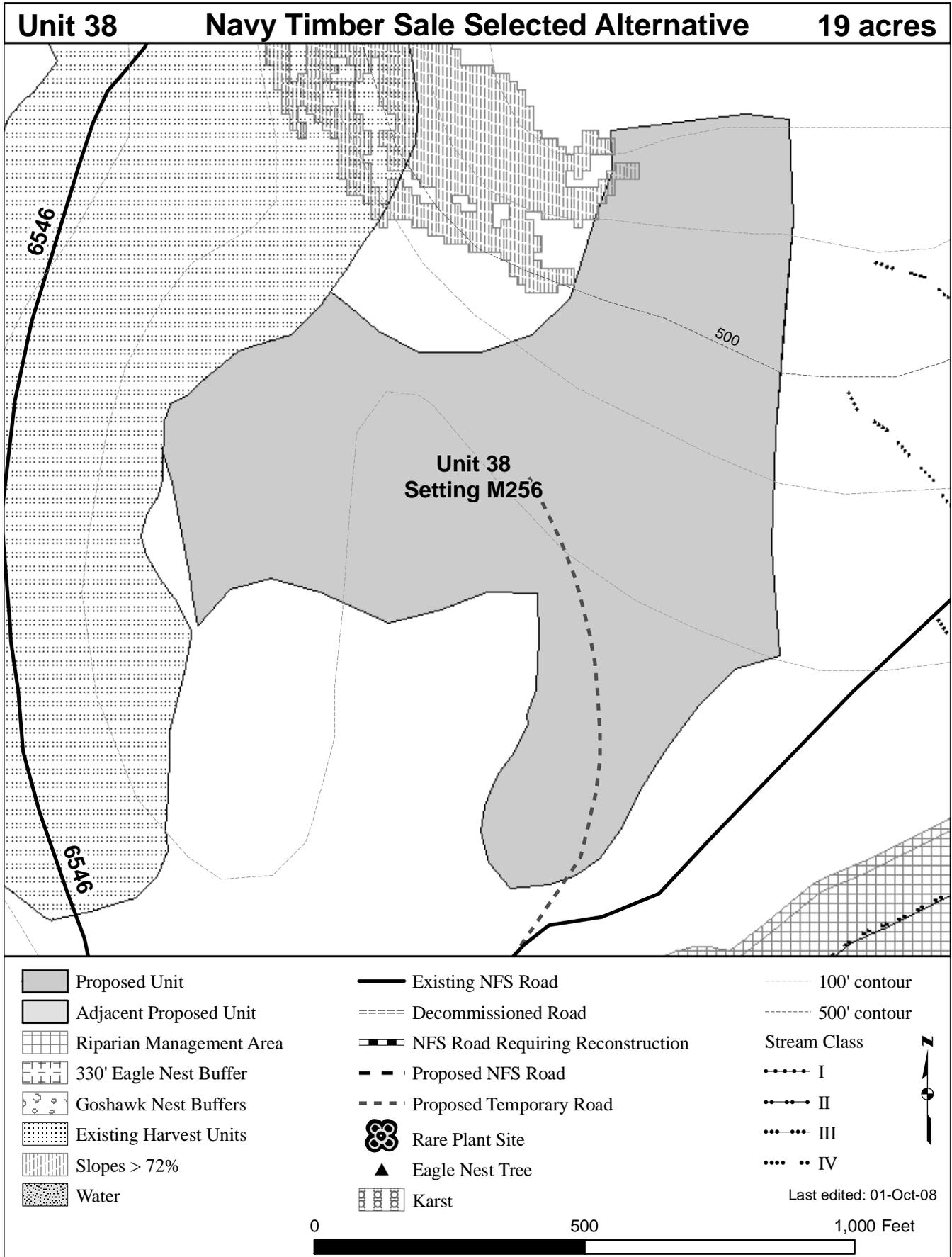
RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).

SCENERY: Settings M14A and M261 are 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 for setting M149. All other settings will meet the prescribed very low SIO.

SOILS: Unit includes small areas of 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 west side of the unit. Shovel tracks 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 the Interagency Bald Eagle MOU. Settings M14A and M149 break the only old-growth corridor connecting the South Mosman Small Old-growth Reserve to the other reserves on the island.

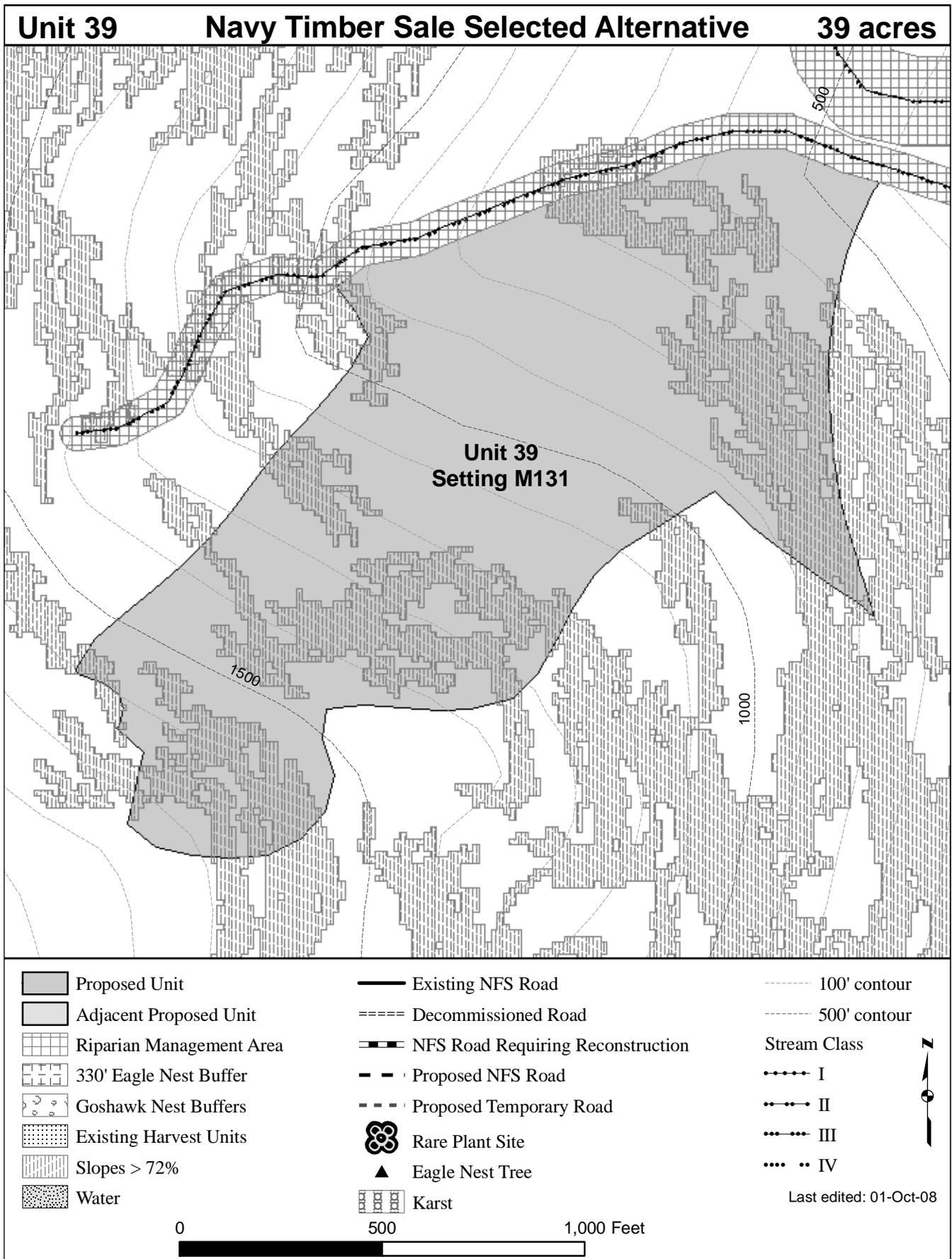
No resource concerns were identified for Botany, Geology and Heritage.



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM SV		Total Unit Acres: 19	Unit Number: 38
	Logging Cable Systems:	Harvest Acres: 16	
Setting Number(s): M256		Volume Strata Acres: High: 17 Medium: 2 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 378
Photo Number: 1098-81			
<p>SILVICULTURE: <u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 46 percent western hemlock, 7 percent Sitka spruce, 46 percent red cedar and 2 percent yellow cedar. BA=221. Site Index based on PA is 86 (Sitka spruce, Farr 50) <u>Silvicultural Prescription:</u> Even-aged prescription using clearcut with reserves (15 percent BA for visuals) with natural regeneration. Even-aged management is an appropriate regeneration method given the stand's windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
<p>TIMBER/LOGGING: This unit is designed for downhill cable yarding to a temporary stub road off of the 51581 road. Retention will be located during layout in groups or clumps.</p>			
<p>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.</p>			
<p>SCENERY: The 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.</p>			
<p>SOILS: This unit harvests 2 acres of forested wetlands.</p>			
<p>No resource concerns were identified for Fish/Watershed, Geology, Wildlife, Heritage, Recreation, Botany and Soils.</p>			

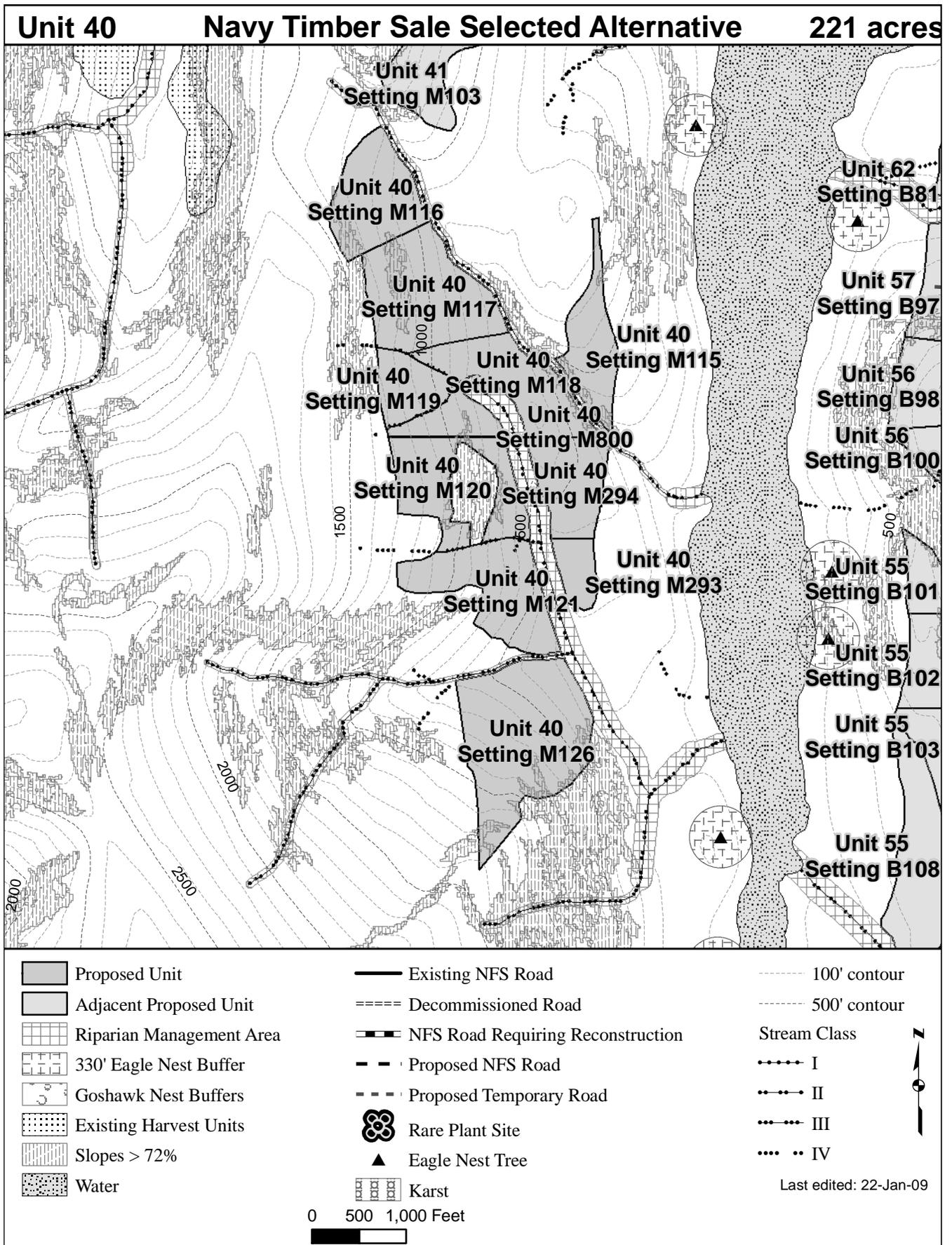
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Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 39	Unit Number: 39
	Logging Systems: Helicopter	Harvest Acres: 39	
Setting Number(s): M131		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-11		High: 10 Medium: 24 Low: 5 Non-forested:	MBF: 303
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 45 percent western hemlock and 55 percent yellow cedar. BA=290. Site Index based on PA is 50 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.			
FISH/WATERSHED:			
There is a Class III, channel type HC6 stream on the north end of unit. No harvest in the v-notch (BMP 13.16)			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: The unit is visible from the Burnett Inlet viewshed, where the adopted SIO is low. The proposed prescription will meet a moderate SIO.			
SOILS: This unit includes about 10 acres of 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. This unit harvests 4 acres of forested wetlands.			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Geology, Botany and Heritage.			

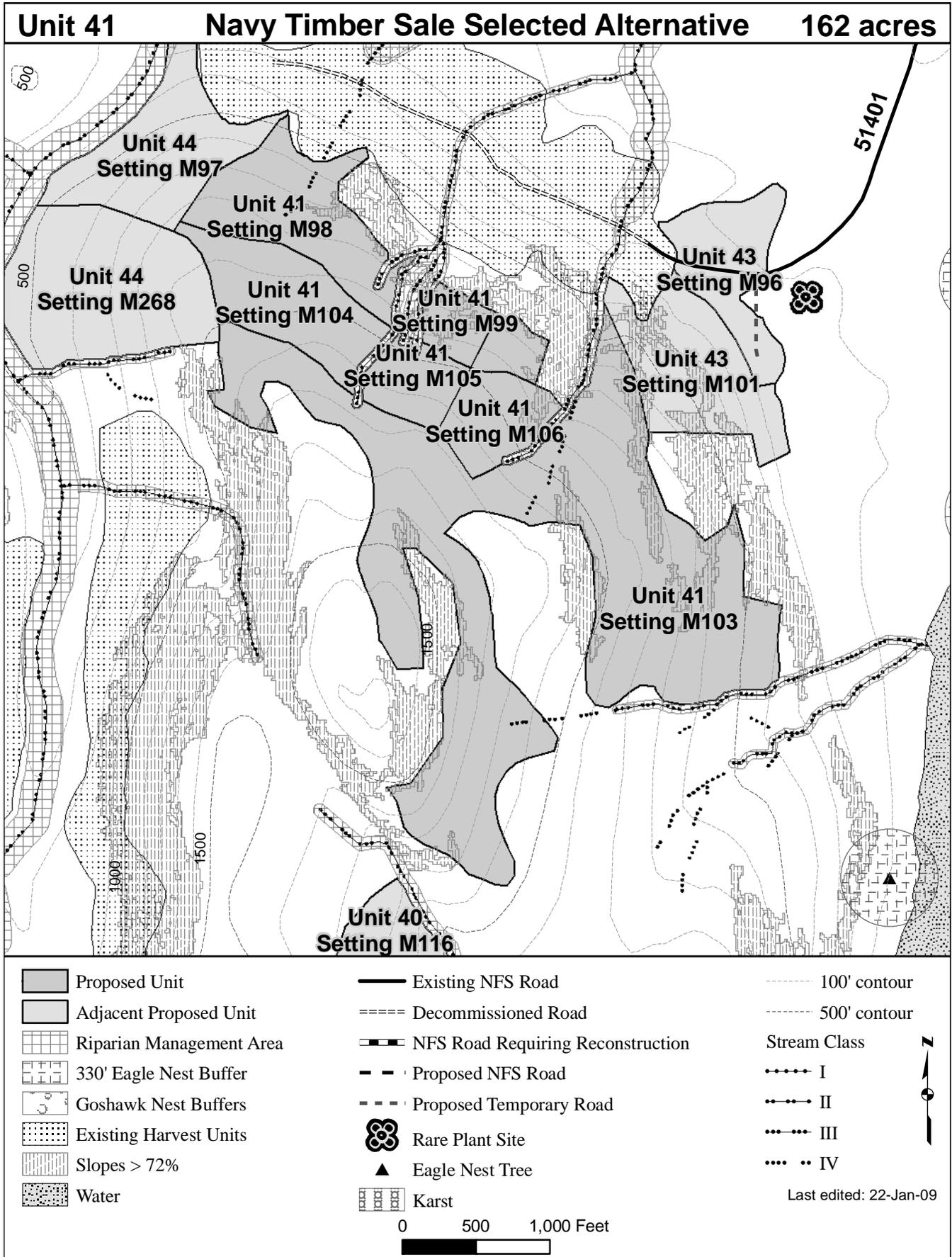
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Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML, SV		Total Unit Acres: 221	Unit Number: 40
	Logging Helicopter Systems:	Harvest Acres: 221	
Stand Number(s): M115, M116, M117, M118, M119, M120, M121, M126, M293, M294, M800		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-14		High: 150 Medium: 45 Low: 26	MBF: 1,951
		Non-forested:	
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 75 percent western hemlock, 12 percent Sitka spruce, 10 percent red cedar and 3 percent yellow cedar. BA=210. Site Index based on PA is 100 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. Treat all settings. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.			
FISH/WATERSHED:			
<p>There is a Class II, channel type HC3 stream that flows south from the central part of the unit. No harvest within 100 feet of the channel (BMP 13.16).</p> <p>There are two 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).</p> <p>There are three Class IV, channel type HC5 streams within the unit. No harvest within the v-notch. 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>Moderate windthrow potential. RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident. Additional stream mapping may be necessary during layout.</p>			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Settings M293 and M294 are unseen. All other settings are visible from the Burnett Inlet viewshed, where the adopted SIOs are moderate to low. The proposed prescription will meet moderate SIOs for all seen areas.			
SOILS: This unit includes about 17 acres of 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. Adjust unit boundary to avoid harvest on slopes more than 72 percent gradient adjacent to stream buffers. Full suspension will be used to harvest trees from 29 acres of forested wetlands. (BMP 12.5)			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Geology, Botany and Heritage.			

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Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM,ML, SV		Total Unit Acres: 162	Unit Number: 41
	Logging Helicopter Systems:	Harvest Acres: 162	
Setting Number(s): M98, M99, M100, M103, M104, M105, M106		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-15		High: 24 Medium: 124 Low: 14 Non-forested:	MBF: 1,244

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 53 percent western hemlock, 15 percent Sitka spruce, 6 percent red cedar and 26 percent yellow cedar. BA=258. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

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 six 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 are three Class IV, channel type HC5 streams 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).

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

RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).

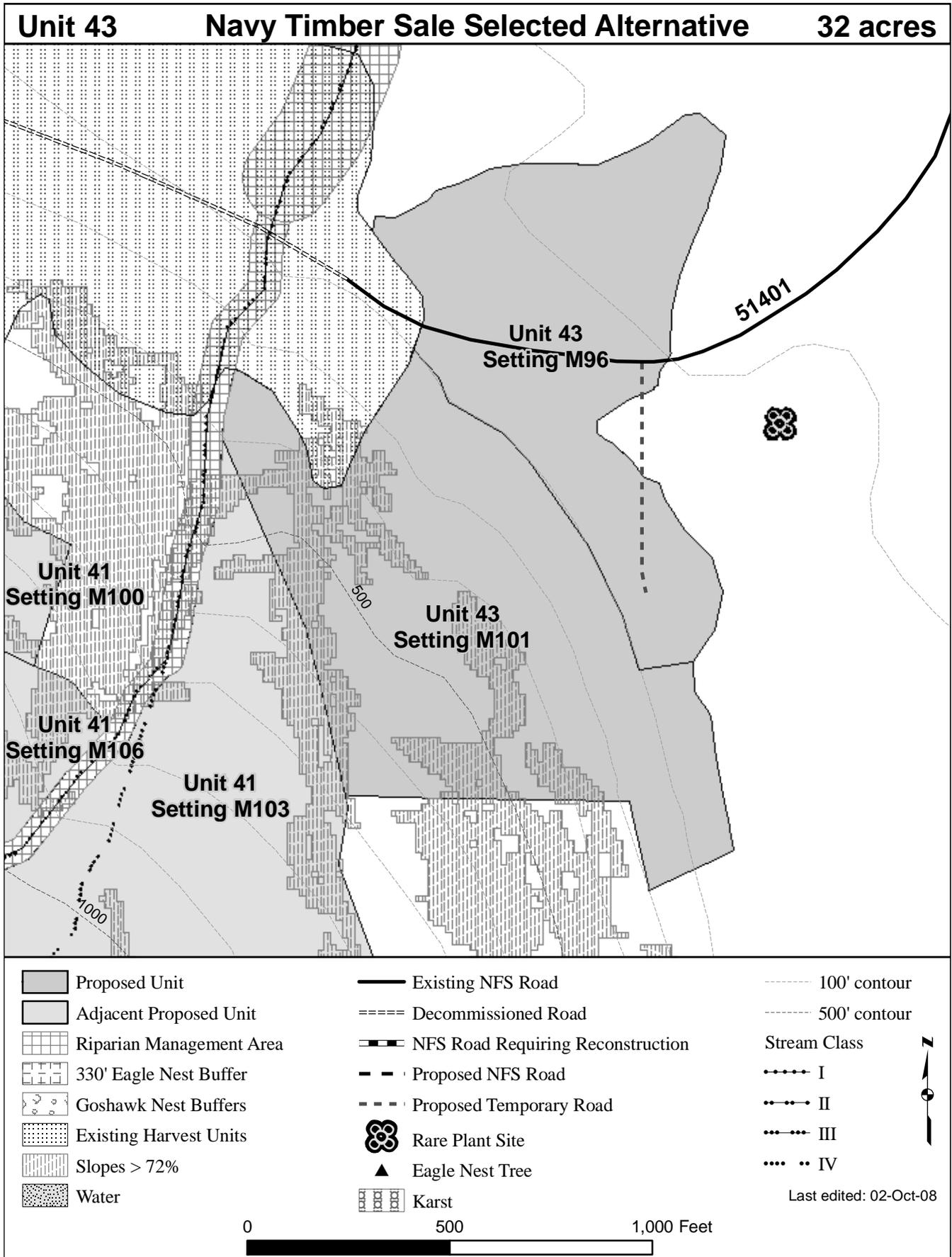
SCENERY: The unit is visible from either the head of the Burnett Inlet or Anita Bay viewsheds, where the adopted SIOs range from moderate to very low. The proposed prescription will meet moderate SIO.

SOILS: The unit includes about 10 acres of slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Avoid harvest on unstable slopes. This unit harvests 15 acres of forested wetlands.

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

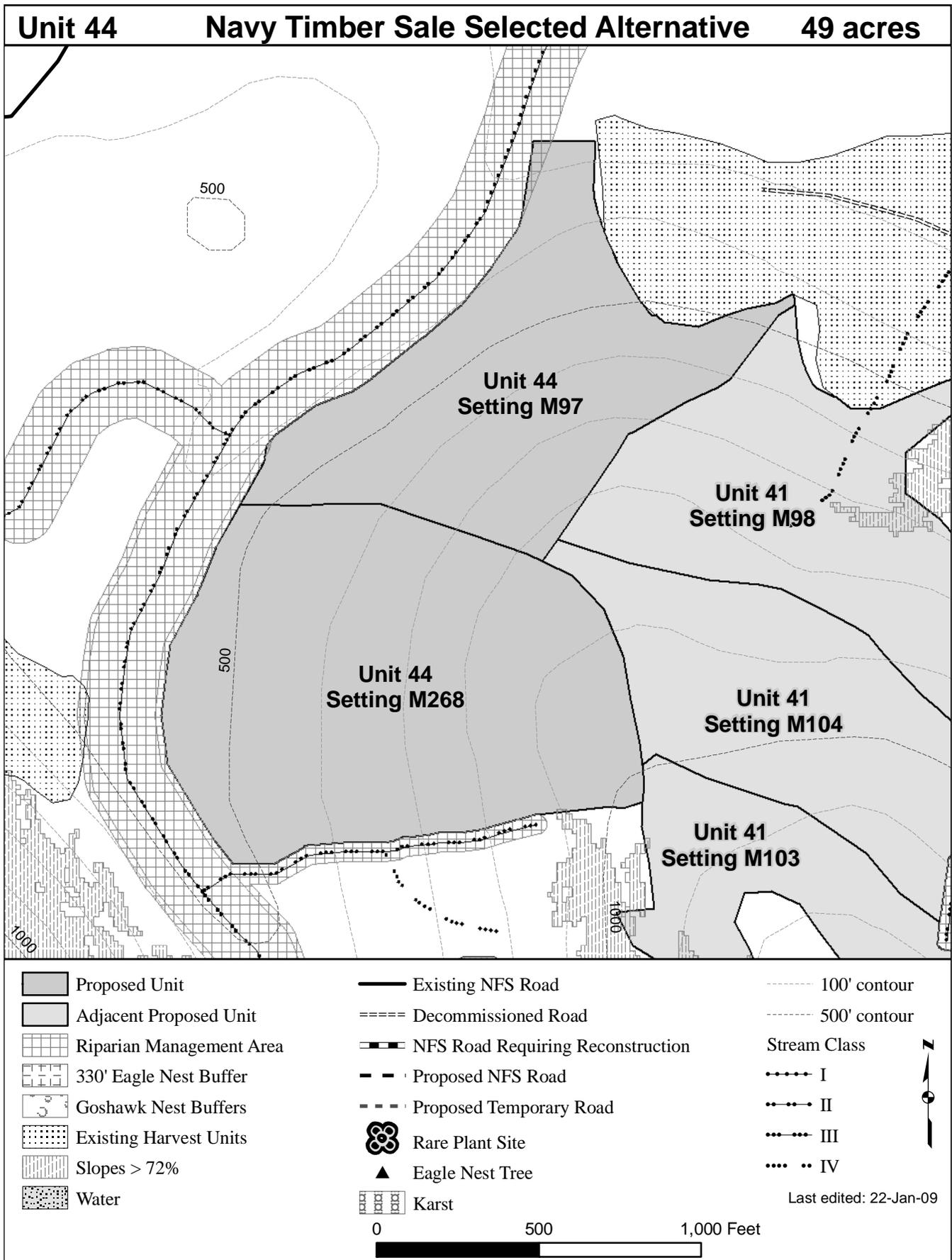
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 32	Unit Number: 43
	Logging Systems: Cable & Shovel	Harvest Acres: 32	
Setting Number(s): M96, M101		Volume Strata Acres: High: 28 Medium: 4 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 721
Photo Number: 1198-16			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 100 percent western hemlock, BA=320. Site Index based on PA is 75 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the stand's high windthrow potential and species composition. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: Setting M101 is designed for downhill cable yarding to a temporary stub road located off of the 51401 road. Setting M96 is designed for shovel yarding to continuous landings on the 51401 road.			
ENGINEERING/ROADS: 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.			
BOTANY: A population of <i>Malaxis paludosa</i> , eight plants, is located in a muskeg approximately 200 feet east of site. Avoid disturbance to this population. See map for location.			
FISH/WATERSHED:			
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). Moderate windthrow potential. RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Setting M96 is unseen. Setting M101 is visible from the head of the Burnet Inlet Viewshed, where the adopted SIO is very low. Only a small portion of the entire unit is evident, so the proposed prescription will meet a low SIO.			
SOILS: This unit includes about 4 acres of slopes over 72% 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 tracks 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 the Interagency Bald Eagle MOU.			
No resource concerns were identified for Geology and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 49	Unit Number: 44
	Logging Systems: Helicopter	Harvest Acres: 49	
Setting Number(s): M97, M268		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-16		High: 39 Medium: 9 Low: Non-forested:	MBF: 467

SILVICULTURE:
Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 62 percent western hemlock, 22 percent Sitka spruce, 22 percent red cedar, 10 percent yellow cedar and 6 percent mountain hemlock. BA=246. Site Index based on PA is 75 (Sitka spruce, Farr 50)
Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: Settings are designed for helicopter yarding to landings on the 51401 road.

FISH/WATERSHED:
 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).
 There is a Class III, channel type HC5 stream on the southern unit boundary. Do not harvest in v-notch, (BMP 13.9, 13.16).
 Moderate windthrow potential. RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

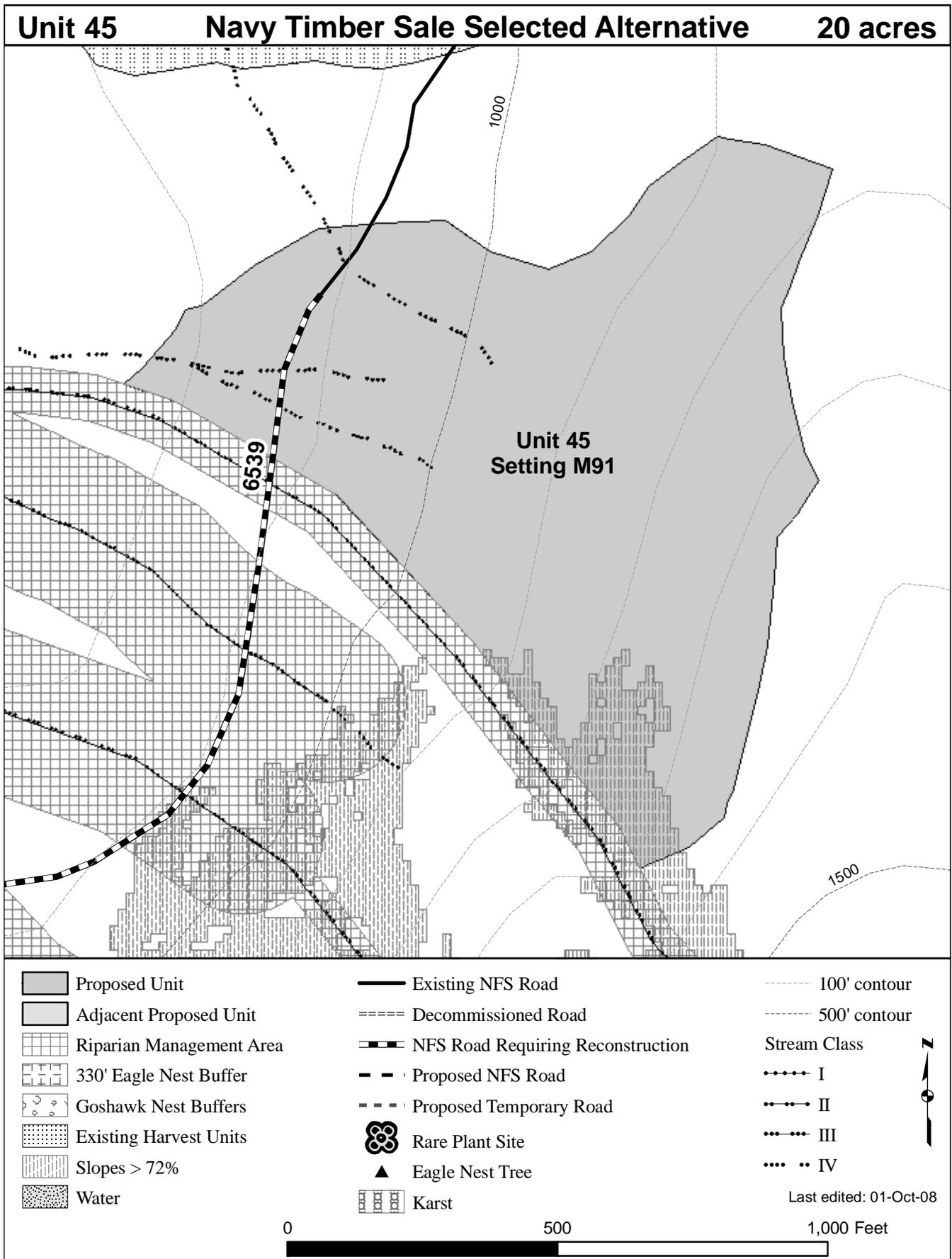
RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233)

SCENERY: Setting M268 is unseen. Setting M97 is visible from the head of the Anita Bay viewshed, where the adopted SIO is very low. The proposed prescription will meet an SIO of low to very low.

SOILS: Unit includes about an acre of slopes over 72 percent gradient. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Avoid harvest on unstable slopes. The proposed spur road crosses a fine textured glacial till soil adjacent to Duckbill Creek. Cutslopes should be laid back to the angle of repose or buttressed with rock and promptly revegetated to minimize sedimentation of the headwaters of Duckbill Creek. (BMPs 14.7, 14.8, 14.10, & 12.17)
 This unit harvests 5 acres of forested wetlands.

WILDLIFE: Consider opportunities to allow for the elevational migration of wildlife, by retaining structure along the boundary with the managed stand to the northeast.

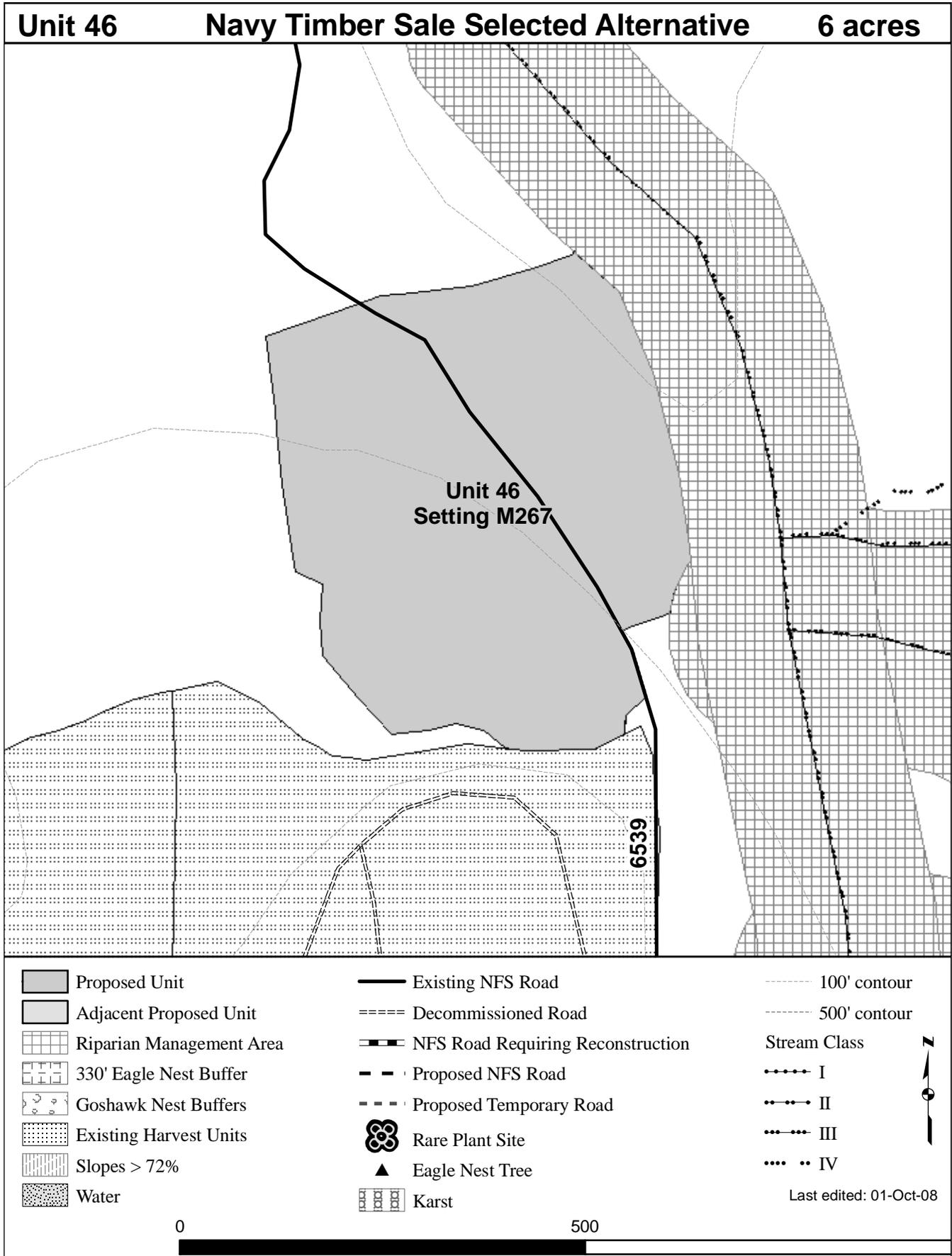
No resource concerns were identified for Geology, Roads, Botany and Heritage.



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 20	Unit Number: 45
	Logging Cable Systems:	Harvest Acres: 20	
Setting Number(s): M91		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-108		High: 1 Medium: 18 Low: 1 Non-forested:	MBF: 374
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 37 percent western hemlock, 29 percent Sitka spruce, and 34 percent yellow cedar. BA=181. Site Index based on PA is 55 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the stand's windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: This unit is designed for downhill cable yarding to the 6539 road.			
FISH/WATERSHED:			
<p>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).</p> <p>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).</p> <p>Moderate windthrow potential. 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>			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: Unit includes about 1 acre of 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. This unit includes 1 acre of forested wetlands.			
No resource concerns were identified for Roads, Botany, Wildlife, Geology, Heritage and Recreation.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 6	Unit Number: 46
	Logging Systems: Shovel	Harvest Acres: 6	
Setting Number(s): M267		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-108		High: Medium: Low: 6 Non-forested:	MBF: 60

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 60 percent western hemlock, 10 percent Sitka spruce, 10 percent red cedar and 20 percent yellow cedar. BA=120. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using the clearcut w/ reserves for seed trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source) with natural regeneration. Even-aged management is an appropriate regeneration method as it will encourage the regeneration of desirable shade-intolerant species (spruce and cedar). Plan to PCT at 15-35 years of age depending on silvicultural need.

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).

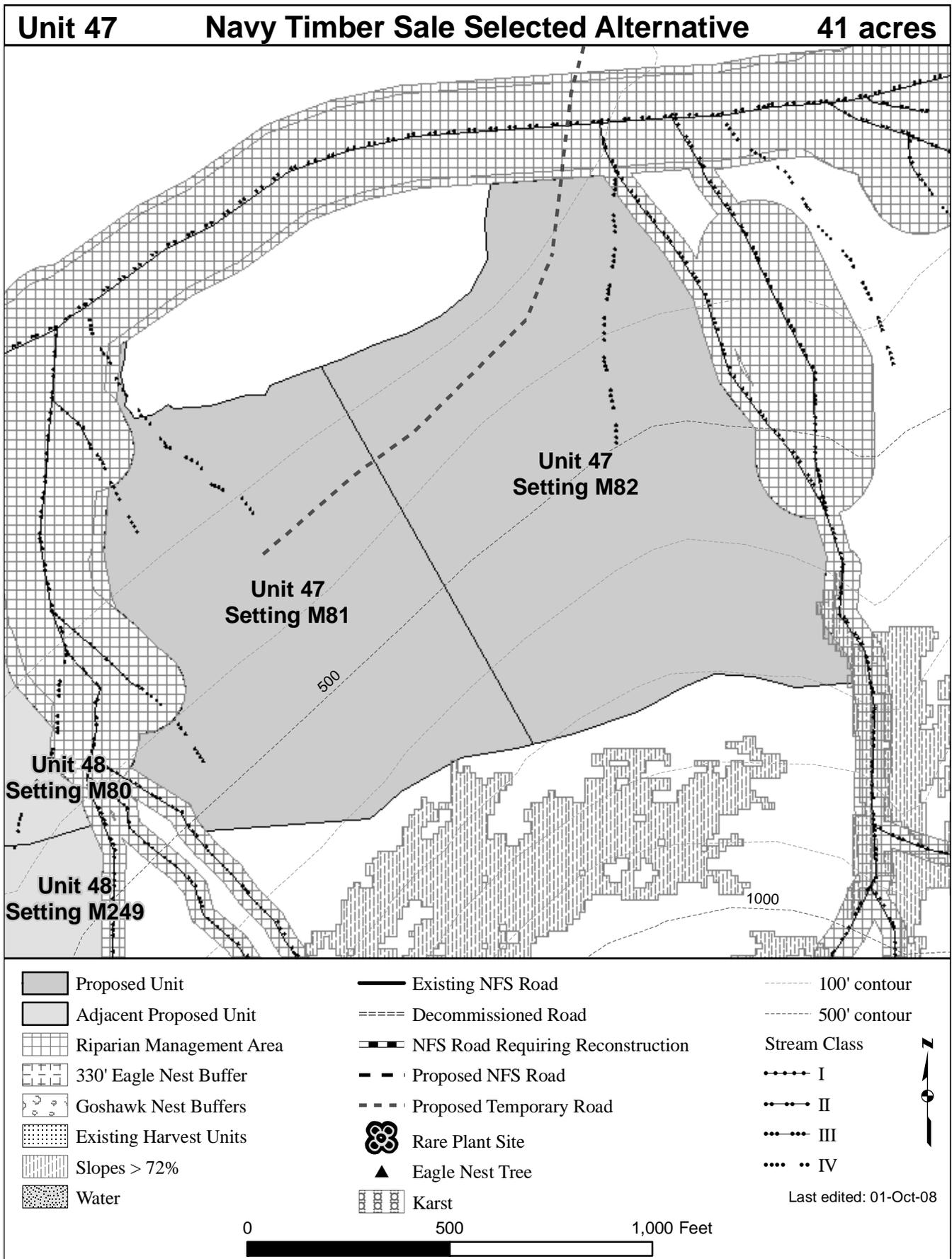
Moderate windthrow potential. RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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 tracks 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.

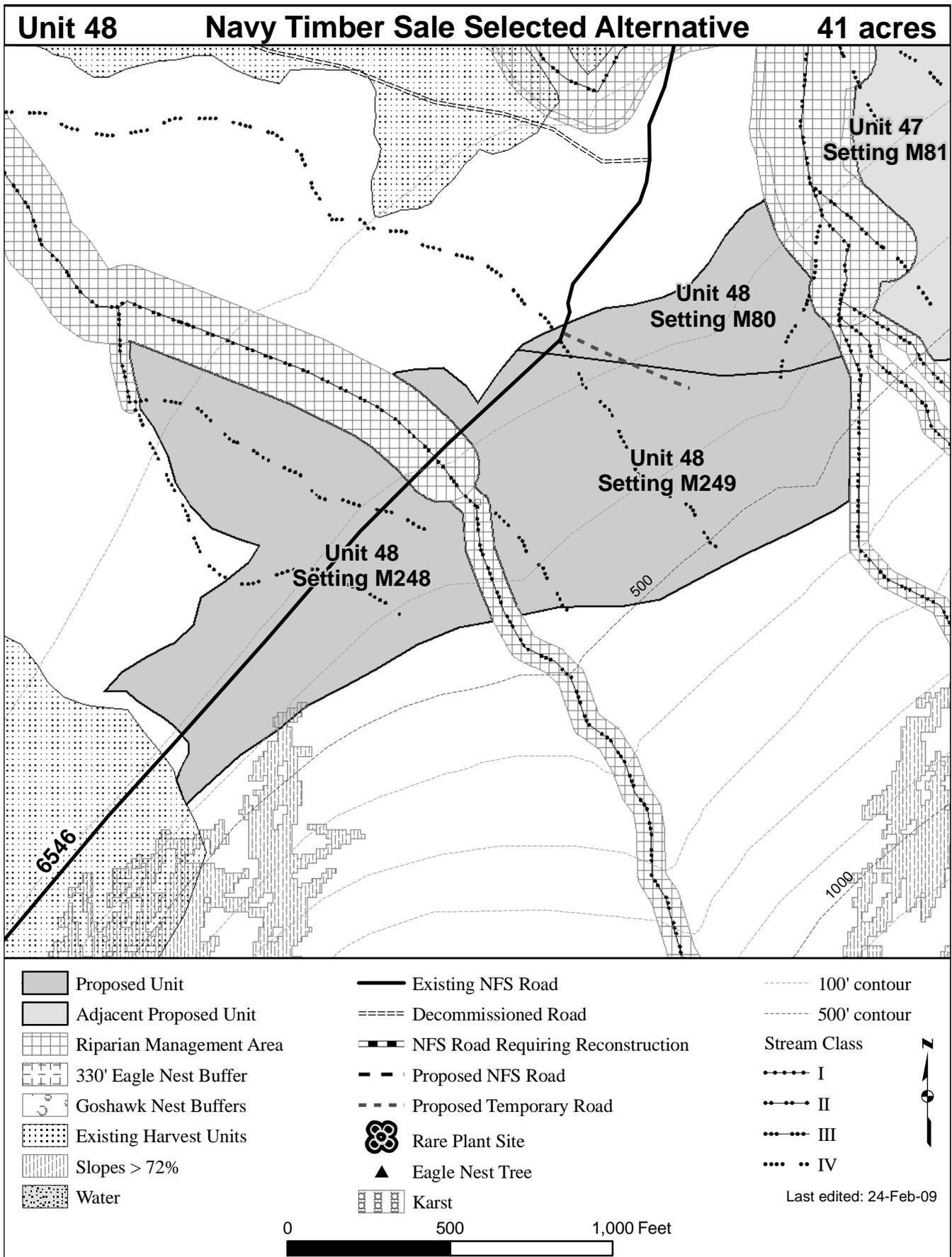
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 41	Unit Number: 47
	Logging Cable Systems:	Harvest Acres: 41	
Setting Number(s): M81, M82		Volume Strata Acres: High: 41 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 954
Photo Number: 1198-77			
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 55 percent western hemlock, 16 percent Sitka spruce, 15 percent red cedar and 14 percent yellow cedar. BA=228</p> <p><u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method as it will encourage the regeneration of desirable shade-intolerant species such as spruce and cedar; in addition, stem decay and mistletoe will be reduced in the hemlock component of the stand. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: The unit is designed for downhill cable yarding to landings located on a temporary spur road off of the existing 6540 road. Some shovel yarding may occur on the north side of the unit.			
ENGINEERING/ROADS: Construct 0.47 mile of temporary road. The road will be decommissioned after the timber sale. The material source is located on Road 6540 mp 3.1 and Road 6540 mp 4.9. A temporary log-stringer bridge will be constructed over a Class II stream crossing.			
FISH/WATERSHED:			
There is a Class II, channel type MM1 stream adjacent to the northern unit boundary. No timber harvest within 120 feet of the channel. (BMP 13.9, 13.16).			
There is a Class II, channel type FP1 stream adjacent to the northern unit boundary. No timber harvest within 130 feet of the channel. (BMP 13.9, 13.16).			
There is a Class II, channel type AF1 stream adjacent to the northern unit boundary. No timber harvest within 140 feet of the channel. (BMP 13.9, 13.16).			
There are two Class III, channel types HC1, HC5, and HC6, adjacent to the unit. No harvest within the v-notch. (BMP 13.9, 13.16).			
There are four Class IV, channel types HC1 and 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 proposed temporary road crosses a Class II channel (Average Creek). Temporary log stringers bridges will be necessary. Adequate size structures will need to be installed and removed as soon as logging activities have ended. (BMP 13.16, 14.20).			
Moderate windthrow potential. RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
No resource concerns were identified for Geology, Wildlife, Botany, Soils, and Heritage.			

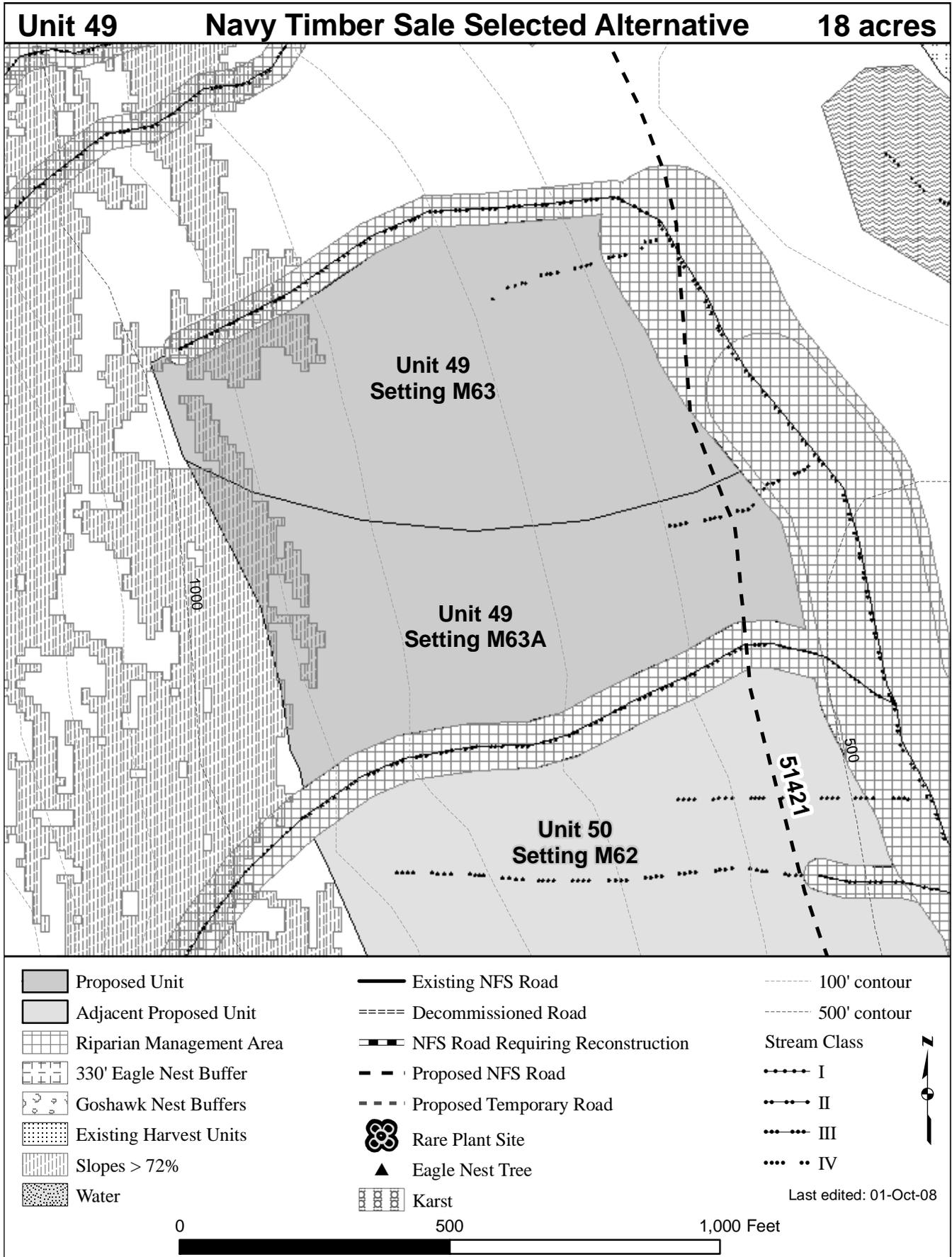
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 41	Unit Number: 48
	Logging Systems: Cable & Shovel	Harvest Acres: 41	
Setting Number(s): M80, M248, M249		Volume Strata Acres: High: 37 Medium: 4 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 927
Photo Number: 1198-77			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 65 percent western hemlock, 16 percent Sitka spruce, 10 percent red cedar and 9 percent yellow cedar. BA=246.			
<u>Silvicultural Prescription:</u> Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method as desirable shade intolerant species such as spruce and cedar will be favored, in addition stem decay and mistletoe will be effectively treated with this harvest method. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: All settings are included. 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).			
Moderate windthrow potential. 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: This unit harvests 4 acres of forested wetlands. Shovel tracks 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.			

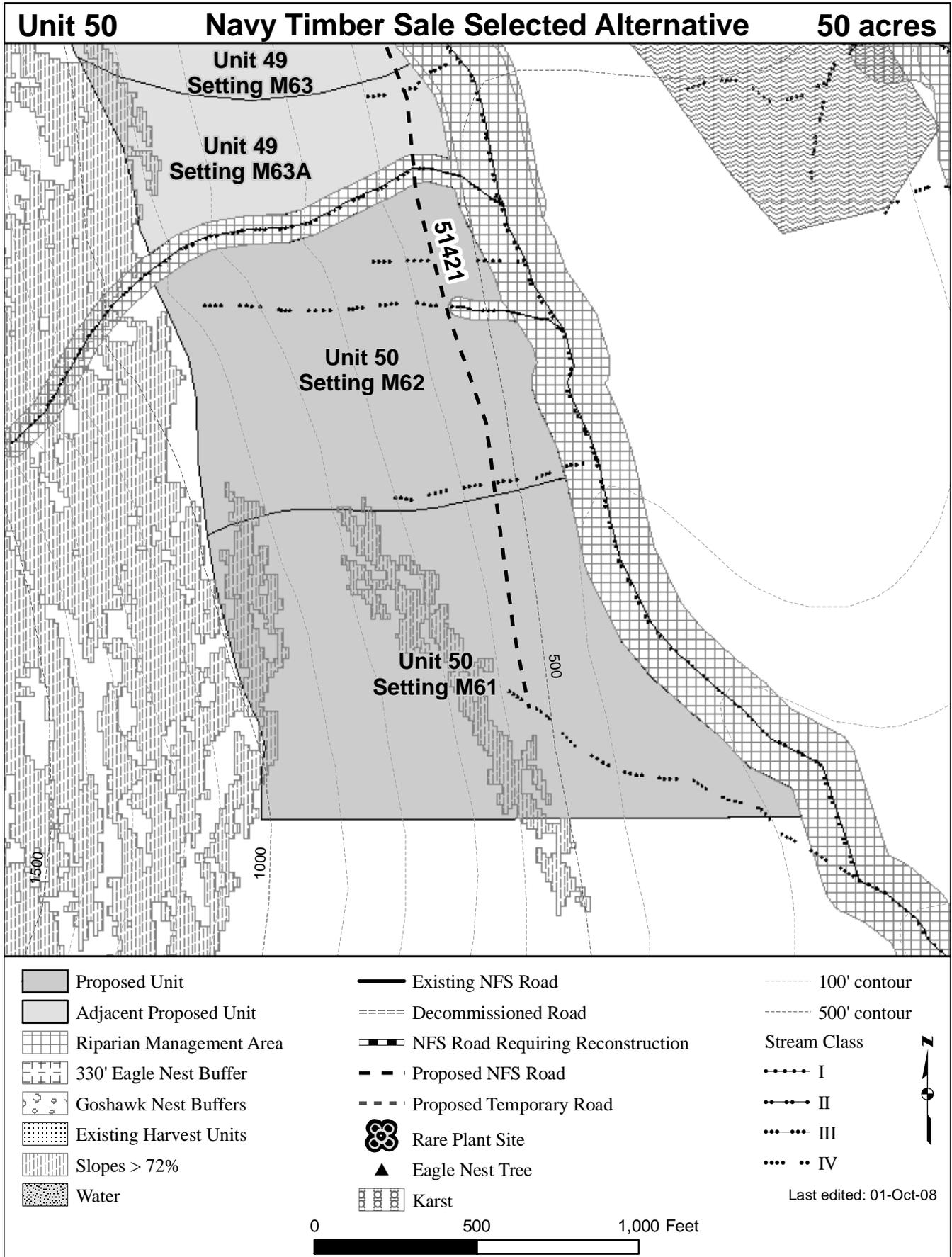
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 18	Unit Number: 49
	Logging Cable Systems:	Harvest Acres: 18	
Setting Number(s): M63, M63A		Volume Strata Acres: High: 18 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 418
Photo Number: 1198-107			
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 60 percent red cedar. BA=145. Site Index based on PA is 86 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Settings M63 and M63a are treated with an even-aged prescription using clearcut. Even-aged management is an appropriate regeneration method given the stand's high wind throw potential. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: Both settings are designed for downhill cable yarding to landings located on the proposed extension of the 51421 road. Retention in M63 will be located in the northern portion as a RAW buffer.			
ENGINEERING/ROADS: Refer to road card 51421.			
FISH/WATERSHED:			
<p>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).</p> <p>There are three Class III, channel types HC5 and HC6, within or adjacent to unit. No harvest in v-notch. (BMP 13.9, 13.16).</p> <p>There are two 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).</p> <p>This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). 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>			
GEOLOGY/KARST: A well-developed karst area north of the unit was excluded from the harvest unit. Karst area needs a windfirm buffer. Require at least partial suspension on all upslope areas contributing to the resurgent stream (the northern most stream shown on the unit card).			
RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: This unit includes about 2 acres of 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.			
No resource concerns were identified for Wildlife and Botany.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM,SV		Total Unit Acres: 50	Unit Number: 50
	Logging Cable Systems:	Harvest Acres: 42	
Setting Number(s): M61, M62		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-107		High: 45 Medium: 5 Low: Non-forested:	MBF: 972

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 28 percent western hemlock, 48 percent red cedar and 24 percent yellow cedar. BA=327. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with 15 percent reserves on western edge due to visuals, with natural regeneration. Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: Settings are designed for downhill cable yarding to landings located on the proposed extension of the 51421 road. Retention will be located during layout in groups or clumps in the upper portion of the unit (western).

ENGINEERING/ROADS: Refer to road card 51421.

FISH/WATERSHED:

There is a Class II, channel type HC2, stream (Mirkwood Creek) on the eastern side of unit. No harvest within 100 feet of the channel. (BMP 13.9, 13.16).

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

There are four Class IV, channel types HC1, HC5 and MC1, 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).

This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). 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: There was no carbonate bedrock identified in the unit. Mirkwood Creek separates the karst system from this unit.

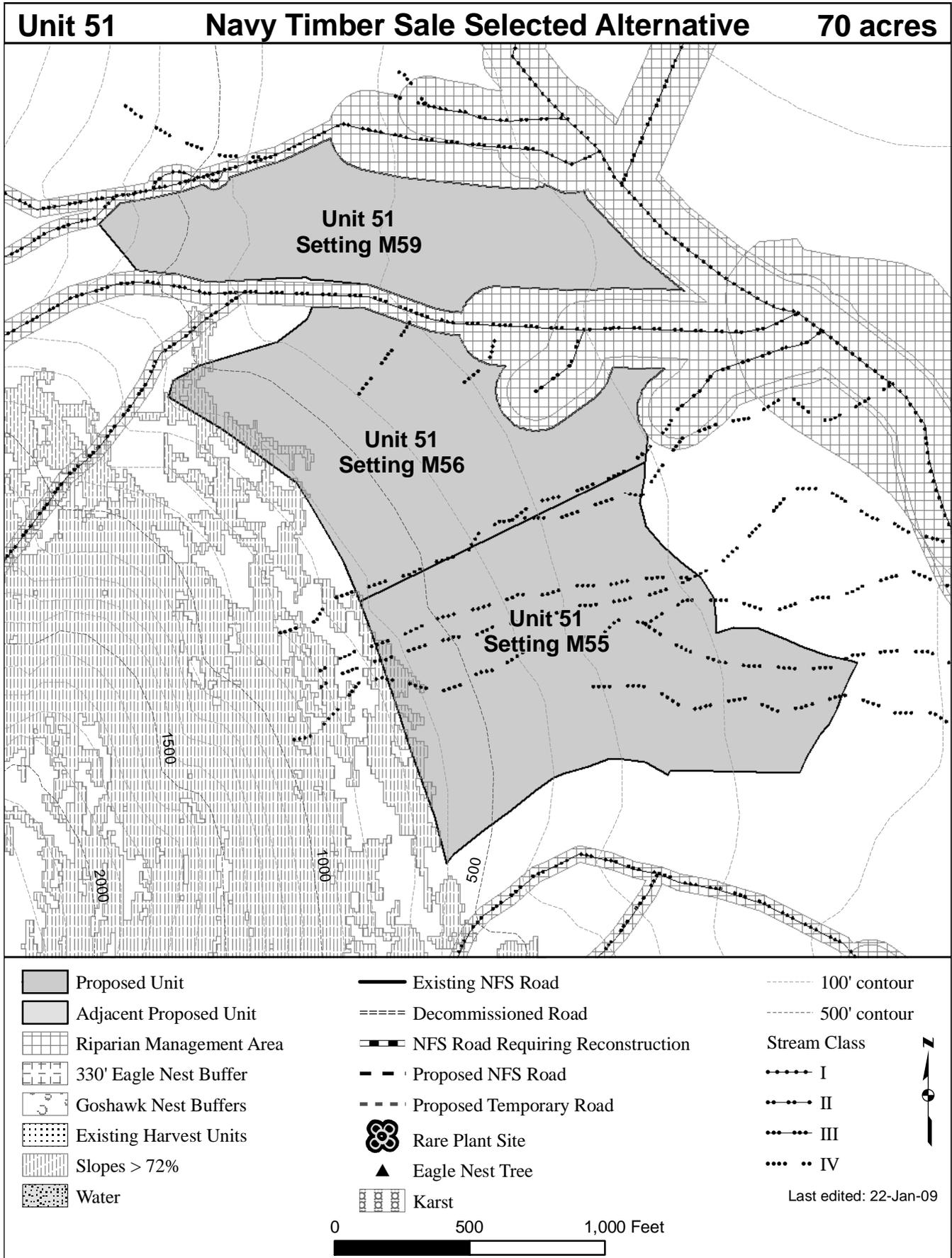
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

SCENERY: The unit is visible from the head of the Mosman Inlet viewshed, where the adopted SIOs range from moderate to very low. The bottom portions of settings M60 and M61 are in the SV LUD and are largely unseen. The proposed prescription will meet the adopted SIO of moderate.

SOILS: This unit has cliffs (4 acres with slopes >72 percent) located in the center of setting M61. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Consider high risk of windthrow when designing retention. Require at least partial suspension for the entire unit.

No resource concerns were identified for Wildlife and Botany.

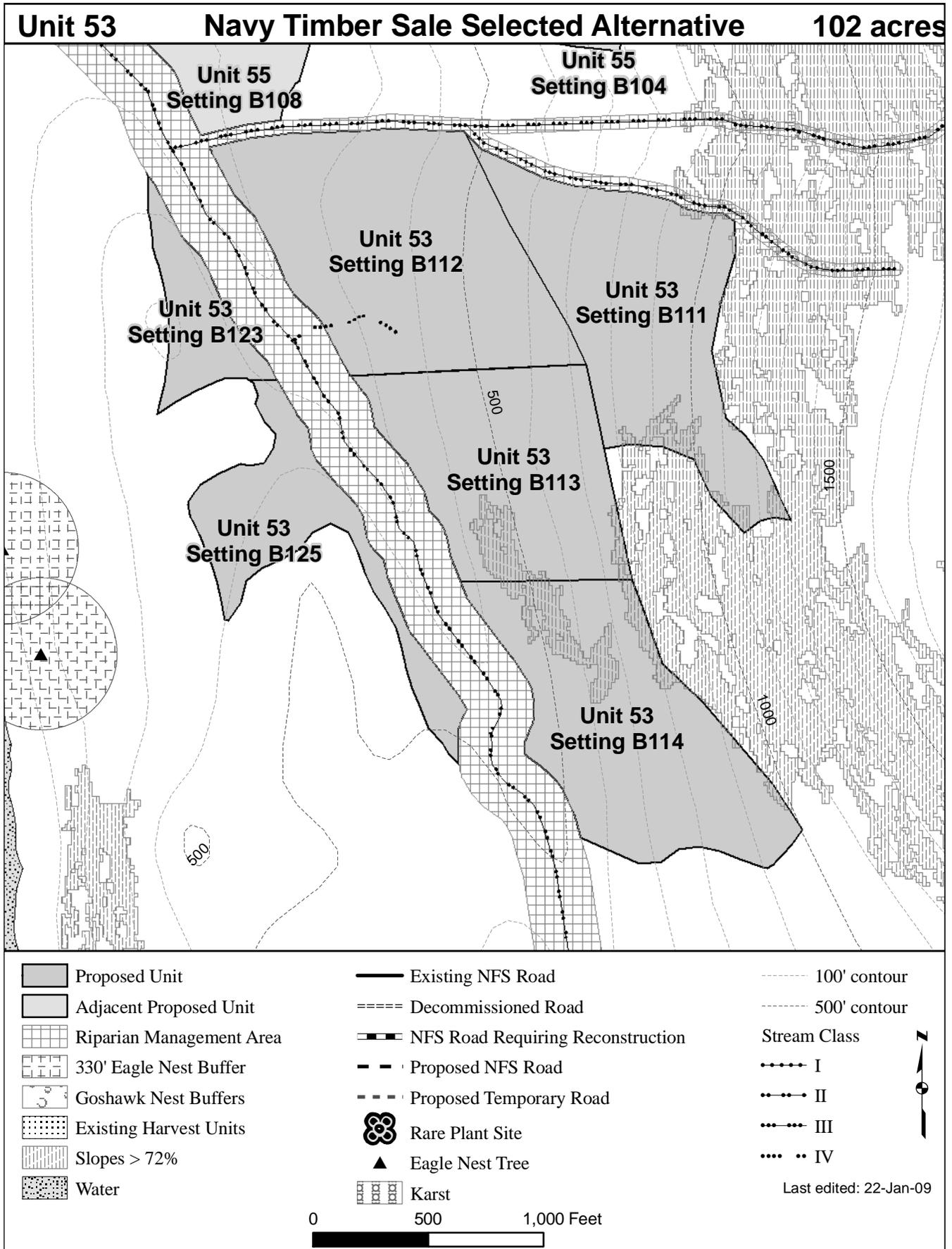
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV,TM		Total Unit Acres: 70	Unit Number: 51
	Logging Systems: Helicopter	Harvest Acres: 70	
Setting Number(s): M55, M56, M59		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-106		High: 40 Medium: 27 Low: 3 Non-forested:	MBF: 620
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 45 percent western hemlock, 35 percent Sitka spruce and 20 percent red cedar. BA=242. Site Index based on PA is 75 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: The unit is designed for helicopter yarding to the end landing on the proposed 51421 road. RAW buffers will be implemented in settings M56 and M59.			
ENGINEERING/ROADS: Refer to road card 51421.			
FISH/WATERSHED:			
<p>There is a Class I, channel type MM1, stream adjacent to the northeast boundary of the unit. No harvest within 120 feet of the channel. (BMP 13.9, 13.16).</p> <p>There are at least three Class II, channel type AF2, streams within or adjacent to the unit. No harvest within 140 feet of the channel. RAW and RMA buffers need to be established for the alluvial fans that impact this unit. (BMP 13.9, 13.16).</p> <p>There are two Class III, channel type HC5 and HC6, streams within or adjacent to the unit. Do not harvest in v-notch. (BMP 13.9, 13.16).</p> <p>There are at least nine Class IV streams that flow through the unit (channel types HC1 and HC5). Fall timber away from streams if feasible. Helicopter harvest will minimize impacts to these channels. Remove logging debris from streams (BMP 13.9, 13.16).</p> <p>This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow. RMA buffers need to be established for the alluvial fans that impact this unit.</p>			
GEOLOGY/KARST: There was no carbonate bedrock identified in the unit.			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Only setting M55 is seen. It is visible from the head of the Mosman Inlet viewshed where the adopted SIO is moderate. The proposed prescription will meet a moderate SIO.			
SOILS: This unit includes several areas of 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. This unit harvests 4 acres of forested wetlands.			
No resource concerns were identified for Wildlife, Botany and Heritage.			

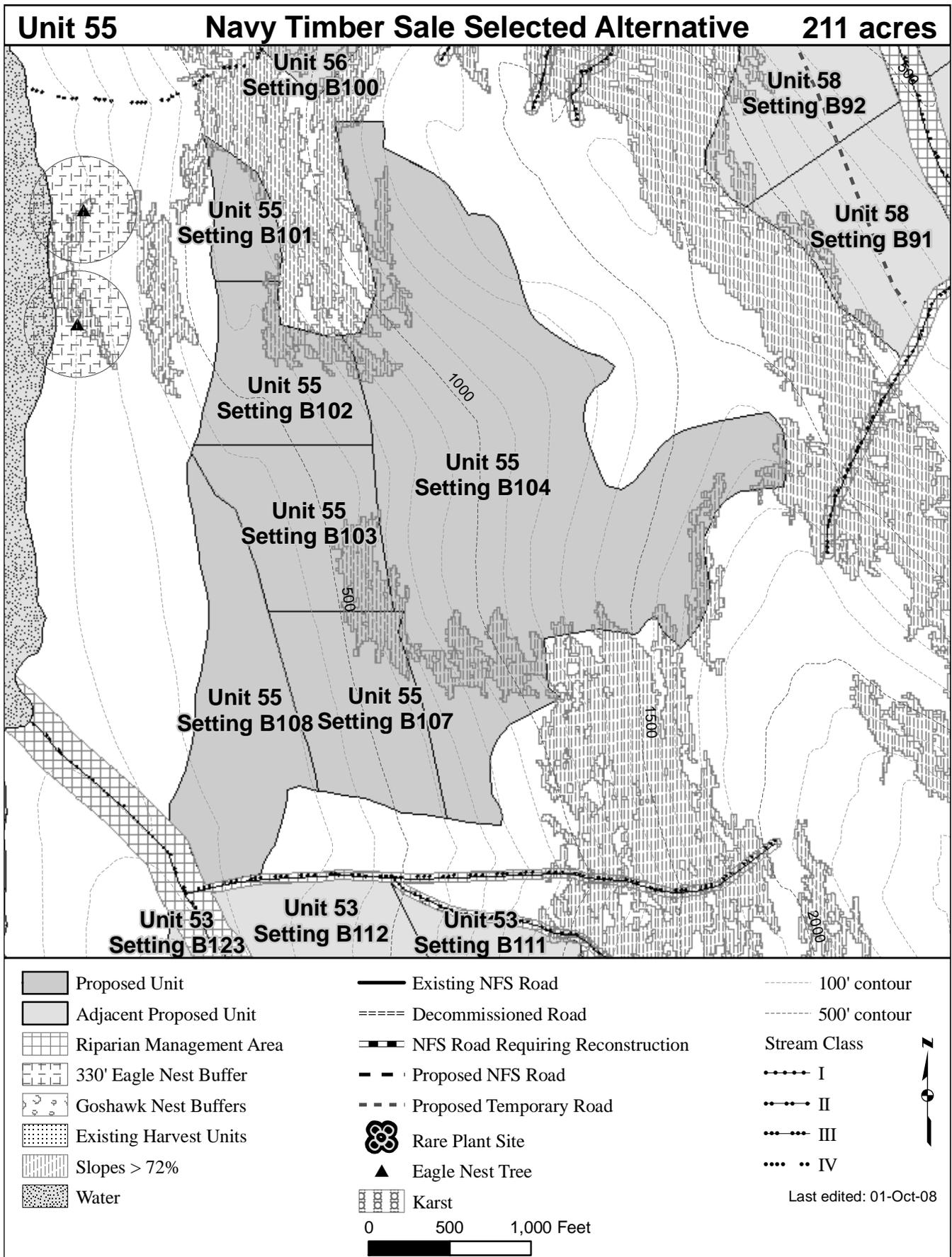
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 102	Unit Number: 53
	Logging Helicopter Systems:	Harvest Acres: 102	
Setting Number(s): B111, B112, B113, B114, B123, B125		Volume Strata Acres: High: 85 Medium: 5 Low: 12 Non-forested:	Net Harvest Volume (Saw): MBF: 942
Photo Number: 1098-175			
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 50 percent western hemlock, 20 percent Sitka spruce and 30 percent red cedar. BA=200. Site Index based on PA is 86 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.			
FISH/WATERSHED:			
<p>There is a Class II, channel type MM2, stream that bisects the unit. Do not harvest within 120 feet of the unit. (BMP 13.9, 13.16).</p> <p>There are two Class III, channel types HC5, streams on the northern end of unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).</p> <p>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 streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).</p> <p>This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.</p>			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Only setting B111 is seen. It is visible from the Burnett Inlet viewshed, where the adopted SIO is low. Only the top half of the setting is evident, and the proposed prescription will meet an SIO of high to moderate.			
SOILS: This unit has 6 acres with slopes >72 percent, A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Full suspension (helicopter) will protect 11 acres of forested wetlands. (BMP 12.5)			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Geology, Botany and Heritage.			

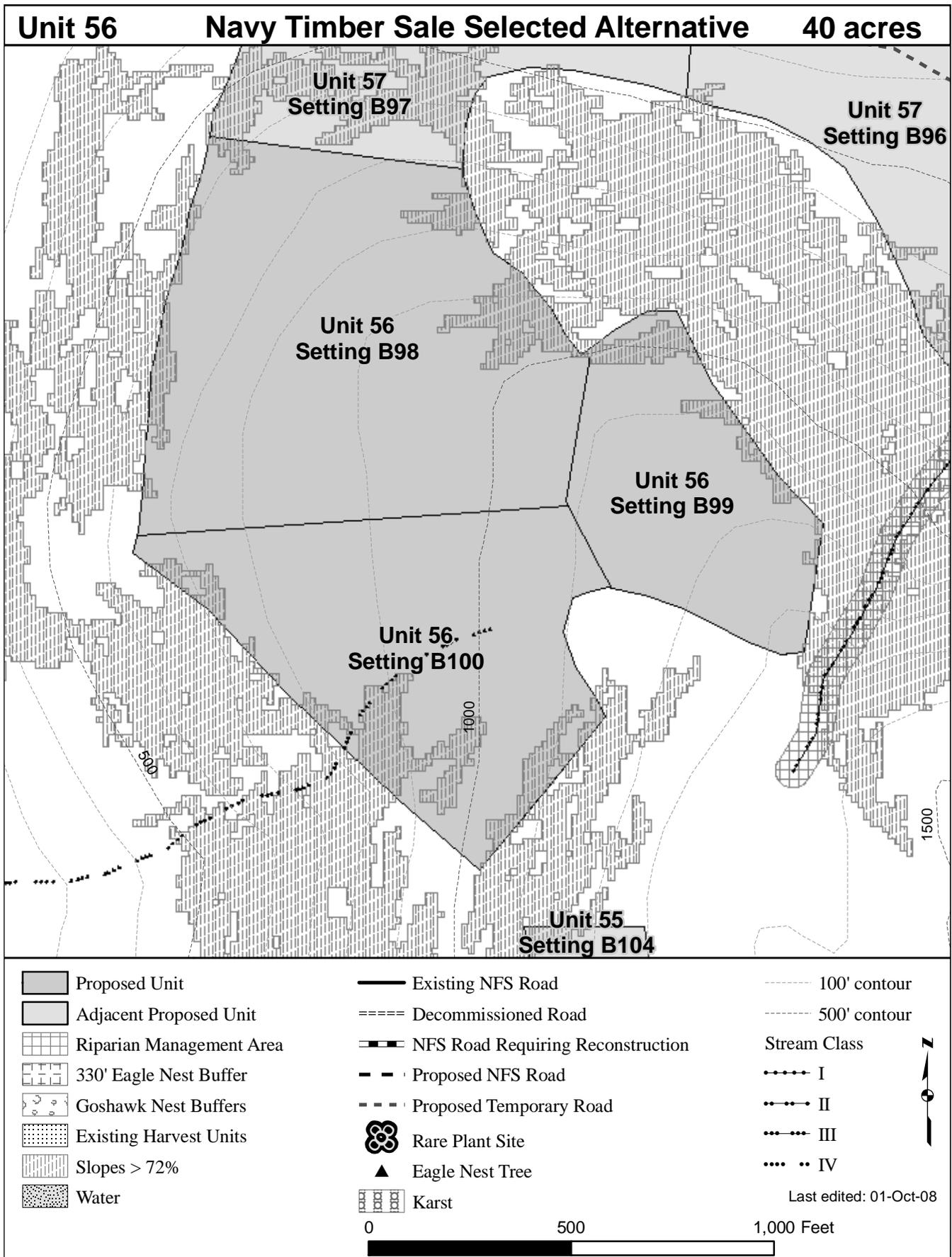
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML,TM		Total Unit Acres: 211	Unit Number: 55
	Logging Helicopter Systems:	Harvest Acres: 211	
Setting Number(s): B101, B102, B103, B104 ,B107, B108		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-174		High: 160 Medium: 43 Low: 7 Non-forested:	MBF: 1,971
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 65 percent western hemlock, 19 percent Sitka spruce, 11 percent red cedar and 5 percent yellow cedar. BA=246. Site Index based on PA is 75 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.			
FISH/WATERSHED:			
<p>There is a Class II, channel type MM2, stream adjacent to the unit. Do not harvest within 120 feet of the unit (BMP 13.9, 13.16).</p> <p>There is a Class III, channel type HC5, stream on the southern unit boundary. Do not harvest in the v-notch (BMP 12.6, 12.6a, 13.16).</p> <p>Additional stream mapping may be necessary during layout.</p>			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Settings B102, B103, B107, and B108 are unseen. Settings B101 and B104 are seen. They are visible from the head of the Burnett Inlet viewshed, where the adopted SIO is low. Only a small portion of the very top of setting B101 is evident. Most of setting B104 is visible. The proposed prescription will result in moderate to low SIOs.			
SOILS: Unit includes about 18 acres of 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. Full suspension (helicopter) will protect 10 acres of forested wetlands. (BMP 12.5)			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML,SV, TM		Total Unit Acres: 40	Unit Number: 56
	Logging Systems: Helicopter	Harvest Acres: 40	
Setting Number(s): B98, B99, B100		Volume Strata Acres: High: 14 Medium: 18 Low: 8 Non-forested:	Net Harvest Volume (Saw): MBF: 298
Photo Number: 1098-173			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 32 percent western hemlock, 9 percent Sitka spruce, 10 percent red cedar, 44 percent yellow cedar and 5 percent mountain hemlock. BA=275. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding to landings located on the 6547 road, or directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

FISH/WATERSHED:

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 streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

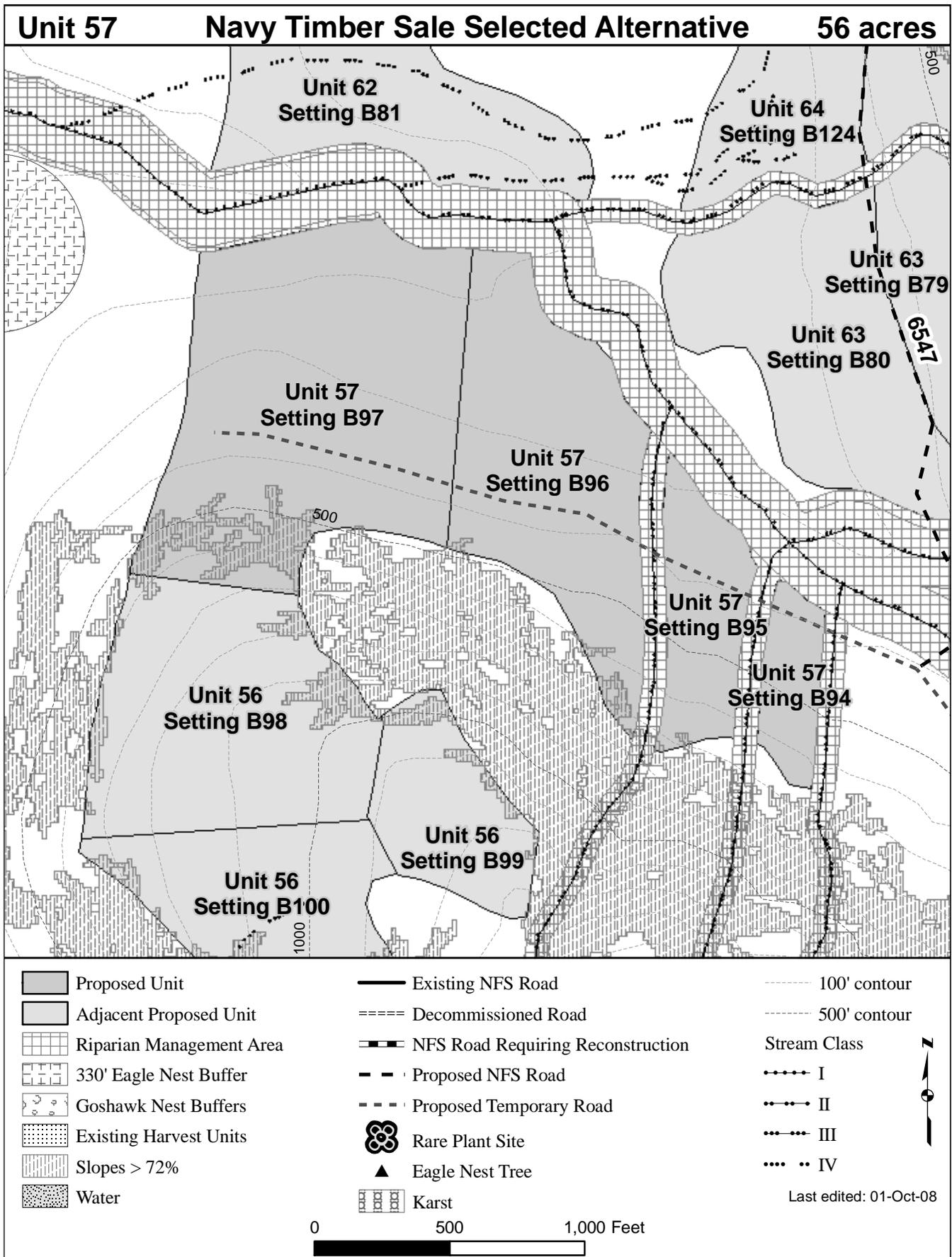
SCENERY: The unit is visible from the head of the Burnett Inlet viewshed, where adopted SIOs range from moderate to very low. The proposed prescription will meet a high to moderate SIOs.

SOILS: This unit includes about 4 acres of 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. Full suspension (helicopter) will protect 8 acres of forested wetlands. (BMP 12.5)

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM,SV		Total Unit Acres: 56	Unit Number: 57
	Logging Systems: Cable & Shovel	Harvest Acres: 56	
Setting Number(s): B94, B95, B96, B97		Volume Strata Acres: High: 34 Medium: 19 Low: 3 Non-forested:	Net Harvest Volume (Saw): MBF: 1,193
Photo Number: 1098-173			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 91 percent western hemlock and 9 percent mountain hemlock. BA=246. Site Index based on PA is 96 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged treatment of clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, as it will favor desirable shade-intolerant species such as cedars and spruce. It will also effectively deal with stem decay and mistletoe in the hemlock component of the stand. Plan to PCT at 15-35 years of age depending on silvicultural need .

TIMBER/LOGGING: All settings are included for management. Settings B94 and B95 are designed for downhill cable yarding to landings located on the proposed 6547 road. Settings B96 and B97 are designed for a combination of cable and shovel yarding. The shovel yarding will occur in the northern half of the settings.

ENGINEERING/ROADS: Construct 0.52 mile of temporary road. The temporary road will be decommissioned after the timber sale. Material for construction is likely to come from a new source along the 6547 road and pit in or near Unit 58.

FISH/WATERSHED:

The Class I/II main stem (Detailer Creek) runs on the northern end of the unit. Do not harvest in the v-notch, additional protection may be necessary for windfirmness (BMP 13.9, 13.16). Do not harvest in the RMA buffer which will be different for the MM and MC channel types on the stream. (BMP 13.9, 13.16).

There are three Class III streams that bisect the unit. Do not harvest in the v-notch, (BMP 13.9, 13.16).

The temporary road proposed will cross three mapped Class III streams. Adequate size structures will be necessary and will be removed immediately following timber sale activities. (BMP 13.16, 14.20).

This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

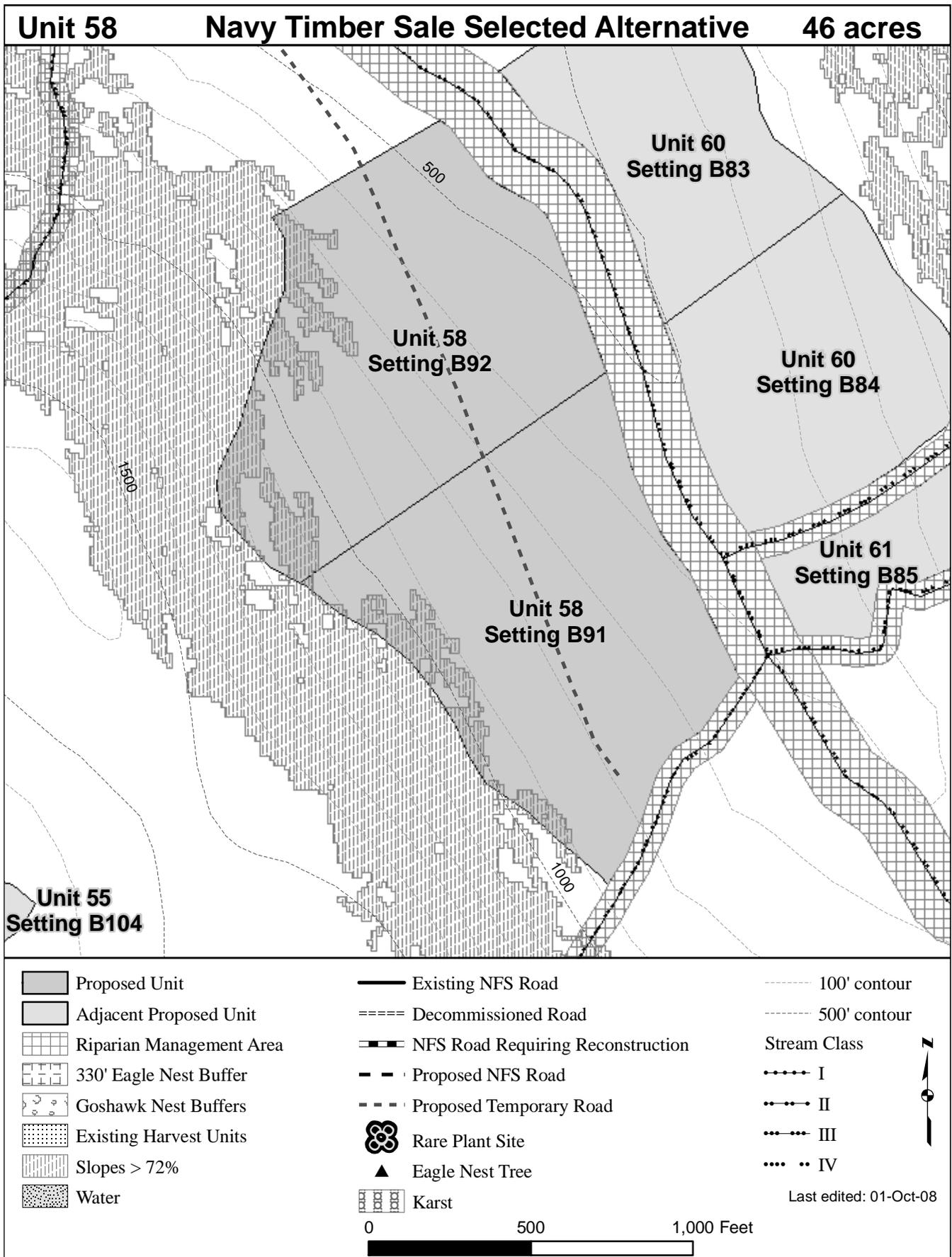
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

SCENERY: Settings B94, B95, and B96 are unseen. Setting B97 is visible from the head of the Burnett Inlet viewshed, where the adopted SIOs range from moderate to very low. Only a small aspect of the opening is visible and the prescribed prescription will meet a moderate SIO.

SOILS: This unit has 3 acres with slopes >72 percent. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. The northern portion of the unit is forested wetland. Shovel tracks need to be supported by slash (BMP12.5, 13.9)

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 46	Unit Number: 58
	Logging Cable Systems:	Harvest Acres: 39	
Setting Number(s): B91, B92		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-173		High: 46	MBF: 919
		Medium:	
		Low:	
		Non-forested:	

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 93 percent western hemlock and 7 percent Sitka spruce. BA=215. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using the clearcut with reserves (15% retention for steep slopes along backline). Even-aged management is an appropriate regeneration method as it will favor desirable shade-intolerant species such as cedars and spruce. In addition, this treatment will effectively deal with stem decays and mistletoe in the hemlock component of the stand. Planting of red and yellow cedar may be prescribed to minimize the effects of porcupine damage. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill and uphill cable yarding to landings located on the temporary road off of the 6547 road. Locate retention in settings B91 and B92 along backline for steep slopes.

ENGINEERING/ROADS: Construct 0.58 mile of temporary road. The road will be decommissioned after the timber sale. Material for construction is likely to come from a new source along the 6547 road and pit in or near setting B93.

FISH/WATERSHED:

There is a Class II, channel types MC2 and HC2, stream (Detailer Creek) on the east side of the unit. Do not harvest within 100 feet of the channel. (BMP 13.9, 13.16).

There are two Class III, channel type HC6, streams on the north and south end of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

Temporary access road may have some unmapped stream crossings that will need adequate structures. All structures will be removed at the end of timber sale operations (BMP 13.16, 14.20).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

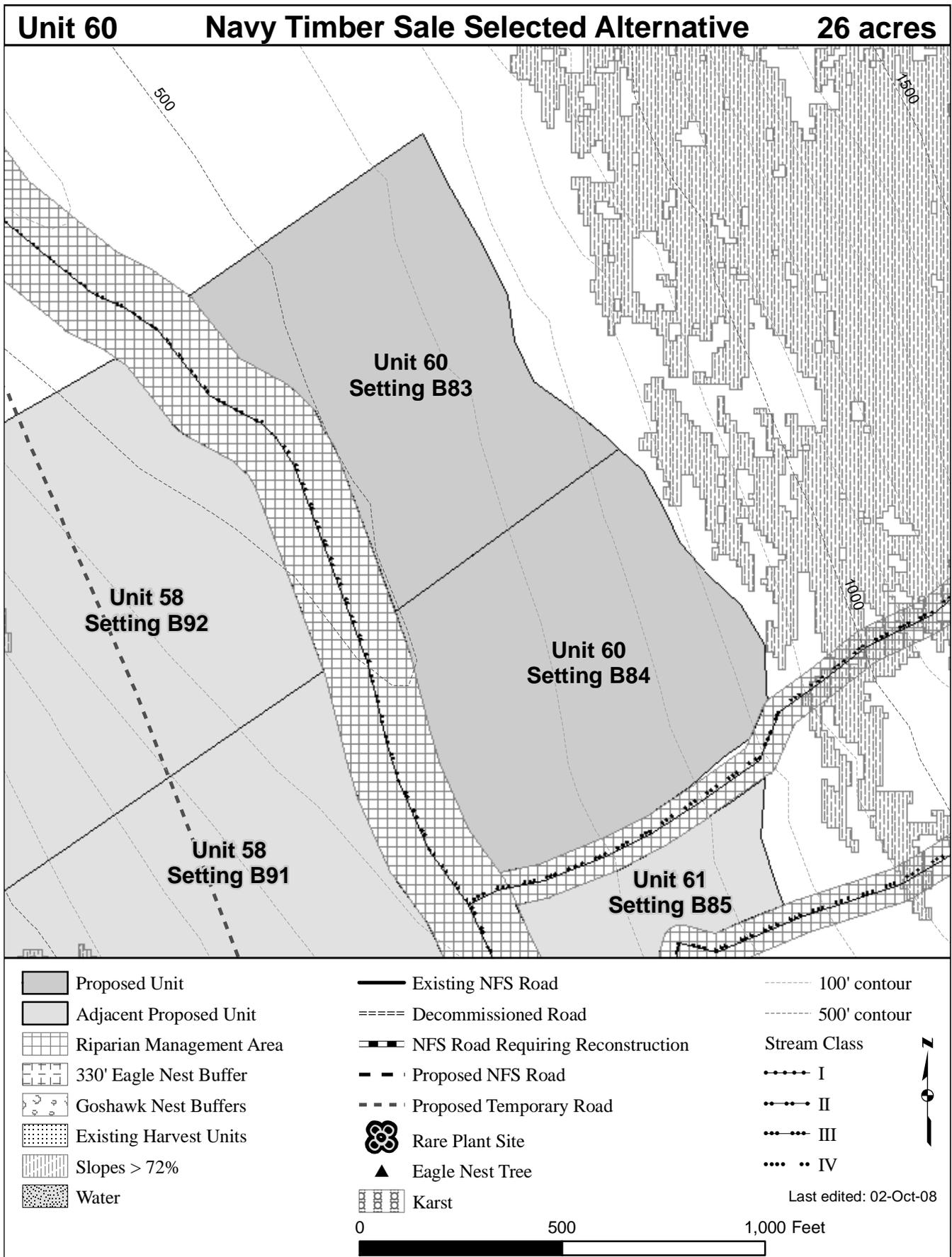
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

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

SOILS: This unit includes 5 acres with slopes >72 percent located along the backline of the unit. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Require partial suspension upslope of the road.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 26	Unit Number: 60
	Logging Cable Systems:	Harvest Acres: 26	
Setting Number(s): B83, B84		Volume Strata Acres: High: 26 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 620
Photo Number: 1098-173			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 78 percent western hemlock and 22 percent Sitka spruce. BA=203. Site Index based on PA is 96 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the stands windthrow potential and high percentage of western hemlock in which future species composition, stem decay and mistletoe can be effectively dealt with. Planting of red and yellow cedar may be prescribed to minimize the effects of porcupine damage. Plan to PCT at 15-35 years of age, depending on silvicultural need.

TIMBER/LOGGING: Settings B83 and B84 are proposed for management. This unit is designed for long-span cable yarding across Detailer Creek to landings located on the temporary road off of the 6547 road. Full suspension yarding across the creek must be achieved, and yarding corridors through the RMA buffer will be necessary.

FISH/WATERSHED:

There is a Class II, channel types MC2 and HC2, stream (Detailer Creek) on the southwest side of the unit. No harvest within 100 feet of the channel (RMA) (BMP 13.9, 13.16).

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

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

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

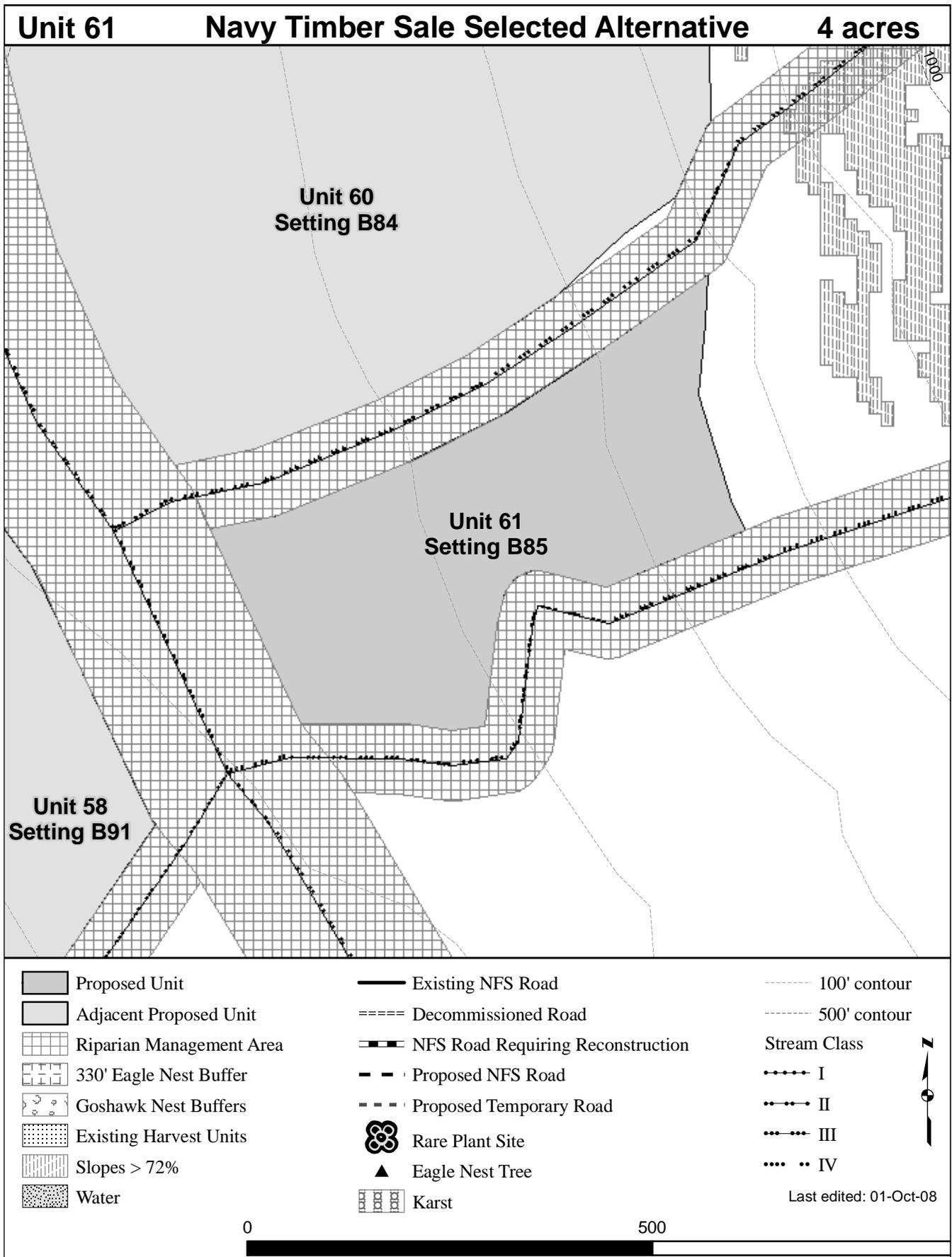
During harvest provide full suspension over Detailer Creek and limit impacts to the RMA as logs are yarded across. Small corridors are allowed to facilitate yarding but all felled RMA logs must be retained in the RMA area.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

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

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 4	Unit Number: 61
	Logging Cable Systems:	Harvest Acres: 4	
Setting Number(s): B85		Volume Strata Acres: High: 4 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 90
Photo Number: 1098-174			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 78 percent western hemlock and 22 percent Sitka spruce. BA=293. Site Index based on PA is 85 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Also, this method will encourage desirable shade-tolerant species such as cedars and spruce as well as dealing with stem decay and mistletoe in the hemlock component of the stand. Planting of red and yellow cedar may be prescribed to minimize the effects of porcupine damage. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for long-span cable yarding across Detailer Creek to a landing located on the temporary road off of the 6547 road. Full suspension yarding across the creek must be achieved, and yarding corridors through the RMA buffer will be necessary.

FISH/WATERSHED:

There is a Class II, channel type HC2, stream (Detailer Creek) on the southwest side of the unit. No harvest within 100 feet of the channel. (BMP 13.9, 13.16).

There are two Class III, channel type HC6, streams adjacent to the unit. No harvest in the v-notch. (BMP 13.9, 13.16).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

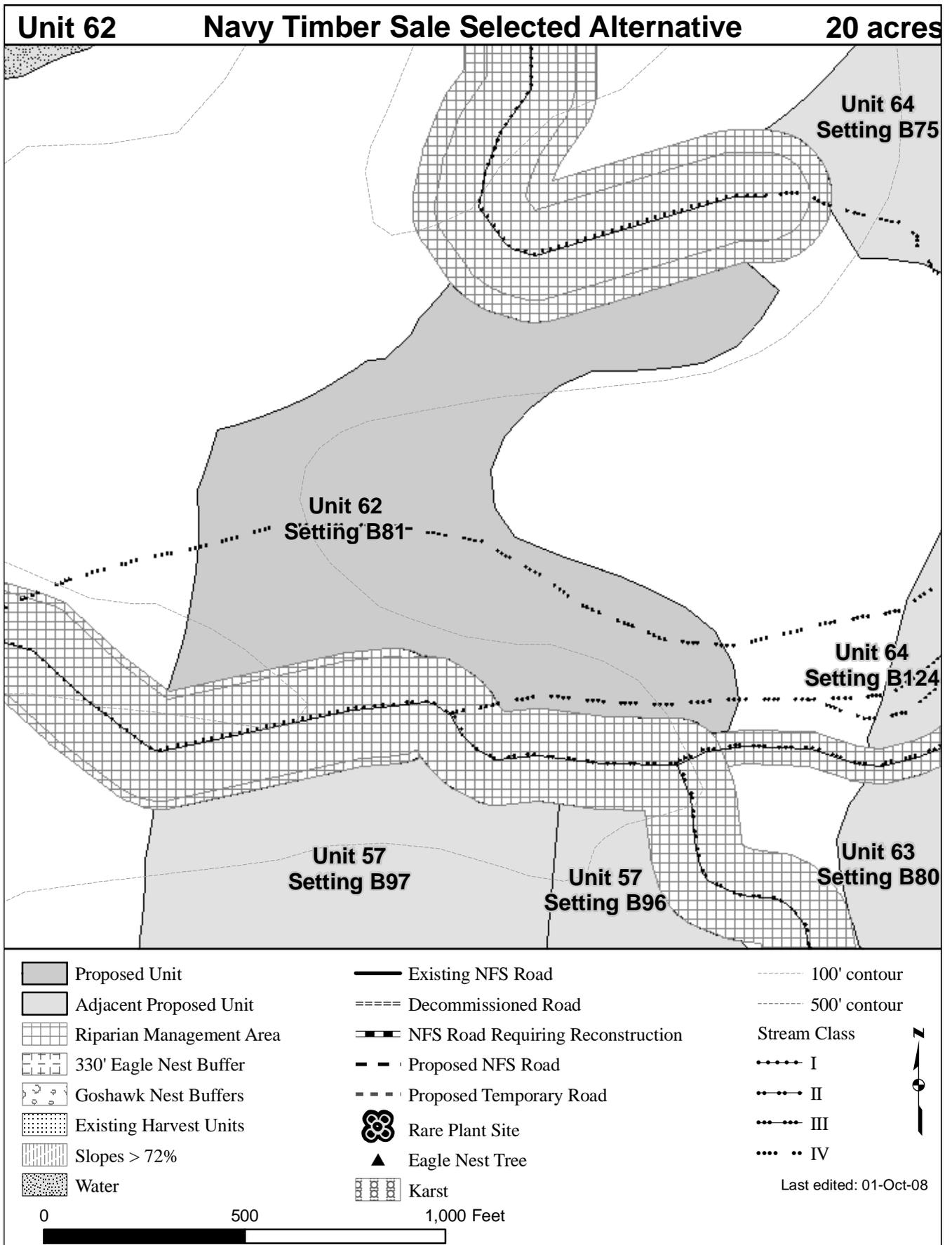
During harvest provide full suspension over Detailer Creek and limit impacts to the RMA as logs are yarded across. Small corridors are allowed to facilitate yarding but all felled RMA logs must be retained in the RMA area.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

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

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV, TM		Total Unit Acres: 20	Unit Number: 62
	Logging Systems: Helicopter	Harvest Acres: 20	
Setting Number(s): B81		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-172		High: Medium: 18 Low: 2 Non-forested:	MBF: 149

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 87 percent western hemlock and 13 percent Sitka spruce. BA=216. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding directly to the 6547 road.

FISH/WATERSHED:

There is a Class I/II, channel types MM2 and MC2, stream on the southern side of the unit. Do not harvest within 120 feet (MM2) or 100 feet (MC2) of the channel. (BMP 13.9, 13.16).

There is a Class I, channel type FP3, stream on the northern side of the unit. No harvest within 130 feet of the channel. (BMP 13.9, 13.16).

There are two Class IV, channel type HC1, 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).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

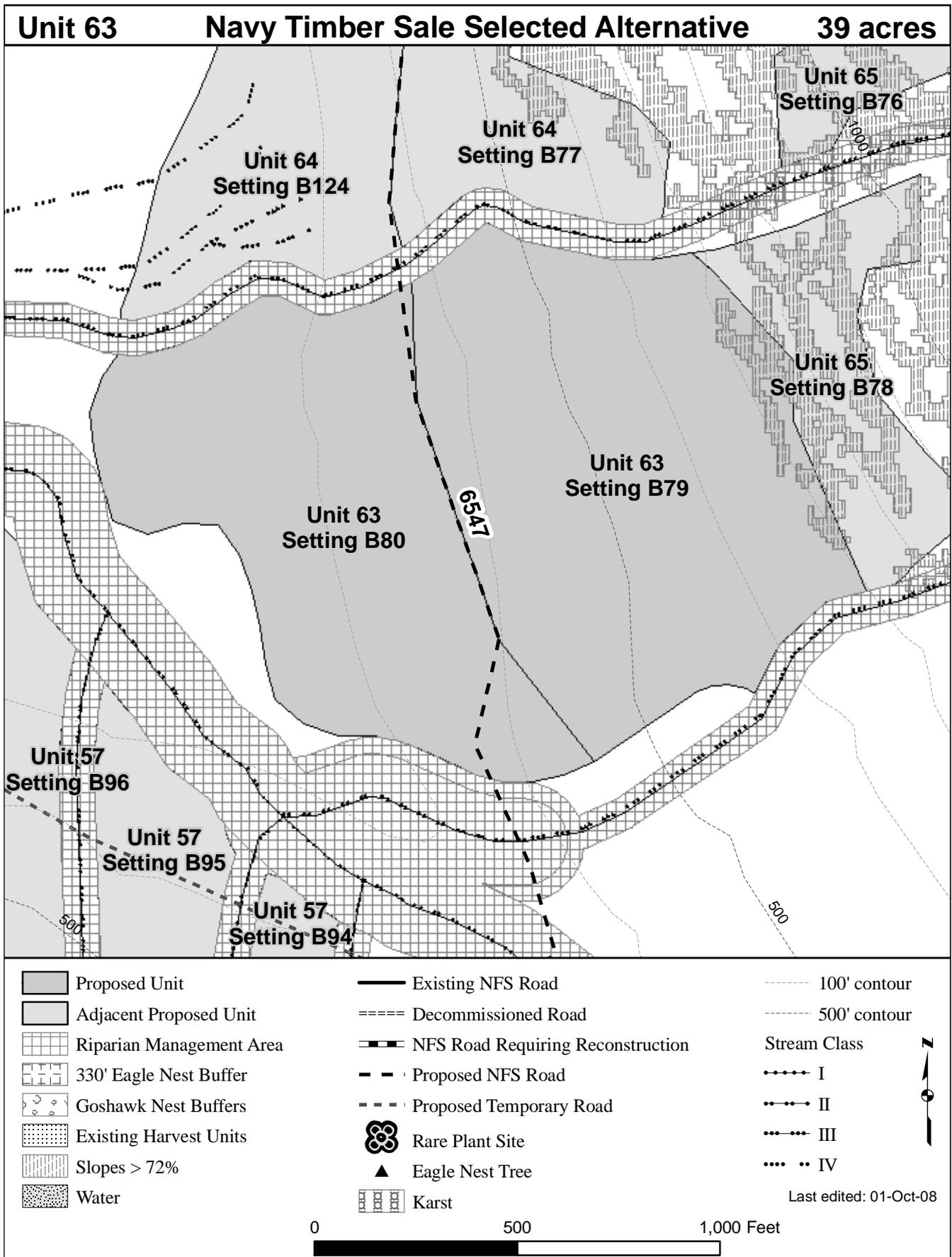
SCENERY: Unit is not seen from any visual priority travel route or use area.

SOILS: This unit harvests 2 acres of forested wetlands.

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 39	Unit Number: 63
	Logging Systems: Cable & Shovel	Harvest Acres: 39	
Setting Number(s): B79, B80		Volume Strata Acres: High: 24 Medium: 6 Low: 9 Non-forested:	Net Harvest Volume (Saw): MBF: 790
Photo Number: 1098-172			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 42 percent western hemlock, 12 percent Sitka spruce and 46 percent red cedar. BA=276. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: Setting B79 is designed for downhill cable yarding and setting B80 is designed for shovel logging to landings on the proposed 6547 road.

ENGINEERING/ROADS: Refer to road card 6547.

FISH/WATERSHED:

There is a Class II, channel type MC2, stream (Detailer Creek) on the west side of the unit. Do not harvest within 100 feet of the channel. (BMP 13.9, 13.16).

There is a Class II/III, channel types AF2 and HC2, stream on the southern end of the unit. No harvest within 140 feet of the channel. (BMP 13.9, 13.16).

There are two Class III, channel type HC6, streams on the northern and southern ends of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers, especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

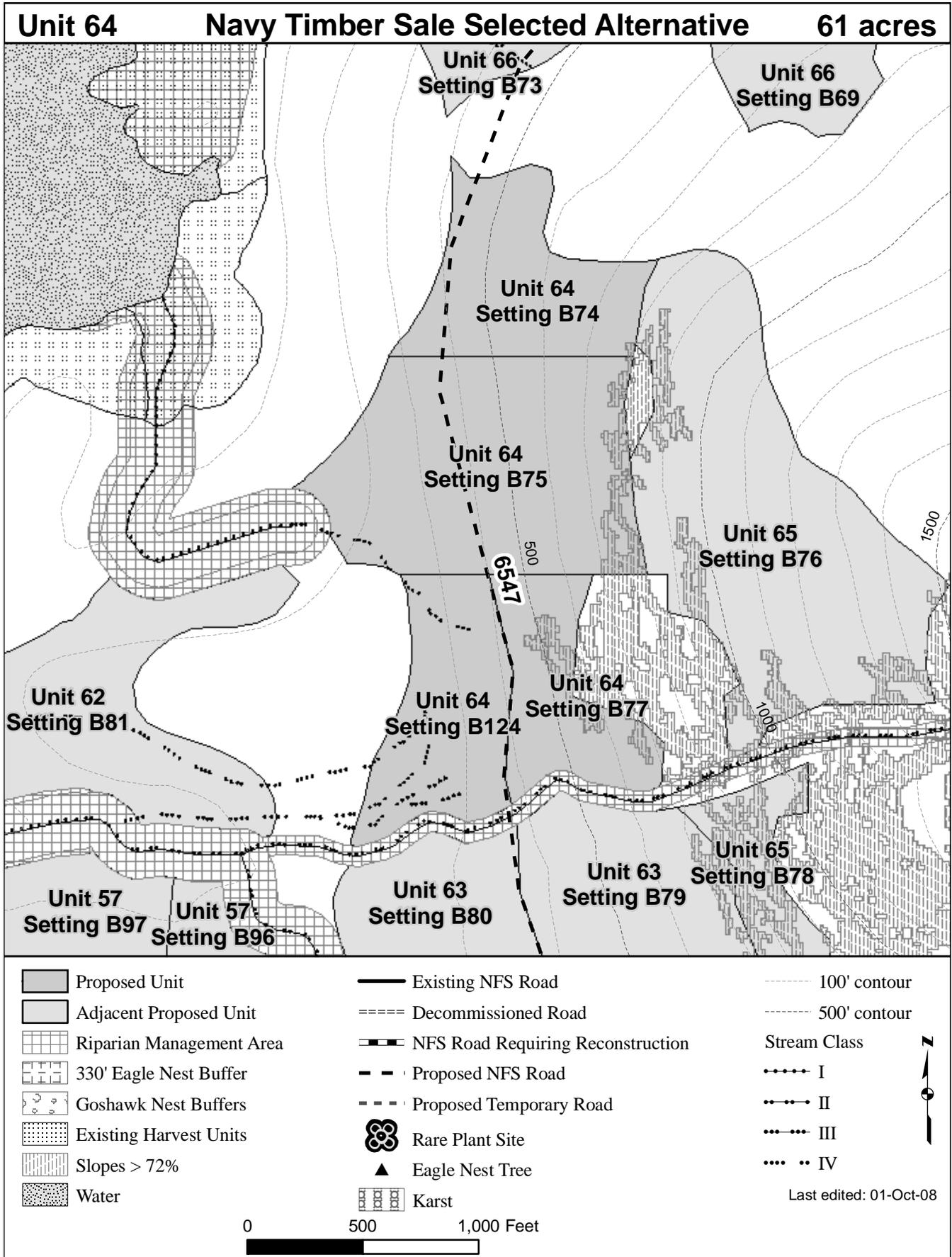
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

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

SOILS: This unit has 1 acre with slopes >72 percent along the backline, lay out to avoid slopes >85 percent. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Forested wetland occurs in the western portion of the unit. Shovel tracks need to be supported with slash (BMP 13.9)

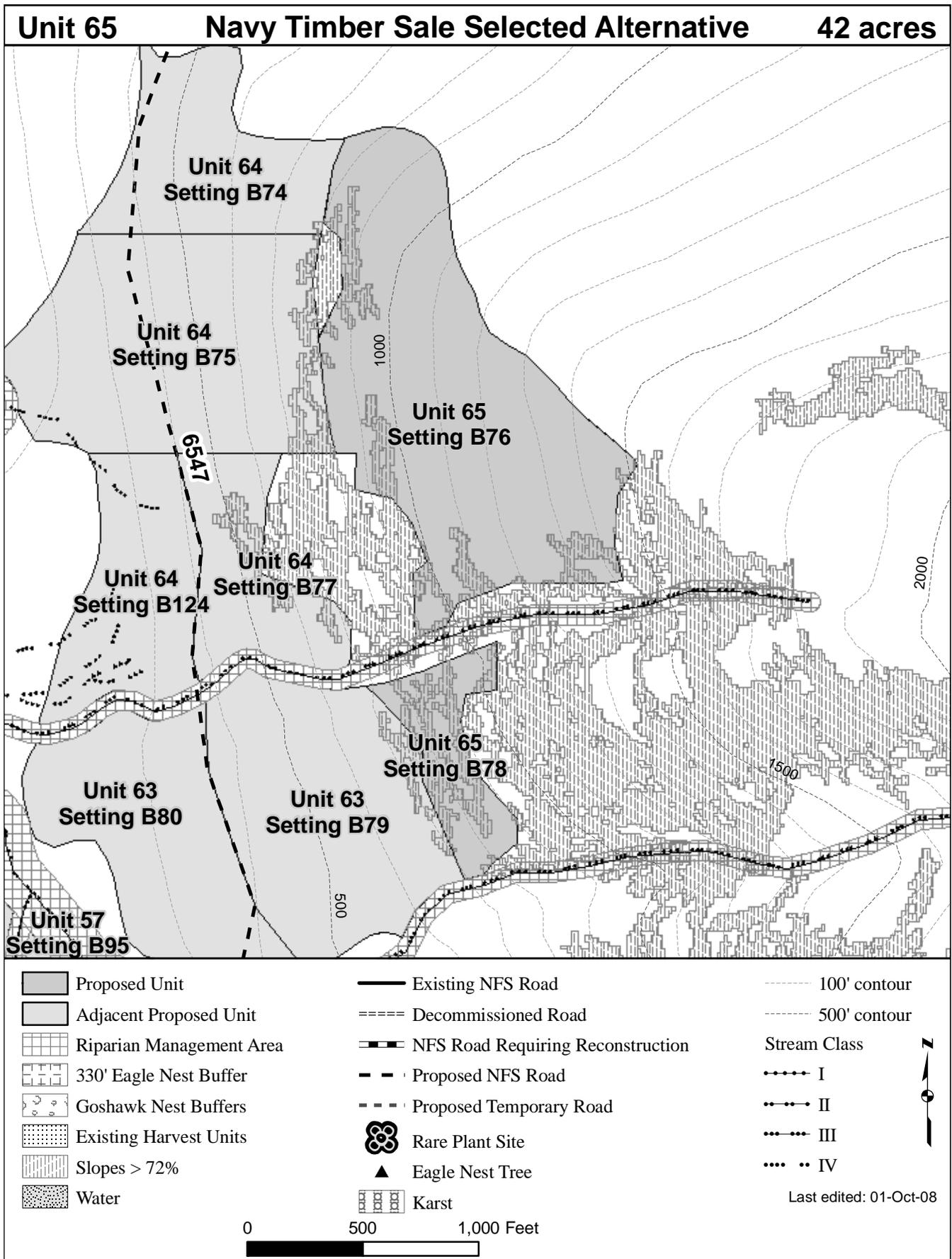
No resource concerns were identified for Wildlife, Geology, Botany and Heritage.

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

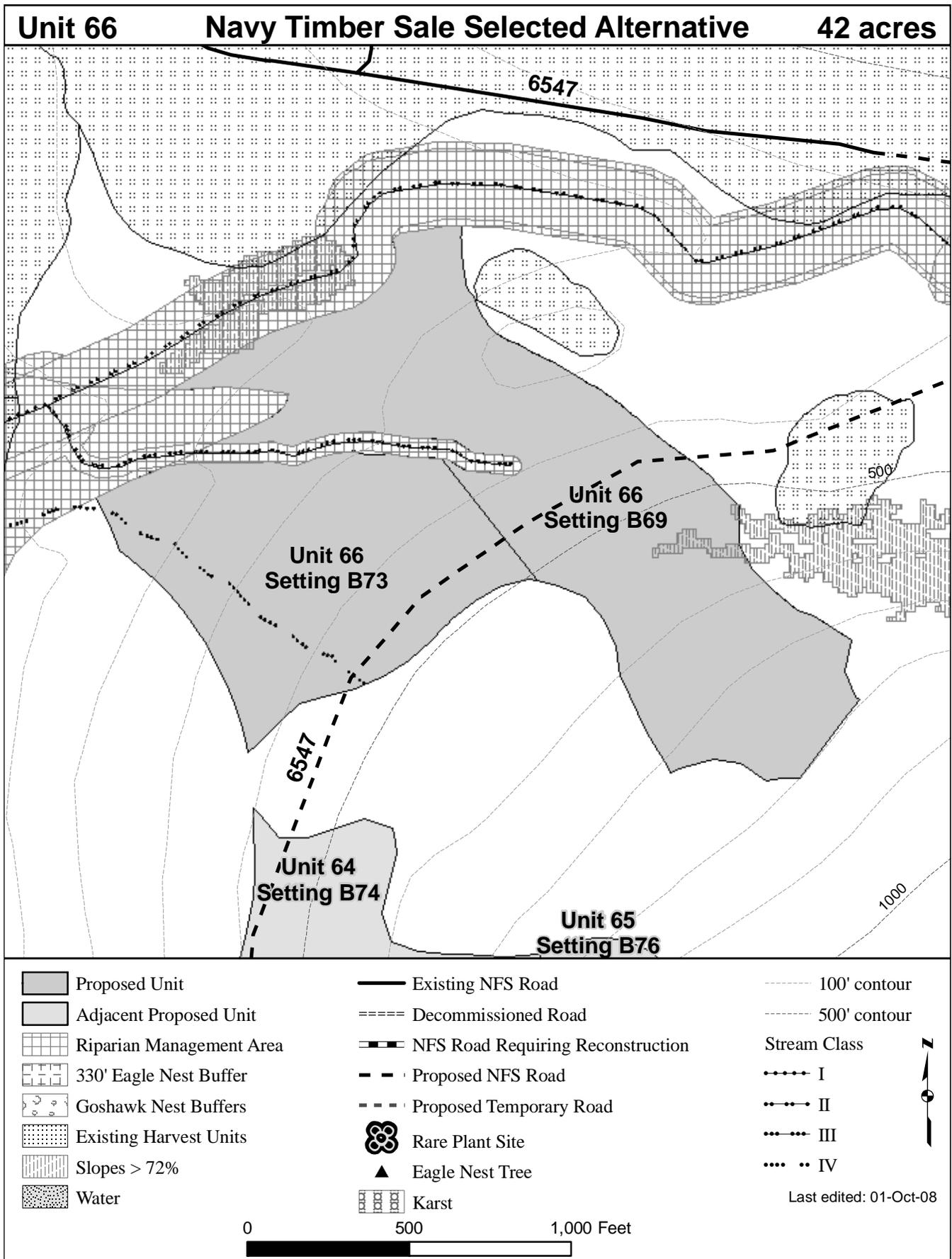
LUD: TM		Total Unit Acres: 61	Unit Number: 64
	Logging Systems: Cable & Shovel	Harvest Acres: 61	
Setting Number(s): B74, B75, B77, B124		Volume Strata Acres: High: 47 Medium: 13 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 1,359
Photo Number: 1098-172			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 46 percent western hemlock, 5 percent Sitka spruce, 44 percent red cedar and 5 percent yellow cedar. BA=246. Site Index based on PA is 96 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: All settings are included for management. Settings B74, B75, and B77 are designed for downhill cable yarding to the 6547 road. Setting B124 is designed for shovel yarding to landings located on the 6547 road.			
ENGINEERING/ROADS: Refer to road card 6547.			
FISH/WATERSHED:			
There is a Class I, channel type FP3, stream adjacent to the west side of the unit. No harvest within 130 feet of the channel (BMP 13.9, 13.16).			
There is a Class III, channel type HC6, stream on the southern end of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).			
There are five Class IV, channel type HCx, 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).			
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: The unit is seen from the head of the Burnett Inlet viewshed, where the adopted SIO is very low, and the VAC rating is predominantly intermediate, with some low. Proposed prescription will meet low to very low SIOs.			
SOILS: This unit has imperfectly drained glacial till soil. This unit includes about 1 acre of 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. This unit harvests 10 acres of forested wetlands. In areas logged with shovel, shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.			
No resource concerns were identified for Wildlife, Soils, Geology, Botany and Heritage			



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 42	Unit Number: 65
	Logging Systems: Helicopter	Harvest Acres: 42	
Setting Number(s): B76, B78		Volume Strata Acres: High: 15 Medium: 1 Low: 26 Non-forested:	Net Harvest Volume (Saw): MBF: 276
Photo Number: 1098-172			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 12 percent Sitka spruce, 18 percent red cedar and 30 percent yellow cedar. BA=305. Site Index based on PA is 75 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: The unit is designed for helicopter yarding to the proposed 6547 road.			
FISH/WATERSHED:			
There is a Class III, channel type HC6, stream on the southern end of the unit. Do not harvest in the v-notch (BMP 12.6, 12.6a, 13.16).			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Setting B78 is unseen. Only setting B76 is visible from the head of the Burnett Inlet viewshed; it has an adopted SIO of very low. The proposed prescription will meet a high to moderate SIOs.			
SOILS: This unit has 6 acres with slopes >72 percent. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. This unit harvests 2 acres of forested wetlands.			
No resource concerns were identified for Roads, Wildlife, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM, SV		Total Unit Acres: 42	Unit Number: 66
	Logging Cable Systems:	Harvest Acres: 38	
Setting Number(s): B69, B73		Volume Strata Acres: High: 15 Medium: 7 Low: 20 Non-forested:	Net Harvest Volume (Saw): MBF: 655
Photo Number: 1098-171			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 70 percent western hemlock, 19 percent Sitka spruce and 11 percent yellow cedar. BA=207. Site Index based on PA is 96 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription with the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source) in both settings and clearcut with 15% reserves in northwest portion of setting B69. Even-aged management is an appropriate regeneration method, given the stand's windthrow potential, as well as encouraging desirable species such as cedars and spruce. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: The unit is designed for uphill and downhill cable yarding to the proposed 6547 road. Place retention in the northwest portion of setting B69 to protect the Camp Creek Canyon.

ENGINEERING/ROADS: Refer to road card 6547.

FISH/WATERSHED:

There is a Class II, channel types MC3 and MM1, stream (Camp Creek) on the northern end of the unit. Do not harvest within 100 feet (MC3) or 120 feet (MM1) of the channel. (BMP 13.9, 13.16).

There is a Class III, channel type HC5, stream in the middle of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

There is a Class IV, channel type HC, stream in the southern portion of 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).

This unit has high windthrow potential on the western side (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).

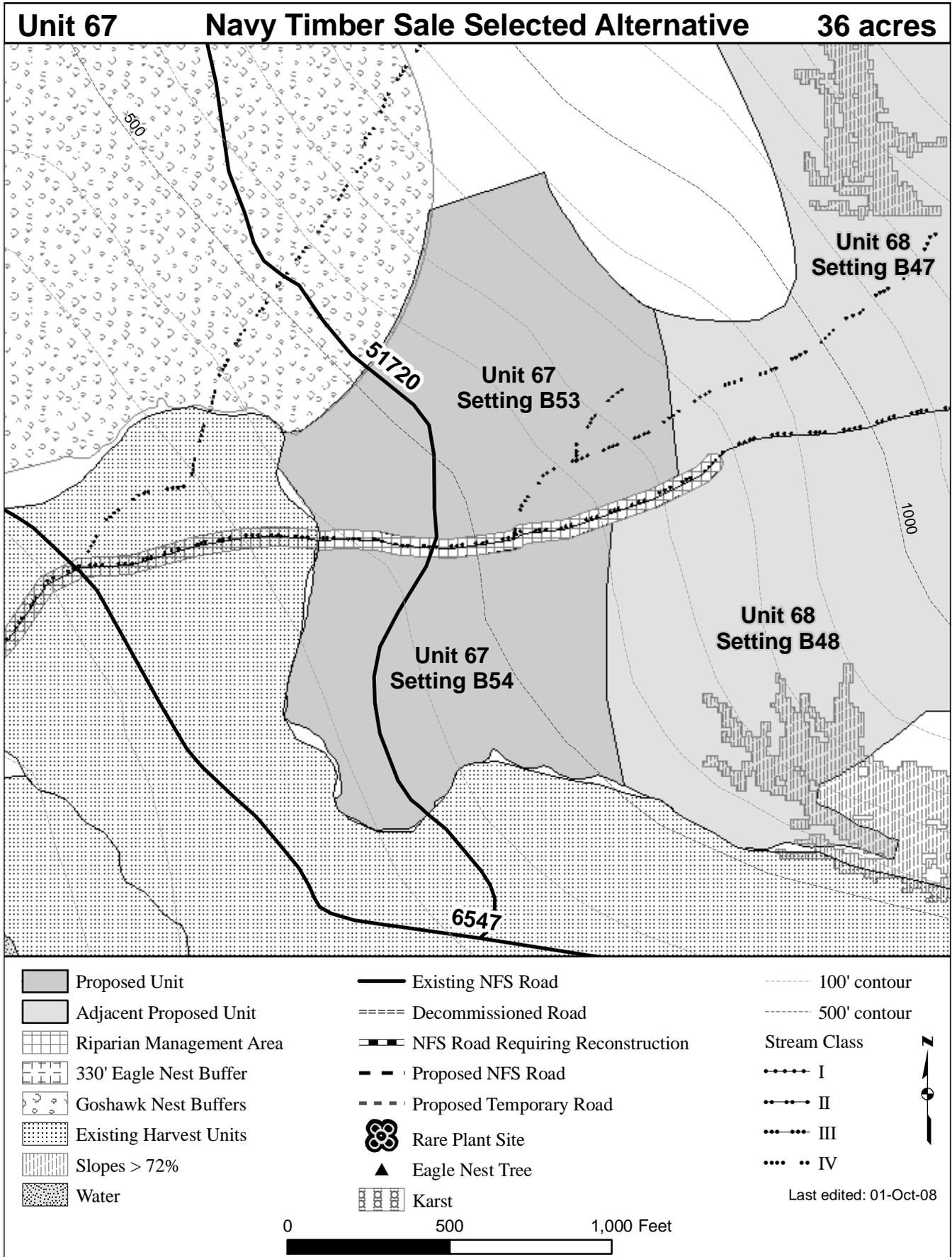
SCENERY: Unit is not seen from any visual priority travel route or use area.

SOILS: This unit includes about 1 acre of 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. Portions of the unit may be suitable for shovel yarding. If used, shovel tracks need to be supported by slash (BMP 13.9) This unit harvests 23 acres of forested wetlands.

WILDLIFE: Retain 15 percent in setting B69 next to creek for wildlife connectivity.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM,SV		Total Unit Acres: 36	Unit Number: 67
	Logging Cable Systems:	Harvest Acres: 30	
Setting Number(s): B53, B54		Volume Strata Acres: High: 32 Medium: 4 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 698
Photo Number: 1098-170			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 62 percent western hemlock, 6 percent red cedar and 32 percent yellow cedar. BA=310. Site Index based on PA is 80 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged management using clearcut with 15 percent retention (for wildlife habitat connectivity in the pinchpoint) for both settings. Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: The unit is designed for downhill and uphill cable yarding to the existing 51720 road. Retention will be located during layout in the east/northeast portion of the unit.

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).

This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

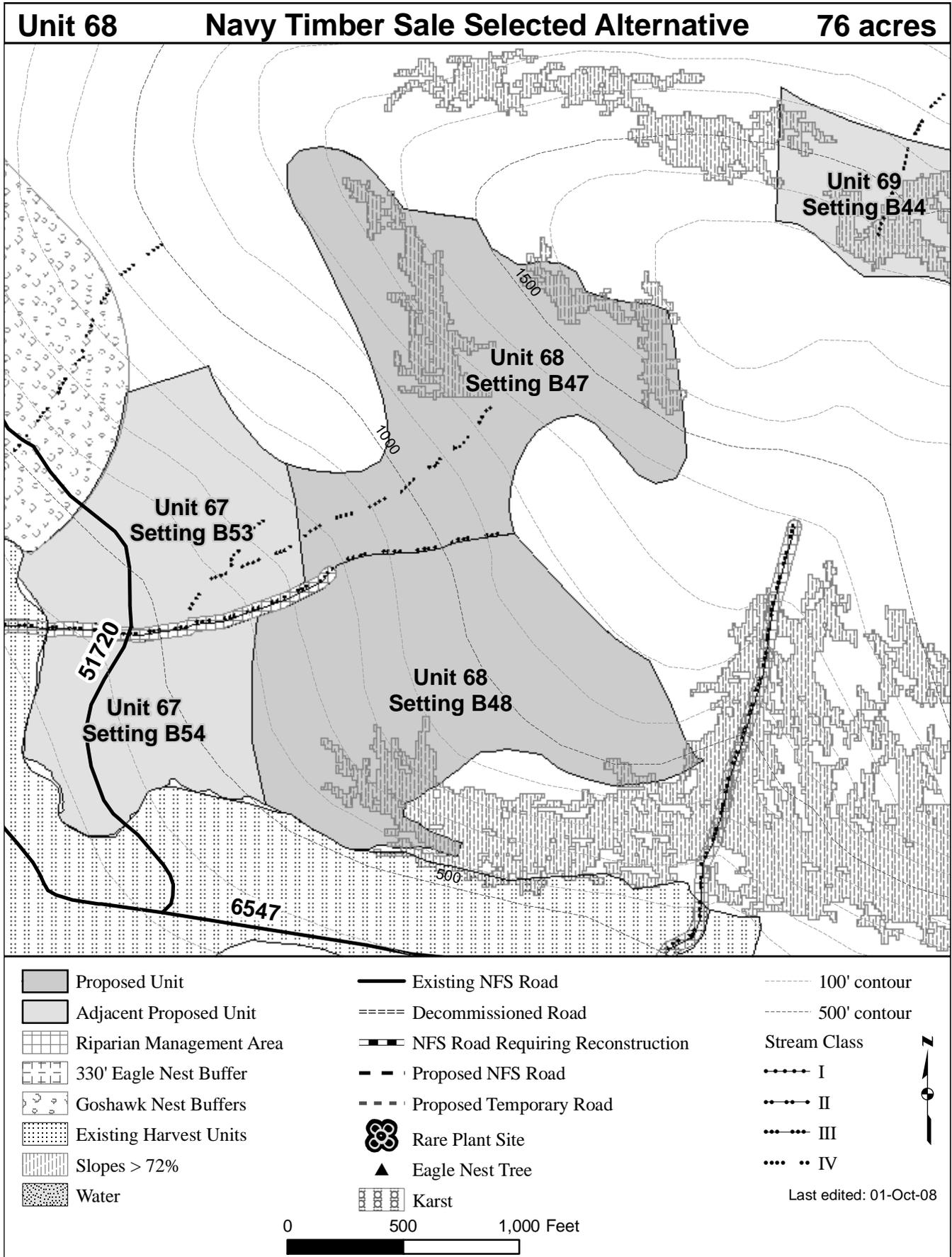
SCENERY: Unit is seen from the head of the Burnett Inlet viewshed, where the adopted SIOs are moderate to very low. The portion of Scenic Viewshed that lies at the bottom of setting B54 is unseen. The proposed prescription will meet moderate to very low SIOs.

SOILS: This unit harvests 2 acres of forested wetlands.

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. Apply the 15% retention as a leave strip along the south and west edges of the unit. Design the leave strip to be as windfirm as possible.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 76	Unit Number: 68
	Logging Systems: Helicopter	Harvest Acres: 76	
Setting Number(s): B47, B48		Volume Strata Acres: High: 39 Medium: 28 Low: 9 Non-forested:	Net Harvest Volume (Saw): MBF: 641
Photo Number: 1098-170			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 51 percent western hemlock, 19 percent red cedar and 30 percent yellow cedar. BA=244. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding to landings on the existing 51720 road. Retention will be concentrated at the setting break along the Class IV stream.

FISH/WATERSHED:

There is a Class III, channel type HC5, stream within the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16)

There is a Class IV, channel type HC5, stream that runs through the unit. Fall timber away from streams if feasible. Remove logging debris from streams (BMP 13.9, 13.16).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.

RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).

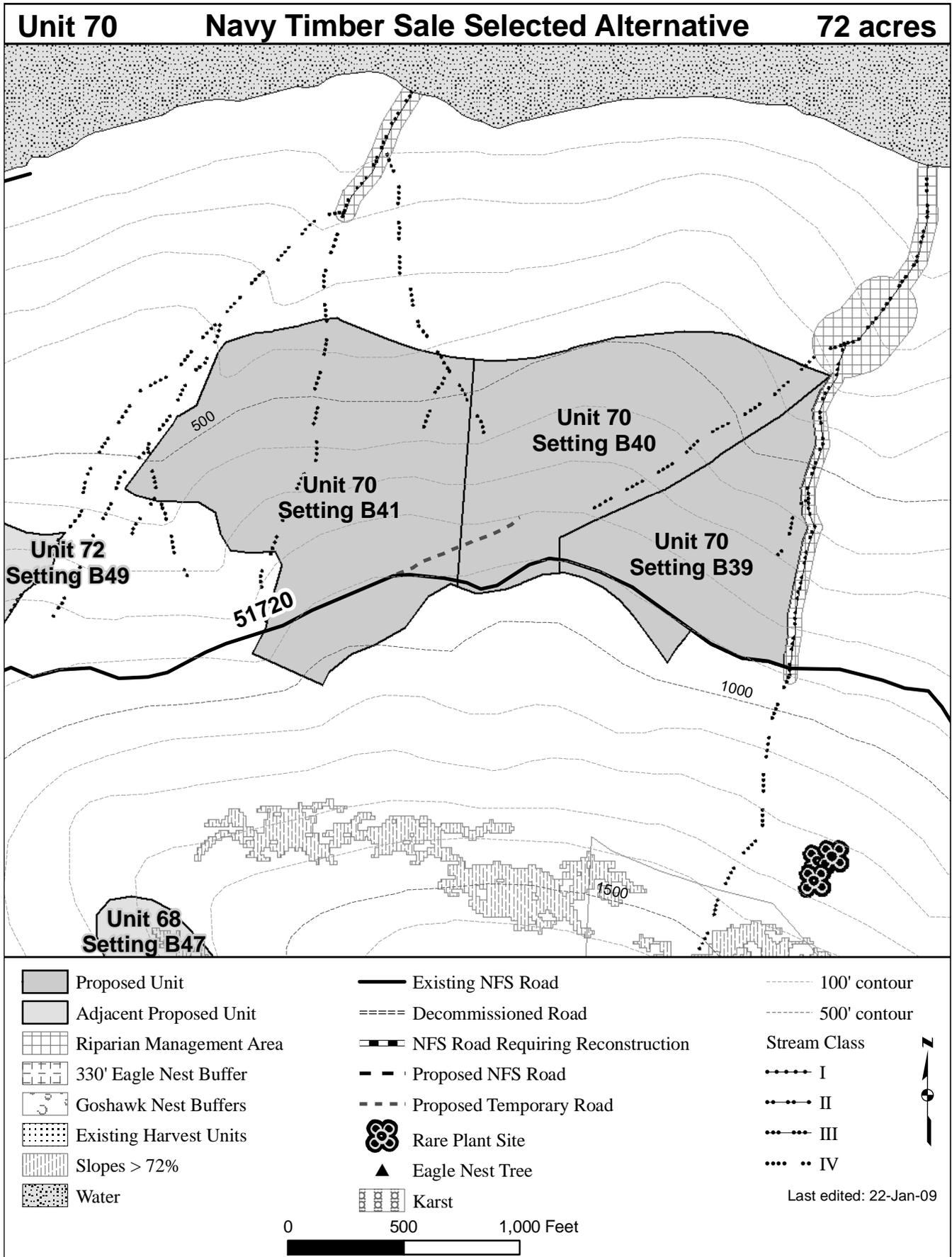
SCENERY: This unit is seen from the head of the Burnett Inlet viewshed, which has an adopted SIO of very low. The proposed prescription will meet an SIO of high to moderate.

SOILS: This unit has 9 acres with slopes >72 percent, a slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. This unit harvests 35 acres of forested wetlands.

WILDLIFE: The STS prescription should retain connectivity, especially if harvest and slash accumulation is minimized in the south part of setting B48.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML,TM		Total Unit Acres: 72	Unit Number: 70
	Logging Cable Systems:	Harvest Acres: 62	
Setting Number(s): B39, B40, B41		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 998-86		High: 38	MBF: 1,299
		Medium: 34	
		Low:	
		Non-forested:	

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 35 percent western hemlock, 7 percent Sitka spruce, 29 percent red cedar and 50 percent yellow cedar. BA=232. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with 15 percent retention (for scenery and wildlife) with natural regeneration. Even-aged management is an appropriate regeneration method given that this stand has moderate levels of mistletoe and stem decay in both the hemlock and yellow cedar. Plan to PCT at 15-35 years of age depending on silvicultural need.

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

ENGINEERING/ROADS: Construct 0.11 mile of temporary road. The road would be decommissioned after the timber sale. The proposed material source is located on the 51720 road at MP 0.74.

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 six 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).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

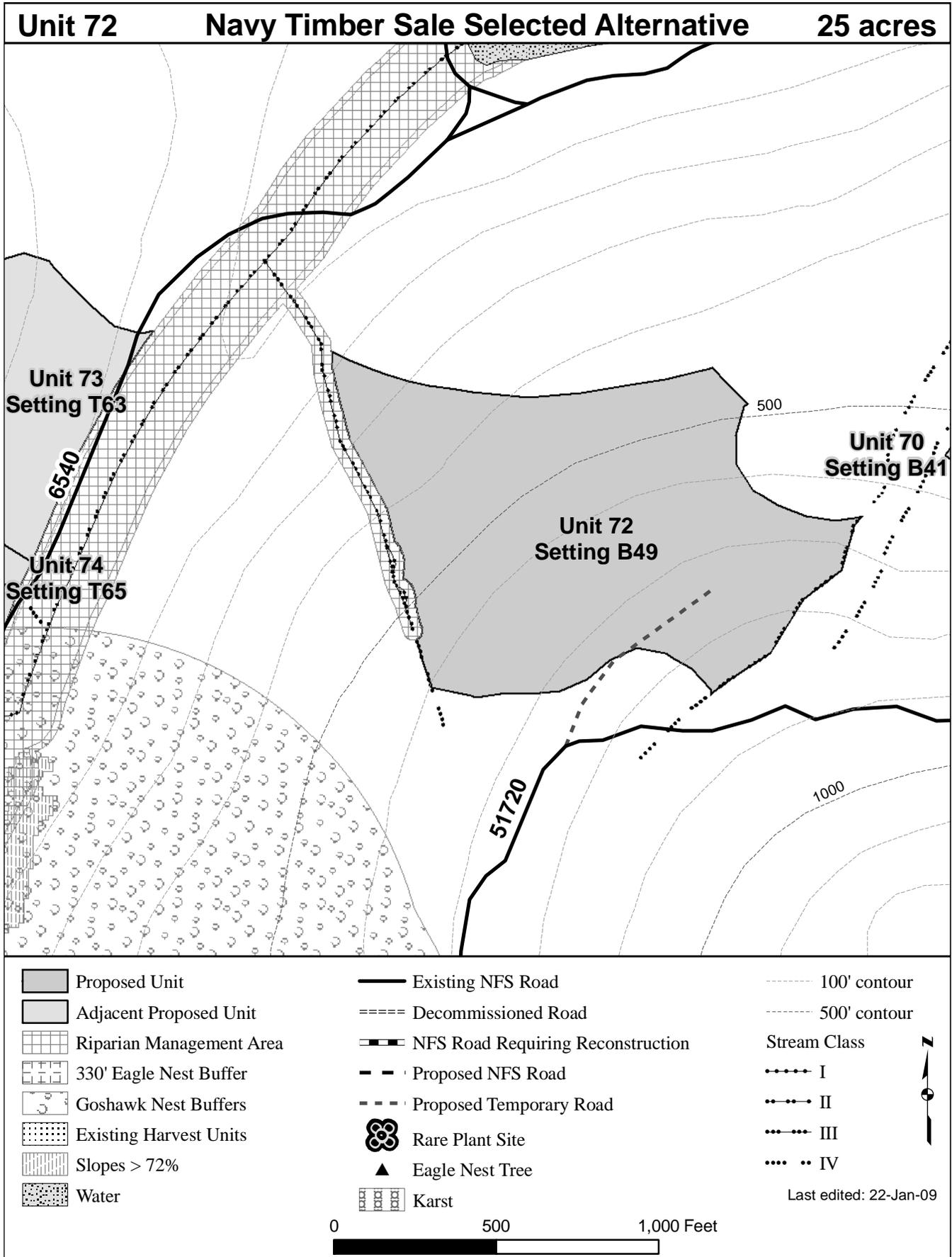
SCENERY: Unit is seen from the midpoint of the Anita Bay viewshed, which has an adopted SIO of low, and an intermediate VAC rating. To meet scenic integrity objectives, retention should be divided into groupings or clusters, and located near the tops and middle portions of these settings, instead of 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.

SOILS: This unit has broken ground with short steep pitches, require at least partial suspension in all settings.

WILDLIFE: Retention should be larger green trees and snags.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 25	Unit Number: 72
	Logging Cable Systems:	Harvest Acres: 25	
Setting Number(s): B49		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-169		High: 25 Medium: Low: Non-forested:	MBF: 464

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 60 percent western hemlock, 15 percent Sitka spruce, 5 percent red cedar and 20 percent yellow cedar. BA=118. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, as desirable, shade-tolerant species such as cedars and spruce will be encouraged. Also, this method is an effective way to treat mistletoe and stem decay found in hemlock. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for uphill cable yarding to a temporary stub spur off of the 51720 road.

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).

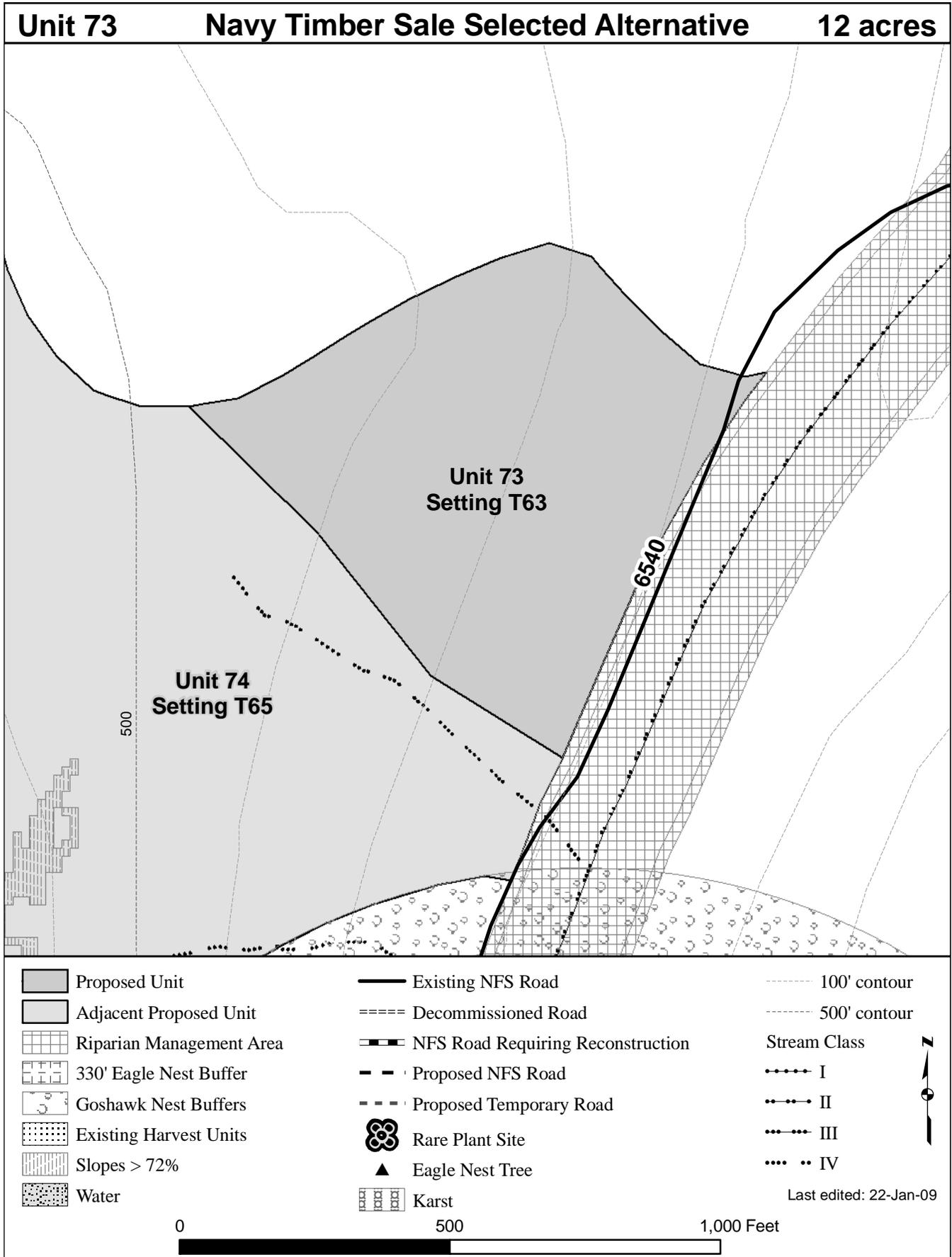
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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.

WILDLIFE: This unit is near a 230-acre goshawk nesting habitat buffer. 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 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.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 12	Unit Number: 73
	Logging Cable Systems:	Harvest Acres: 10	
Setting Number(s): T63		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-169		High: 11 Medium: 1 Low: Non-forested:	MBF: 225

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 22 percent western hemlock, 47 percent red cedar and 31 percent yellow cedar. BA=360. Site Index based on PA is 80 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with reserves (15 percent for wildlife habitat connectivity) with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

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 stub 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.

This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). 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.

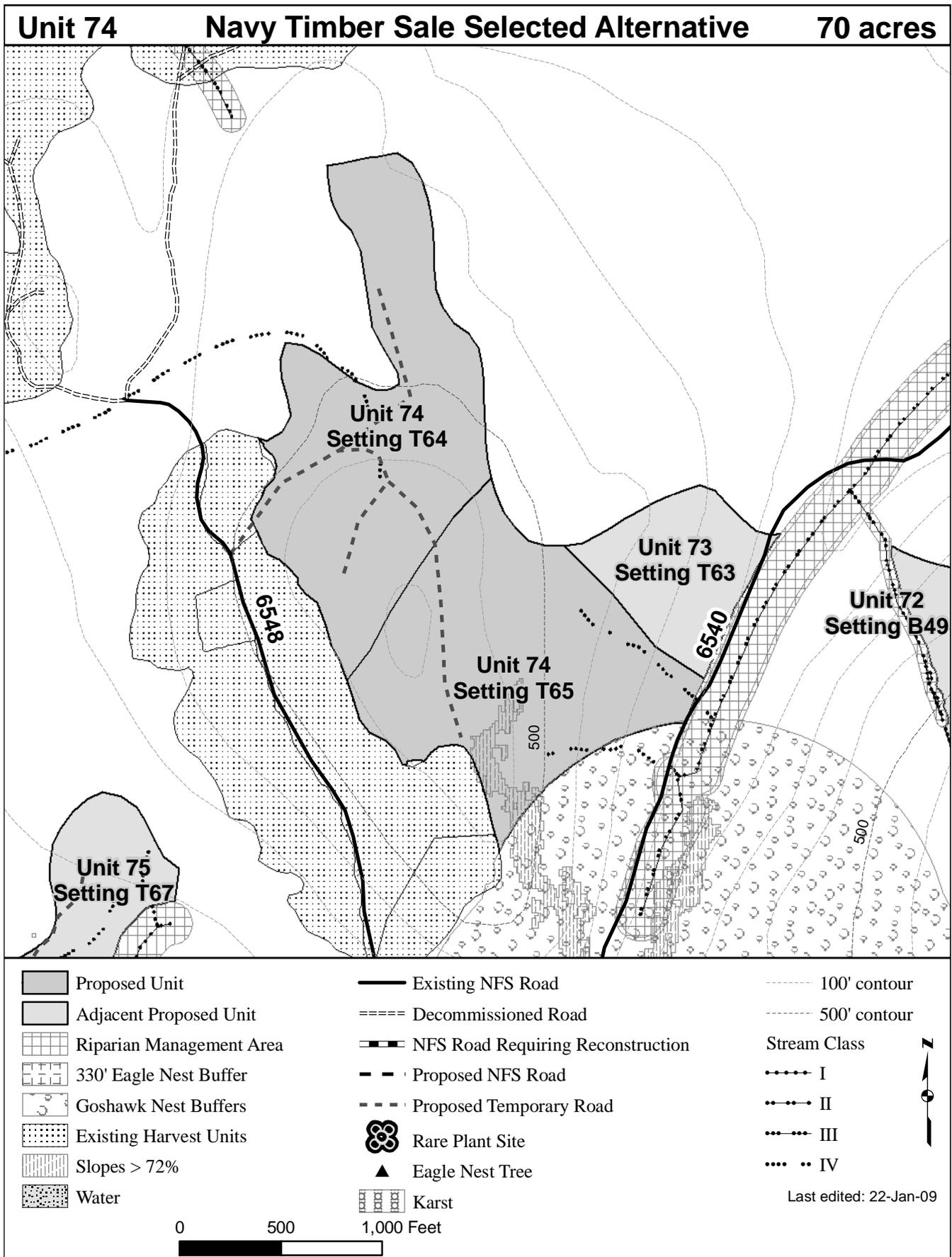
SOILS: This unit harvests 1 acre of forested wetlands.

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 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 70	Unit Number: 74
	Logging Systems: Cable & Shovel	Harvest Acres: 60	
Setting Number(s): T64, T65		Volume Strata Acres: High: 51 Medium: 19 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 1,330
Photo Number: 1098-169			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 30 percent western hemlock, 4 percent Sitka spruce, 46 percent red cedar and 20 percent yellow cedar. BA=246. Site Index based on PA is 65 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with reserves (15 percent retention for wildlife habitat connectivity) with natural regeneration. Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: 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.

ENGINEERING/ROADS: 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.

FISH/WATERSHED:

There are two 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).

A small portion of a Class II, channel type MM1, stream may be affected by the unit. No harvest within 120 feet of the channel (BMP 12.6).

SCENERY: 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 a moderate SIO.

SOILS: This unit includes about 3 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, 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 tracks need to be supported by slash in the forested wetland (BMP 12.5 & 13.9)

WILDLIFE:

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.

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

Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 15	Unit Number: 75
	Logging Systems: Shovel	Harvest Acres: 15	
Setting Number(s): T67		Volume Strata Acres: High: Medium: Low: 15 Non-forested:	Net Harvest Volume (Saw): MBF: 67
Photo Number: 1198-17			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 10 percent western hemlock, 15 percent Sitka spruce, 30 percent red cedar and 45 percent yellow cedar. BA=184. Site Index based on PA is 50 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. This unit has been designated for small sale opportunities. No under stocked opening greater than 2 acres.

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 RESOURCES:

Ten individuals of *Platanthera orbiculata* (Round-leaved orchid) were 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)

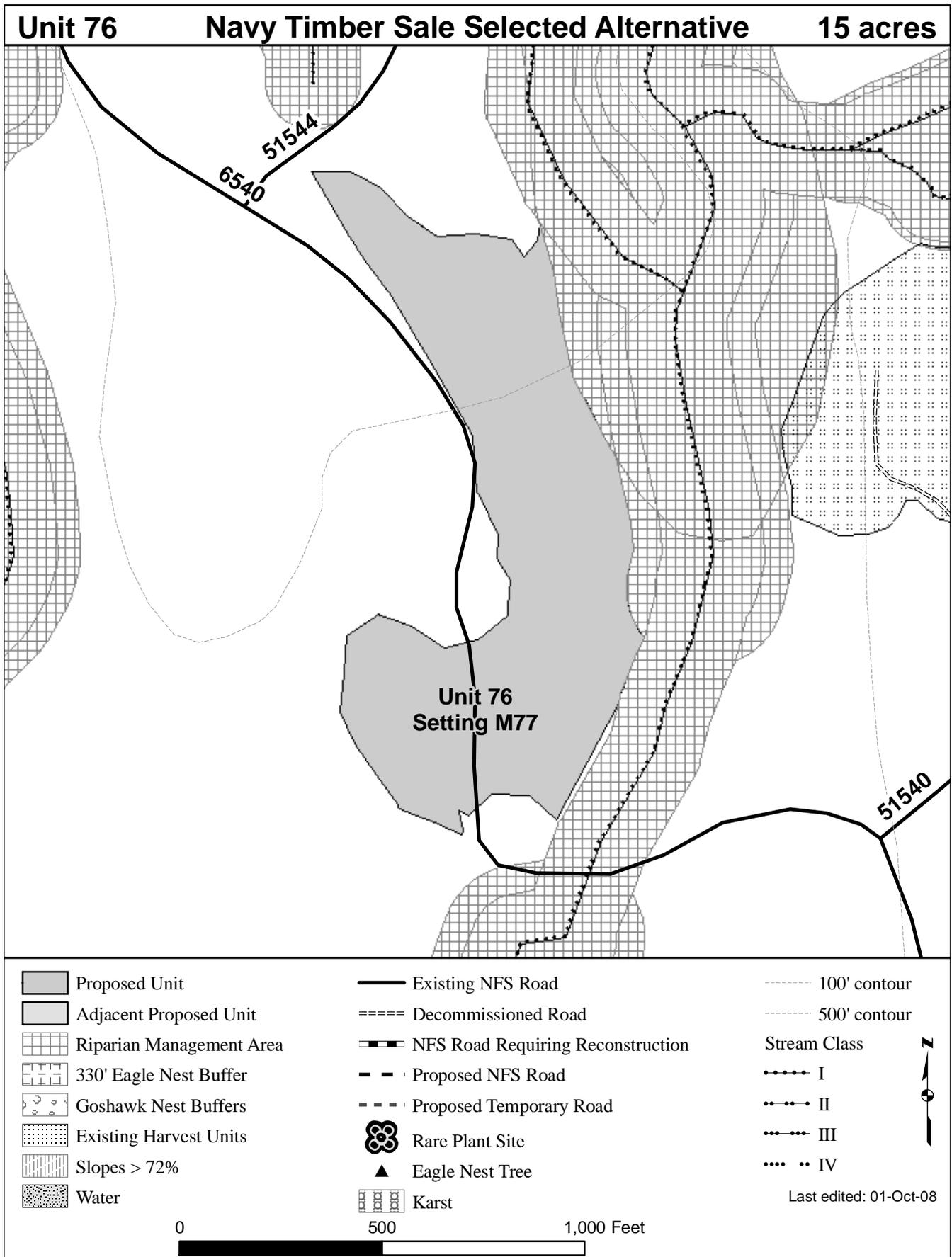
WILDLIFE: This unit is an 'island' of old growth in the dense scrub timber in this part of the Anita pinchpoint. Deferring it would provide a 'stepping stone' for old-growth dependent species.

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

SOILS: The unit harvests 15 acres of forested wetlands. Shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.

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

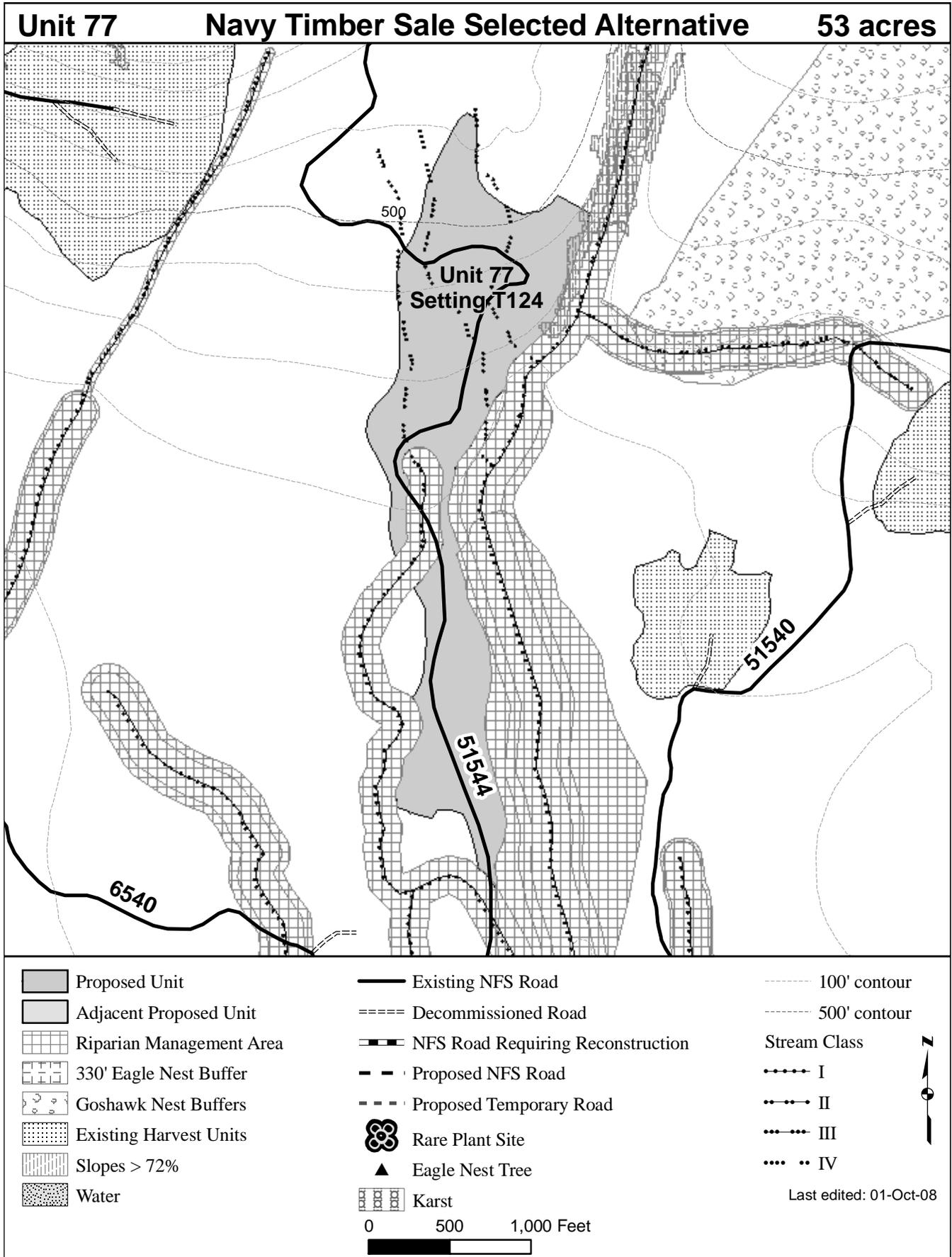
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM,SV		Total Unit Acres: 15	Unit Number: 76
	Logging Systems: Shovel	Harvest Acres: 15	
Setting Number(s): M77		Volume Strata Acres: High: Medium: 1 Low: 14 Non-forested:	Net Harvest Volume (Saw): MBF: 69
Photo Number: 1098-78			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 78 percent western hemlock, 8 percent Sitka spruce, 4 percent red cedar and 10 percent yellow cedar. BA=200. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. This is designed as a small sale opportunity. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING:			
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.			
FISH/WATERSHED:			
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).			
WILDLIFE: 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.			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: The unit harvests 15 acres of forested wetlands. Shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.			
No resource concerns were identified for Roads, Botany, Geology, Heritage, and Recreation.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 53	Unit Number: 77
	Logging Systems: Shovel	Harvest Acres: 53	
Setting Number(s): T124		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-77		High: Medium: 13 Low: 40 Non-forested:	MBF: 282

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 78 percent western hemlock, 8 percent Sitka spruce, 4 percent red cedar and 10 percent yellow cedar. BA=170. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. This is designed as a small sale opportunity. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: 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.

FISH/WATERSHED:

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).

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

SOILS: The unit harvests 44 acres of forested wetlands. If shovel logging is used, shovel tracks need to be supported by slash to protect soil resources (BMP 13.9 & 12.5).

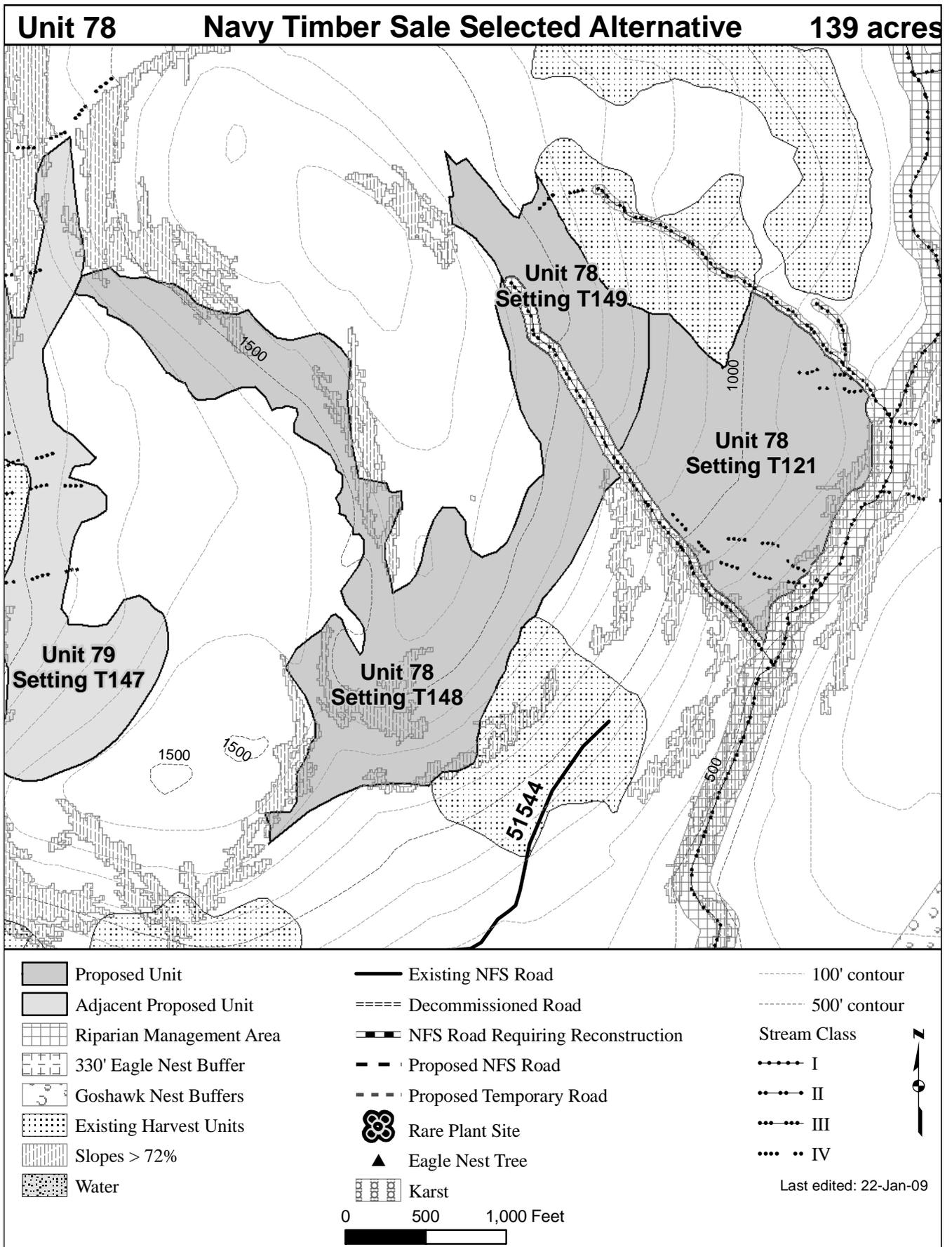
WILDLIFE:

This unit is near a 100-acre goshawk nesting habitat buffer. 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 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.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM, ML		Total Unit Acres: 139	Unit Number: 78
	Logging Systems: Helicopter	Harvest Acres: 139	
Setting Number(s): T121, T148, T149		Volume Strata Acres: High: 26 Medium: 102 Low: 11 Non-forested:	Net Harvest Volume (Saw): MBF: 1,081
Photo Number: 1098-75			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 42 percent western hemlock, 6 percent Sitka spruce, 7 percent red cedar 36 percent yellow cedar, and 9 percent mountain hemlock. BA=246. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: All settings are included. 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).

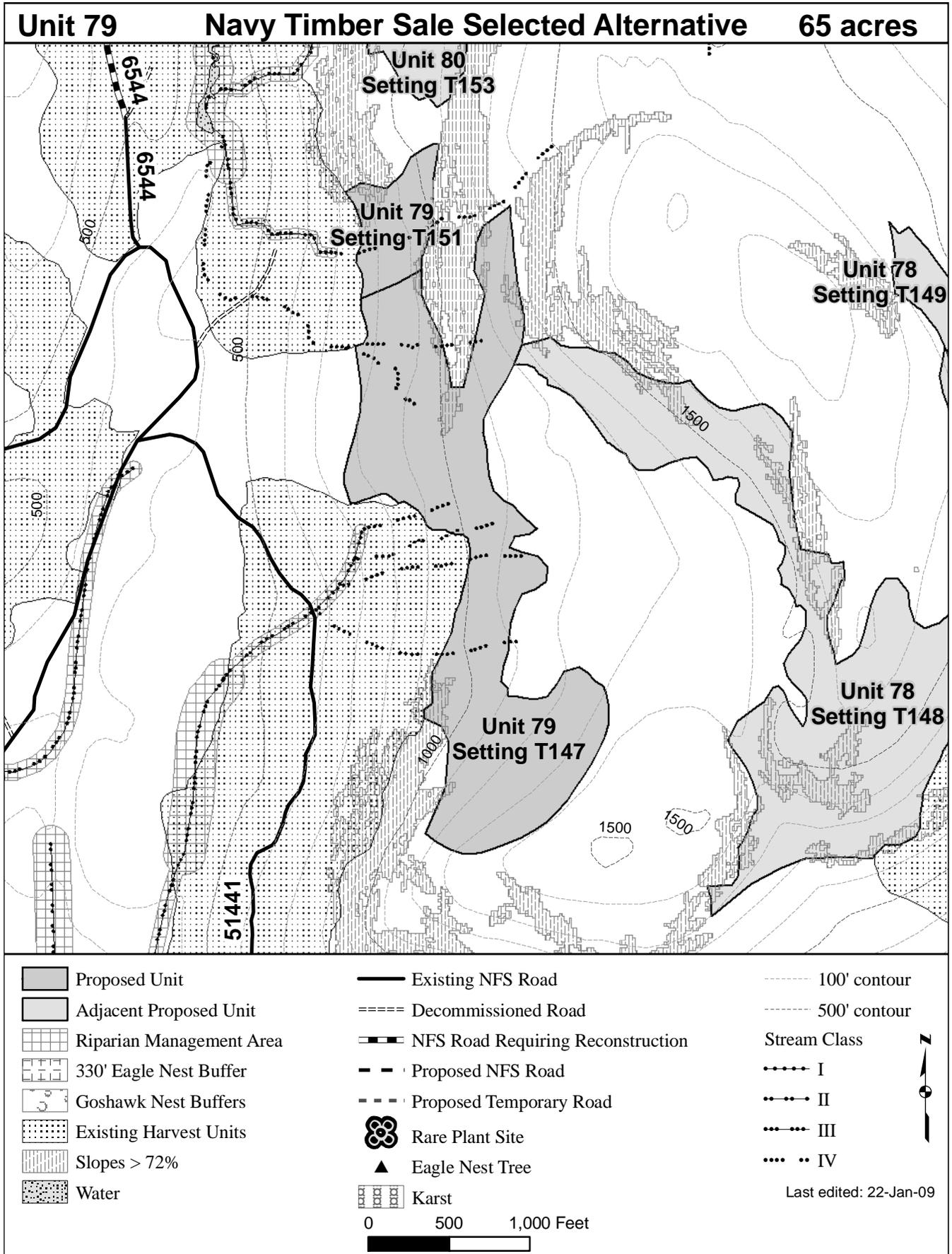
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.

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 aspects 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. Avoid harvest on unstable slopes. This unit harvests 10 acres of forested wetlands.

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

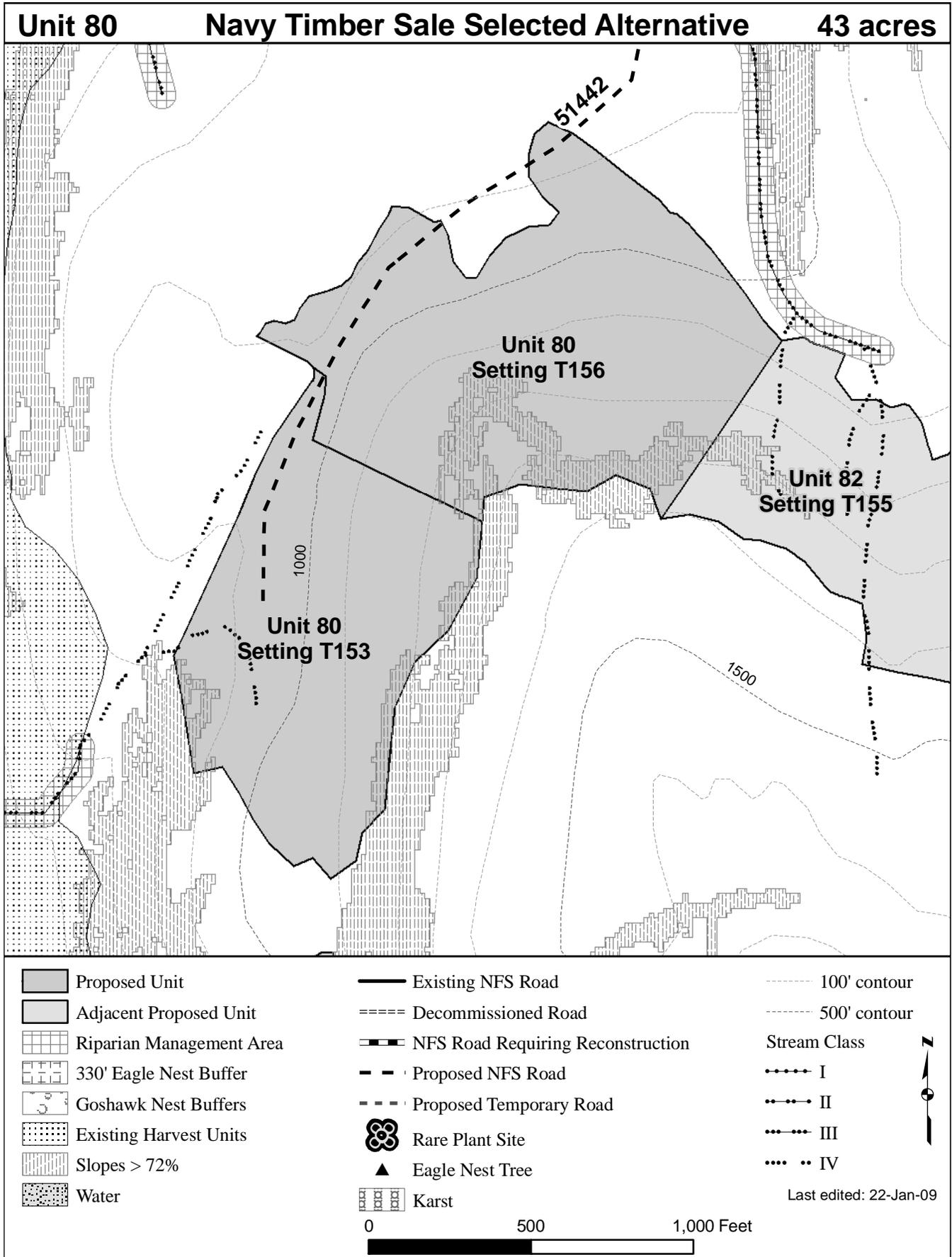
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 65	Unit Number: 79
	Logging Cable Systems:	Harvest Acres: 65	
Setting Number(s): T147, T151		Volume Strata Acres: High: 65 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 652
Photo Number: 1098-75			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 62 percent western hemlock, 30 percent Sitka spruce and 8 percent mountain hemlock. BA=250. Site Index based on PA is 96 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings on the existing 6544 and 51441 roads. Consider maintaining habitat connectivity uphill of the leave strip between managed stands.			
FISH/WATERSHED:			
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).			
SCENERY: Setting T151 is unseen. Aspects 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.			
SOILS: The unit includes about 2 acres of 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: Consider opportunities to allow for the elevational migration of wildlife by maintaining an elevational travel corridor between the two existing clearcuts.			
No resource concerns were identified for Roads, Geology, Heritage, Botany and Recreation.			

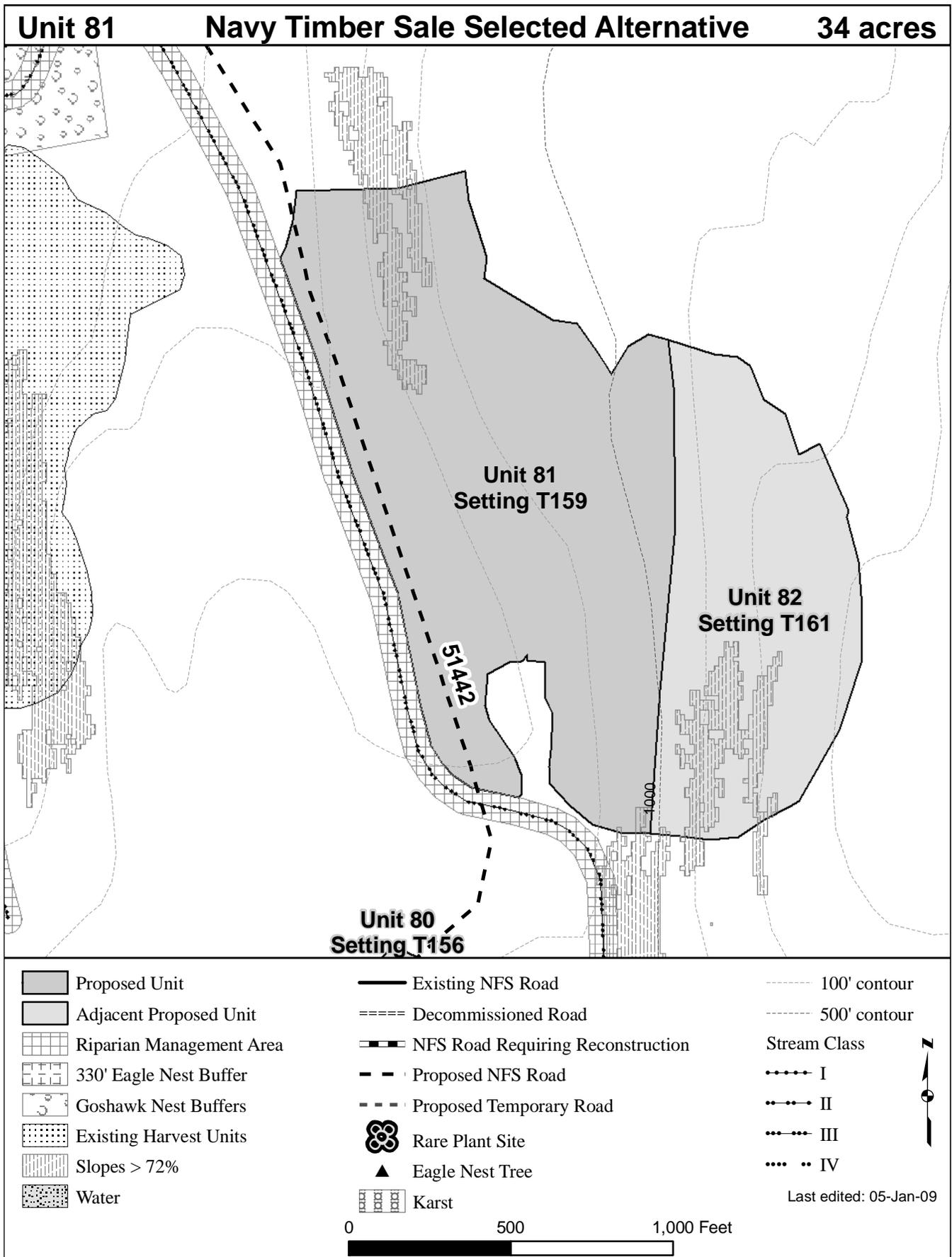
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV, TM		Total Unit Acres: 43	Unit Number: 80
	Logging Cable Systems:	Harvest Acres: 43	
Setting Number(s): T153, T156		Volume Strata Acres: High: 27 Medium: 16 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 946
Photo Number: 1098-74			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 50 percent western hemlock, 14 percent Sitka spruce, 27 percent yellow cedar and 9 percent mountain hemlock. BA=341. Site Index based on PA is 75 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the high percentage of hemlock. This method will encourage desirable shade tolerant species such as cedars and spruce to develop and effectively treat mistletoe and stem decay in hemlock. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: This unit is designed for downhill cable yarding to the proposed 51442 road.			
ENGINEERING/ROADS: Refer to road card 51442.			
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).			
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: The unit includes about 4 acres of 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.			
No resource concerns were identified for Geology, Wildlife, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV		Total Unit Acres: 34	Unit Number: 81
	Logging Cable Systems:	Harvest Acres: 34	
Setting Number(s): T159		Volume Strata Acres: High: 7 Medium: 12 Low: 15 Non-forested:	Net Harvest Volume: MBF: 580
Photo Number: 1098-74			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 38% western hemlock, 9% Sitka spruce, 17% red cedar and 36% yellow cedar. BA=350. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using the clearcut method. Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill cable yarding to landings on the proposed 51442 road.

ENGINEERING/ROADS: Refer to road card 51442.

FISH/WATERSHED:

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

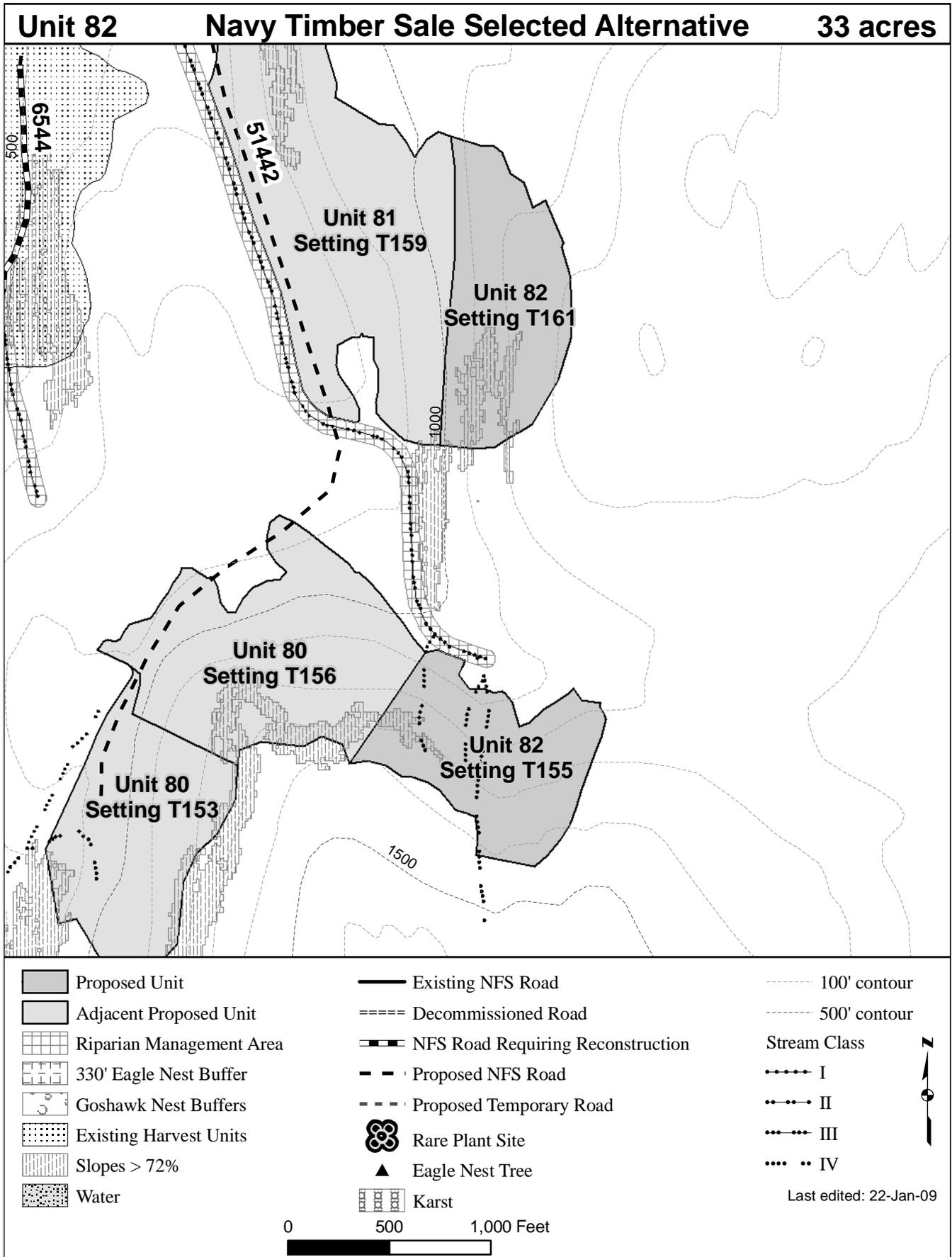
RECREATION: Most of this unit is in the North Etolin Inventoried Roadless Area (#232).

SCENERY: This unit is visible from Stikine Strait, just east of Quiet Harbor, and the adopted SIO is moderate. The distance from the priority travel route, its intermediate VAC rating, and the size of the proposed clearcut combine to meet an SIO of moderate.

SOILS: This unit includes about 1 acre of 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. Use at least partial suspension across wetland inclusion.

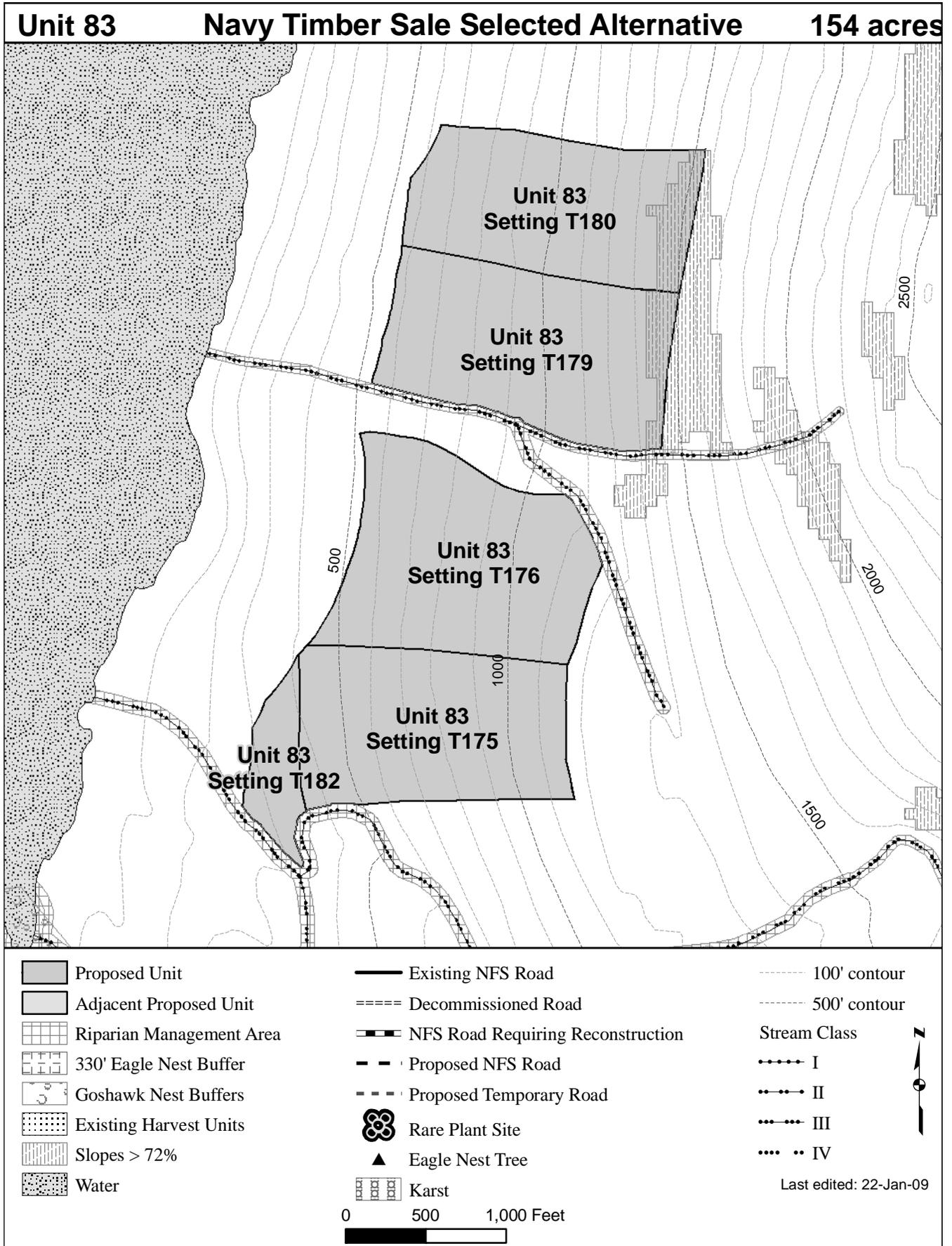
No resource concerns were identified for Geology, Wildlife, Botany and Heritage.

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

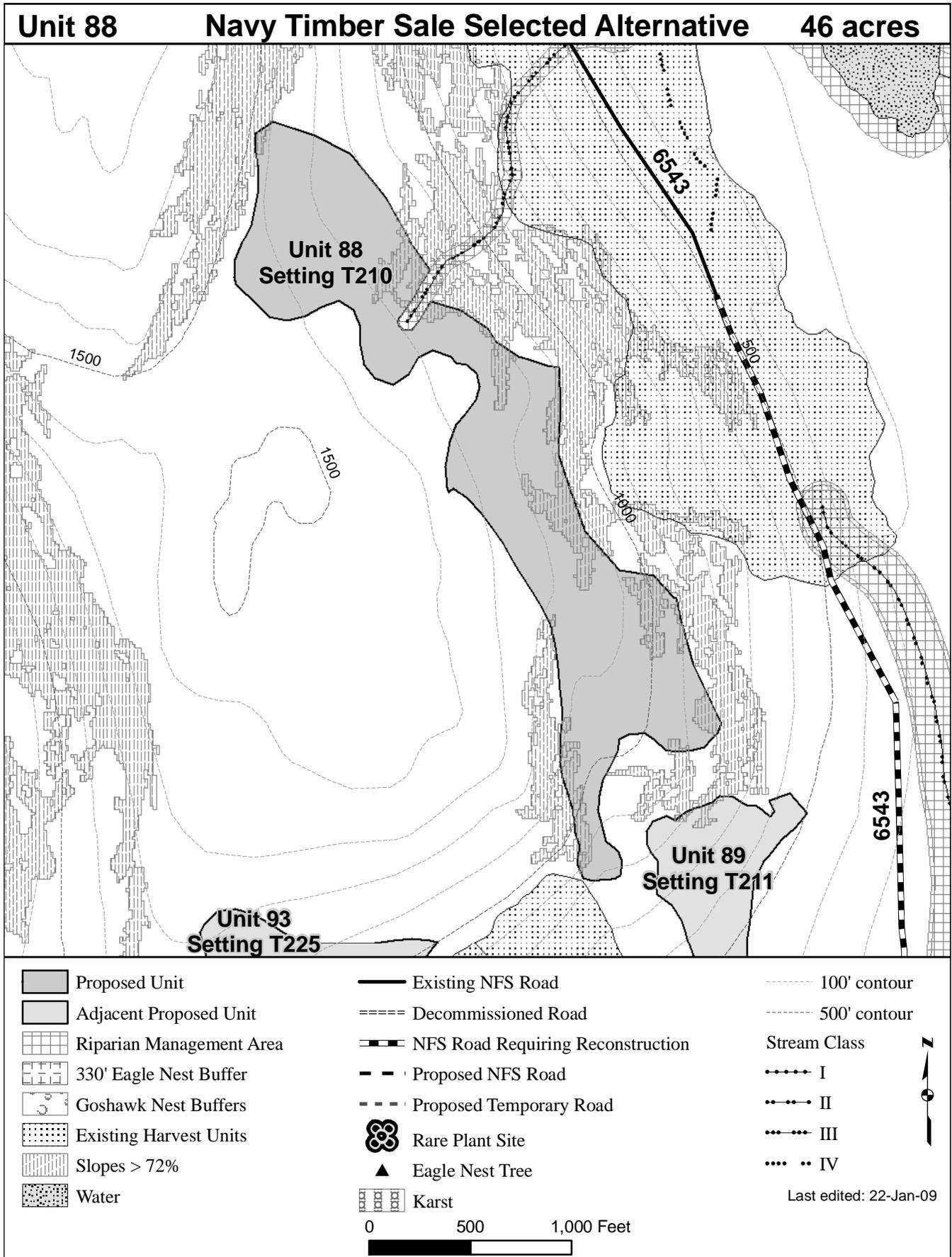
LUD: SV		Total Unit Acres: 33	Unit Number: 82
	Logging Helicopter Systems:	Harvest Acres: 33	
Setting Number(s): T155, T161		Volume Strata Acres: High: 16 Medium: 17 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 287
Photo Number: 1098-74			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 78 percent western hemlock, 8 percent Sitka spruce, 4 percent red cedar and 10 percent yellow cedar. BA=251. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings on the proposed 51442.			
FISH/WATERSHED:			
There is a Class III, channel type HC6 adjacent to the southern unit setting. Do not harvest in the v-notch (BMP 13.9, 13.16). There are multiple Class IV, channel type HC, 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).			
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.			
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Setting T155 is unseen. Setting T161 is visible from Stikine Strait, just east of Quiet Harbor, and the adopted SIO for the setting is moderate. When combined with this setting's angle from viewer and distance from travel route, the proposed prescription will meet an SIO of moderate.			
SOILS: This unit includes about 2 acres of 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.			
No resource concerns were identified for Roads, Geology, Wildlife, Botany and Heritage.			



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV		Total Unit Acres: 154	Unit Number: 83
	Logging Helicopter Systems:	Harvest Acres: 154	
Settings Number(s): T175, T176, T179, T180, T182		Volume Strata Acres: High: 136 Medium: 18 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 1,500
Photo Number: 1098-71			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 44 percent western hemlock, 16 percent red cedar 34 percent yellow cedar and 6 percent mountain hemlock. BA=318. Site Index based on PA is 75 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.			
FISH/WATERSHED:			
Additional stream mapping may be necessary for this unit.			
There are four Class III, channel type HCx, streams bordering unit. Do not harvest in the v-notch, (BMP 13.9, 13.16).			
For unmapped Class IV streams, 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).			
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.			
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Setting T182 is unseen. All other settings are visible from Stikine Strait, and the adopted SIO is moderate. The prescribed prescription for the seen units will meet an SIO of moderate.			
SOILS: This unit includes about 6 acres of 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. This unit harvests 2 acres of forested wetlands.			
WILDLIFE: A new goshawk nest has been found south of this unit. Conduct goshawk nest surveys in the southern part of this unit prior to beginning of logging activities.			
No resource concerns were identified for Roads, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 46	Unit Number: 88
	Logging Systems: Helicopter	Harvest Acres: 46	
Setting Number(s): T210		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-122		High: 5 Medium: 12 Low: 29 Non-forested:	MBF: 272

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 67 percent western hemlock, 26 percent Sitka spruce and 7 percent yellow cedar. BA=242. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding to landings on the existing 6543 road.

FISH/WATERSHED:

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).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.

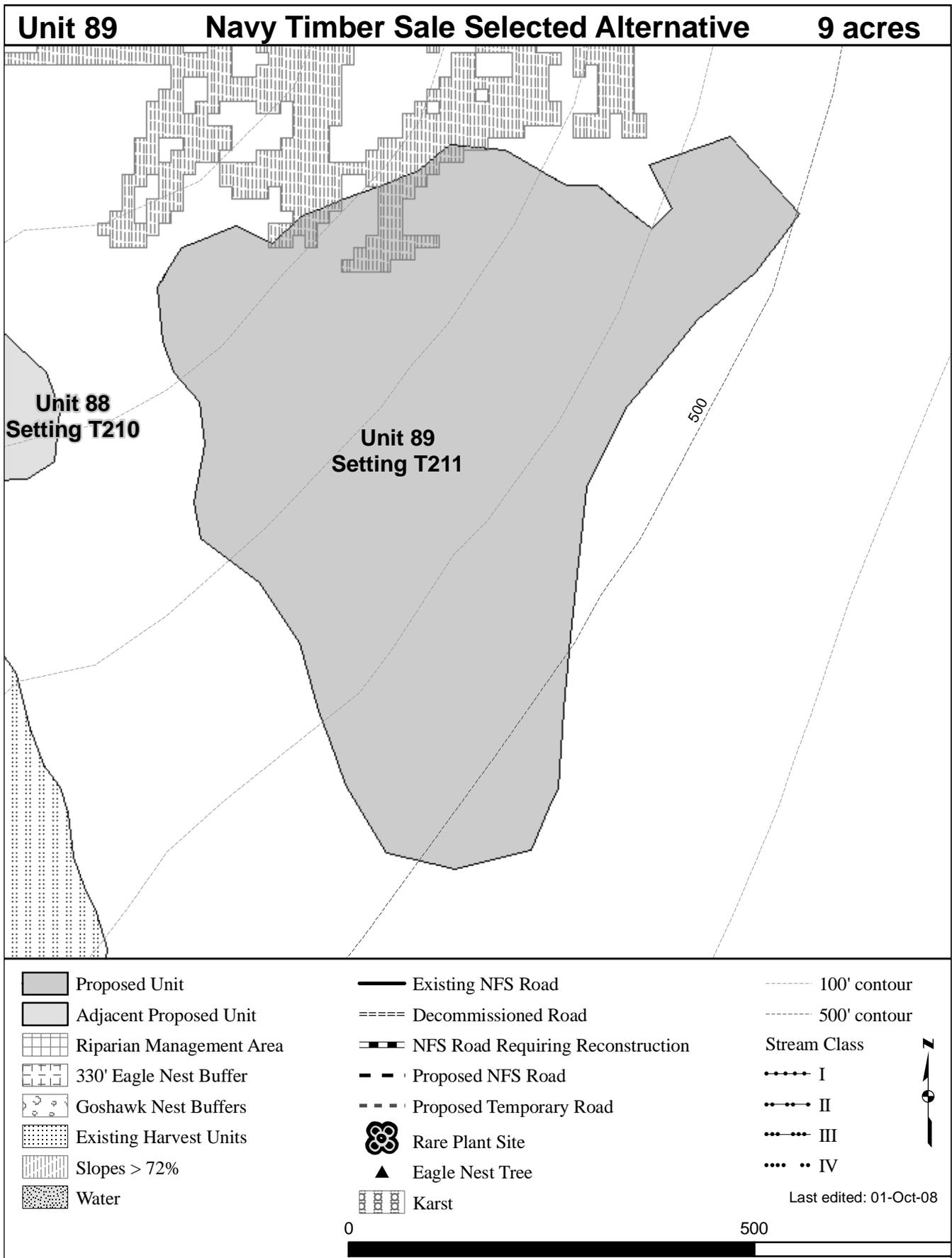
SCENERY: Unit is not seen from any visual priority travel route or use area.

SOILS: Unit includes about 6 acres of 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. This unit harvests 30 acres of forested wetlands.

WILDLIFE: Consider opportunities to allow for the elevational migration of wildlife between Units 88/89 and nearby existing clearcuts. Recommend dropping south tip of unit to maintain elevational travel corridor between Units 88/89/90 and existing clearcuts to south/southwest.

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

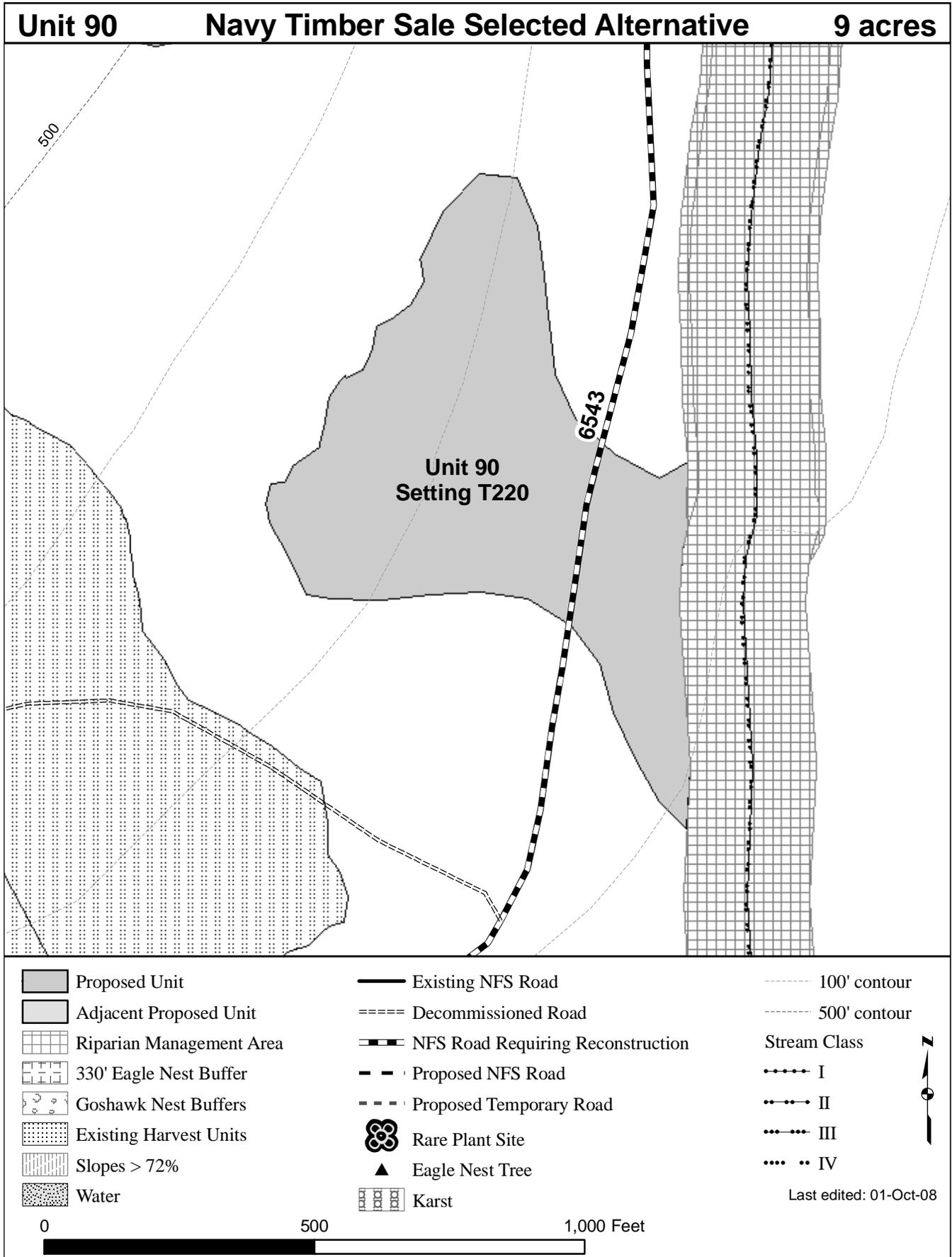
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 9	Unit Number: 89
	Logging Systems: Helicopter	Harvest Acres: 9	
Setting Number(s): T211		Volume Strata Acres: High: 8 Medium: 8 Low: 1 Non-forested:	Net Harvest Volume (Saw): MBF: 66
Photo Number: 1198-123			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 61 percent red cedar and 39 percent yellow cedar. BA=286. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding to a landing located on the 6543 road.			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: This unit includes less than an acre of 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: Consider opportunities to allow for the elevational migration of wildlife: an elevational travel corridor can be left between Units 88/89 and nearby existing clearcuts.			
No resource concerns were identified for Fish/Watershed, Roads, Geology, Heritage, Recreation, Botany, Soils, and Wildlife.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 9	Unit Number: 90
	Logging Systems: Cable & Shovel	Harvest Acres: 9	
Setting Number(s): T220		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-111		High: Medium: Low: 9 Non-forested:	MBF: 116

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 14 percent western hemlock, 23 percent Sitka spruce, 63 percent red cedar and 50 percent yellow cedar. BA=246. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill cable logging to a landing located on the existing 6543 road. Some 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).

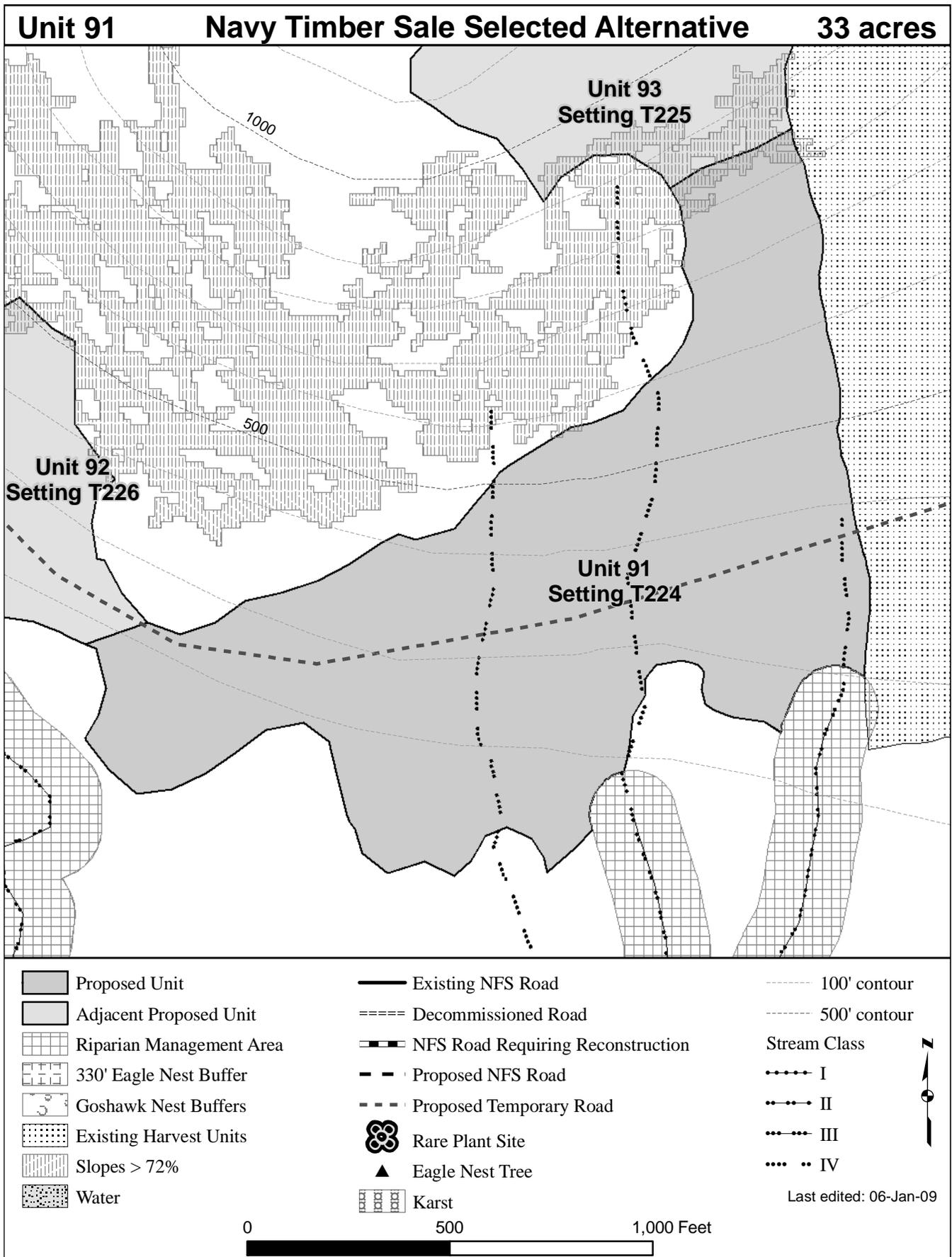
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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

SOILS: This unit harvests 9 acres of forested wetlands. If shovel logging is used, shovel tracks 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 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 33	Unit Number: 91
	Logging Cable Systems:	Harvest Acres: 33	
Setting Number(s): T224		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-124		High: Medium: 28 Low: 6 Non-forested:	MBF: 589

SILVICULTURE:
Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 42 percent western hemlock, 33 percent red cedar and 25 percent yellow cedar. BA=246. Site Index based on PA is 55 (Sitka spruce, Farr 50)
Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for uphill and downhill cable logging to a landing located on the proposed temporary spur of the 6543 road.

ENGINEERING/ROADS: Construct 0.71 mile of temporary road. Road will be decommissioned after the timber sale. The rock is most likely to come from a pit developed near the beginning of the temporary road.

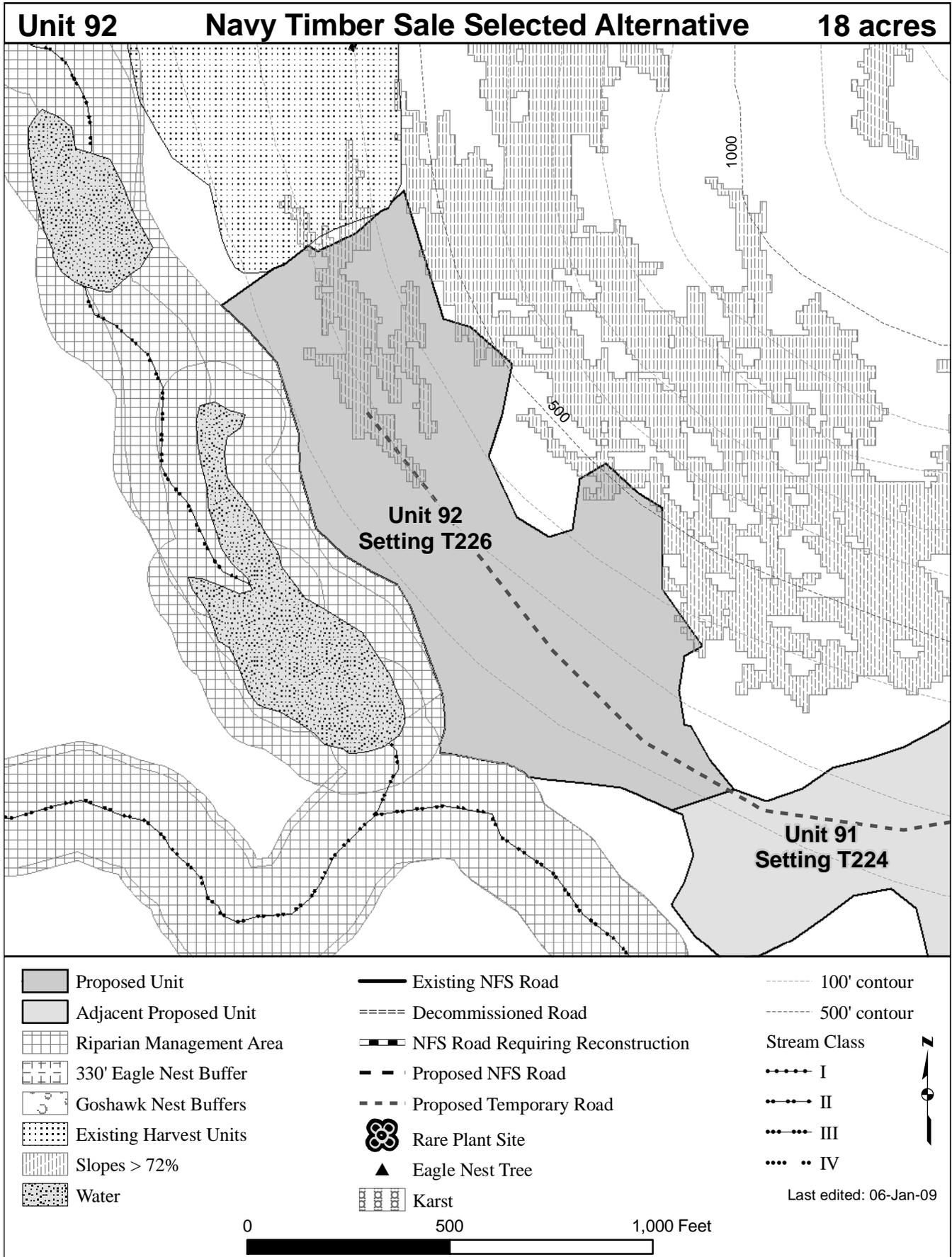
FISH/WATERSHED:
 There are two Class II, channel type HC1, streams on the southern boundary of the unit. No harvest within 100 feet of channel. (BMP 13.9, 13.16).
 There are three Class IV, channel type HC5, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).
 The temporary road in the unit crosses several Class IV streams, adequate size structures will be necessary for all stream crossings and will be removed immediately following timber sale activities. (BMP 13.16, 14.20).
 The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). 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 includes about 1 acre of 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. This unit harvests 6 acres of forested wetlands.

WILDLIFE: Consider opportunities to allow for the elevational migration of wildlife: If possible, leave elevational travel corridor within/between Units 91/92.

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



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 18	Unit Number: 92
	Logging Cable Systems:	Harvest Acres: 18	
Setting Number(s): T226		Volume Strata Acres: High: 2 Medium: 15 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 352
Photo Number: 1198-124			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 32 percent western hemlock, 18 percent red cedar and 50 percent yellow cedar. BA=261. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an effective way to treat stands with high levels of stem decay (i.e. hemlock and cedar). Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for uphill and downhill cable logging to a landing located on the proposed temporary road off the 6543 road.

ENGINEERING/ROADS: Construct 0.33 mile of temporary road. Road will be decommissioned after the timber sale.

FISH/WATERSHED:

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).

The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). 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: Potential for limestone bedrock in the unit.

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

SOILS: This unit includes about 2 acres of 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 backline of the unit is highly susceptible to windthrow, retain windfirm trees along the backline.

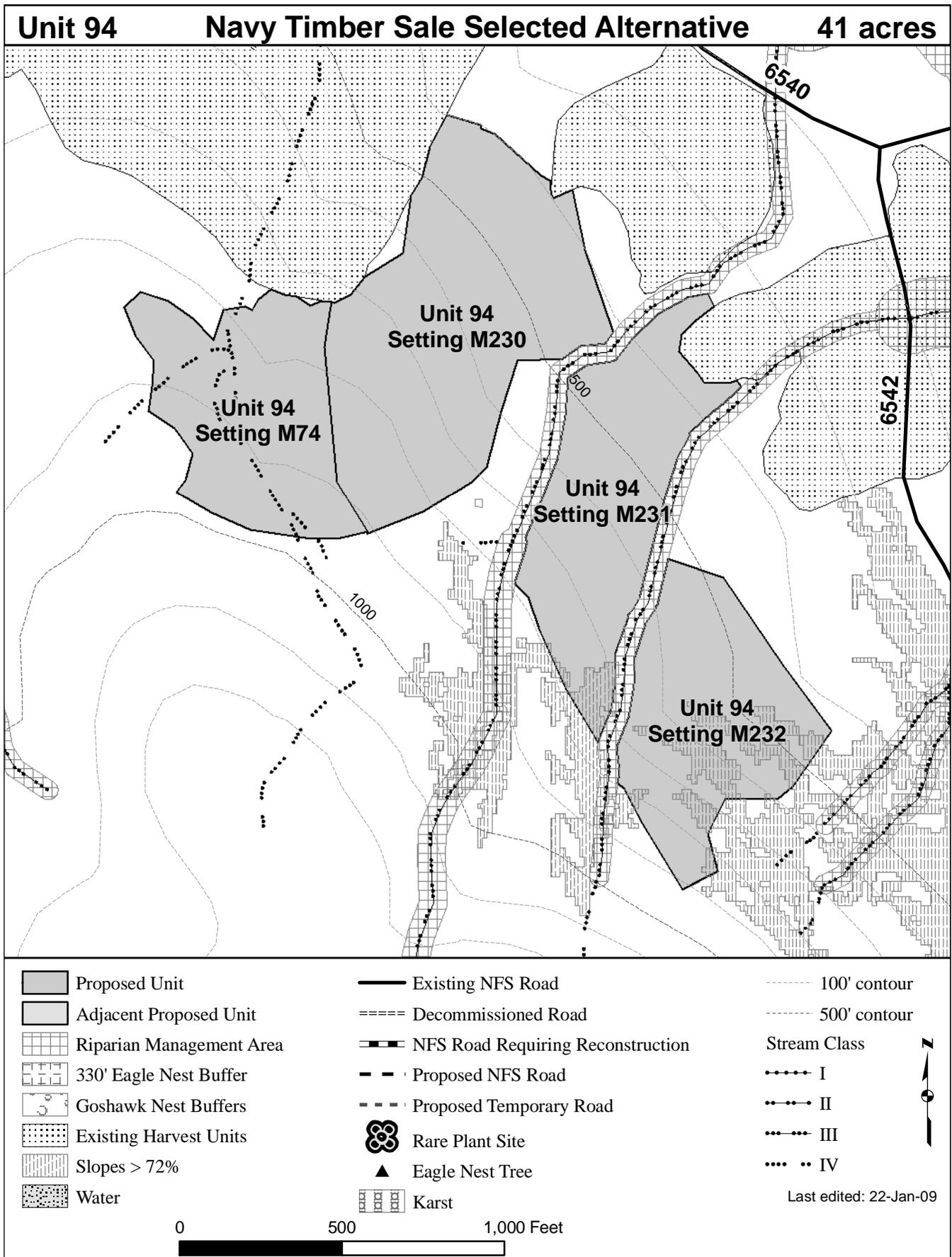
WILDLIFE: Consider opportunities to allow for the elevational migration of wildlife: If possible, leave elevational travel corridor within/between Units 91/92.

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

Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 14	Unit Number: 93
	Logging Systems: Helicopter	Harvest Acres: 14	
Setting Number(s): T225		Volume Strata Acres: High: Medium: Low: 14 Non-forested:	Net Harvest Volume (Saw): MBF: 63
Photo Number: 1198-124			
<p>SILVICULTURE: <u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 61 percent western hemlock, 27 percent red cedar and 12 percent yellow cedar. BA=254. Site Index based on PA is 50 (Sitka spruce, Farr 50) <u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
<p>TIMBER/LOGGING: This unit is designed for helicopter yarding to a landing on a reconstructed road in the adjacent managed stand.</p>			
<p>SCENERY: 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>SOILS: Unit includes about 1 acre of 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. This unit harvests 14 acres of forested wetlands.</p>			
<p>No resource concerns were identified for Roads, Fish/Watershed, Heritage, Recreation, Botany and Wildlife.</p>			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 41	Unit Number: 94
	Logging Systems: Helicopter	Harvest Acres: 41	
Setting Number(s): M74, M230, M231, M232		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-126		High: 16 Medium: 22 Low: 3 Non-forested:	MBF: 346

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 20 percent Sitka spruce, 20 percent red cedar and 20 percent yellow cedar. BA=210. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding to landings located on the existing 6542 and 6540 roads.

FISH/WATERSHED:

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 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).

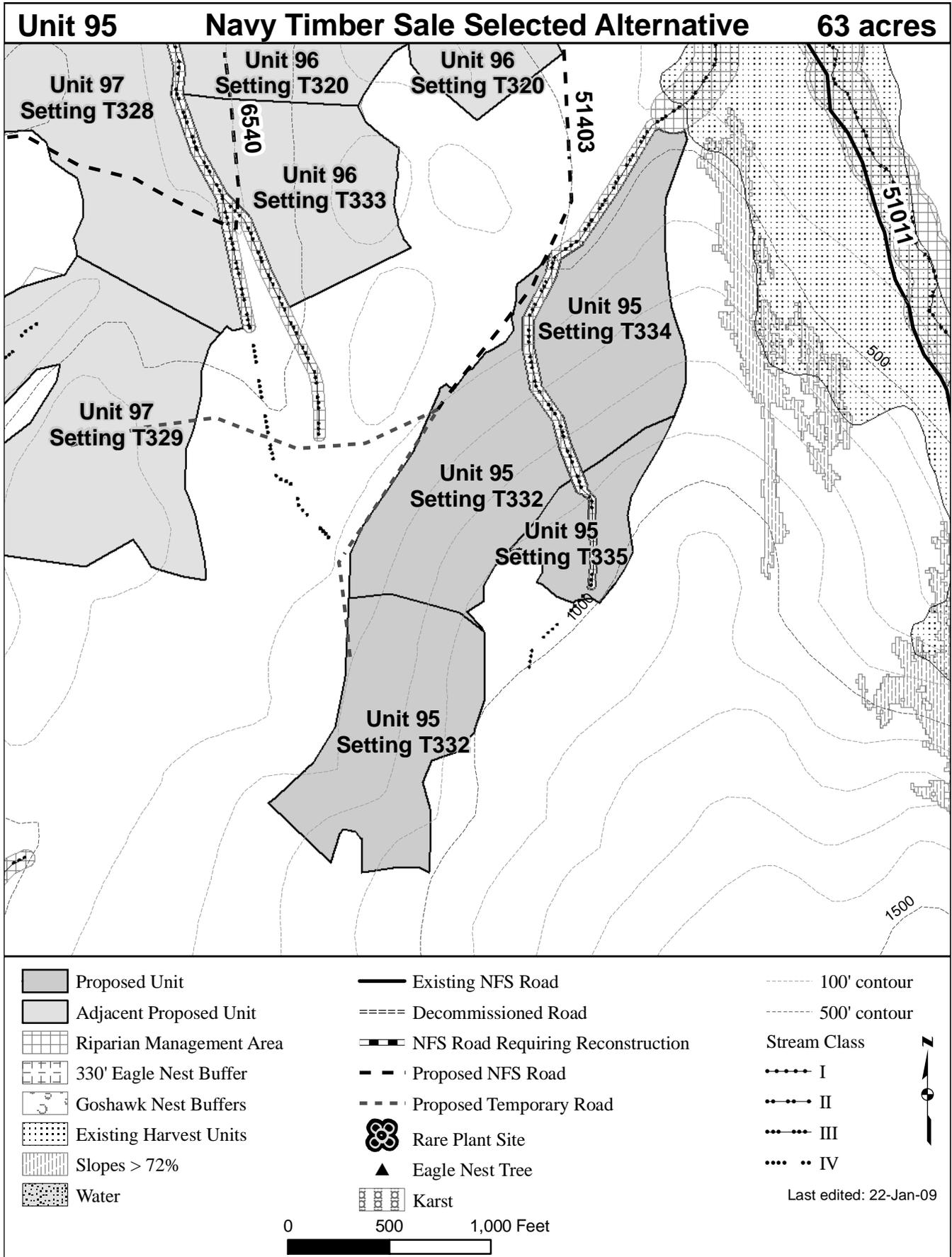
The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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

SOILS: This unit has 3 acres with slopes >72 percent, a slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. This unit harvests 2 acres of forested wetlands.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 63	Unit Number: 95
	Logging Cable Systems:	Harvest Acres: 61	
Setting Number(s): T332a, b, T334, T335		Volume Strata Acres: High: 46 Medium: 17 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 1,340
Photo Number: 1198-158			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 47 percent western hemlock, 9 percent Sitka spruce, 19 percent red cedar and 25 percent yellow cedar. BA=200. Site Index based on PA is 50 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut and clearcut with reserves (15 percent retention for elevational migration for wildlife) with natural regeneration. Even-aged management is an appropriate regeneration method as it effectively treats stem decay in hemlock and encourages a desirable species mix, specifically spruce. Plan to PCT at 15-35 years of age depending on silvicultural need.

Treats setting T334 with a CC with reserves, and settings T332a, b, and T335 with a CC. See below for location of retention.

TIMBER/LOGGING: Settings T334 and T335 are designed for downhill cable yarding to the proposed 51403 road. Setting T332 would be downhill yarded to a temporary extension of the 51403 road. A short temporary stub may be necessary to yard the east side of setting T334. In setting T334, locate retention in the northeast corner, near the RMA buffer. Retention will be located during layout in groups or clumps.

ENGINEERING/ROADS: Construct 0.26 mile of temporary road. Road will be decommissioned after the timber sale. The material source is located on Road 6540 mp 10.3 and Road 6540 mp 11.1. Refer to road cards 6540 and 51403.

FISH/WATERSHED:

There is a Class II, channel type MC1, stream adjacent to the northwest unit boundary. No harvest within 100 feet of channel. (BMP 13.9, 13.16).

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

There are at least 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).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).

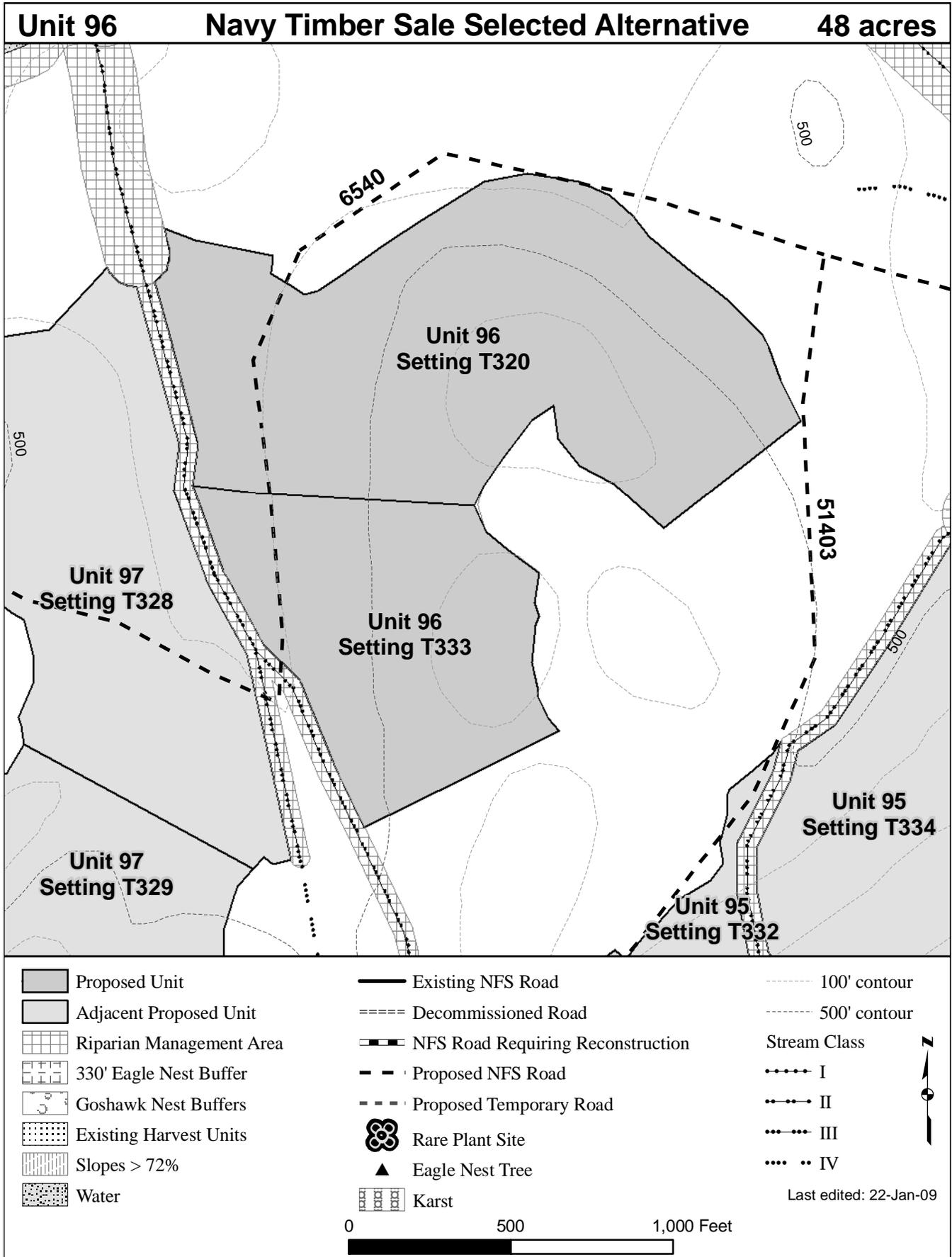
SCENERY: Only setting T332 is visible. A small aspect of this setting can be seen from the Steamer Bay Viewshed, and a larger portion from Clarence Strait to the west. The adopted SIO for this visible setting is very low. The proposed prescription will meet high to low SIOs.

SOILS: Shovel tracks need to be supported by slash (BMP 13.9). This unit harvests 17 acres of forested wetlands.

WILDLIFE: Consider opportunities to allow for the elevational migration of wildlife by leaving windfirm elevational travel corridor along east edge.

No resource concerns were identified for Botany.

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 48	Unit Number: 96
	Logging Systems: Cable and Shovel	Harvest Acres: 41	
Setting Number(s): T320, T333		Volume Strata Acres: High: 25 Medium: 12 Low: 11 Non-forested:	Net Harvest Volume (Saw): MBF: 806 CCF:
Photo Number: 1198-158			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 20 percent western hemlock, 10 percent Sitka spruce, 44 percent red cedar and 26 percent yellow cedar. BA=246. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with reserves (wildlife corridor) with natural regeneration. Even-aged management is an appropriate treatment for stands with high stem decays (i.e. cedars and hemlock). Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill cable yarding to landings located on the proposed 6540 road. Some shovel yarding will occur along the west edge of the unit. Retention will be located during layout in groups or clumps. Locate retention along the RMA.

ENGINEERING/ROADS: Refer to road card 6540.

FISH/WATERSHED:

There is a Class II lake (Kindergarten Lake) adjacent to the northern unit boundary. Do not harvest within 100 feet of the lake perimeter.

There is a Class II, channel type HC0, stream adjacent to the northwest unit boundary. No harvest within 100 feet of channel. (BMP 13.9, 13.16).

There is a Class III, channel type HC5, adjacent to the western unit boundary. No harvest in the v-notch. (BMP 13.9, 13.16). This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

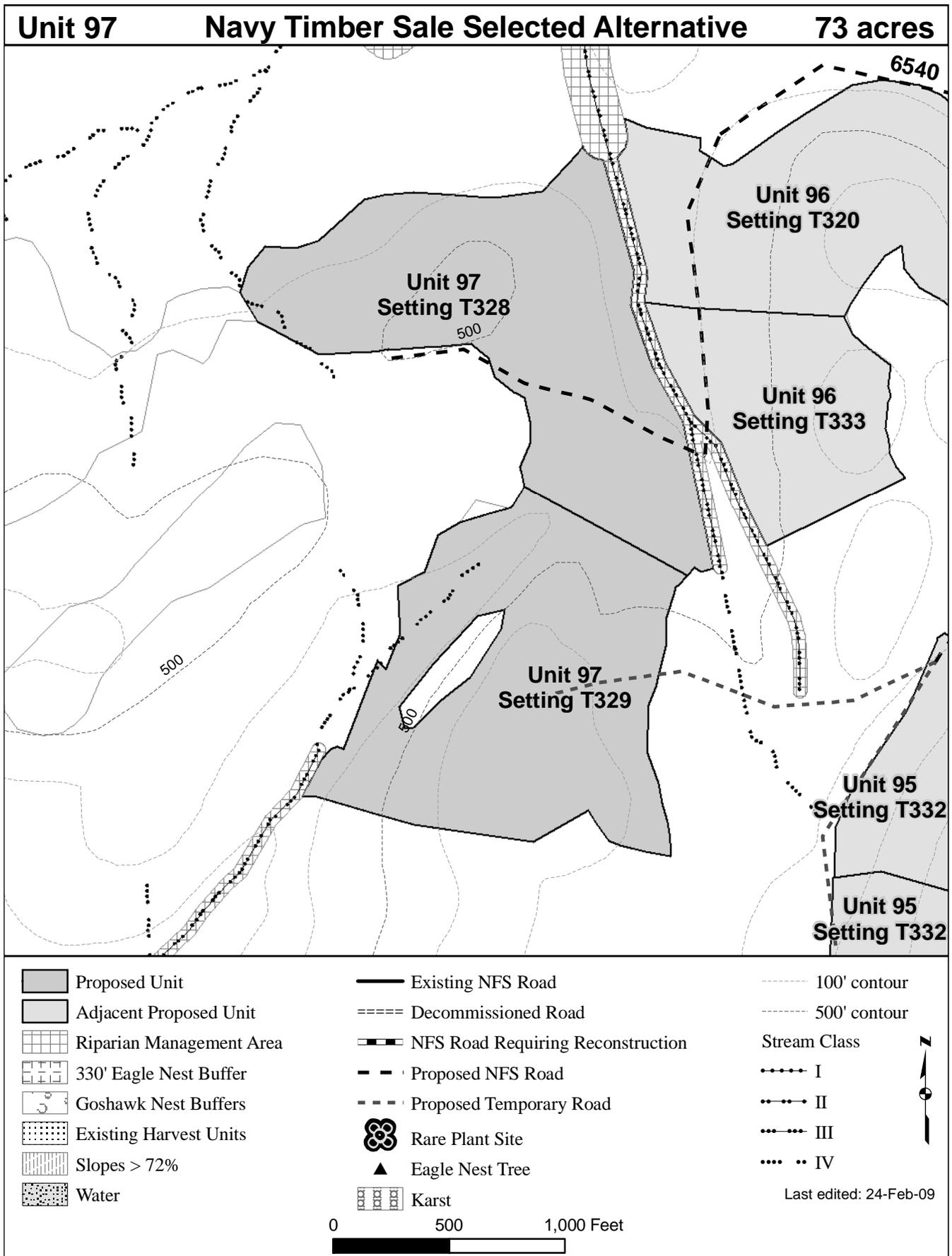
SCENERY: Unit is not seen from any visual priority travel route or use area.

SOILS: Shovel tracks need to be supported by slash (BMP 13.9). This unit harvests 21 acres of forested wetlands.

WILDLIFE: The combination of Units 96 and 97 creates an opening that totals 121 acres with just a narrow riparian corridor separating the two units. Expanding the riparian buffer and making it windfirm would improve elevational migration for wildlife.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM, SV		Total Unit Acres: 73	Unit Number: 97
	Logging Cable Systems:	Harvest Acres: 67	
Setting Number(s): T328, T329		Volume Strata Acres: High: 12 Medium: 15 Low: 47 Non-forested:	Net Harvest Volume (Saw): MBF: 1,022
Photo Number: 1198-158			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 88 percent western hemlock, 8 percent Sitka spruce, 4 percent red cedar and 10 percent yellow cedar. BA=246. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut and clearcut with reserves (for wildlife travel corridor) with natural regeneration. Even-aged management is an appropriate regeneration method, as desirable species such as spruce and cedar are able to become established. Plan to PCT at 15-35 years of age depending on silvicultural need. Setting T328 will use a CCR15 prescription.

TIMBER/LOGGING: Both settings are designed for uphill cable and shovel yarding to the proposed 6540 road and a temporary extension of the proposed 51403 road. Retention will be located in eastern edge of setting T328.

ENGINEERING/ROADS: 0.36 mile of temporary road will be constructed. The road will be decommissioned after the timber sale. The material source is located on Road 6540, mp 10.3 and Road 6540, mp 11.1. Refer to road card 6540.

FISH/WATERSHED:

There is a Class II, channel type HC0, stream adjacent to the northeast unit boundary. No harvest within 100 feet of channel. (BMP 13.9, 13.16).

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

There are at least 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).

The temporary roads in the unit may cross streams, adequate size structures will be necessary for all stream crossings and will be removed immediately following timber sale activities. (BMP 13.16, 14.20).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

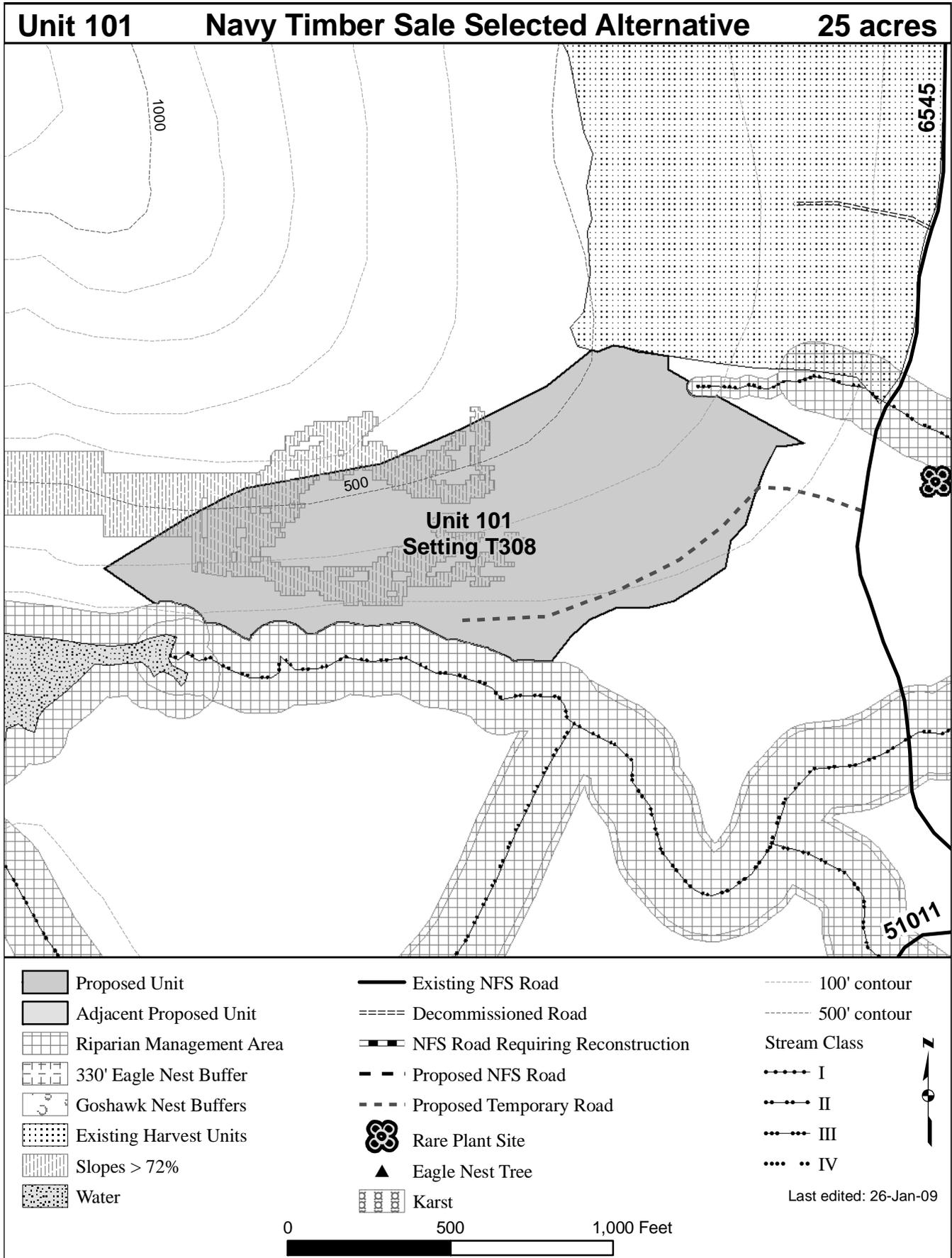
SCENERY: Only setting T329 is visible, and is seen from Clarence Strait. The adopted SIO for the setting is moderate. Only a very slight opening of the T329 setting is apparent, and is practically unnoticed from the distance over Clarence Strait. The proposed prescription will meet SIOs of high to moderate.

SOILS: Shovel tracks need to be supported by slash (BMP 13.9). This unit harvests 47 acres of forested wetlands.

WILDLIFE: The combination of Units 96 and 97 creates an opening that totals 121 acres with just a narrow riparian corridor separating the two units. Expanding the riparian buffer and making it windfirm would improve elevational migration for wildlife.

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

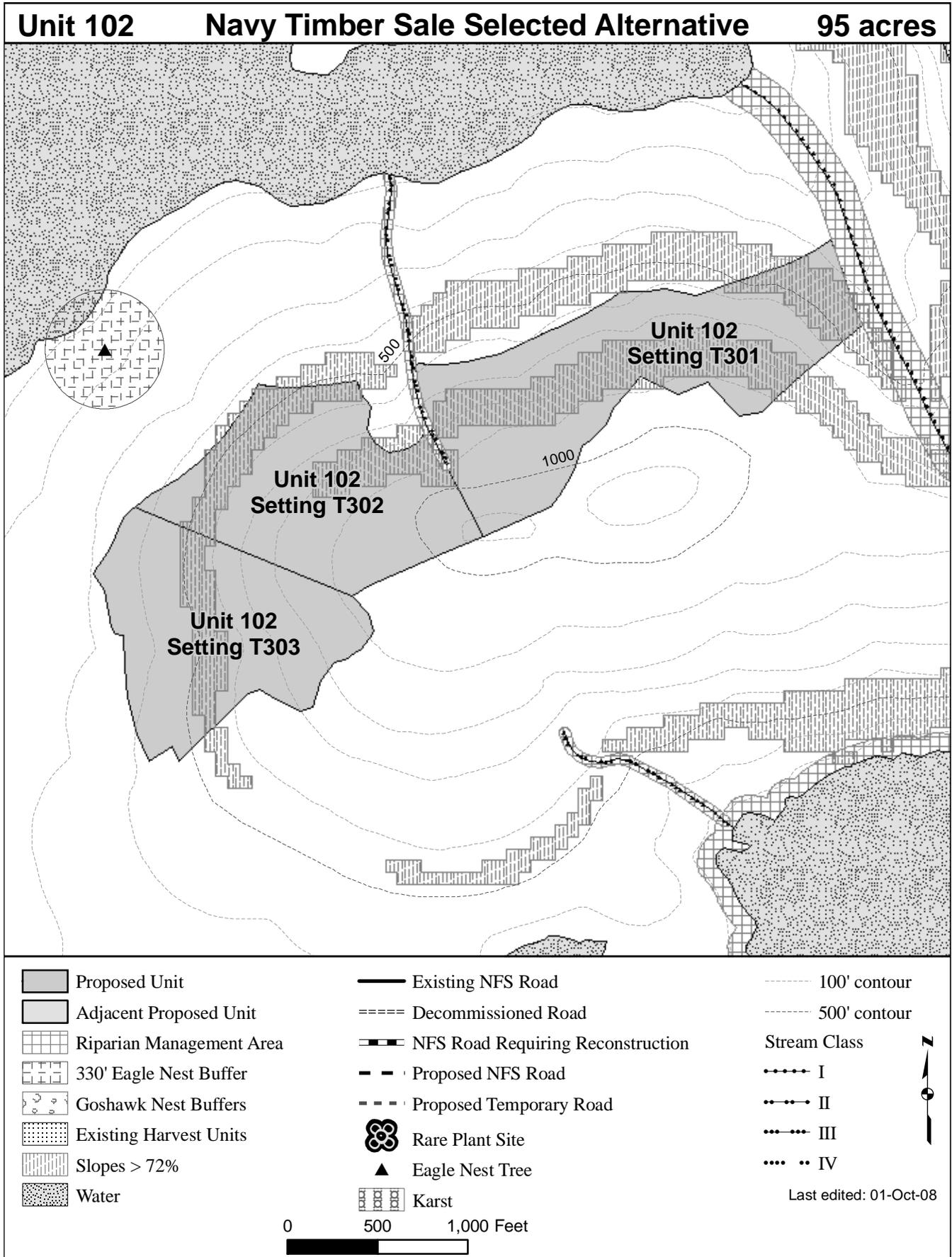
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 25	Unit Number: 101
	Logging Cable Systems:	Harvest Acres: 25	
Setting Number(s): T308		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-159		High: 10 Medium: 13 Low: 3 Non-forested:	MBF: 500
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 39 percent western hemlock, 16 percent Sitka spruce, 34 percent red cedar and 12 percent yellow cedar. BA=358. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: This unit is designed for downhill cable yarding to a temporary stub spur off of the 6545 road.			
ENGINEERING/ROADS: Construct 0.26 mile of temporary road. Road will be decommissioned after the timber sale. The rock for this road is most likely to come from a new or existing pit near the junction of the Unit 101 temporary road and the 6545 road.			
BOTANY:			
A population of <i>Cypripedium montanum</i> (mountain ladies' slipper) estimated at 100-400 plants is located near the unit, approximately 200 feet from new road construction. The population of mountain ladies' slipper orchid should be monitored 2 and 5 years after conclusion of harvest activities on Unit 101.			
FISH/WATERSHED:			
There is a Class II lake on the southern unit boundary. No harvest within 100 feet of the channel (BMP 12.6, 12.6a, 13.16). There is a Class II, channel type PA1, stream on the southern unit boundary. No harvest within 100 feet of the channel (BMP 12.6, 12.6a, 13.16). There is a Class III, channel type HC1 stream on the Northeast boundary of the unit. See geology/karst section for protection requirements. This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
GEOLOGY/KARST: There is an area with marble bedrock to the north of this unit. A small part of the unit is on the marble. The Class III stream on northeast side of the unit is a resurgent stream that provides water to a downslope fen. Unit boundary has been modified to protect stream.			
RECREATION: Part of this unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: This unit includes about 4 acres of slopes over 72% gradient. A slope stability assessment 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) About 3 acres of forested wetland occur in the unit. Shovel tracks need to be supported by slash in the forested wetland (BMP 12.5 & 13.9) Retain windfirm trees along the northwest and northeast boundaries of the unit to minimize windthrow. This unit harvests 3 acres of forested wetlands.			
No resource concerns were identified for Wildlife and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV		Total Unit Acres: 95	Unit Number: 102
	Logging Systems: Helicopter	Harvest Acres: 95	
Setting Number(s): T301, T302, T303		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-221		High: 81 Medium: 10 Low: 4 Non-forested:	MBF: 897

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 64 percent western hemlock, 17 percent Sitka spruce and 19 percent red cedar. BA=242. Site Index based on PA is 85 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

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).

There is a Class III, channel type HC5, stream within the unit. Do not harvest in the v-notch (BMP 12.6, 12.6a, 13.16).

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

SCENERY: The unit is seen from the Kindergarten Bay viewshed. The proposed prescription will meet the adopted moderate SIO.

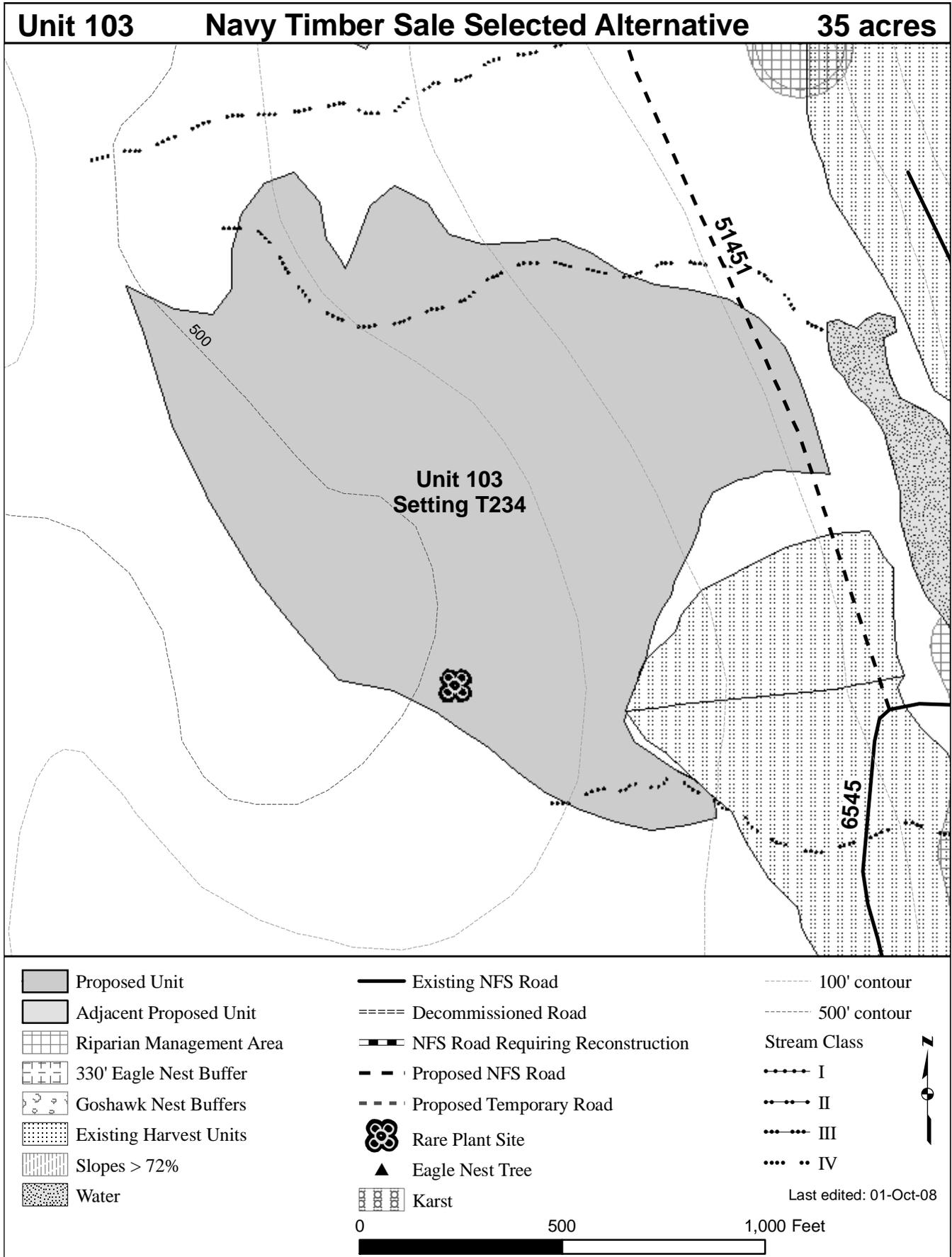
SOILS: This unit contains a cliff; there are 27 acres with slopes >72 percent, A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Avoid steep slopes adjacent to riparian buffers during lay out. This unit harvests 12 acres of forested wetlands.

WILDLIFE:

If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

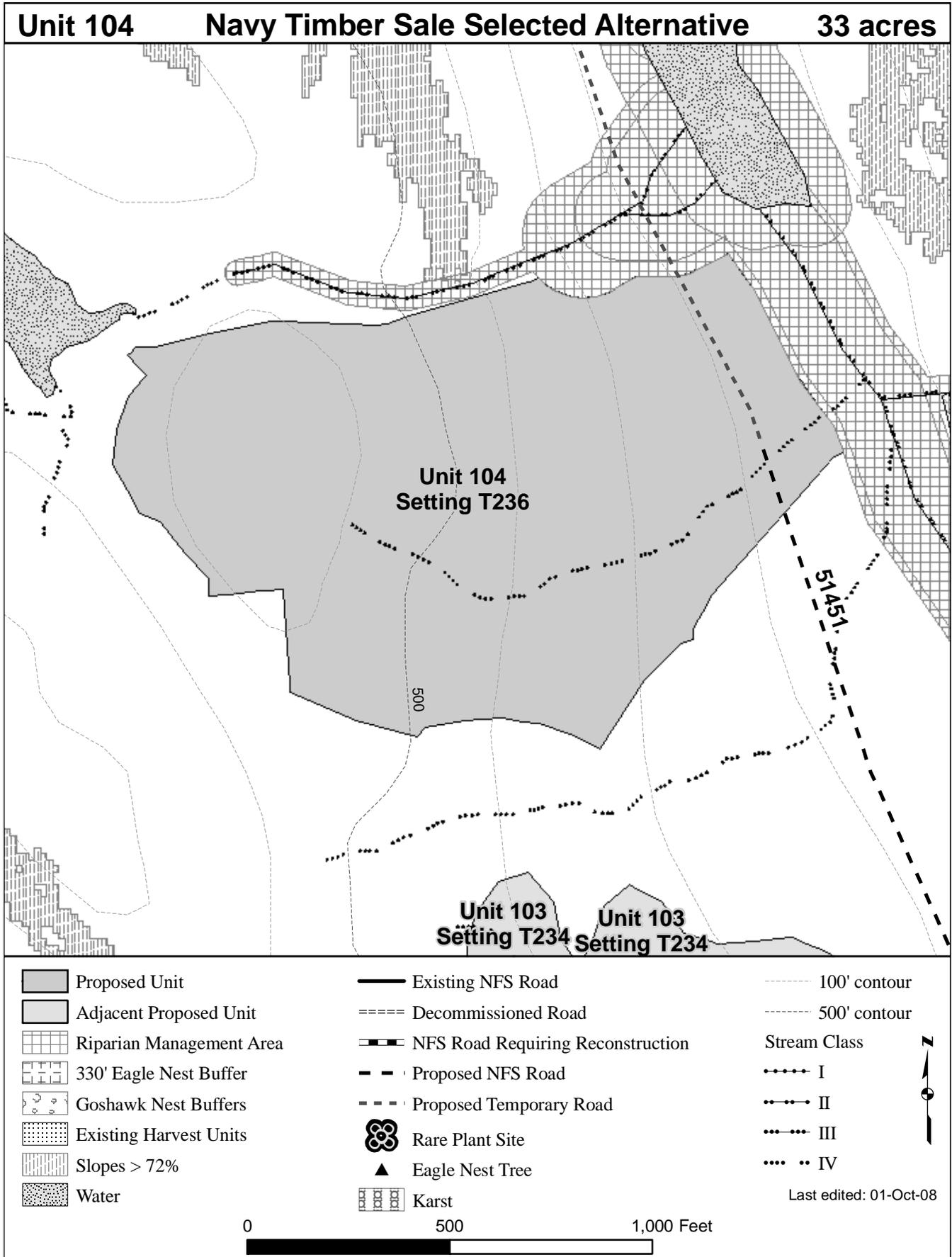
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML TM		Total Unit Acres: 35	Unit Number: 103
	Logging Cable Systems:	Harvest Acres: 35	
Setting Number(s): T234		Volume Strata Acres: High: 10 Medium: 25 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 700
Photo Number: 1198-123			
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 37 percent western hemlock, 12 percent Sitka spruce, 31 percent red cedar, 16 percent yellow cedar and 4 percent shore pine. BA=286. Site Index based on PA is 50 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: This unit is designed for downhill cable yarding to landings located on the proposed extension of the 6545 road.			
ENGINEERING/ROADS: Refer to road card 51451.			
BOTANY RESOURCES: One population of <i>Listera convallarioides</i> (broad-lipped twayblade), 16 individuals, was documented in the unit. Lay out the unit boundary to exclude this population.			
FISH/WATERSHED:			
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)			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: This unit harvests 2 acres of forested wetlands.			
No resource concerns were identified for Geology, Wildlife, and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML, TM		Total Unit Acres: 33	Unit Number: 104
	Logging Cable Systems:	Harvest Acres: 33	
Setting Number(s): T236		Volume Strata Acres: High: Medium: 32 Low: 1 Non-forested:	Net Harvest Volume (Saw): MBF: 603 CCF:
Photo Number: 1198-161			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 15 percent Sitka spruce, 23 percent red cedar and 22 percent yellow cedar. BA=310. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

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).

This unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

Temporary road is mapped across Class II and Class III alluvial fan. Road will be moved up the hill and cross at the top of the fan and above fish habitat.

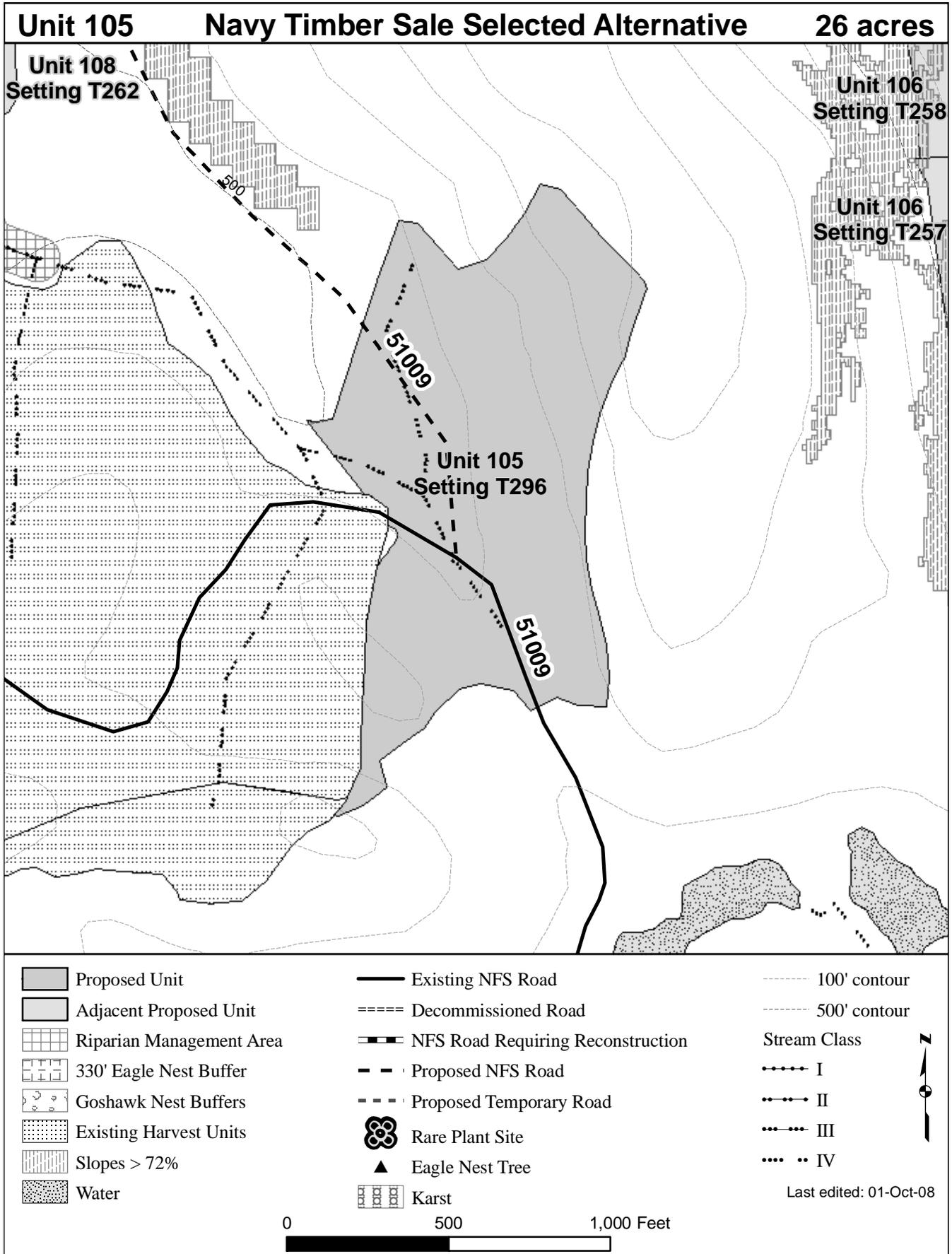
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).

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

SOILS: This unit harvests 1 acre of forested wetlands.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 26	Unit Number: 105
	Logging Cable Systems:	Harvest Acres: 26	
Setting Number(s): T296		Volume Strata Acres: High: 25 Medium: 1 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 605
Photo Number: 1198-162			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 15 percent Sitka spruce, 24 percent red cedar and 21 percent yellow cedar. BA=310. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: 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.

ENGINEERING/ROADS: Refer to the road card for the 51009 road.

FISH/WATERSHED:

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).

GEOLOGY/KARST: Small solution (karst) features found along proposed road location contributing water to Class IV stream.

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

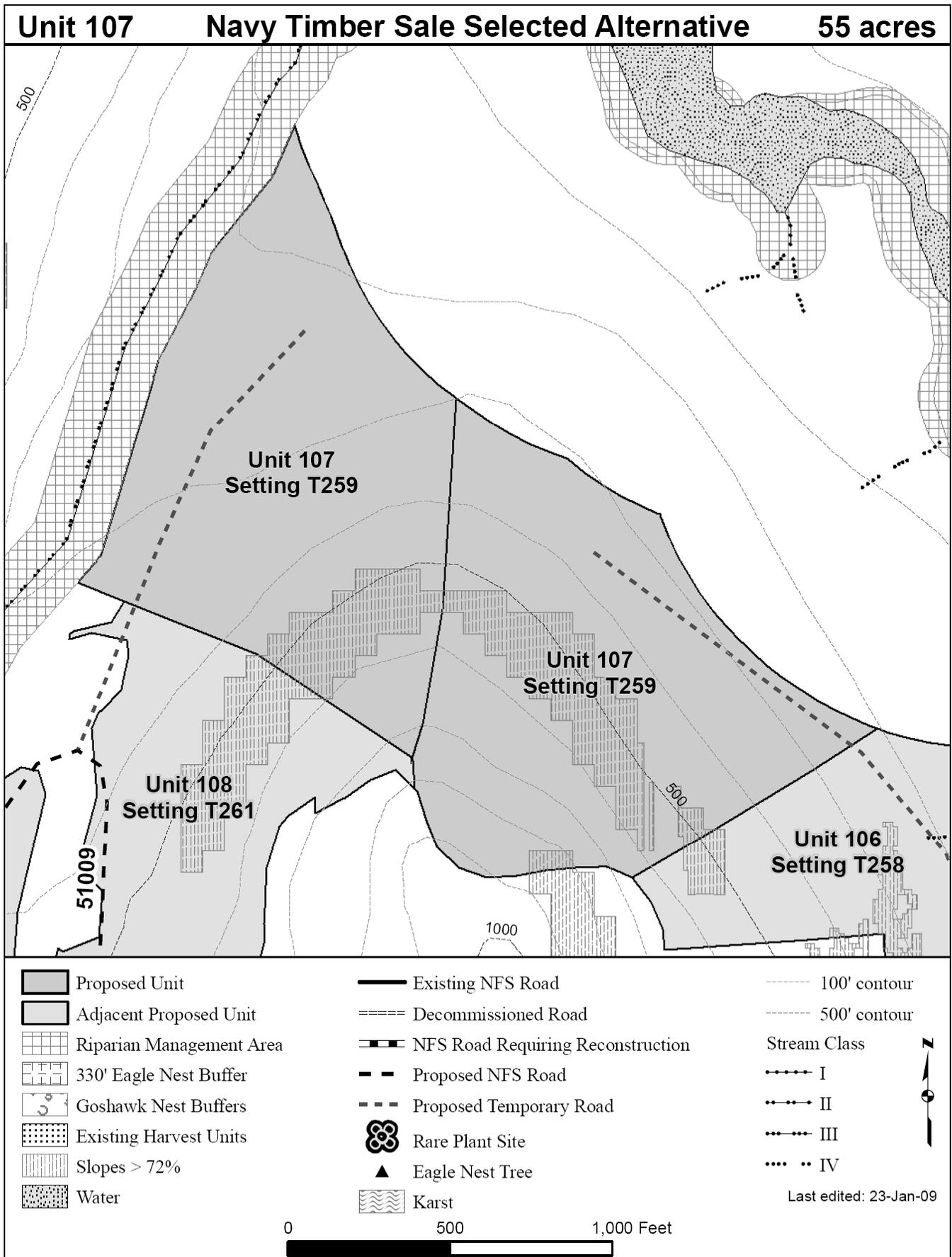
SOILS: This unit harvests 1 acre of forested wetlands.

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

Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML, SV		Total Unit Acres: 55	Unit Number: 106
	Logging Cable Systems:	Harvest Acres: 55	
Setting Number(s): T257, T258		Volume Strata Acres: High: 55 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 1,302
Photo Number: 1198-162			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 61 percent western hemlock, 13 percent Sitka spruce, 18 percent red cedar and 8 percent yellow cedar. BA=302. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: This unit is designed for downhill cable yarding to the temporary road extending off proposed road 51451.			
ENGINEERING/ROADS: Construct 0.69 mile of temporary road to access this unit. The temporary road will be decommissioned after the timber sale. The material required to construct the road will likely come from a pit along the beginning portion of this temporary road segment.			
FISH/WATERSHED:			
There is a Class I, channel types PA5, FP3, and MC1, stream (Quiet Creek) on the east side of the unit. No harvest within 100 feet (PA5 and MC1) or 130 feet (FP3) of the channel. (BMP 13.9, 13.16).			
There is a Class I/II lake adjacent to the southeastern unit boundary. No harvest within 100 feet of the shoreline.			
There is a Class II, channel type HC1/5, stream on the southeast corner of the unit. No harvest within 100 feet of the channel. (BMP 13.9, 13.16).			
There are six 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).			
The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
Temporary road as mapped crosses Class II stream. Move road up the hill and cross above fish habitat if possible. If road cannot be moved upslope, a designed structure will be necessary for fish passage. Limit road building in the RMA.			
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: Unit includes about 1 acre of 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.			
No resource concerns were identified for Botany, Wildlife, Geology and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV		Total Unit Acres: 55	Unit Number: 107
	Logging Cable Systems:	Harvest Acres: 28	
Setting Number(s): T259		Volume Strata Acres: High: 50 Medium: 3 Low: 2 Non-forested:	Net Harvest Volume (Saw): MBF: 630
Photo Number: 1198-162			

SILVICULTURE:
Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 43 percent western hemlock and 57 percent Sitka spruce. BA=320. Site Index based on PA is 55 (Sitka spruce, Farr 50)
Silvicultural Prescription: Even-aged prescription using clearcut with reserves (50% retention for scenery, steep slopes and adjacency requirements). Retention will be in SE portion of unit with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill cable yarding to either a temporary extension of the 51009 Road or a temporary extension of the 51451 Road. Retention will be above the 450' contour for scenery requirements. Placement of retention below the 450' contour is contingent upon which access route is constructed.

ENGINEERING/ROADS: Construct 0.55 mile of temporary road to access this unit. The temporary road will be decommissioned after the sale. The material to construct the road will likely come from a pit associated with the construction of the 51009 road.

FISH/WATERSHED:
 There is a Class II, channel type HC3, stream on the northwest side of the unit. No harvest within 100 feet of the channel. (BMP 12.6, 12.6a, 13.16).

 The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).

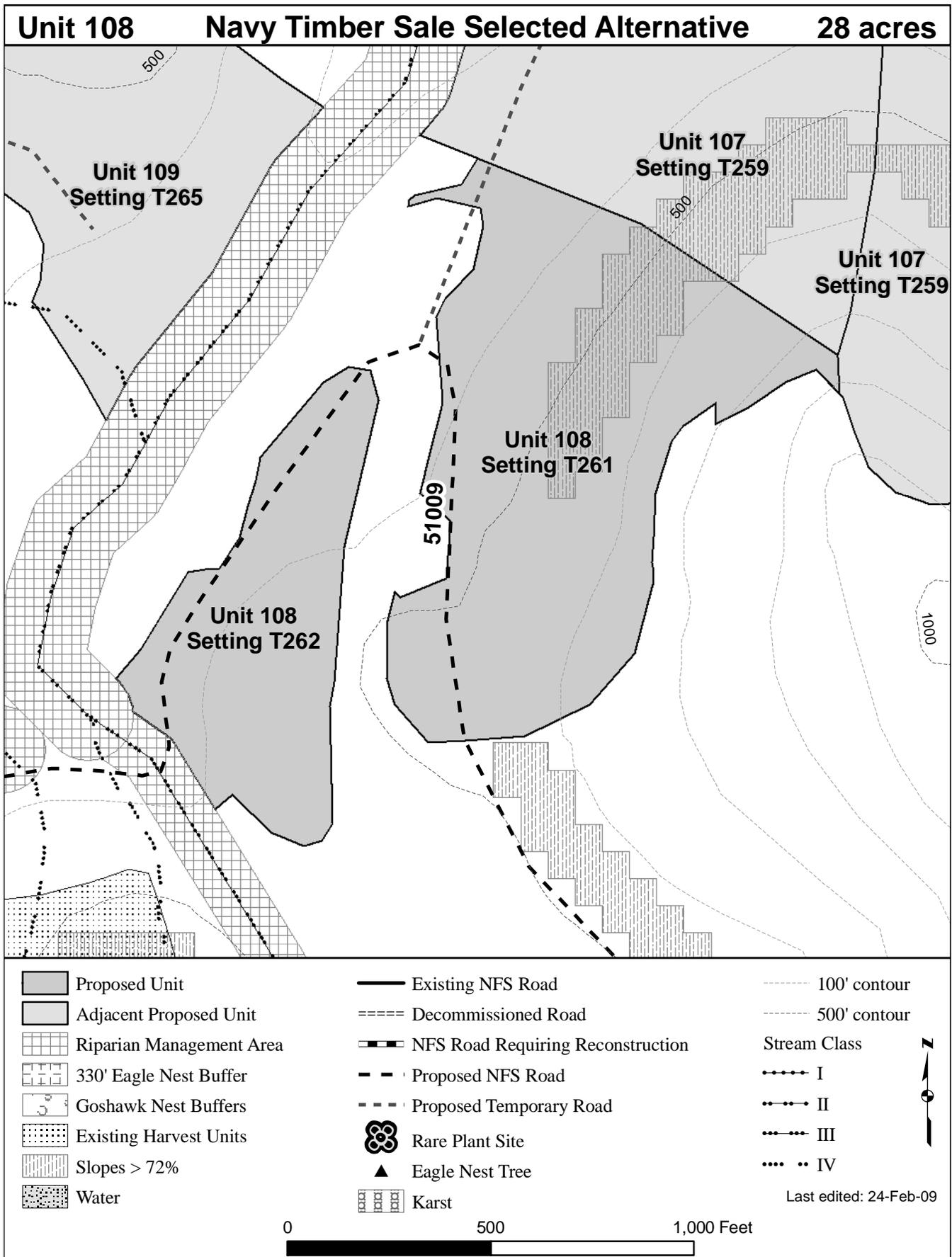
SCENERY: Unit is seen from the Quiet Harbor viewshed, and has an adopted moderate SIO. The proposed prescription will meet a moderate SIO.

SOILS: The unit includes about 4 acres of slopes over 72 percent gradient around in cliff in the upper part of the unit. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. This unit may harvest up to 5 acres of forested wetlands. Locate retention on steep slopes.

WILDLIFE: While designing retention to meet Scenery and NFMA 100 acre opening limit, retain elevational wildlife travel corridor if possible.

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

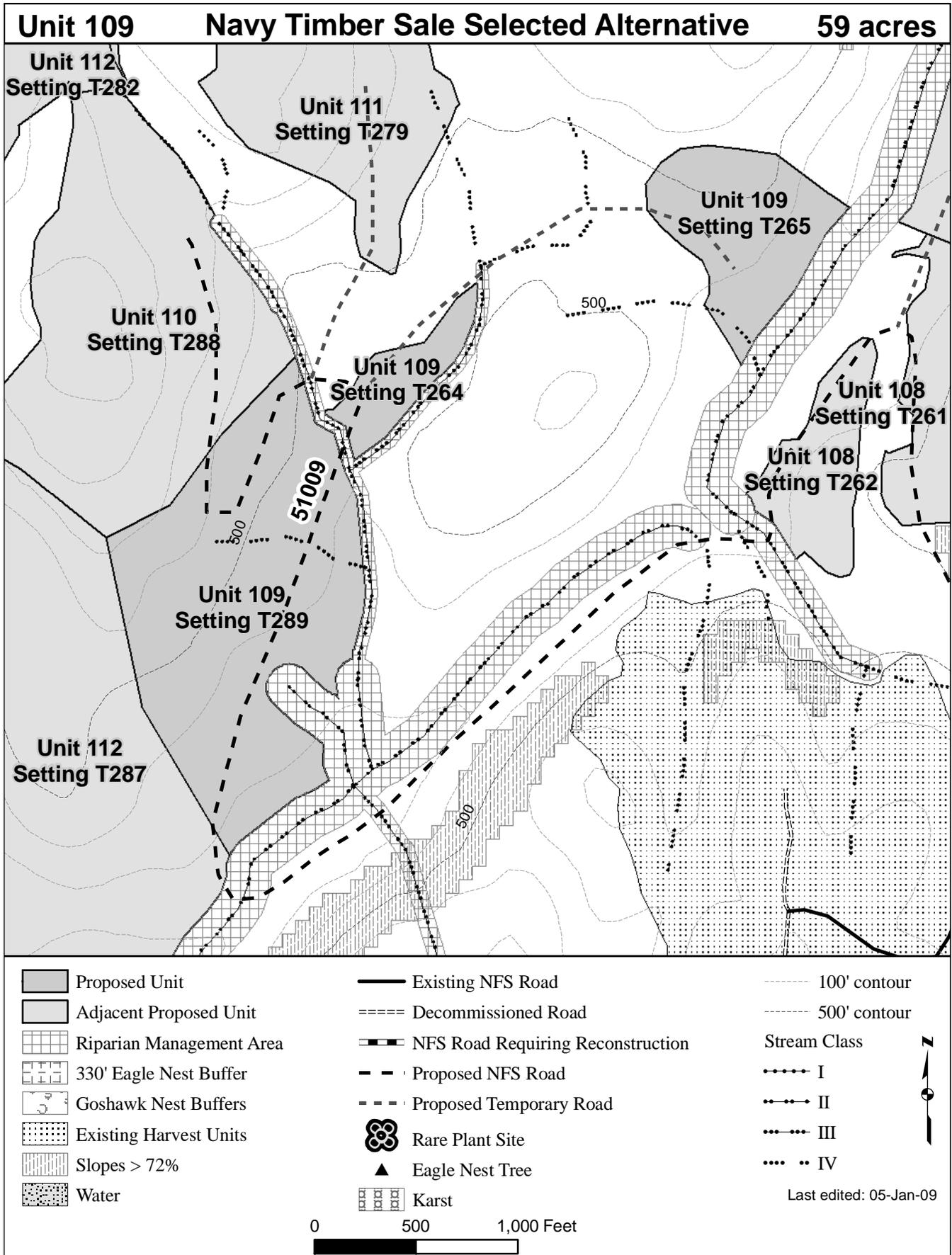
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML, SV		Total Unit Acres: 28	Unit Number: 108
	Logging Systems: Cable & Shovel	Harvest Acres: 28	
Setting Number(s): T261, T262		Volume Strata Acres: High: 17 Medium: 8 Low: 3 Non-forested:	Net Harvest Volume (Saw): MBF: 580
Photo Number: 1198-162			
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 60 percent western hemlock and 40 percent yellow cedar. BA=160. Site Index based on PA is 55 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method to regenerate desirable species and treat mistletoe and stem decay. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: Settings are designed for downhill cable yarding and shovel yarding to the proposed extension of the 51009 road. Setting T262 can be shovel yarded.			
ENGINEERING/ROADS: Refer to road card 51009.			
FISH/WATERSHED:			
<p>There is a Class II, channel type HC3, stream adjacent to the unit. No harvest within 100 feet of the channel. (BMP 12.6, 12.6a, 13.16).</p> <p>There is a Class III, channel type HC3, stream adjacent to the unit. No harvest in v-notch. (BMP 13.9, 13.16).</p> <p>The unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). 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>			
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: The unit includes about 3 acres of 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. This unit harvests 5 acres of forested wetlands. Shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.			
No resource concerns were identified for Botany, Wildlife, Geology and Heritage.			

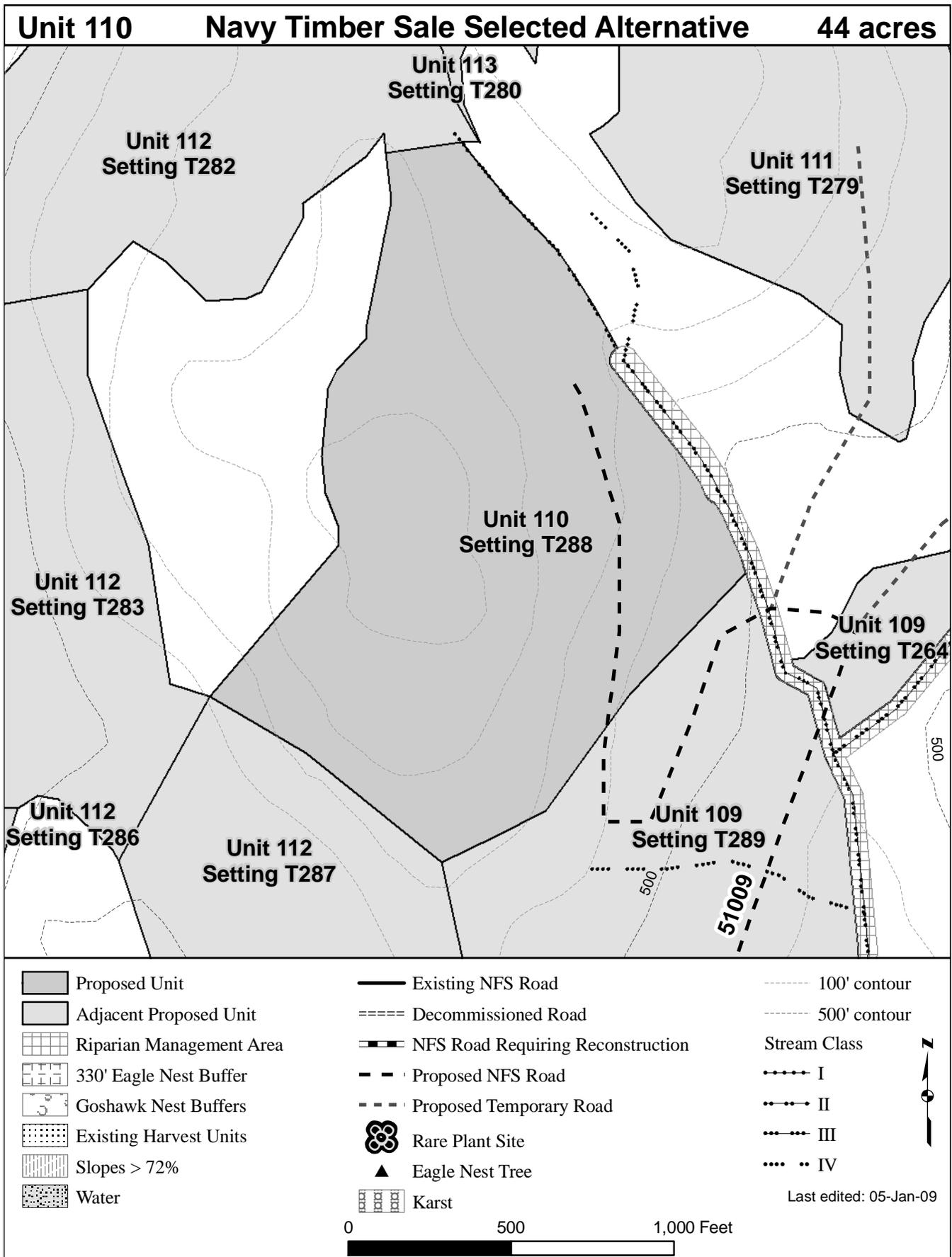
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 59	Unit Number: 109
	Logging Systems: Cable & Shovel	Harvest Acres: 59	
Setting Number(s): T264, T265, T289		Volume Strata Acres: High: 3 Medium: 55 Low: 1 Non-forested:	Net Harvest Volume (Saw): MBF: 1,105
Photo Number: 1198-162			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 54% western hemlock, 10% Sitka spruce, 24% red cedar and 12% yellow cedar. BA=313. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.			
TIMBER/LOGGING: This unit is designed for uphill and downhill cable yarding to landings located on the proposed 51009 road or temporary spur roads off of this road. Some shovel yarding would occur in setting T289. Settings T264 and T265 would be shovel yarded.			
ENGINEERING/ROADS: Construct up to 0.88 mile of temporary road. Road will be decommissioned after the timber sale. See detailed discussion in the 51009 road card.			
FISH/WATERSHED:			
There are at least three Class II, channel types HCx, streams/channels adjacent to or within this unit. No harvest within 100 feet of the channel. (BMP 13.9, 13.16).			
There are two Class III, channel type HC5, streams that bisect 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 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 unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
Temporary road in unit crosses Class III stream; provide adequate structure for crossing. May be able to minimize road building by downhill yarding to 6546 road.			
GEOLOGY/KARST: Marble canyon bisects the unit. Small solution features were found adjacent to the stream, no solution features were located in the uplands.			
RECREATION: Most of this unit is in the North Etoin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: Shovel tracks need to be supported by slash (BMP 13.9) to minimize soil disturbance.			
No resource concerns were identified for Botany, Wildlife, and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV, ML		Total Unit Acres: 44	Unit Number: 110
	Logging Cable Systems:	Harvest Acres: 44	
Setting Number(s): T288		Volume Strata Acres: High: Medium: 43 Low: Non-forested: 1	Net Harvest Volume (Saw): MBF: 799
Photo Number: 1198-218			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 55% western hemlock, 21% Sitka spruce, 7% red cedar and 17% yellow cedar. BA=281. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source) with natural regeneration. Even-aged management is an appropriate regeneration method, desirable species are able to become established in the next cohort of trees (spruce and cedars) and it is an effective way to deal with mistletoe and stem decay in hemlock. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill cable yarding to landings on the proposed 51009 road.

ENGINEERING/ROADS: See detailed discussion in the 51009 road card.

FISH/WATERSHED:

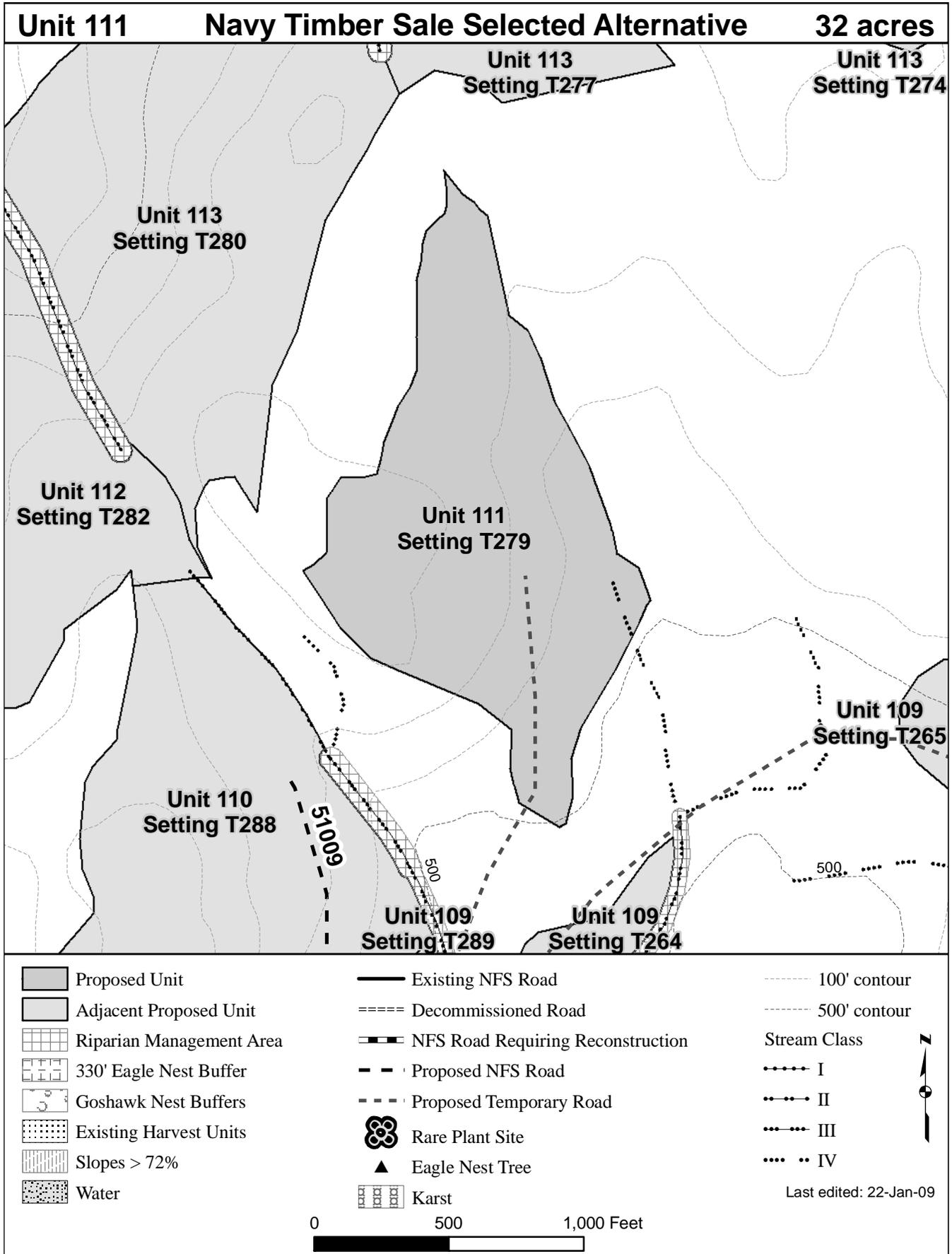
There is a Class III, channel type HC6 stream on the east side of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16). The unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward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

RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).

SCENERY: Unit is visible from the Stikine Strait viewshed; however, only a small part of the opening would be noticable. The unit will meet the adopted moderate SIO.

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

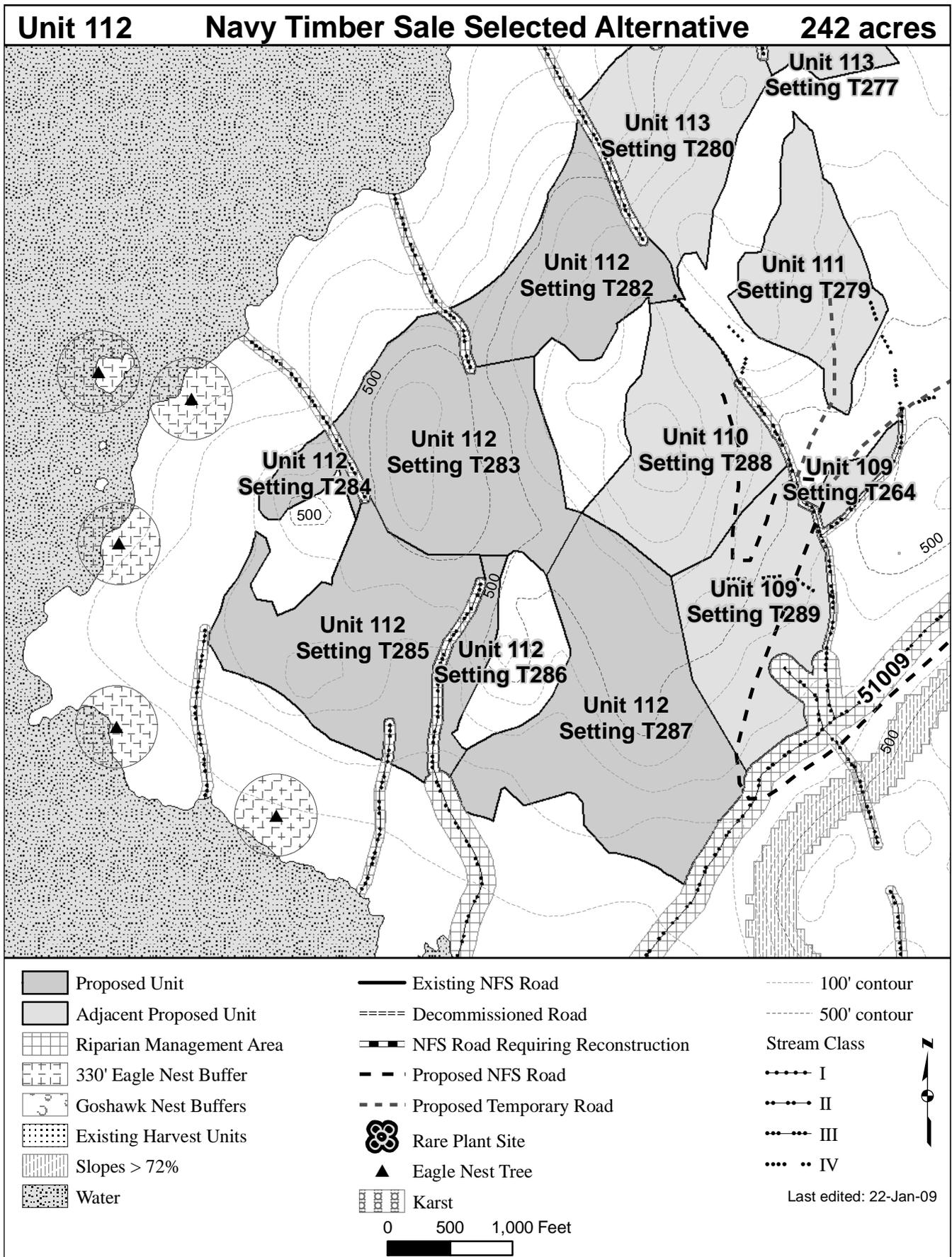
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML,SV		Total Unit Acres: 32	Unit Number: 111
	Logging Cable Systems:	Harvest Acres: 32	
Setting Number(s): T279		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-218		High: 7 Medium: 21 Low: 4 Non-forested:	MBF: 617
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 59% western hemlock, 32% Sitka spruce, 5% red cedar and 4% yellow cedar. BA=266. Site Index based on PA is 55 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method to encourage desirable shade tolerant species such as spruce. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: This unit is designed for cable yarding to landings on a temporary spur off the proposed 51009 road.			
ENGINEERING/ROADS: Construct 0.27 mile of temporary road. Road will be decommissioned after the timber sale. Refer to road card 51009 for additional details.			
FISH/WATERSHED:			
There is a Class IV, channel type HC1, stream that runs through unit. Fall timber away from stream 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).			
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
No resource concerns were identified for Botany, Wildlife, Geology, Heritage and Soils.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV		Total Unit Acres: 242	Unit Number: 112
	Logging Helicopter Systems:	Harvest Acres: 242	
Setting Number(s): T282, T283, T284, T285, T286, T287		Volume Strata Acres: High: 63 Medium: 153 Low: 26 Non-forested:	Net Harvest Volume (Saw): MBF: 1,892
Photo Number: 1198-218,1198-219			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 31 percent western hemlock, 32 percent Sitka spruce, 19 percent red cedar and 18 percent yellow cedar. BA=302. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: All settings will be helicopter yarded directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

FISH/WATERSHED:

There are two Class II, channel type HC2 and HC3, streams at the southern portion of the unit. No harvest within 100 feet of the channel.

There are multiple Class III streams along the unit boundaries. Do not harvest in the v-notch. (BMP 13.9, 13.16).

There are likely multiple Class IV, channel type HC, streams throughout the unit. Identify these streams at layout. Fall timber away from stream 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).

The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). Helicopter yarding should not need RAW buffer due to a smaller opening size.

RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).

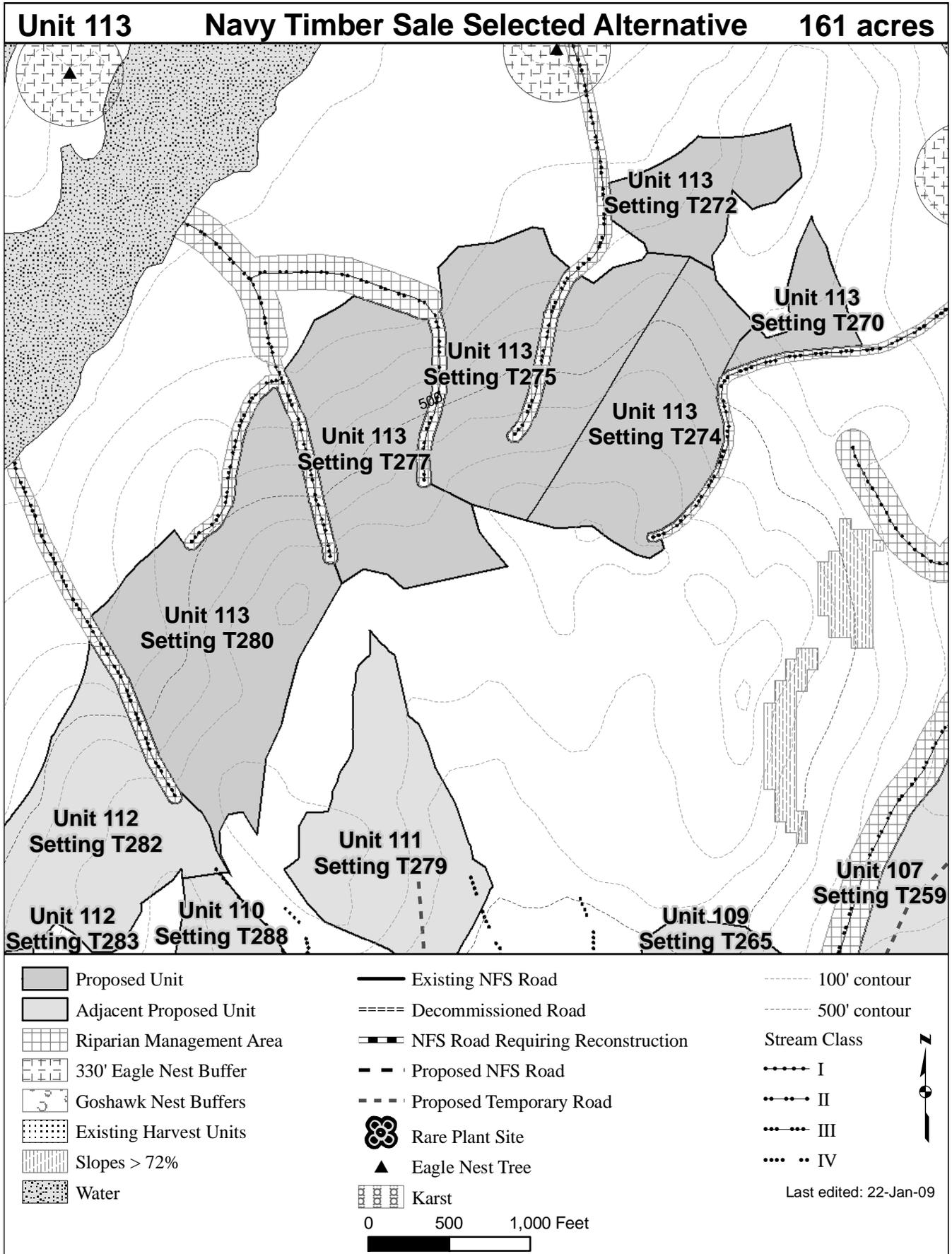
SCENERY: Only setting T284 is not seen. The other settings are visible from either the Stikine Strait or Kindergarten Bay viewsheds, and the proposed prescription will meet the adopted SIO of moderate.

SOILS: This unit harvests 31 acres of forested wetlands.

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV		Total Unit Acres: 161	Unit Number: 113
	Logging Helicopter Systems:	Harvest Acres: 161	
Setting Number(s): T270, T272, T274, T275, T277, T280		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-163,1198-217		High: 104 Medium: 56 Low: Non-forested:	MBF: 1,460

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 57 percent western hemlock, 14 percent Sitka spruce, 14 percent red cedar and 15 percent yellow cedar. BA=296. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: All settings are designed for helicopter yarding to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

FISH/WATERSHED:

There are two Class II, channel type HC1 and HC3, streams adjacent to the northern portion of the unit. No harvest within 100 feet of the channel.

There are multiple Class III streams along the unit boundaries. Do not harvest in the v-notch. (BMP 13.9, 13.16).

There are likely multiple Class IV, channel type HC, streams throughout the unit. Identify these streams at layout. Fall timber away from stream if feasible.

The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). Helicopter yarding should not need RAW buffer due to a smaller opening size.

RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).

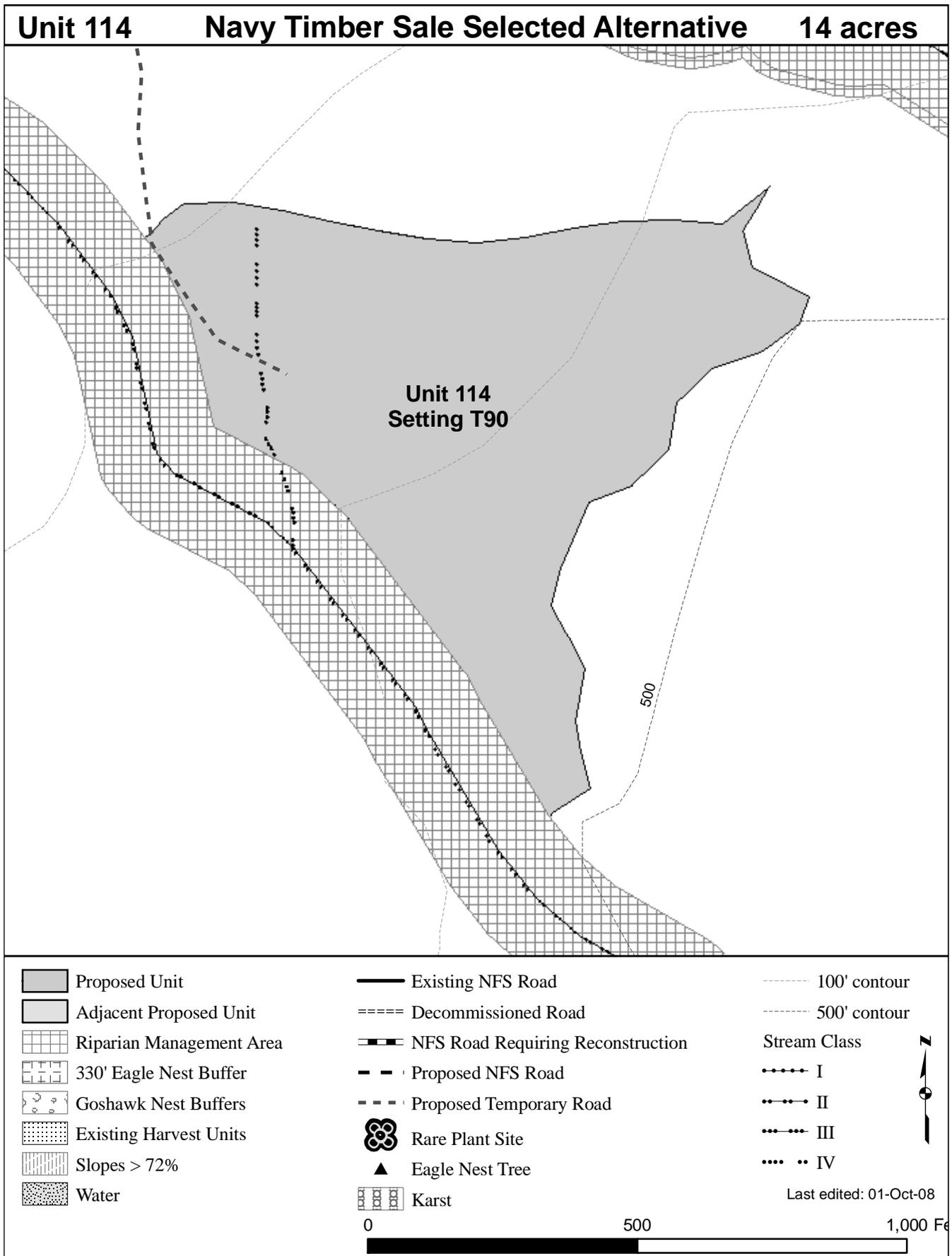
SCENERY: Settings T270 and T274 are not visible. The other settings are visible from the Stikine Strait viewshed. The proposed prescription will meet the SIO of moderate.

SOILS: Unit includes less than an acre of 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. This unit harvests 2 acres of forested wetlands.

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 14	Unit Number: 114
	Logging Cable Systems:	Harvest Acres: 14	
Setting Number(s): T90		Volume Strata Acres: High: Medium: 14 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 261
Photo Number: 1198-74			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock and 60 percent yellow cedar. BA=220. Site Index based on PA is 80 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for uphill cable yarding to landings on the proposed temporary spur road off of the existing 51540 road.

ENGINEERING/ROADS: Construct 0.19 mile of temporary road to access this unit. The temporary road will be decommissioned after the timber sale. The rock required for construction of this road may come from an existing pit on the 51540 road or by developing a small pit near the beginning of this road.

FISH/WATERSHED:

There is a Class II, channel type HC3, stream on the southwestern boundary of the unit. No harvest within 100 feet of the channel. (BMP 12.6, 12.6a, 13.16).

There is a Class IV, channel type HC1, stream within the unit. Fall timber away from stream 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).

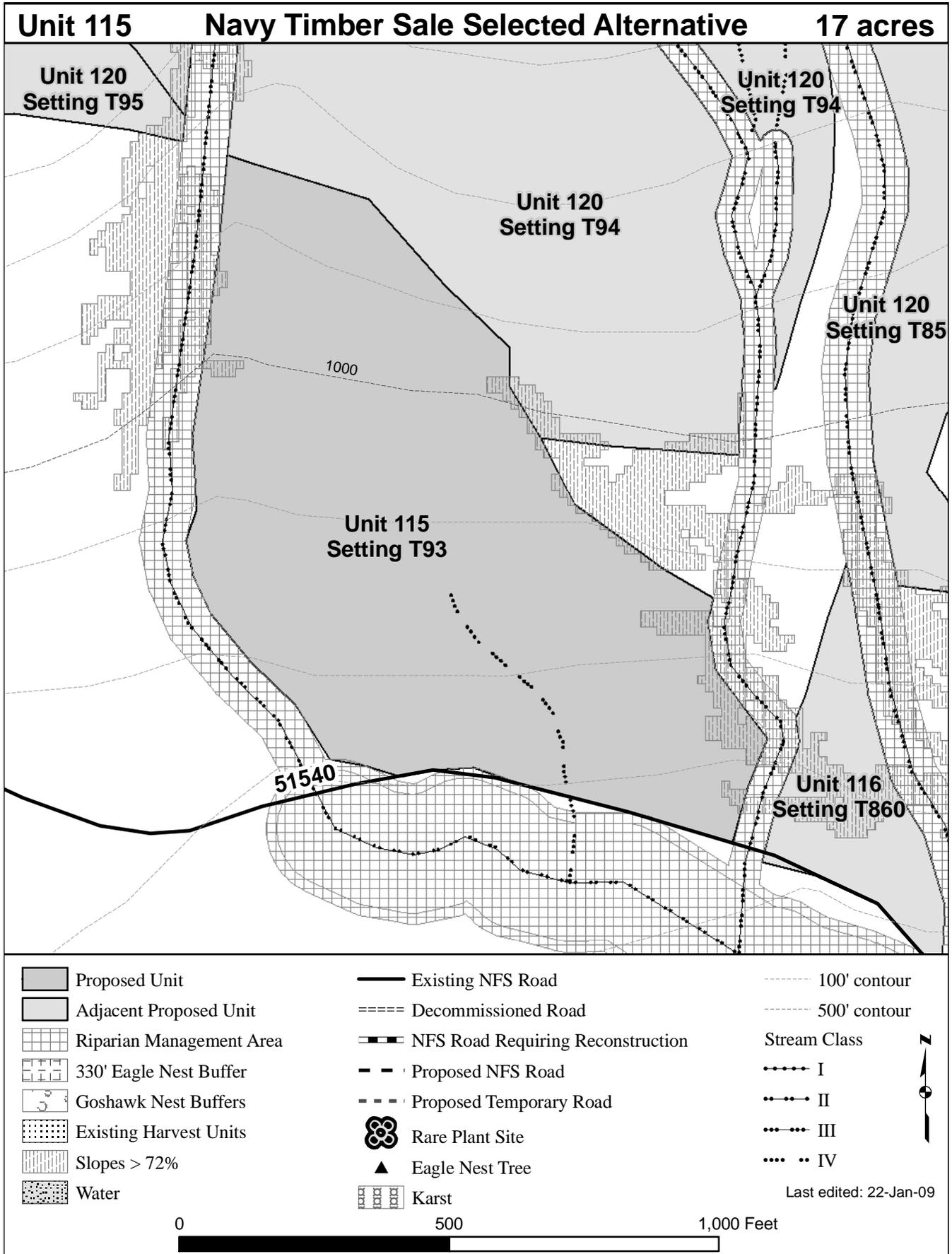
The unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

Minimize temporary road building in the RMA. Move road location out of RMA if feasible. The temporary roads in the unit may cross streams, adequate size structures will be necessary for all stream crossings and will be removed immediately following timber sale activities. (BMP 13.16, 14.20).

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

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 17	Unit Number: 115
	Logging Cable Systems:	Harvest Acres: 17	
Setting Number(s): T93		Volume Strata Acres: High: 15 Medium: 2 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 396
Photo Number: 1198-73			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 36 percent western hemlock, 35 percent red cedar and 29 percent yellow cedar. BA=371. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

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).

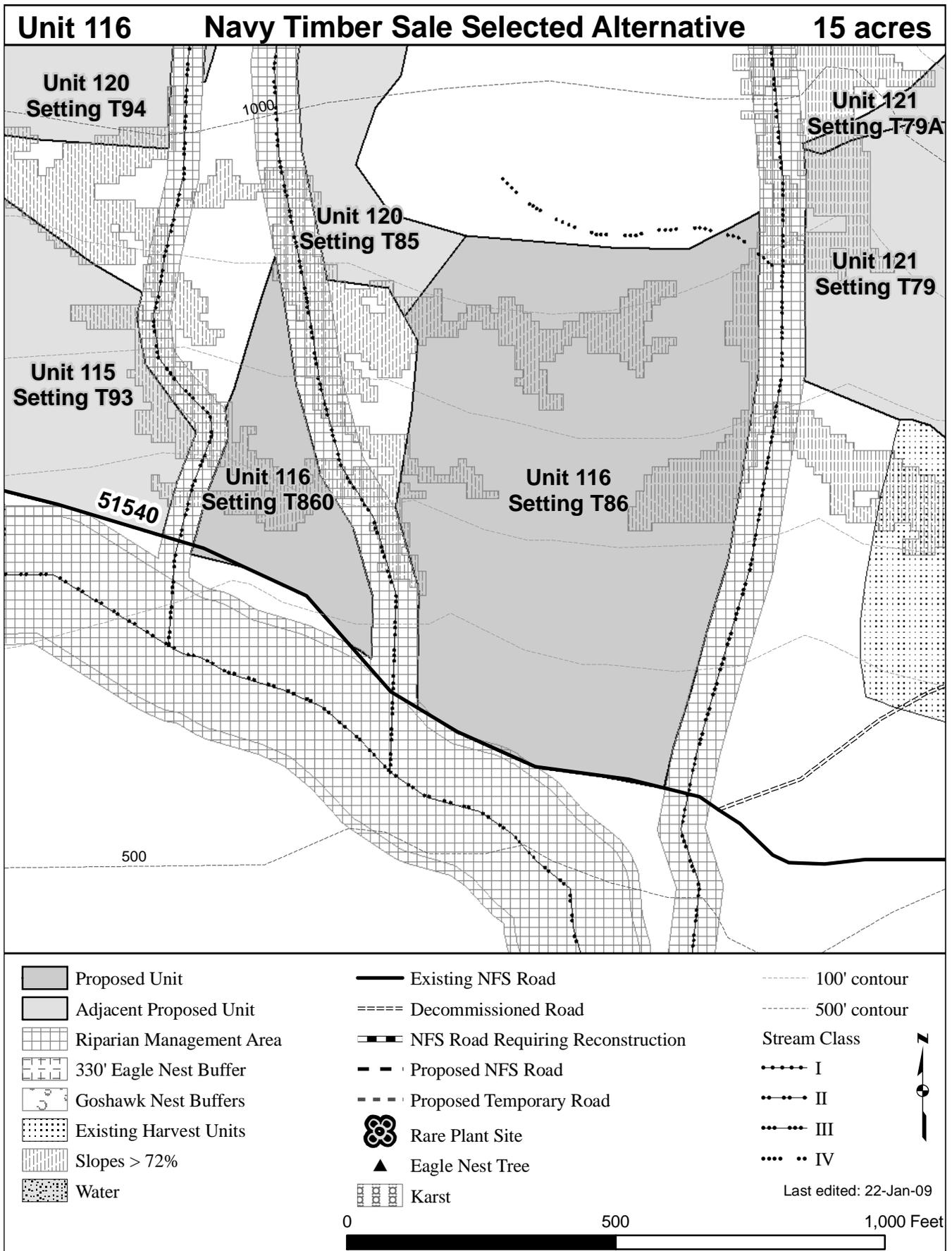
The unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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

SOILS: Unit includes about 1 acre of slopes over 72 percent gradient. Slopes over 72 percent will be avoided during layout. Partial suspension is required on the remainder of the unit. (BMP 13.5, 13.9) Harvest on unstable slopes will be avoided.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 15	Unit Number: 116
	Logging Cable Systems:	Harvest Acres: 15	
Setting Number(s): T86, T860		Volume Strata Acres: High: 8 Medium: 3 Low: 4 Non-forested:	Net Harvest Volume (Saw): MBF: 288
Photo Number: 1098-112			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 18 percent western hemlock, 72 percent red cedar and 10 percent yellow cedar. BA=276. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

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 Rd 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).

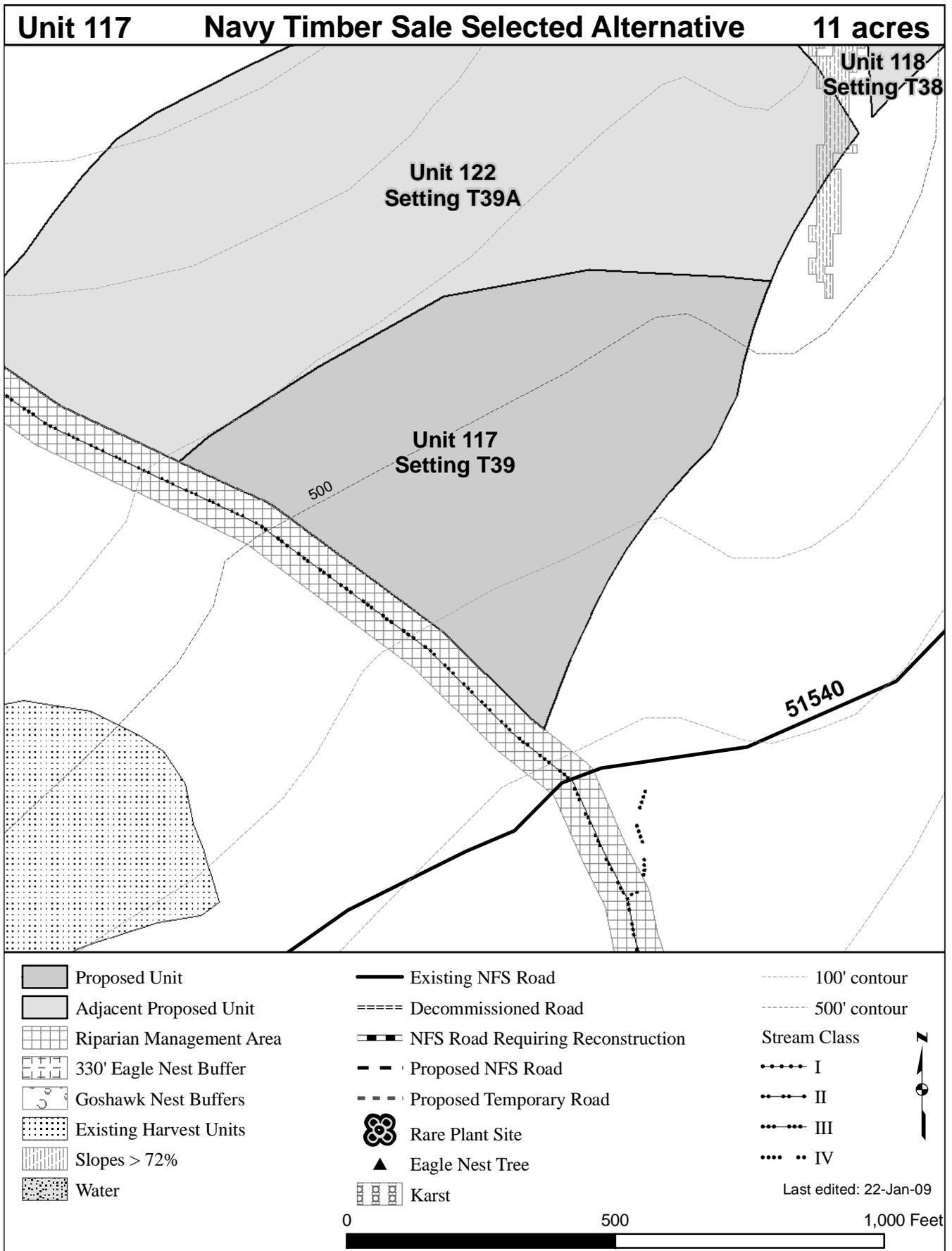
The unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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

SOILS: Unit includes scattered patches of slopes over 72% 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.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 11	Unit Number: 117
	Logging Cable Systems:	Harvest Acres: 11	
Setting Number(s): T39		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-111		High: 1 Medium: 9 Low: Non-forested:	MBF: 211

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 30 percent western hemlock and 70 percent red cedar. BA=160. Site Index based on PA is 65 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

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

FISH/WATERSHED:

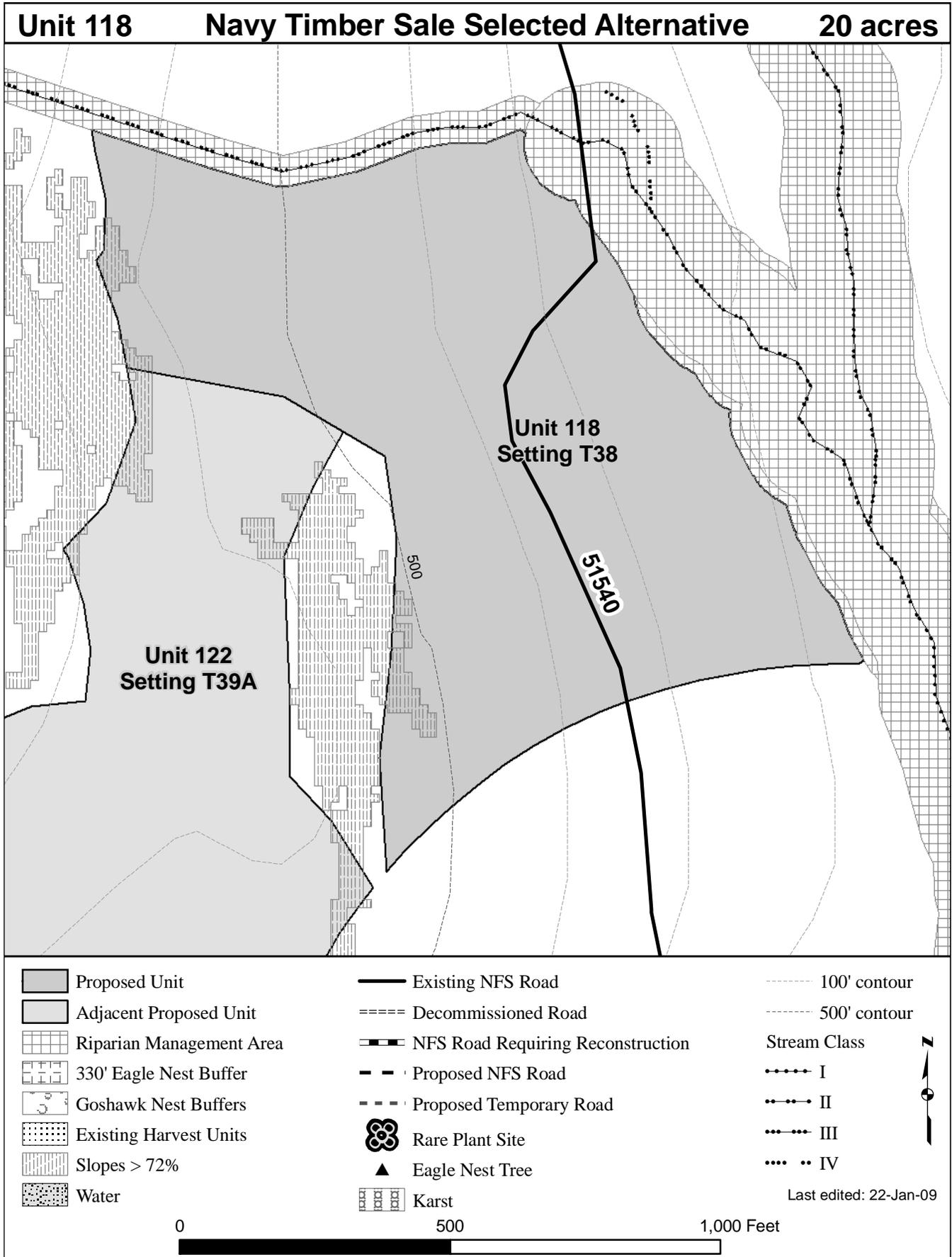
There is a Class III, channel type HC6, stream on the southern boundary of the unit. Do not harvest in the v-notch. (BMP 13.9, 13.16).

The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). 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.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 20	Unit Number: 118
	Logging Cable Systems:	Harvest Acres: 20	
Setting Number(s): T38		Volume Strata Acres: High: 13 Medium: 7 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 441
Photo Number: 1098-112			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 54 percent western hemlock and 46 percent red cedar. BA=273. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

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

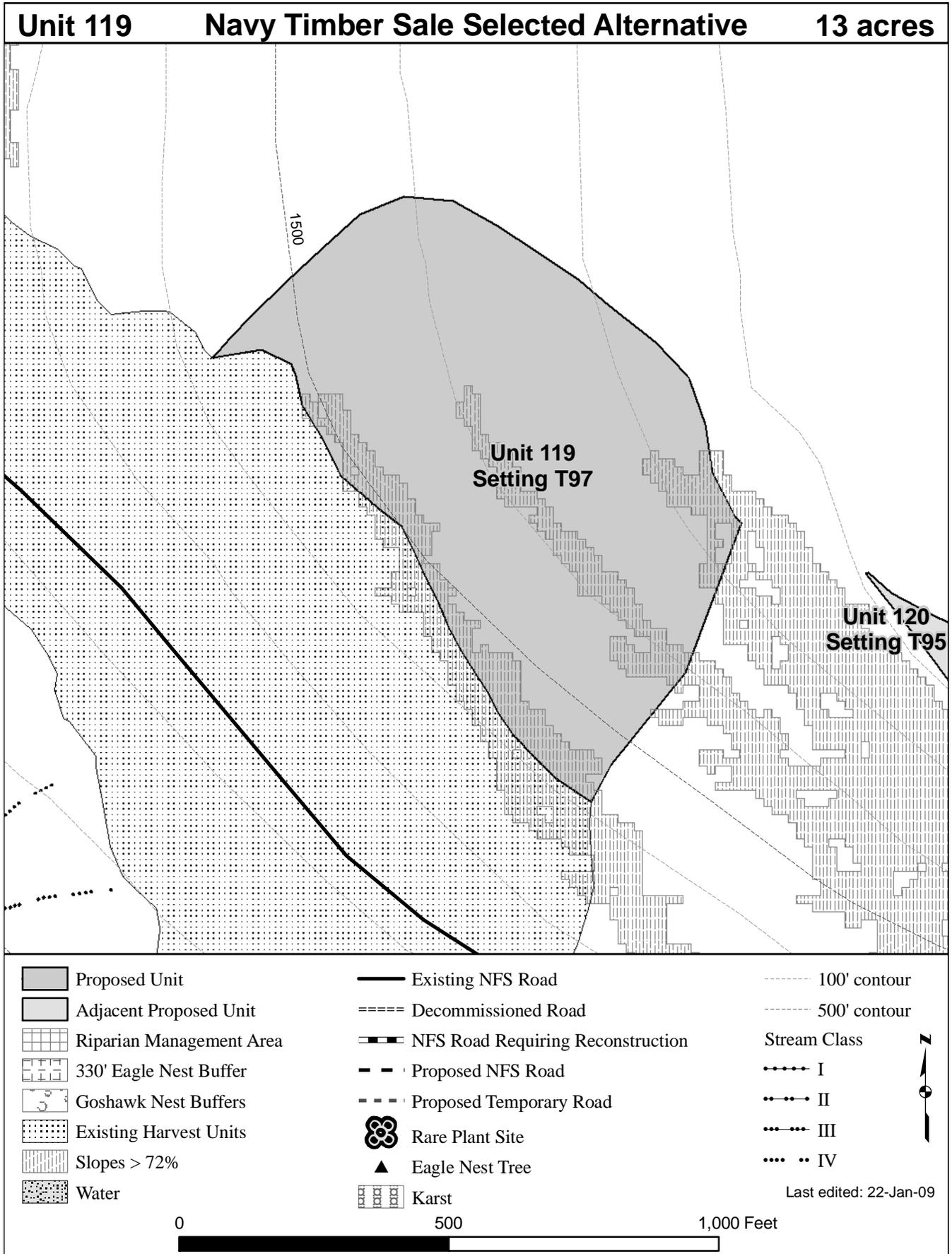
The unit has high windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

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 short pitches of slopes over 72 percent gradient. A slope stability assessment 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, Wildlife, Geology, Heritage and Recreation.

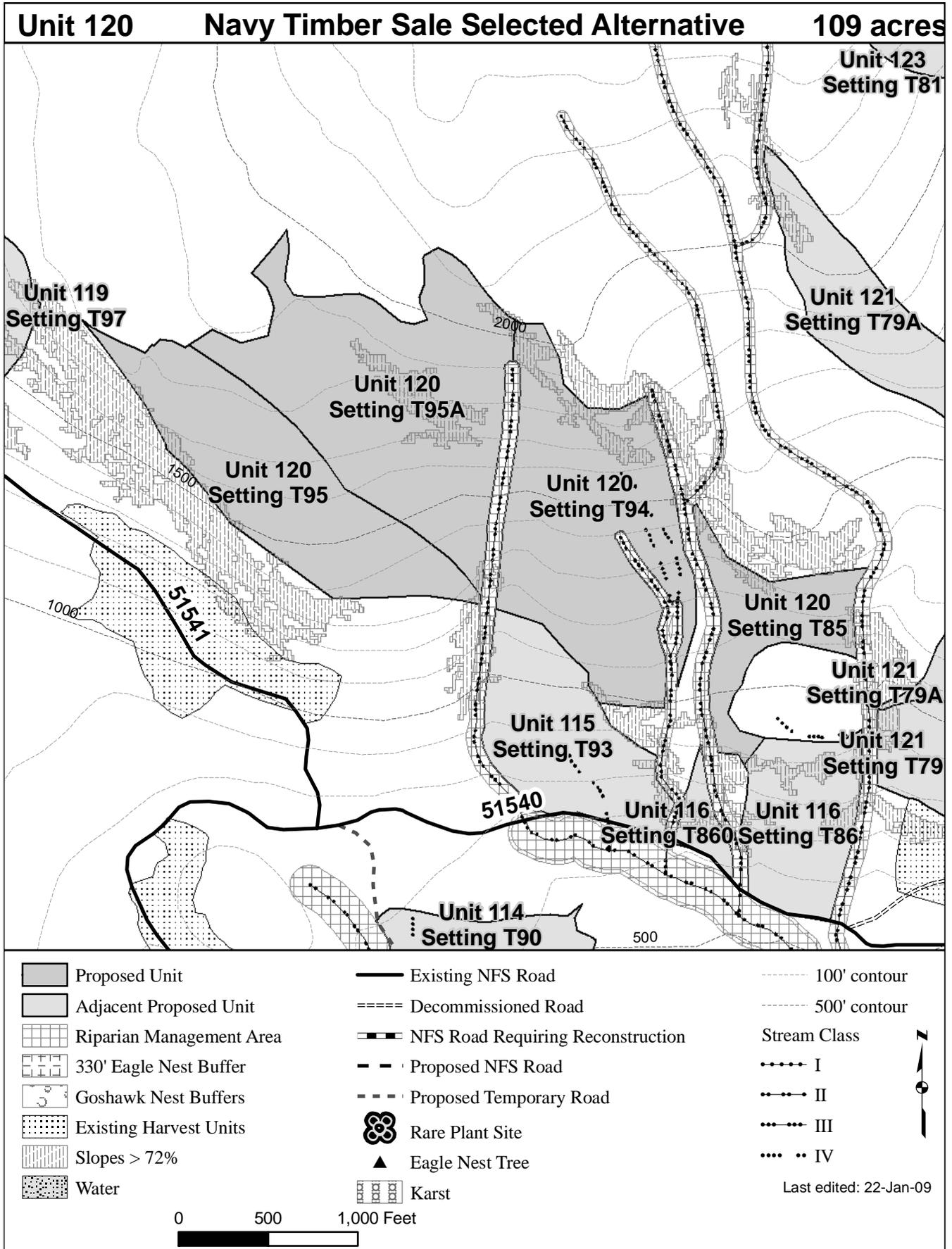
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 13	Unit Number: 119
	Logging Systems: Helicopter	Harvest Acres: 13	
Setting Number(s): T97		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1198-72		High: 13 Medium: Low: Non-forested:	MBF: 129
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 47 percent western hemlock and 63 percent Sitka spruce. BA=440. Site Index based on PA is 100 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings on the existing 51541 road.			
SCENERY: The unit is seen from the head of the Anita Bay viewshed. The adopted very low SIO. The proposed prescription will meet a moderate SIO.			
SOILS: The unit includes several areas of slopes over 72 percent gradient associated with cliffs in the unit. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Retain windfirm trees throughout the unit to minimize windthrow and associated landslides.			
No resource concerns were identified for Roads, Fish/Watershed, Wildlife, Heritage, Botany and Recreation.			

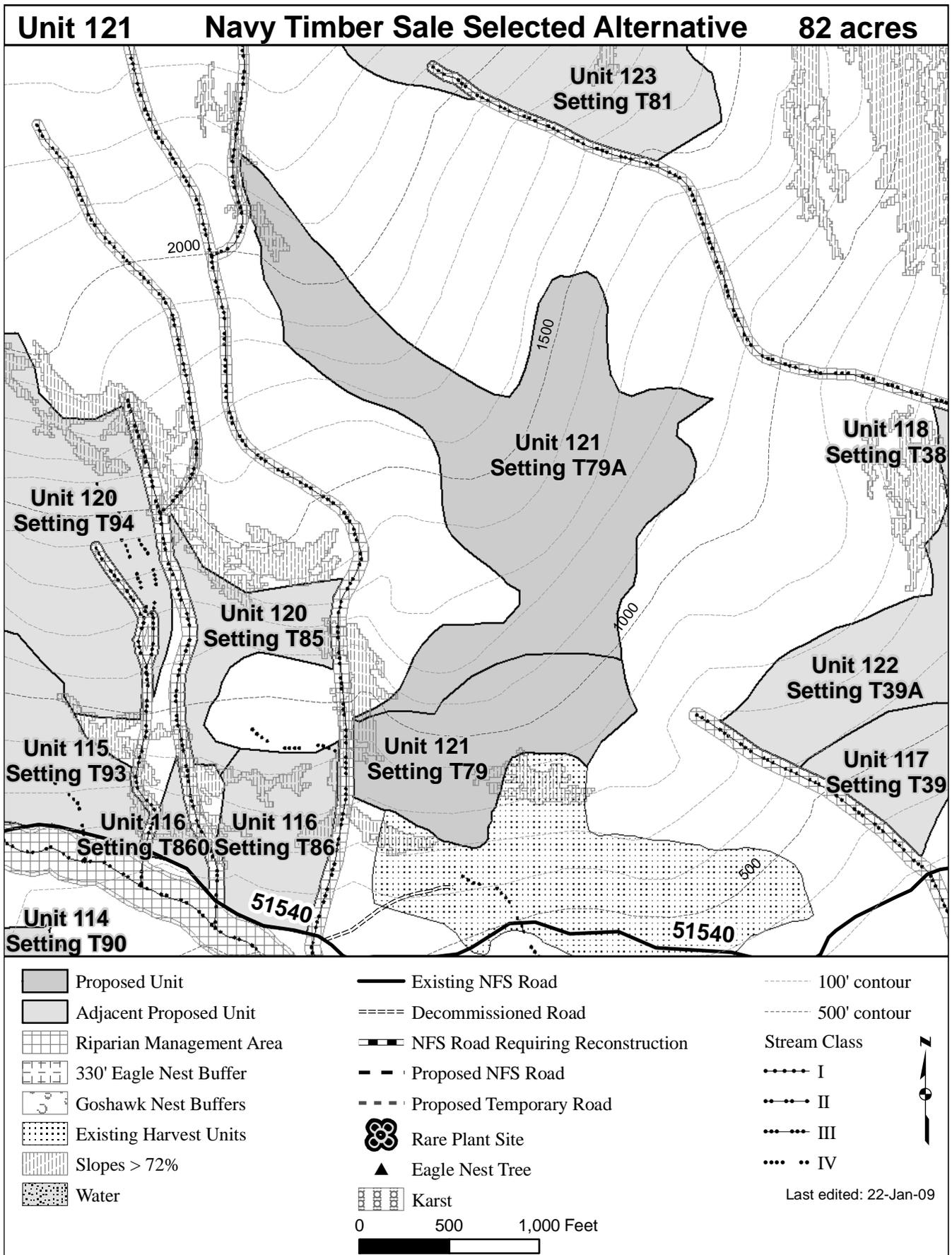
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 109	Unit Number: 120
	Logging Systems: Helicopter	Harvest Acres: 109	
Setting Number(s): T85, T94, T95, T95a		Volume Strata Acres: High: 9 Medium: 74 Low: 25 Non-forested:	Net Harvest Volume (Saw): MBF: 771
Photo Number: 1198-73			
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 22 percent western hemlock, 5 percent Sitka spruce, 4 percent red cedar 36 percent yellow cedar and 33 percent mountain hemlock. BA=284. Site Index based on PA is 55 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.</p>			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings along the existing 51541 and 51540 roads.			
FISH/WATERSHED:			
<p>There are five Class III, channel type HC5 and HC6, streams within or adjacent to the unit. Do not harvest in the v-notch (BMP 13.9, 13.16).</p> <p>There are at least two Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Remove logging debris from streams (BMP 13.9, 13.16).</p>			
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).			
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 several small areas of 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. This unit harvests 15 acres of forested wetlands.			
No resource concerns were identified for Roads, Wildlife, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 82	Unit Number: 121
	Logging Systems: Helicopter	Harvest Acres: 82	
Setting Number(s): T79, T79A		Volume Strata Acres: High: 71 Medium: 71 Low: 11 Non-forested:	Net Harvest Volume (Saw): MBF: 591
Photo Number: 1098-112			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 45 percent western hemlock, 18 percent Sitka spruce, 18 percent red cedar and 19 percent yellow cedar.

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding to landings along a temporary stub spur off of the existing 51540 road.

ENGINEERING/ROADS: Construct 0.15 mile of temporary road. Road will be decommissioned after the timber sale. The material source is located on Road 51540, mp 8.3. The temporary road will be constructed on an old road prism to minimize environmental impact.

FISH/WATERSHED:

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

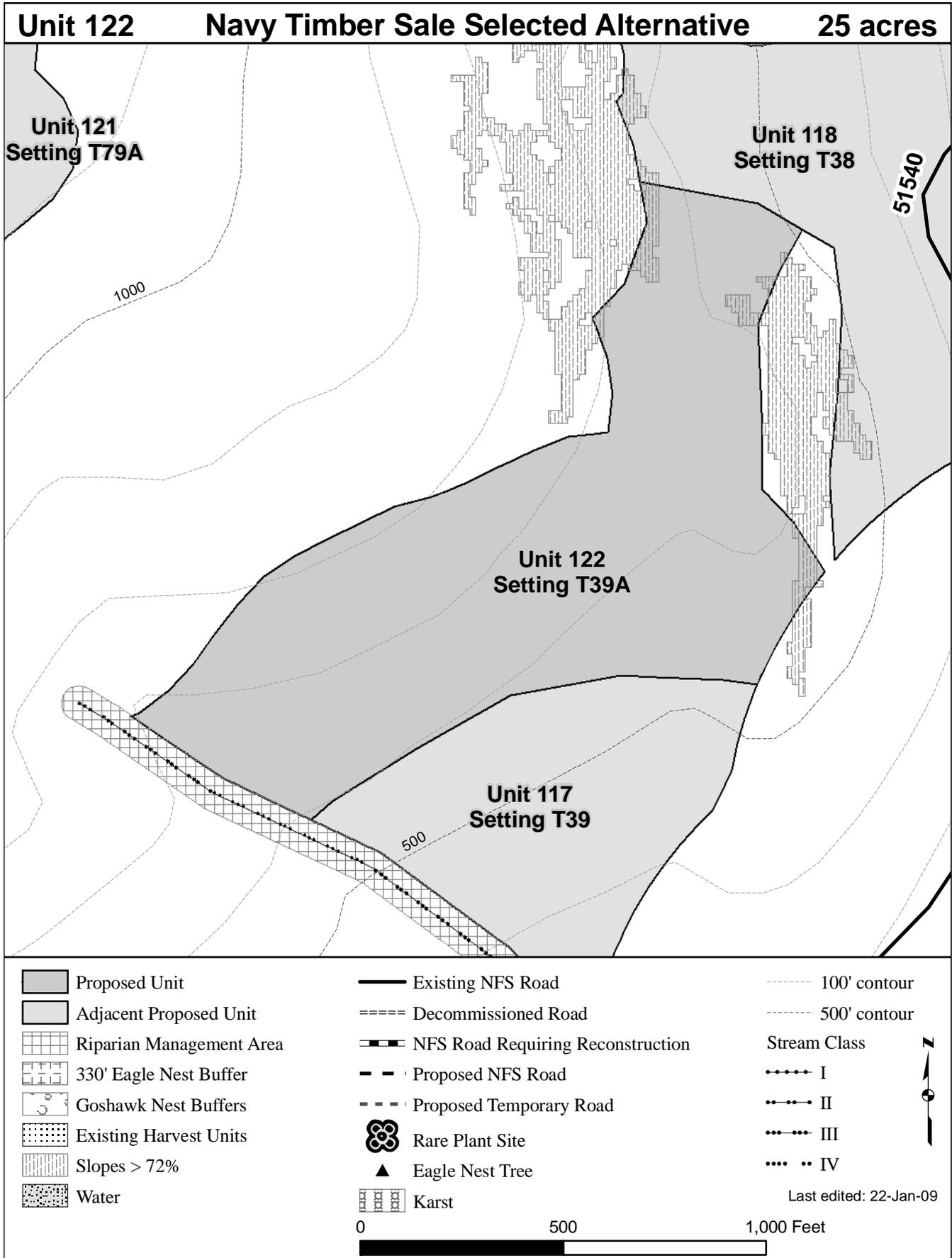
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).

SCENERY: 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.

SOILS: This unit includes about 5 acres of 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. This unit harvests 11 acres of forested wetlands.

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

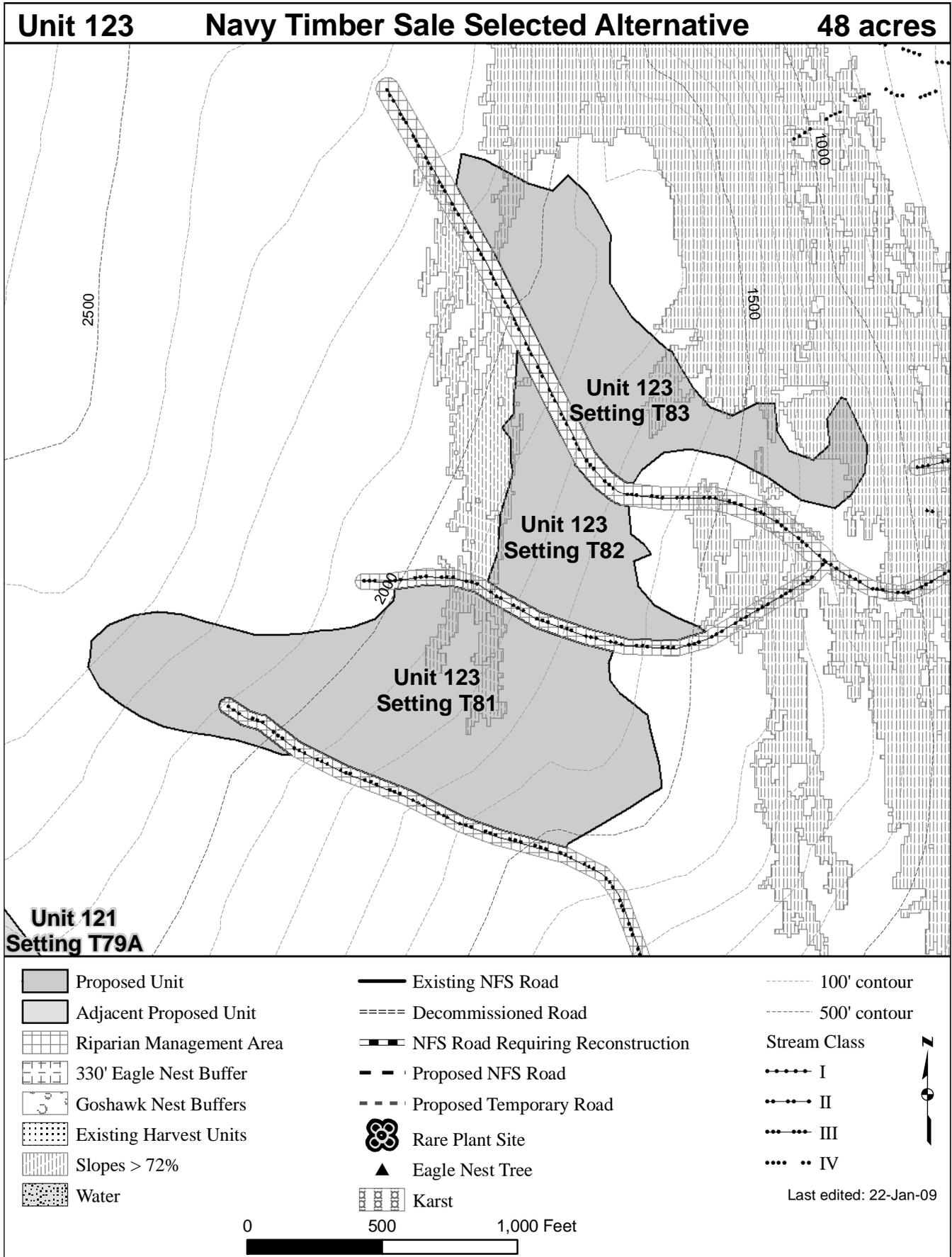
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 25	Unit Number: 122
	Logging Systems: Helicopter	Harvest Acres: 25	
Setting Number(s): T39A		Volume Strata Acres: High: 10 Medium: 3 Low: 12 Non-forested:	Net Harvest Volume (Saw): MBF: 179
Photo Number: 1098-112			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 50 percent western hemlock, 18 percent Sitka spruce, 15 percent red cedar and 35 percent yellow cedar. BA=181. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings along the existing 51540 road.			
FISH/WATERSHED:			
There is a Class III, channel type HC6, stream on the unit boundary. No harvest in the v-notch (BMP 13.9, 13.16).			
RECREATION: Part of this unit is in the North Etoin Inventoried Roadless Area (#232).			
SCENERY: The unit is seen from the head of the Anita Bay viewshed. The adopted SIO is very low. The proposed prescription will meet a moderate SIO.			
SOILS: This unit includes about 2 acres of slopes over 72 percent gradient. A slope stability assesement is included in the project record. (BMP 13.5) Based on the field review, slopes up to 85 percent gradient are suitable for timber harvest. The unit harvests 12 acres of forested wetlands.			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Botany, Geology, Heritage.			

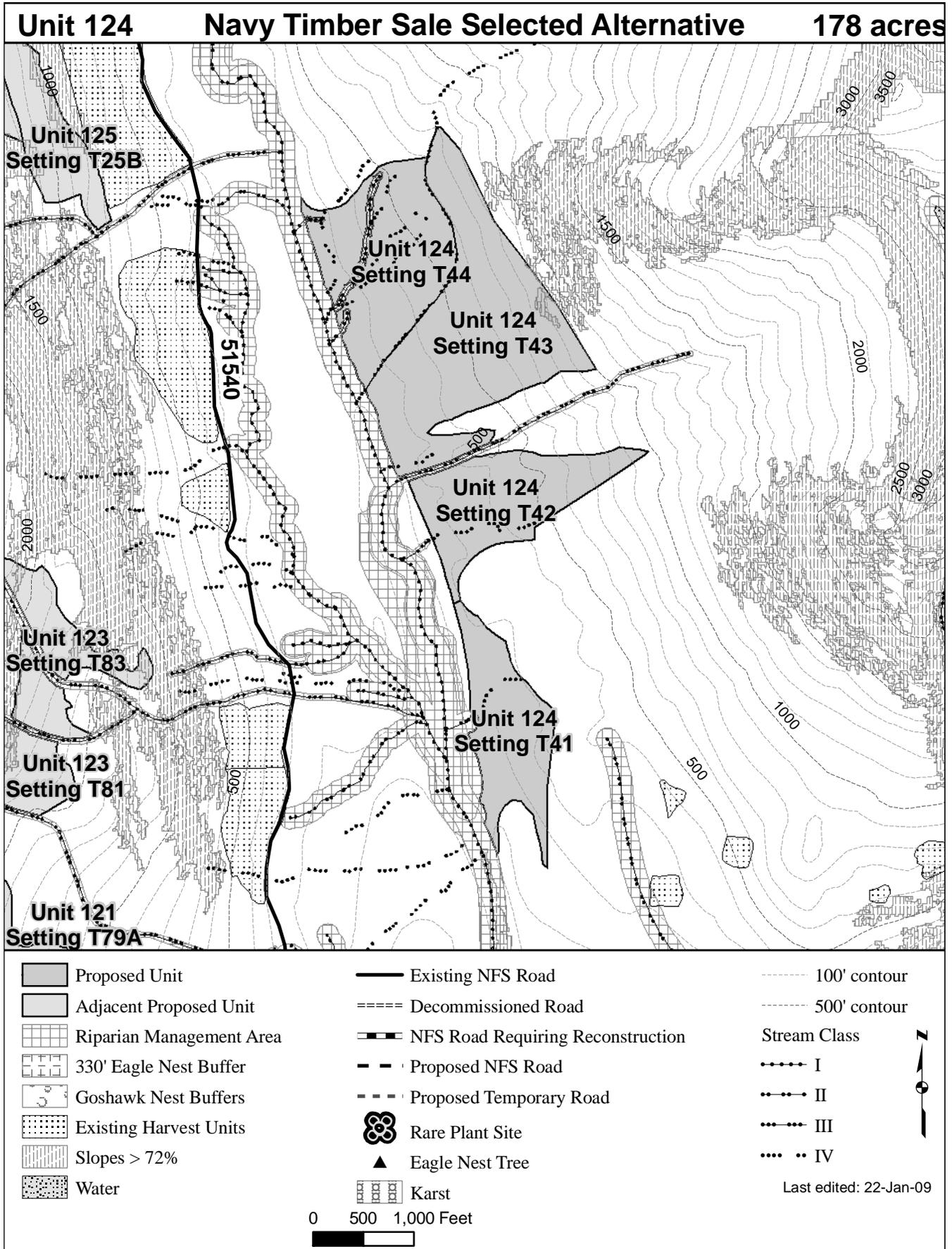
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 48	Unit Number: 123
	Logging Systems: Helicopter	Harvest Acres: 48	
Setting Number(s): T81, T82, T83		Volume Strata Acres: High: 14 Medium: 34 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 391
Photo Number: 1098-113			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 60 percent western hemlock, 14 percent Sitka spruce, 13 percent red cedar and 13 percent yellow cedar. BA=246. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration.			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings along the existing 51540 road.			
FISH/WATERSHED: There are three Class III, channel types HC5 and HC6, streams within and adjacent to the unit. No harvest in the v-notch (BMP 13.9, 13.16).			
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: The unit is seen from the heads of the Burnett Inlet and Anita Bay viewsheds. The adopted SIO is very low. The proposed prescription will meet a moderate SIO.			
SOILS: Unit includes about 4 acres of 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. This unit harvests 1 acre of forested wetlands.			
No resource concerns were identified for Roads, Wildlife, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 178	Unit Number: 124
	Logging Systems: Helicopter	Harvest Acres: 178	
Setting Number(s): T41, T42, T43, T44		Volume Strata Acres: High: 126 Medium: 12 Low: 40 Non-forested:	Net Harvest Volume (Saw): MBF: 1,505
Photo Number: 1198-21			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 45 percent western hemlock, 8 percent Sitka spruce, 37 percent red cedar and 10 percent yellow cedar. BA=257. Site Index based on PA is 75 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

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

FISH/WATERSHED:

There is a Class I, channel types MM2, FP4, and LC2, stream (Fishtrap Creek) that runs along the west edge of the unit. No harvest within 100 feet (LC), 120 feet (MM) or 130 feet (FP) of the channel. (BMP 13.9, 13.16).

Stream 2 is a Class II segment of stream on the western edge of setting T41 Do not harvest in the RMA buffer. (BMP 13.9, 13.16).

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

There are at least eight 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).

The unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

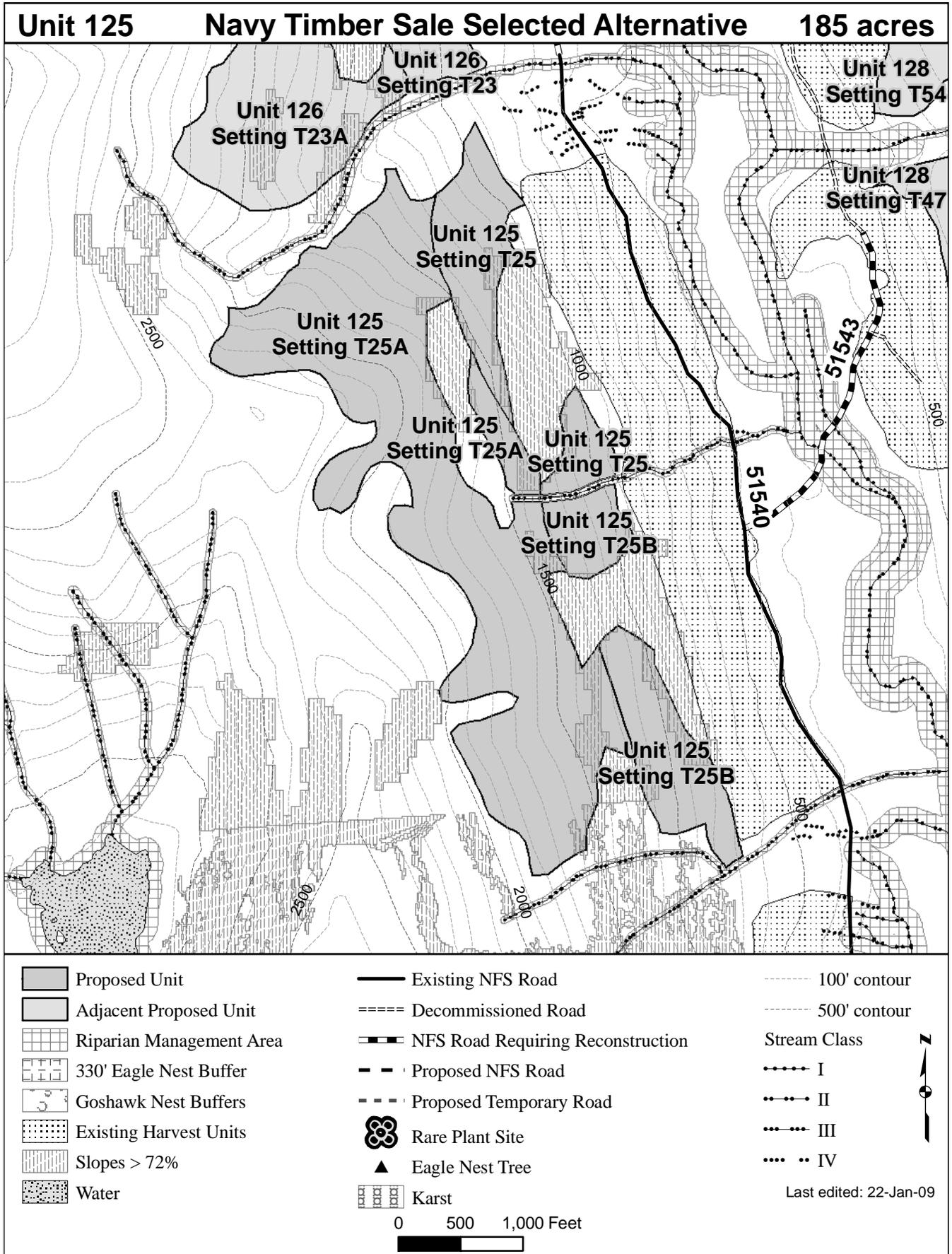
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).

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

SOILS: This unit includes about 1 acre of 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. This unit harvests 36 acres of forested wetlands.

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

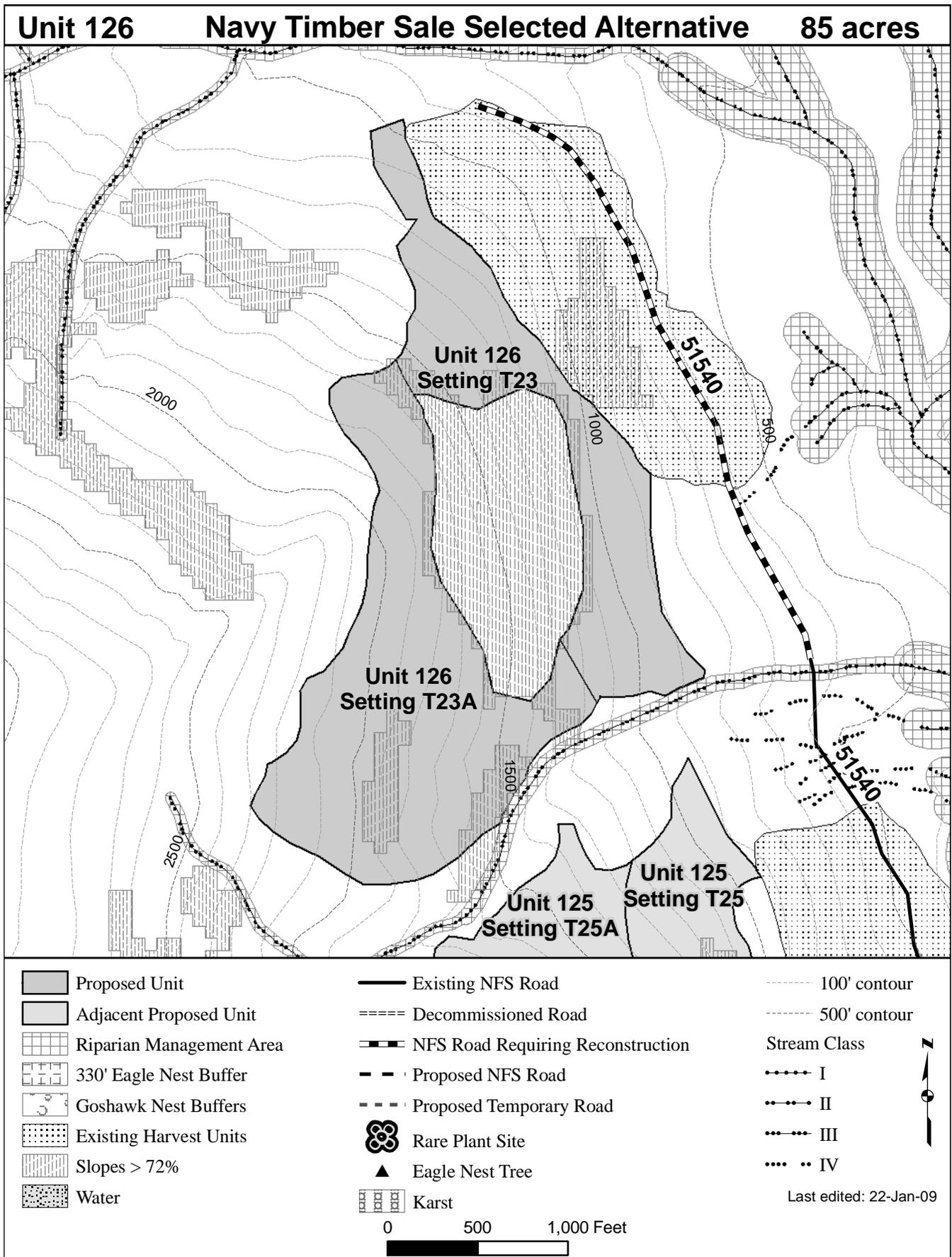
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 185	Unit Number: 125
	Logging Systems: Helicopter	Harvest Acres: 185	
Setting Number(s): T25, T25A, T25B		Volume Strata Acres: High: 65 Medium: 87 Low: 33 Non-forested:	Net Harvest Volume (Saw): MBF: 1,460
Photo Number: 1098-115			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 5 percent western hemlock, 18 percent red cedar and 32 percent yellow cedar. BA=322. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
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).			
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).			
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: Unit includes about 16 acres of 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. This unit harvests 34 acres of forested wetlands.			
No resource concerns were identified for Roads, Wildlife, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 85	Unit Number: 126
	Logging Systems: Helicopter	Harvest Acres: 85	
Setting Number(s): T23,T23A		Volume Strata Acres: High: 7 Medium: Low: 78 Non-forested:	Net Harvest Volume (Saw): MBF: 423
Photo Number: 1098-116			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 10 percent western hemlock, 18 percent Sitka spruce, 22 percent red cedar and 50 percent yellow cedar. BA=225. Site Index based on PA is 70 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: Both settings are proposed for management. This unit is designed for helicopter yarding to landings along the existing 51540 road.

FISH/WATERSHED:

There is a Class III, channel type HC6, stream on the unit boundary. No harvest in the v-notch (BMP 13.9, 13.16).

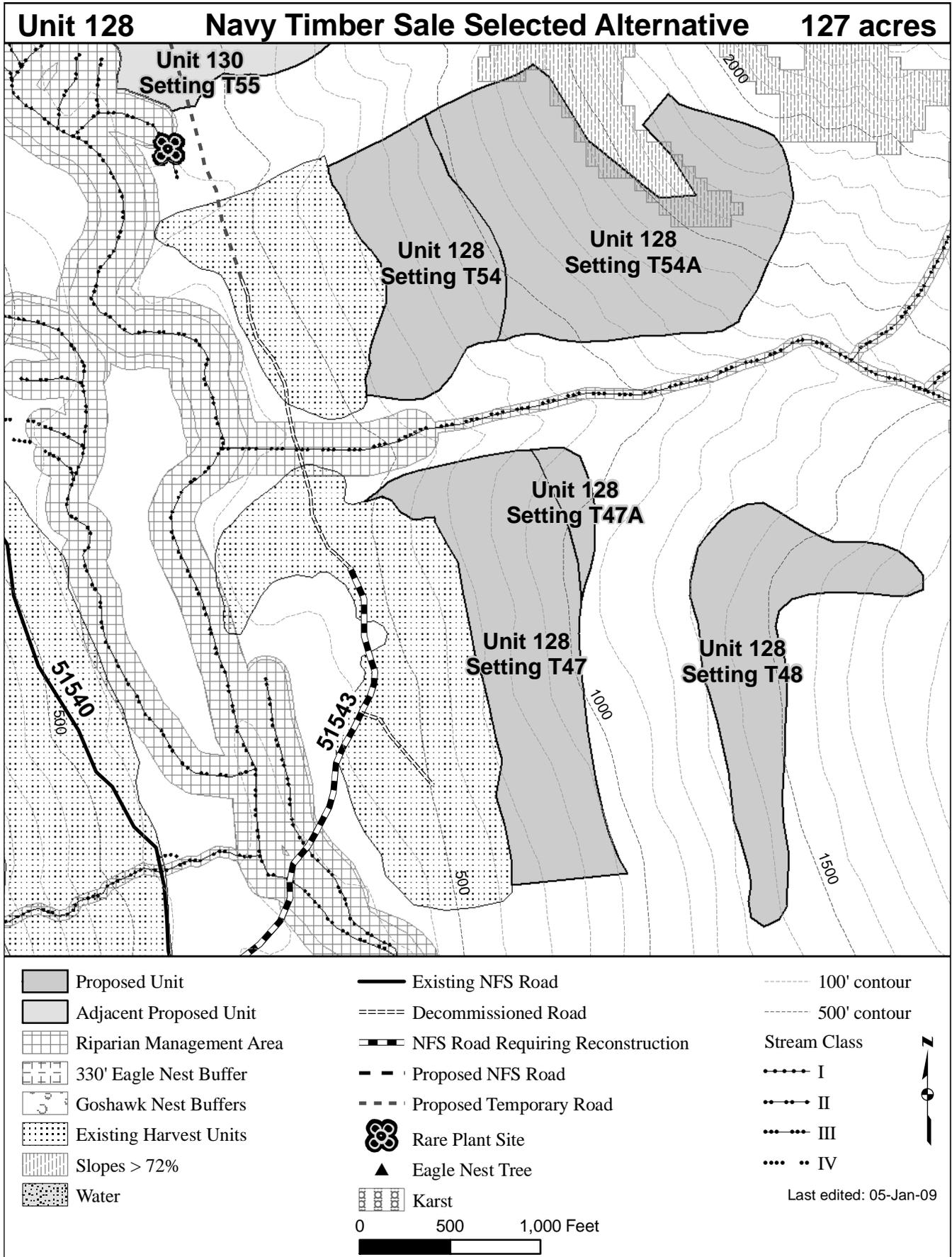
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).

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

SOILS: Unit includes about 11 acres of 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. This unit harvests 3 acres of forested wetlands.

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

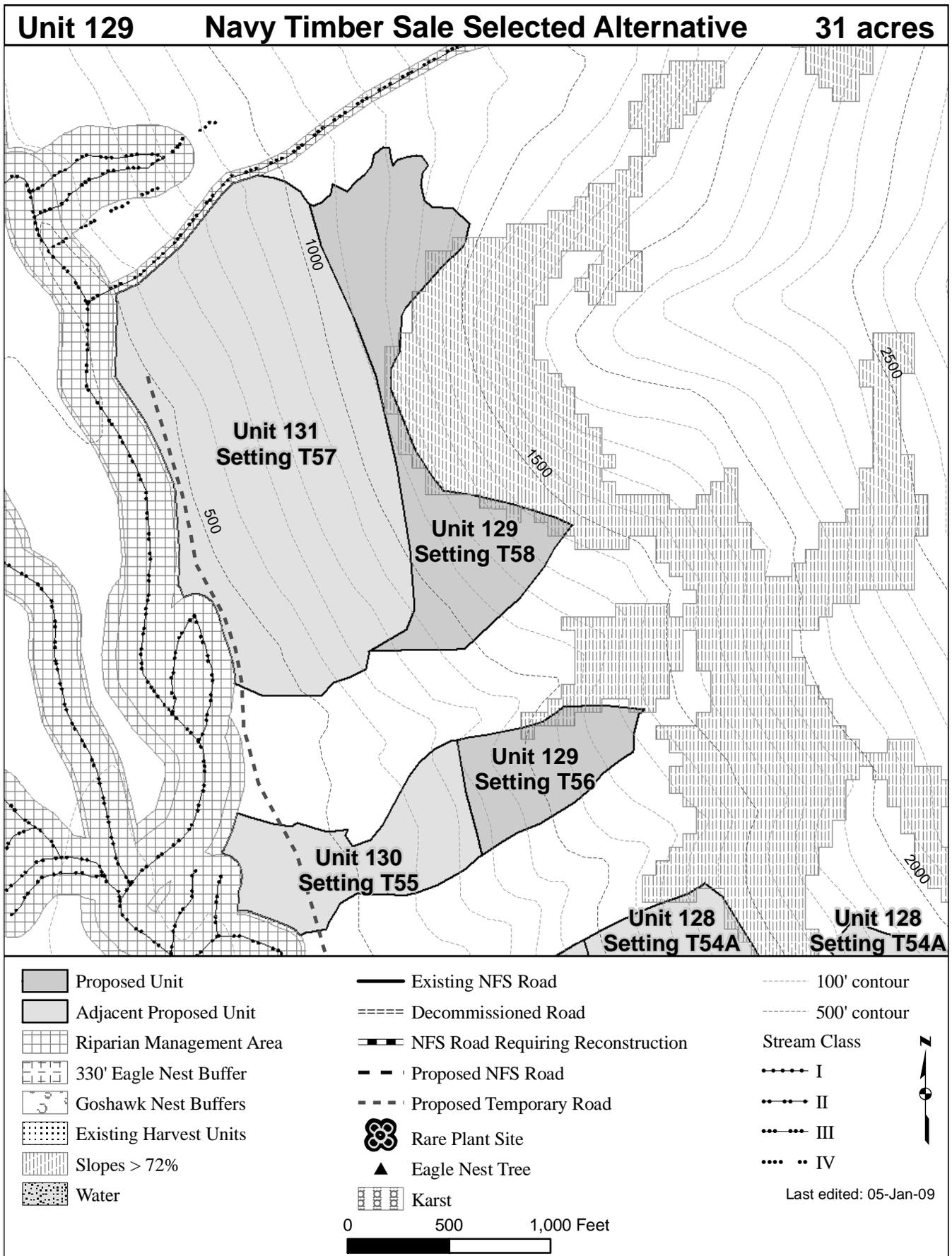
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 127	Unit Number: 128
	Logging Helicopter Systems:	Harvest Acres: 127	
Setting Number(s): T47, T47A, T48, T54, T54A		Volume Strata Acres: High: 81 Medium: 37 Low: 10 Non-forested:	Net Harvest Volume (Saw): MBF: 1,139
Photo Number: 1098-116			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 20 percent western hemlock, 6 percent Sitka spruce, 30 percent red cedar, 32 percent yellow cedar and 12 percent mountain hemlock. BA=293. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding to landings along the existing 51543 road or a temporary extension of this road.			
ENGINEERING/ROADS: 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.			
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: Unit includes about 3 acres of 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.			
No resource concerns were identified for Roads, Fish/Watershed, Wildlife, Geology, Botany and Heritage.			

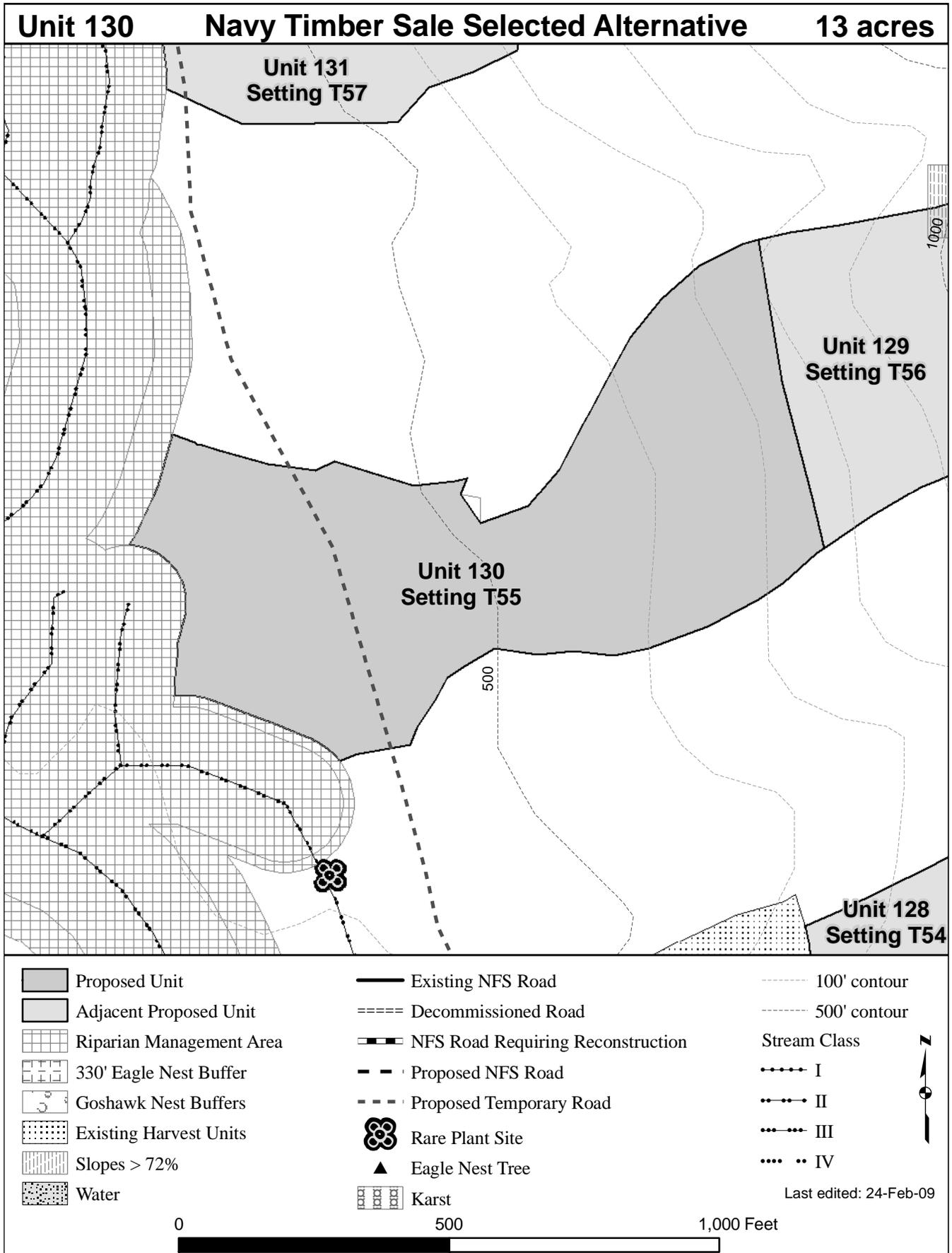
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 31	Unit Number: 129
	Logging Systems: Helicopter	Harvest Acres: 31	
Setting Number(s): T56, T58		Volume Strata Acres: High: 30 Medium: Low: Non-forested:	Net Harvest Volume (Saw): MBF: 298
Photo Number: 1098-117			
<p>SILVICULTURE: <u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 45% western hemlock, 40% red cedar and 15% yellow cedar. BA=297. Site Index based on PA is 55 (Sitka spruce, Farr 50) <u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70% of the unit BA, with at least 50% of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration.</p>			
<p>TIMBER/LOGGING: This unit is designed for helicopter yarding to landings along the proposed temporary extension of the existing 51543 road.</p>			
<p>RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).</p>			
<p>SCENERY: Unit is not seen from any visual priority travel route or use area.</p>			
<p>SOILS: Unit includes about 3 acres of slopes over 72 percent gradient associated with large rock outcrops. A slope stability assessment will be conducted during project implementation. (BMP 13.5) Harvest on unstable slopes will be avoided. Rugged area with large (vertical) rock outcrops located in unit, recognize rock fall hazard in locating unit boundaries.</p>			
<p>No resource concerns were identified for Roads, Fish/Watershed, Wildlife, Geology, Botany and Heritage.</p>			

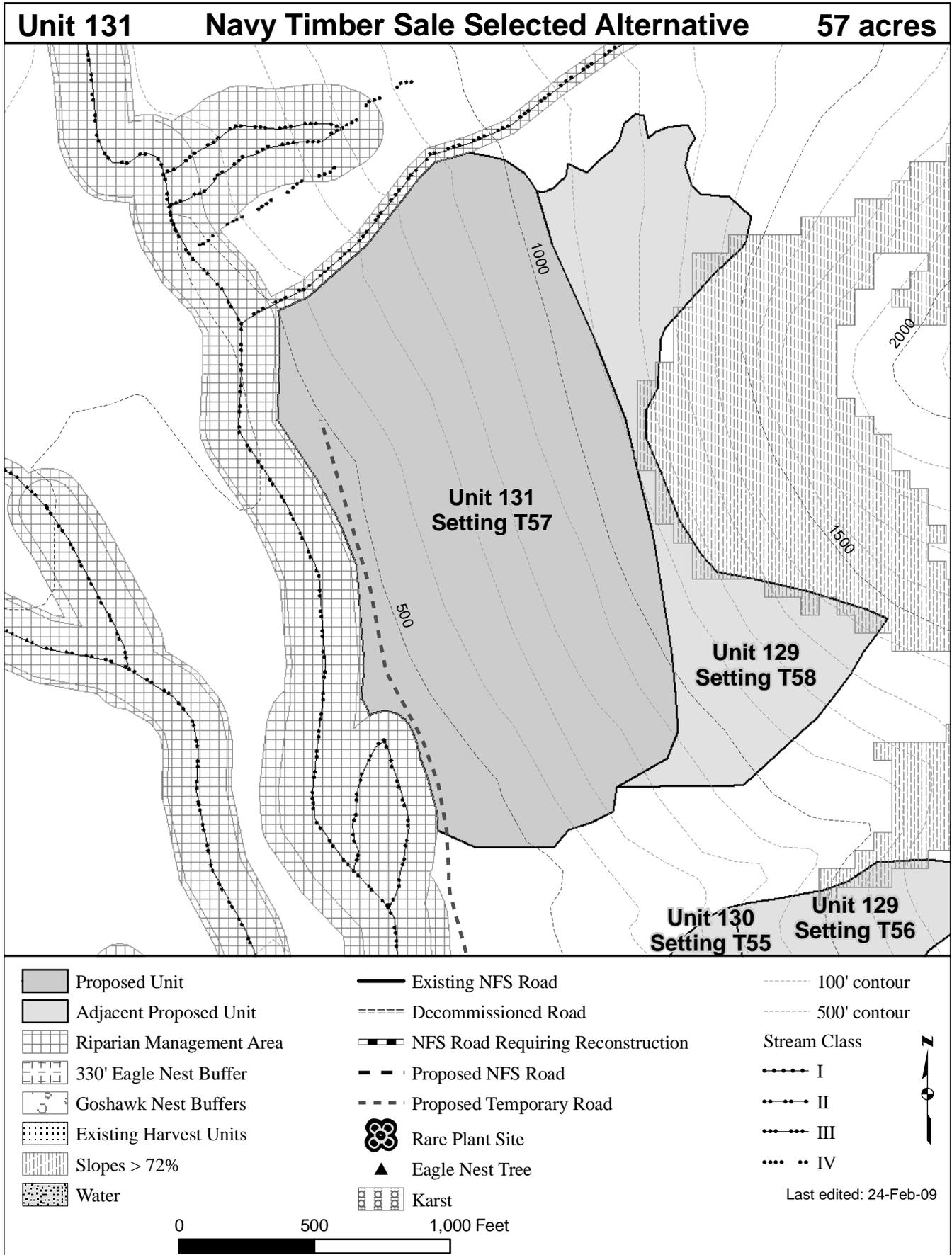
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 13	Unit Number: 130
	Logging Cable Systems:	Harvest Acres: 13	
Setting Number(s): T55		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-117		High: 11 Medium: 2 Low: Non-forested:	MBF: 298
SILVICULTURE:			
<p><u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 80 percent western hemlock, 8 percent Sitka spruce and 12 percent red cedar. BA=246. Site Index based on PA is 75 (Sitka spruce, Farr 50)</p> <p><u>Silvicultural Prescription:</u> Even-aged prescription using the clearcut method with leave trees (leaving one dominant or co-dominant cedar per 5 acres for future seed source). Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.</p>			
TIMBER/LOGGING: This unit is designed for downhill cable yarding to the proposed temporary extension of the 51543 road. Some shovel yarding may occur on the west half of the unit.			
BOTANY:			
Avoid disturbance to a population of <i>Galium kamschaticum</i> , 15 plants, about 200 feet south of unit. See map for location.			
FISH/WATERSHED:			
<p>There are several Class II, channel types FP4, MM1 and PA1, streams (mainstem Fishtrap Creek and tributaries) along the western edge of the unit. No harvest within 100 feet (PA), 120 feet (MM), or 130 feet (FP) of the channel. (BMP 12.6, 12.6a, 13.16).</p> <p>High windthrow potential (based on field reconnaissance and aerial photo interpretation). 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>The temporary road mapped in RMA will be moved upslope out of RMA during layout.</p>			
RECREATION: Part of this unit is in the North Etolin Inventoried Roadless Area (#232).			
SCENERY: Unit is not seen from any visual priority travel route or use area.			
SOILS: The unit harvests 2 acres of forested wetlands.			
No resource concerns were identified for Roads, Wildlife, Geology, Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: TM		Total Unit Acres: 57	Unit Number: 131
	Logging Cable Systems:	Harvest Acres: 57	
Setting Number(s): T57		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 1098-117		High: 47 Medium: 1 Low: Non-forested: 9	MBF: 1,114

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 45 percent western hemlock, 45 percent red cedar and 10 percent yellow cedar. BA=273. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need.

TIMBER/LOGGING: This unit is designed for downhill cable yarding to the proposed temporary extension of the 51543 road.

ENGINEERING/ROADS: Construct 0.64 mile of temporary road. Road will be decommissioned after the timber sale. The material source is located on Road 51540, mp 6.3.

FISH/WATERSHED:

There are two Class II, channel types MM1 and PA1, adjacent to this unit. No harvest within 100 feet (PA) or 120 feet (MM) of the channels.

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

High windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers will be necessary for RMA buffers, especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

The temporary road will avoid RMA during layout. Additional field work will be necessary to determine extent of colluvial influence on the proposed road. Present road location on avalanche paths could potentially contribute more sediment to mainstem Fishtrap Creek and adjacent tributaries.

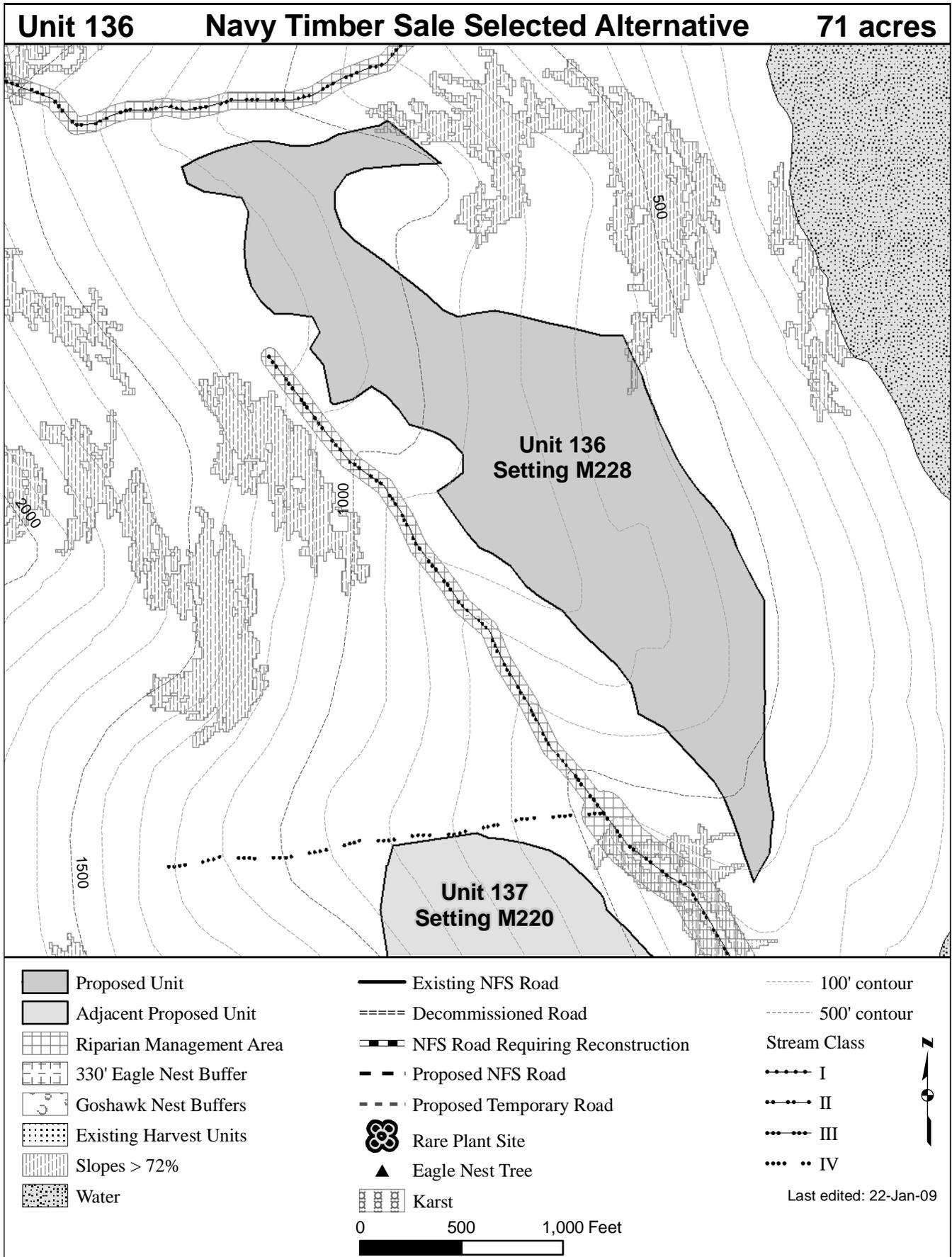
RECREATION: This unit is in the North Etolin Inventoried Roadless Area (#232).

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

SOILS: Unit includes short pitches of slopes over 72% gradient. A slope stability assesment is included in the project record. (BMP 13.5) Based on the field review, slopes up to 85 percent gradient are suitable for timber harvest and slopes over 70 percent gradient will require full suspension to minimize soil disturbance and landslide potential. (BMP 13.9)

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 71	Unit Number: 136
	Logging Systems: Helicopter	Harvest Acres: 71	
Setting Number(s): M228		Volume Strata Acres: High: 68 Medium: 68 Low: 1 Non-forested: 1	Net Harvest Volume (Saw): MBF: 483
Photo Number: 1098-8			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 30 percent western hemlock, 15 percent Sitka spruce, 10 percent red cedar and 45 percent yellow cedar. BA=293. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

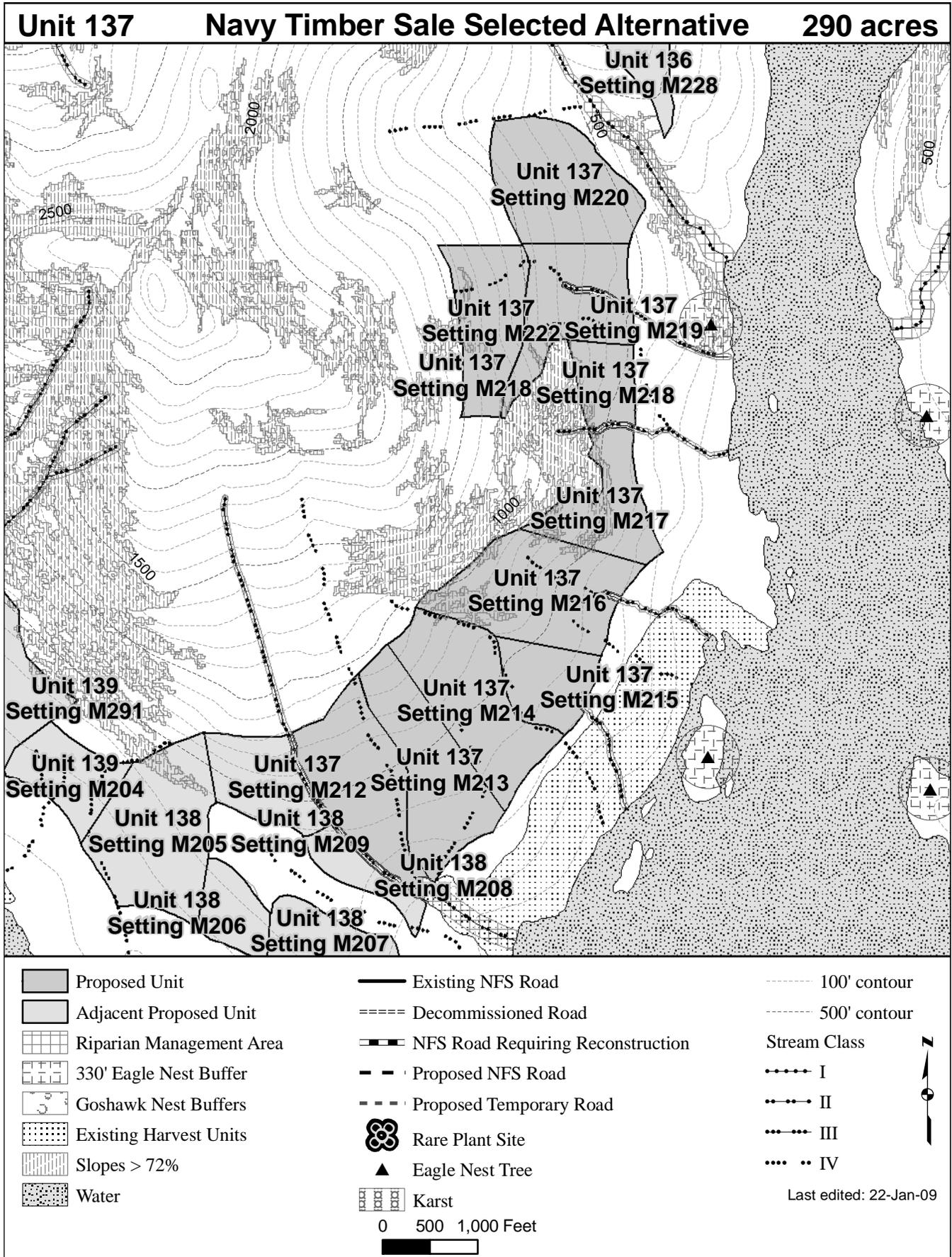
SCENERY: Unit is seen from various points along the Burnett Inlet viewshed. The adopted SIO is low. The proposed prescription will meet a moderate SIO.

SOILS: Unit includes less than an acre of 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 1 acre of forested wetlands.

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

No resource concerns were identified for Fish/Watershed, Roads, Geology, Botany and Heritage.

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML, SV		Total Unit Acres: 290	Unit Number: 137
	Logging Systems: Helicopter	Harvest Acres: 290	
Setting Number(s): M212-M220, M222		Volume Strata Acres: High: 83 Medium: 207 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 2,402
Photo Number: 1198-6, 1198-7			

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 30 percent western hemlock, 20 percent Sitka spruce, 25 percent red cedar and 25 percent yellow cedar. BA=223. Site Index based on PA is 86 (Sitka spruce, Farr 50)

Silvicultural Prescription: Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.

TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.

FISH/WATERSHED:

There are two Class II, channel type HC2, streams adjacent to the north and south end of unit. No harvest within 100 feet of the channel (BMP 13.9, 13.16).

There are five Class III, channel type HC, streams within the unit. No harvest in the v-notch. (BMP 13.9, 13.16)

There are at least eight identified Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. (BMP 13.9, 13.16).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers, especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.

RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).

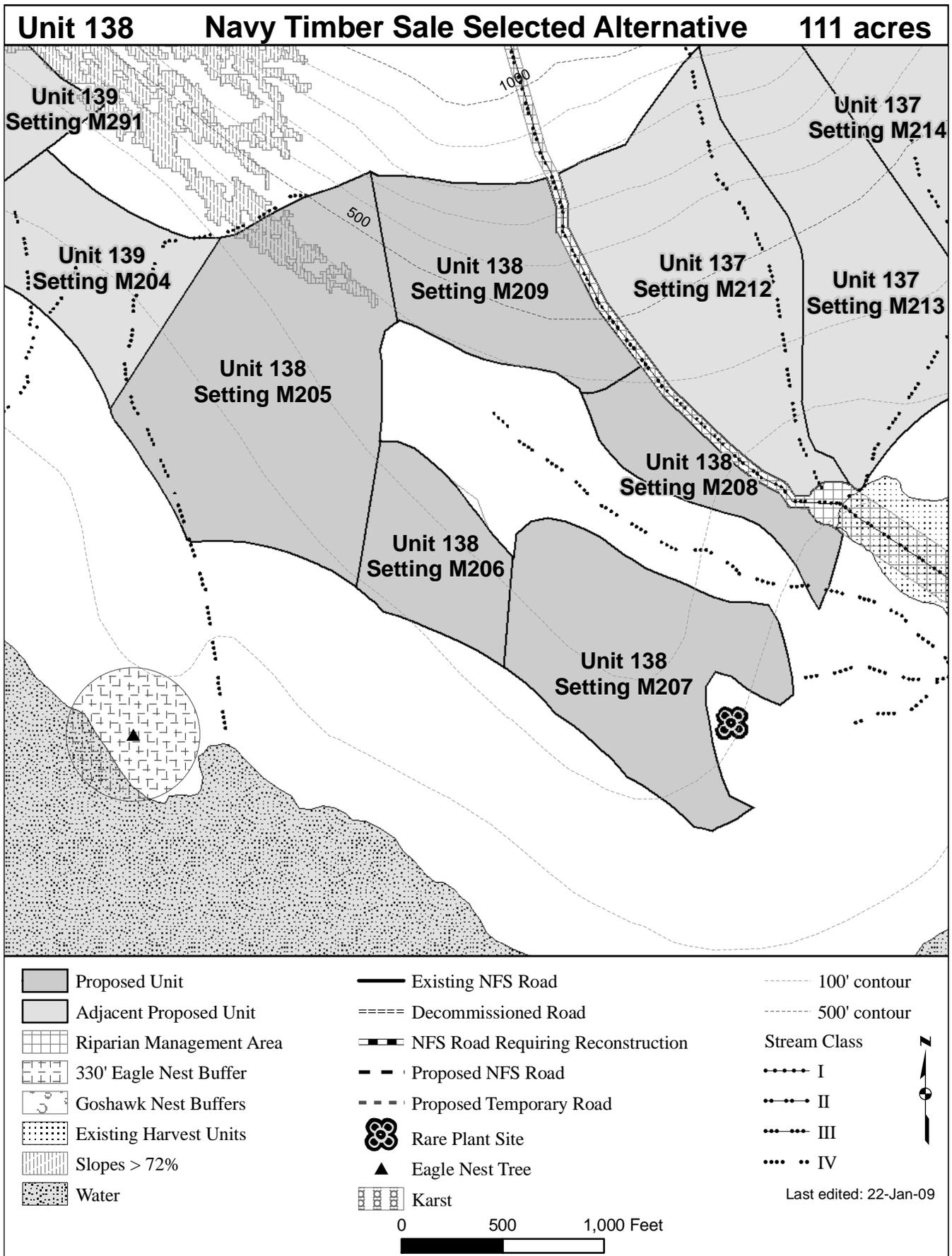
SCENERY: Only setting M220 is unseen from the Burnett Inlet viewshed. The adopted SIOs are moderate and low. The proposed prescription will meet a moderate SIO.

SOILS: This unit includes 16 acres of slopes over 72 percent gradient. A slope stability assesement is included in the project record. (BMP 13.5) Based on the field review, slopes up to 85 percent gradient are suitable for timber harvest

WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.

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

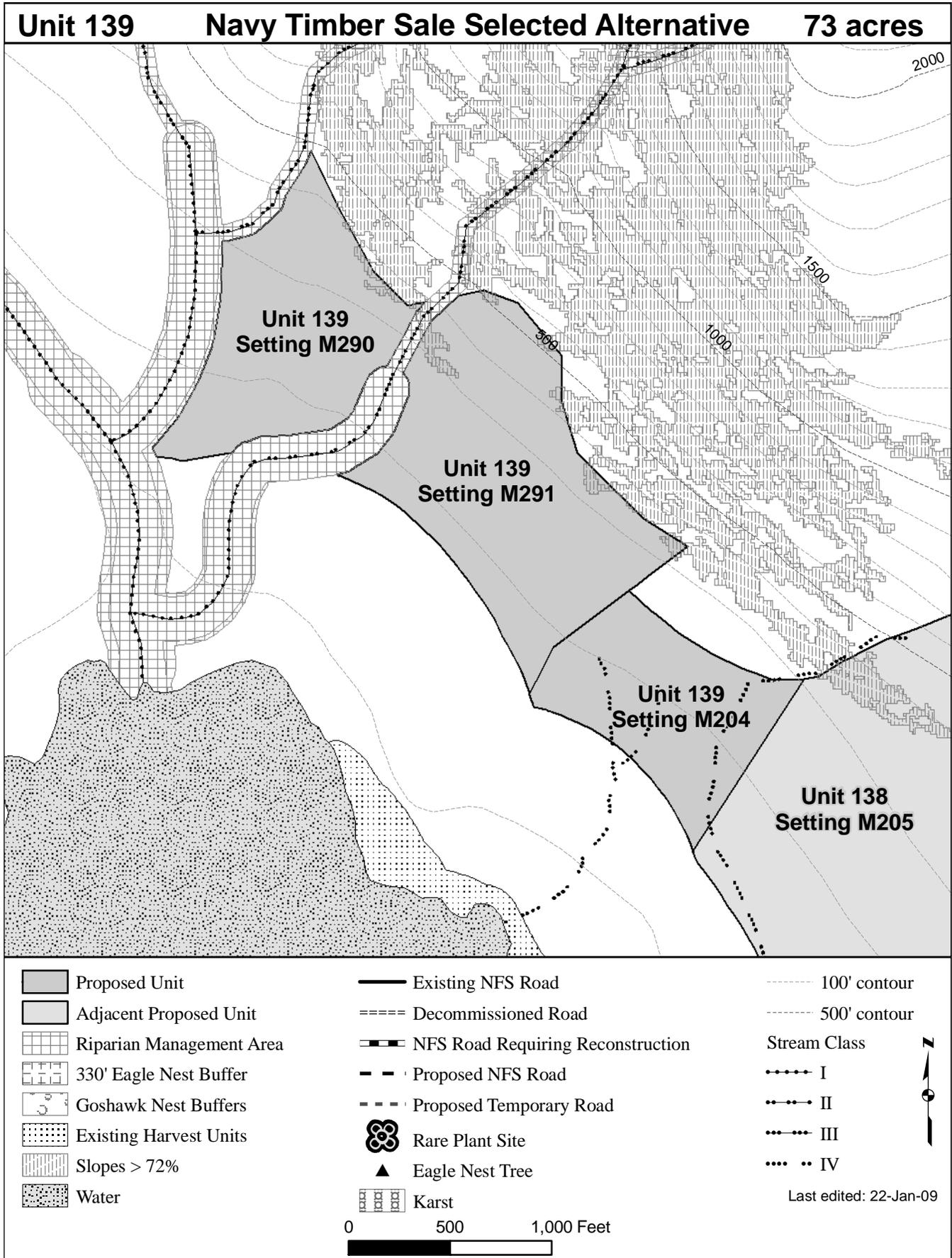
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML,SV		Total Unit Acres: 111	Unit Number: 138
	Logging Systems: Helicopter	Harvest Acres: 111	
Setting Number(s): M205-M209		Volume Strata Acres: High: 49 Medium: 48 Low: 13 Non-forested:	Net Harvest Volume (Saw): MBF: 920
Photo Number: 1198-6			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 88 percent western hemlock, 8 percent Sitka spruce and 4 percent red cedar. BA=214. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs may then be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities..			
BOTANY RESOURCES: One population of <i>Tiarella trifoliata</i> var. <i>laciniata</i> (lacinate three-leaf foamflower) was documented about 100' from the southeast boundary of the unit. Avoid disturbance to this population. See map for location.			
FISH/WATERSHED:			
There is a Class II, channel type HC3, stream adjacent to the eastern end 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 HC5, stream adjacent to the northeastern end of the unit. No harvest in the v-notch. (BMP 12.6, 12.6a, 13.16).			
There is a Class IV, channel type HC, stream within the unit. Fall timber away from streams if feasible. Remove logging debris from streams (BMP 13.9, 13.16).			
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). RAW buffers may be necessary for RMA buffers, especially on the windward (southeasterly) edge of stream buffers and where windthrow has been historically evident.			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Settings M206, M207, and M208 are unseen. The adopted SIOs for the unit range from moderate to low. The proposed prescription will meet a moderate SIO for all settings visible from the Burnett Inlet and Clarence Strait viewsheds.			
SOILS: This unit includes about 3 acres of 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. Full suspension (helicopter) will be used to harvest 23 acres of forested wetlands. (BMP 12.5 & 13.9)The unit harvests 23 acres of forested wetlands.			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Geology and Heritage.			

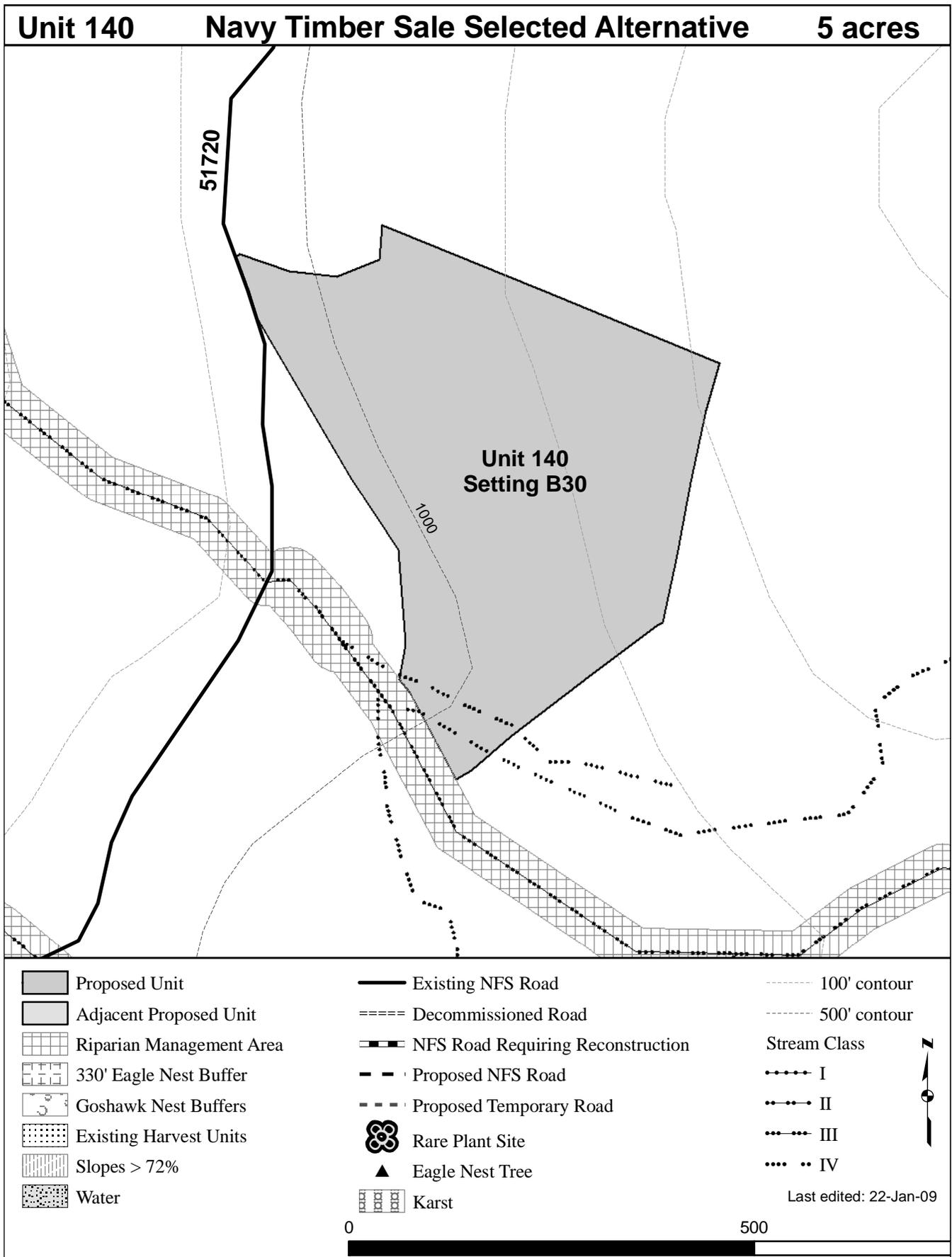
Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: SV, ML		Total Unit Acres: 73	Unit Number: 139
	Logging Systems: Helicopter	Harvest Acres: 73	
Setting Number(s): M204, M290, M291		Volume Strata Acres: High: 35 Medium: 38 Low: Non-forested:	Net Harvest Volume (Saw): MBF: 637
Photo Number: 1098-98			
SILVICULTURE:			
<u>Existing Stand Condition/Vegetation:</u> Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock and 60 percent yellow cedar. BA=290. Site Index based on PA is 55 (Sitka spruce, Farr 50)			
<u>Silvicultural Prescription:</u> Uneven-aged prescription using single-tree selection (STS) retaining at least 70 percent of the unit BA, with at least 50 percent of the cedar and spruce BA retained to ensure species diversity and promote desired regeneration. No under stocked opening greater than 2 acres.			
TIMBER/LOGGING: This unit is designed for helicopter yarding directly to offshore log landing barges. Logs will be bundled and placed in the water for rafting to processing facilities, or stored on barges and towed to processing facilities.			
FISH/WATERSHED:			
There is a Class I, channel type MM1, stream on the west side of the unit. No harvest within 120 feet of the channel. (BMP 12.6, 12.6a, 13.16).			
There is a Class II, channel type MM1 and HC3, stream that bisects the unit. No harvest within 120 feet (MM) or 100 feet (HC) of channel. (BMP 12.6, 12.6a, 13.16).			
There are two Class III, channel type HC6, streams adjacent to or within the unit. No harvest in the v-notch (BMP 12.6, 12.6a, 13.16).			
There are three Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Remove logging debris from streams (BMP 13.9, 13.16).			
This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). Partial harvest helicopter treatment will reduce impacts associated with windthrow.			
RECREATION: This unit is in the Mosman Inventoried Roadless Area (#233).			
SCENERY: Setting M204 is unseen. The adopted SIOs range from moderate to low. The proposed prescription will meet a moderate SIO for all settings visible from the Burnett Inlet and Clarence Strait viewsheds.			
SOILS: This unit includes 1 acre of slopes over 72% gradient. A slope stability assesment is included in the project record. (BMP 13.5) Based on the field review, the area is suitable for timber harvest.			
WILDLIFE: If active, one or more known bald eagle nests near this unit may require seasonal restrictions on helicopter yarding within ¼ mile of the nests in accordance with the Interagency Bald Eagle MOU.			
No resource concerns were identified for Roads, Geology, Botany and Heritage.			

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 5	Unit Number: 140
	Logging Cable Systems:	Harvest Acres: 5	
Setting Number(s): B30		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 998-51		High: 5 Medium: Low: Non-forested:	MBF: 118

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 20 percent Sitka spruce, 20 percent red cedar and 20 percent yellow cedar. BA=214. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need. This unit is designed to be a small sale.

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 southern portion of the unit. No harvest in the v-notch. (BMP 13.9, 13.16).

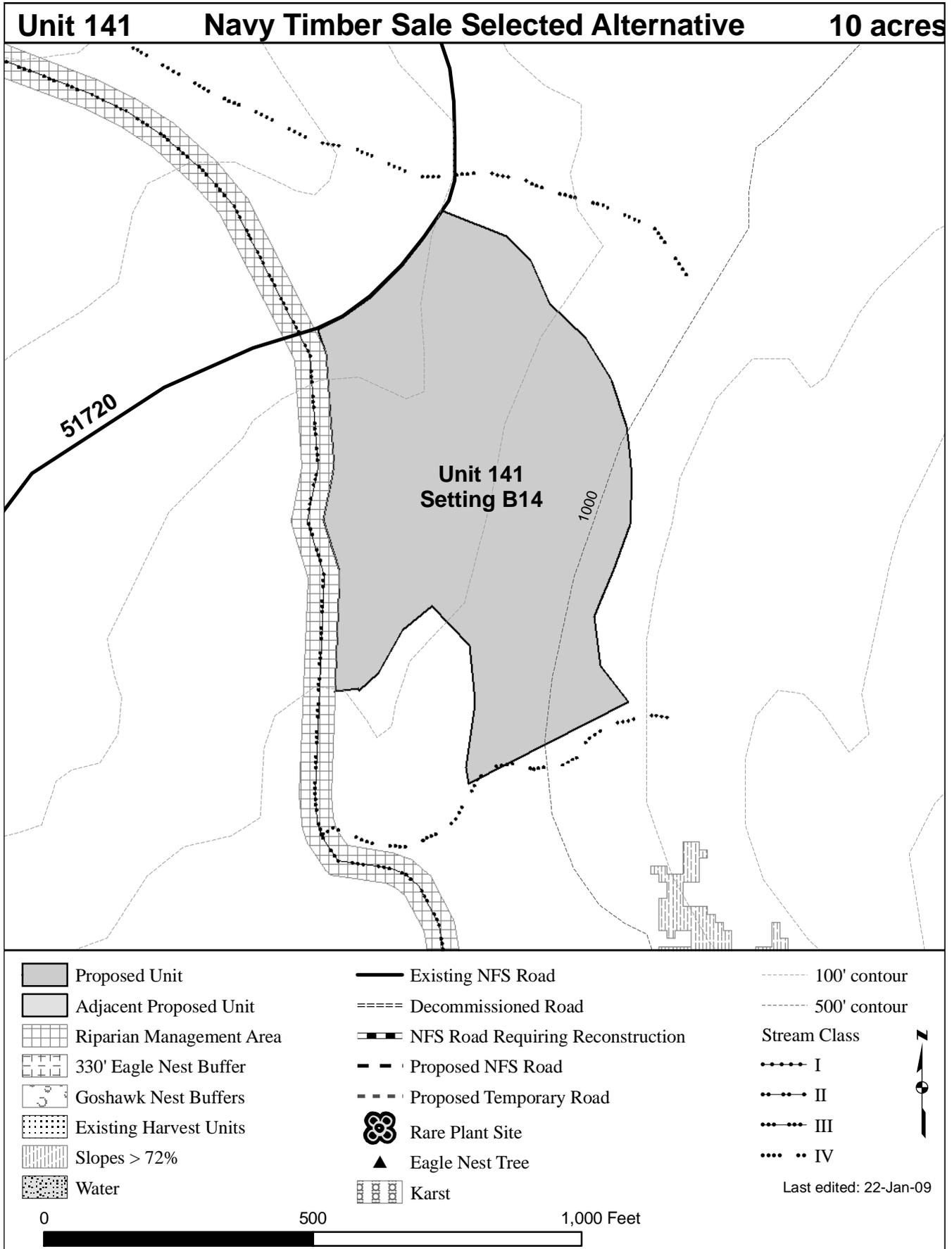
There are two Class IV, channel type HC, streams within the unit. Fall timber away from streams if feasible. Full suspension or split yard away from streams if feasible, a minimum of partial suspension is required. Remove logging debris from streams (BMP 13.9, 13.16).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). 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 is visible from Anita Bay viewshed where the adopted SIO is low. The small unit size and proposed prescription will meet a moderate SIO.

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

Appendix 1



Unit Data Card – Navy Timber Sale Record of Decision

LUD: ML		Total Unit Acres: 10	Unit Number: 141
	Logging Cable Systems:	Harvest Acres: 10	
Setting Number(s): B14		Volume Strata Acres:	Net Harvest Volume (Saw):
Photo Number: 998-51		High: Medium: 8 Low: 1 Non-forested:	MBF: 157

SILVICULTURE:

Existing Stand Condition/Vegetation: Wind-generated multi-canopy uneven-aged stand. Species composition: 40 percent western hemlock, 20 percent Sitka spruce, 20 percent red cedar and 20 percent yellow cedar. BA=214. Site Index based on PA is 55 (Sitka spruce, Farr 50)

Silvicultural Prescription: Even-aged prescription using clearcut with natural regeneration. Even-aged management is an appropriate regeneration method, given the stand's high windthrow potential. Plan to PCT at 15-35 years of age depending on silvicultural need. This unit is designed to be a small sale.

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).

This unit has moderate windthrow potential (based on field reconnaissance and aerial photo interpretation). 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: This unit includes about 4 acres of 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.

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

Appendix 1

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Appendix 2

Selected Alternative Road Cards

Appendix 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 and reconstructed 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.

Appendix 2

Operational and Objective Maintenance Levels

Operational Maintenance Levels indicate the level of road maintenance, either Maintenance Level (ML) 2 or 3, 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 closed by barrier, bridge removal or organic encroachment and are monitored for resource protection. Basic custodial maintenance is performed to perpetuate the road and to facilitate future management activities.
- **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.
- **Maintenance Level 3 (ML 3):** Roads are maintained for travel by a prudent driver in a standard passenger vehicle and are subject to the provisions of the Highway Safety Act. Road use is by administrative and passenger vehicles, and by logging trucks.

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 AFRPA classes on the road cards will be implemented. 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.
- **Closed:** A road is closed when the following activities have been completed: a road is outsloped 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.

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.

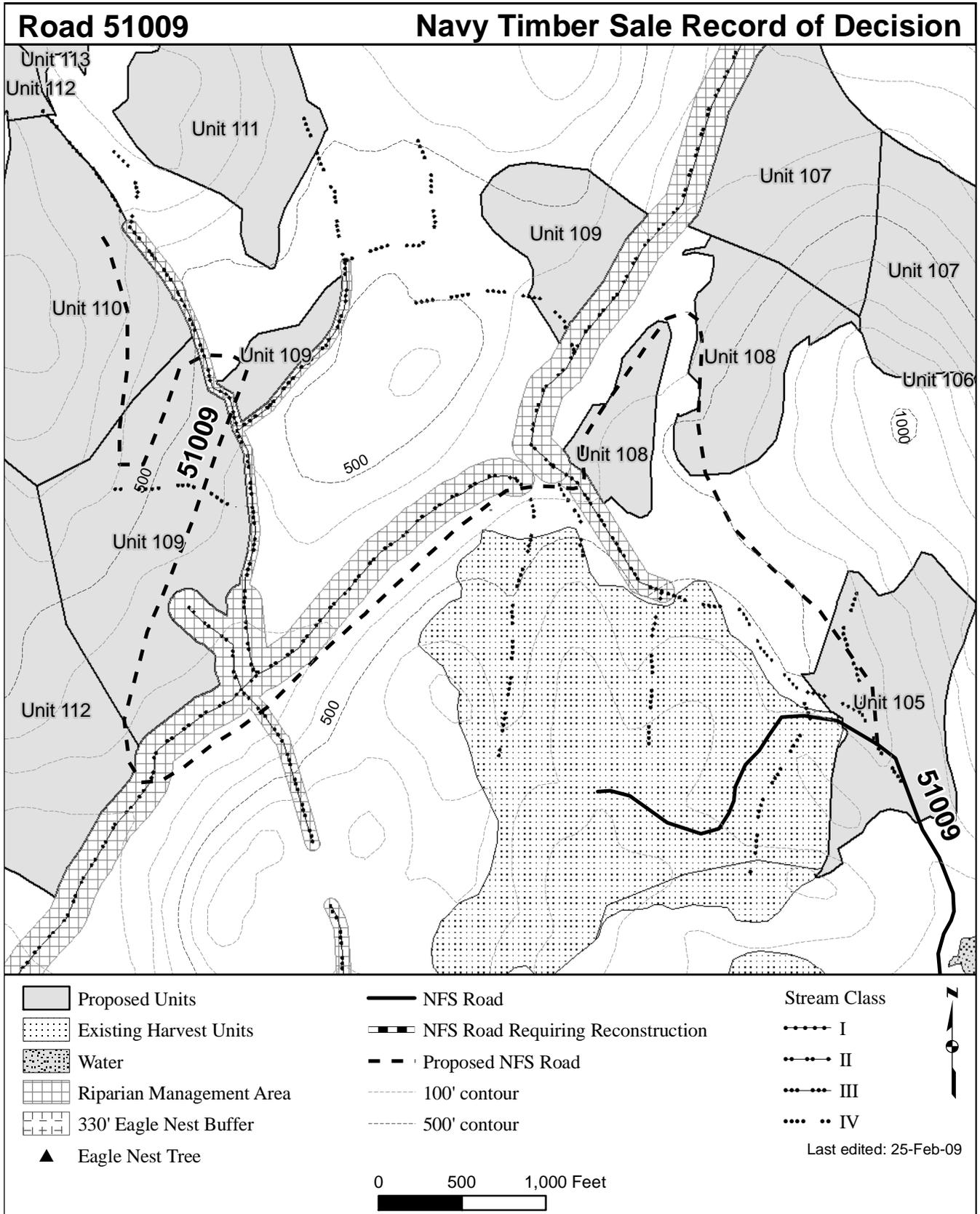
Insert ROD Road Map Here.

Appendix 2

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Appendix 2



Appendix 2

Site-specific Design Criteria Road No. 51009

Road Location The purpose of this road is to access Units 105, 108-111. The existing 51009 road is adequate for hauling with minimal pre-haul maintenance. The initial road line was revised between MP 1.2 and 1.6 to improve a switchback location and to maintain more distance between the road and a fish stream. The revised location eliminates two Class II stream crossings. The new road segment begins near the 1,000-foot elevation contour and for the most part maintains that elevation. At MP 2.3 a bridge will be required as the road crosses a Class II stream and then makes a sweeping turn upslope. A switchback/short radius curve is located at MP 2.8 on relatively flat ground. Another switchback is located at MP 3.0 that will require detailed engineering review during the design phase.

Wetlands: The road is located to avoid as much wetlands as possible. However, there are areas where the only possible location is on wetlands, the first is at a critical switchback near MP 1.3, the other is between the MP 2.7 and 2.8 stream crossings.

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: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). This road travels through areas of visual concern and therefore attention to visual effects will be necessary when selecting location, size, and layout of a rock pit along this road. The rock pit at MP 0.9 of the 51009 road was noted as an initial potential rock source. Other potential initial rock sources are the nearby existing rock pits. After construction of the initial road segment, it is expected that a rock pit will be required between MP 0.8 and 1.0 and at intervals of 1.0 to 1.5 miles thereafter.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: All unmapped stream crossings will need adequate structures (BMPs 13.16, 14.3, and 14.5).

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: There is marble bedrock to the west of where new road construction begins. The road will cross a band of marble in Unit 109; no features have been found that would require protection.

Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings Road No. 51009

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

Narrative: N/A

B.) Mi: 1.632	AHMU: III	Channel Type: HC3	BF Width: 15'	BF Depth: 2'	Substrate: gravel, cobble
Gradient: 15-25%	Structure: 48-60" CMP	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

C.) Mi: 1.657	AHMU: IV	Channel Type: HC2	BF Width: 3-5'	BF Depth: Not noted	Substrate: cobble, boulder
Gradient: 15%	Structure: 36" CMP	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

D.) Mi: 1.697	AHMU: IV	Channel Type: HC5	BF Width: 1-3'	BF Depth: Not noted	Substrate: bedrock, boulder
Gradient: 10-15%	Structure: 18-24" CMP	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

E.) Mi: 2.097	AHMU: III	Channel Type: HC1	BF Width: 5''	BF Depth: Not noted	Substrate: bedrock, boulder, gravel
Gradient: 10-15%	Structure: 48-60" CMP	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

F.) Mi: 2.250	AHMU: II	Channel Type: MM1	BF Width: 30'	BF Depth: 4'	Substrate: Gravel
Gradient: 2%	Structure: 50-70' Bridge	Passage Req'd: Yes		Timing Dates: Timing dates will be determined during layout	

Narrative: A detailed survey will be needed for the design of this bridge.

G.) Mi: 2.614	AHMU: IV	Channel Type: HC2	BF Width: 3-5'	BF Depth: Not noted	Substrate: bedrock, cobble, boulder
Gradient: 15%	Structure: 36" CMP	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

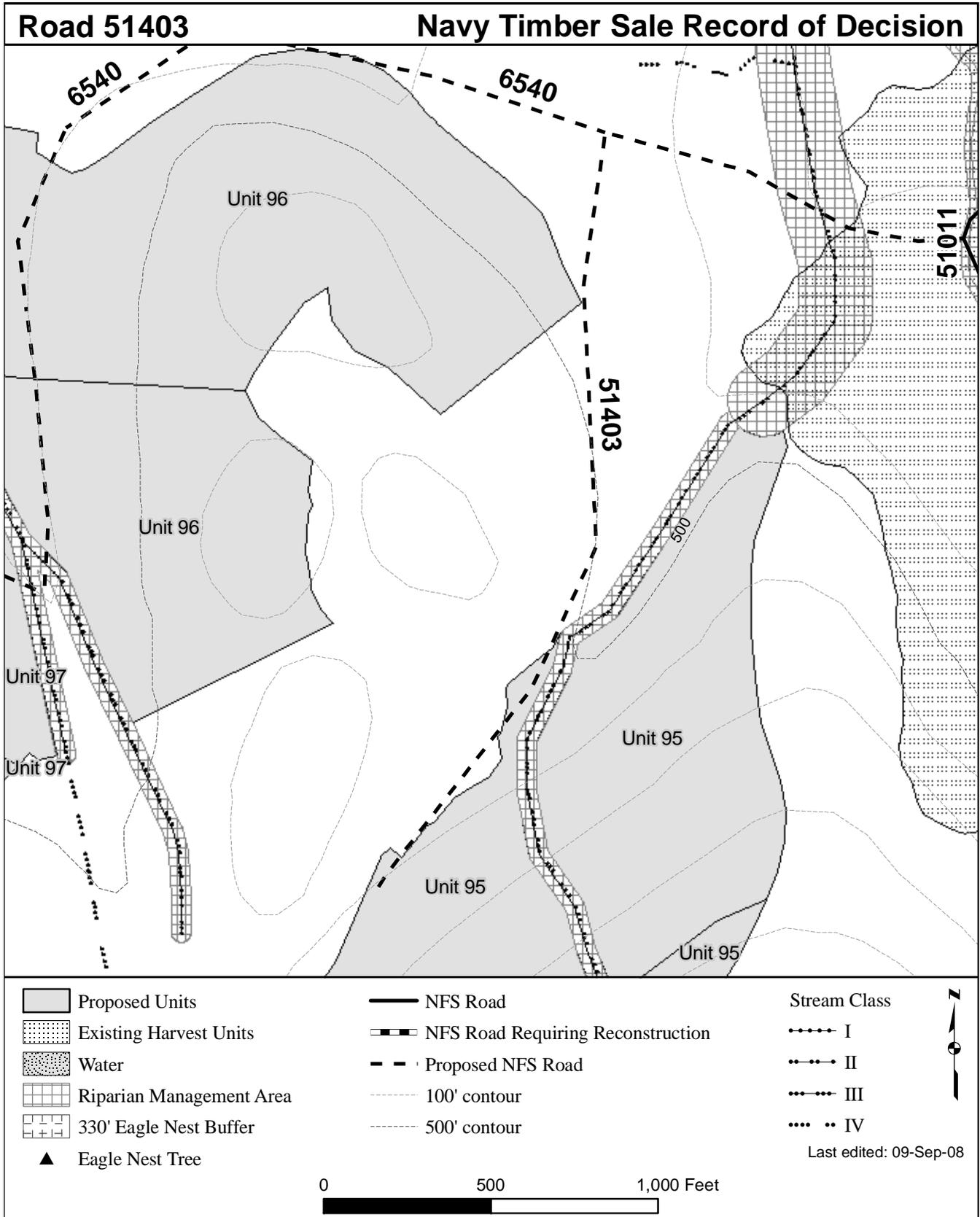
H.) Mi: 2.712	AHMU: III	Channel Type: HC5	BF Width: 8-10'	BF Depth: Not noted	Substrate: boulder, bedrock
Gradient: 10-15%	Structure: 60-72" CMP or a short bridge.	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

I.) Mi: 2.821	AHMU: III	Channel Type: HC1	BF Width: 8-10'	BF Depth: Not noted	Substrate: boulder, bedrock
Gradient: 8-10%	Structure: 60-72" CMP or a short bridge.	Passage Req'd: No		Timing Dates: None	

Narrative: N/A

Appendix 2



Road Management Objectives

Project/FEIS: Navy		System: Anita Bay		Land Use Designation: TM	
Route Number: 51403		Route Name: South Mussel Shell		Status: Opportunity	
Begin MP: 0.00	Length (miles): 0.47	Begin Termini: MP 10.95 of the 6540 road		End Termini: MP 0.47 in Unit	

General Design Criteria and Elements

Functional Class: Local	Service Life: I	Traffic Service Level: D	Surface: Shot rock
Width: 14 feet	Critical Vehicle: Mobile yarder	Design Vehicle: Log truck	Design Speed: 10 mph

Intended Purpose/Future Use: The intended purpose of this road is for timber management in Units 95-97. The road will be used for future timber management and administration.

Maintenance Criteria:

Bmp	Emp	Operational Maintenance Level Planned Condition	Objective Maintenance Level Desired Condition	AFRPA Class
0.00	0.47	2		Active
0.00	0.47		1	Inactive

Maintenance Narrative:

AFR&P Regs. "Active" status: Keep culverts, catch basins, ditches and ditch blocks functional. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance.

AFR&P Regs. "Inactive" status: Where feasible, culverts will be left in place with adequate protection, typically waterbars. Waterbars may be added on steep grades. The road will be placed in a self-maintaining state.

Operation Criteria

Highway Safety Act: No	Jurisdiction: National Forest System
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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 timber harvest, motorized traffic will be discouraged due to safety considerations. After the timber harvest the road will be closed and motor vehicle use will be prohibited.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 2

Site-specific Design Criteria Road No. 51403

Road Location: The purpose of this road is to access Units 95 through 97. From the beginning of the road near the 6540 road, the road climbs until getting above Unit 95, which will enable uphill yarding. Uphill yarding minimizes soil disturbance and gives more options for silvicultural systems.

Wetlands: Wetlands exist along the entire length of proposed road (MP 0.0 to MP 0.47). The road is constrained by a Class III stream at the base of a slope on the east. An opportunity to shift the location of the junction with the 6540 road will be examined during layout, if applicable. This has a potential to reduce the impact to some of the 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 organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

Rock Pits: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). This road travels through areas of visual concern and therefore attention to visual effects will be necessary when selecting location, size, and layout of a rock pit along this road. A rock pit developed in conjunction with the new 6540 road segment will most likely be used as initial rock source for the new 51403 road. After construction of the initial road segment, it may be necessary to develop an additional rock pit along this road.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: MP 0.286-MP 0.344 limit disturbance to Class III stream that parallels the road. All unmapped stream crossings will need adequate structures (BMPs 13.16, 14.3, and 14.5).

Silviculture: N/A

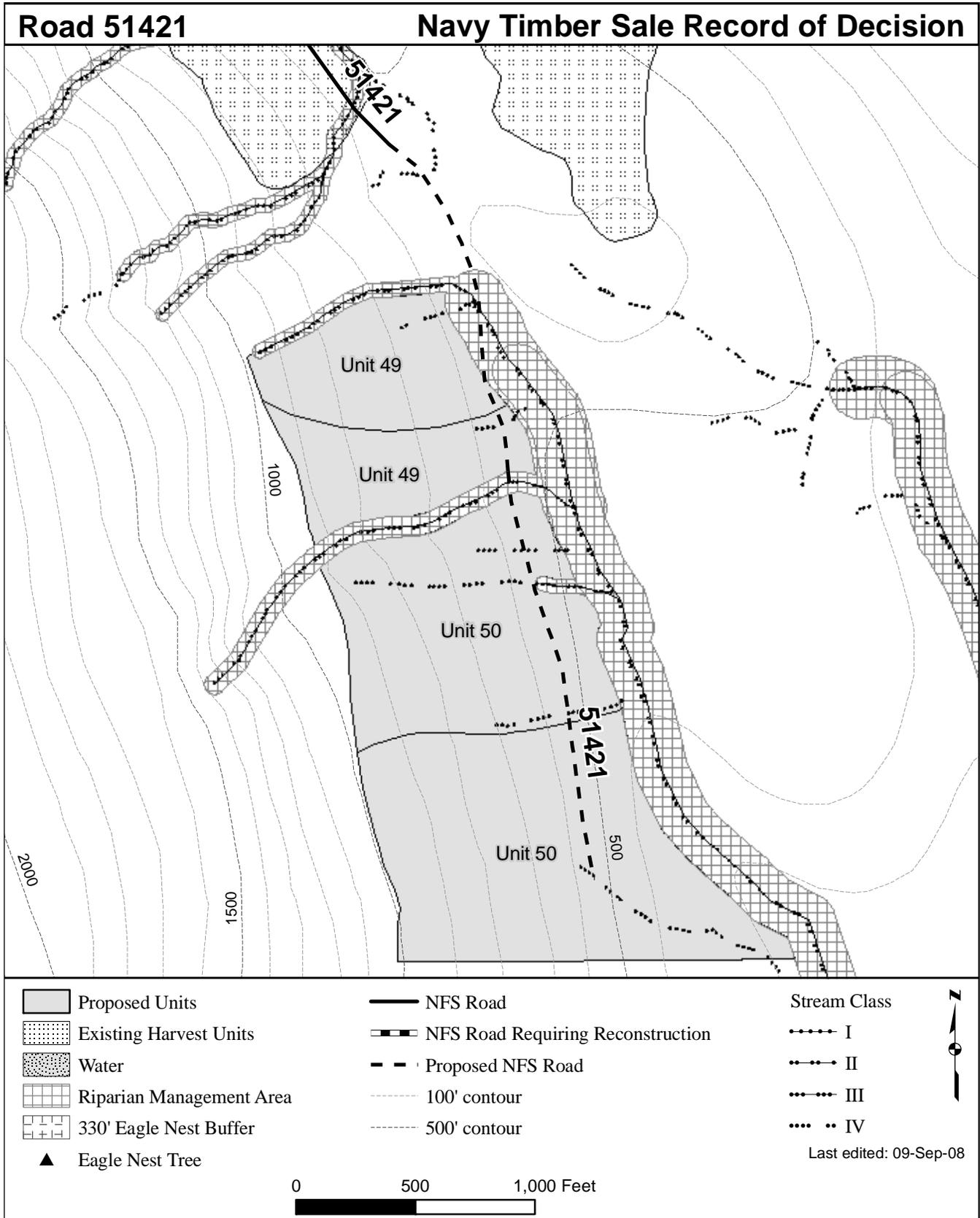
Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

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Appendix 2

Site-specific Design Criteria Road No. 51421

Road Location: The purpose of this road is to access Units 49 through 51. The existing 51421 road is adequate for hauling with minimal pre-haul maintenance. The road was located at the base of a ridge and extends along its base of it with minimal change in elevation. Downhill yarding will be used for timber management in the units. The road segment between MP 0.45 and 0.65 has been relocated to avoid a small section of epikarst. The relocation adds a Class IV stream crossing.

Wetlands: No wetlands exist along proposed road.

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: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). A new rock pit near the end of the existing 51421 road segment is a potential rock source. The rock pit location has been reviewed by a geologist and approved for development.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: MP 0.60 crosses a very active Class III stream channel; a bridge may be necessary at this location. MP 0.73, 0.82 are large stream crossings that will need hydro site surveys. Several other stream crossings will need adequate structures (BMPs 13.16, 14.3, and 14.5).

The road was originally proposed on slopes steeper than 67 percent from MP 0.95 to 1.2. Relocated the road downslope to avoid this area.

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: The road will be located to avoid the high vulnerability karst. A suitable location was found to the east of the original proposed location which avoids the high vulnerability karst.

Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings Road No. 51421

A.) Mi: 0.48	AHMU: IV	Channel Type: HC1	BF Width: 1-2 feet	BF Depth: Not noted	Substrate: gravel, cobble
Gradient: 10%	Structure: 24" or smaller CMP	Passage Req'd: No	Timing Dates: None		

Narrative: This is a resurgent stream with very high water quality, limit upstream sedimentation impacts during construction.

B.) Mi: 0.60	AHMU: III	Channel Type: HC5	BF Width: 8 feet	BF Depth: Not noted	Substrate: cobble, boulder
Gradient: 20-30%	Structure: 48-60" CMP	Passage Req'd: No	Timing Dates: None		

Narrative: 36" culvert would handle the water, oversize to 48" to 60" due to high bedload.

C.) Mi: 0.69	AHMU: IV	Channel Type: HC5	BF Width: 1-2 feet	BF Depth: Not noted	Substrate: cobble, boulder
Gradient: 27%	Structure: 24" or smaller CMP	Passage Req'd: No	Timing Dates: None		

Narrative: N/A

D.) Mi: 0.73	AHMU: III	Channel Type: HC5	BF Width: 6 feet	BF Depth: Not noted	Substrate: bedrock, boulder, gravel
Gradient: 33%	Structure: 24-48" CMP	Passage Req'd: No	Timing Dates: None		

Narrative: N/A

E.) Mi: 0.79	AHMU: IV	Channel Type: HC5	BF Width: 1-2 feet	BF Depth: Not noted	Substrate: gravel, boulder
Gradient: 15-20%	Structure: 24" or smaller CMP	Passage Req'd: No	Timing Dates: None		

Narrative: N/A

F.) Mi: 0.82	AHMU: IV	Channel Type: HC5	BF Width: 2 feet	BF Depth: Not noted	Substrate: gravel, cobble
Gradient: 38%	Structure: 24" or smaller CMP	Passage Req'd: No	Timing Dates: None		

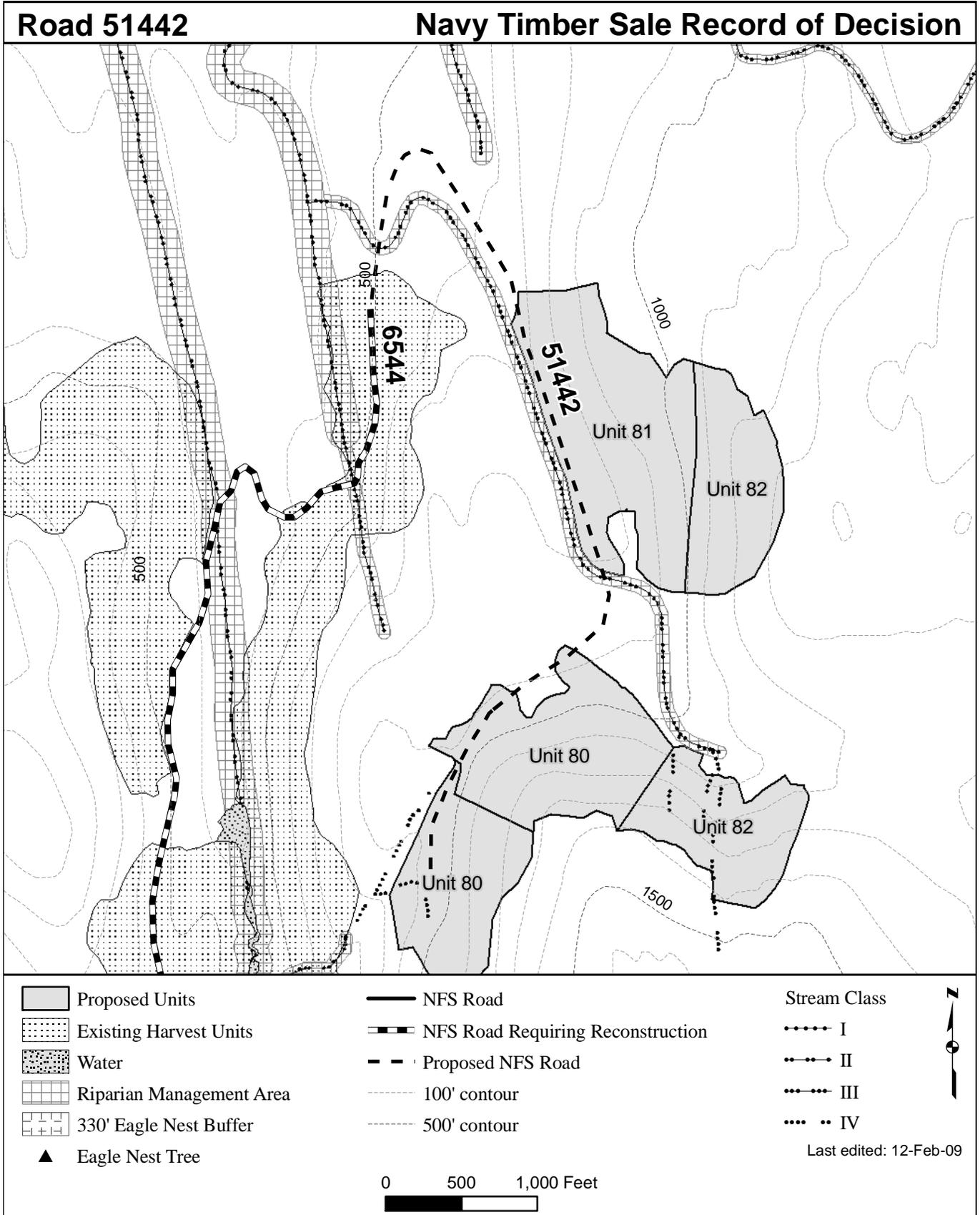
Narrative: N/A

G.) Mi: 0.92	AHMU: IV	Channel Type: HC1	BF Width: 1-2 feet	BF Depth: Not noted	Substrate: gravel, cobble
Gradient: 40%	Structure: 24" or smaller CMP	Passage Req'd: No	Timing Dates: None		

Narrative: N/A

H.) Mi: 1.05	AHMU: IV	Channel Type: HC5	BF Width: 3-5 feet	BF Depth: Not noted	Substrate: boulder, cobble, gravel
Gradient: 20%	Structure: 24-36" CMP	Passage Req'd: No	Timing Dates: None		

Narrative: N/A



Appendix 2

Site-specific Design Criteria Road No. 51442

Road Location: The purpose of this road is to access Units 80 and 81. The road travels northwest for the first 0.2 mile before making a turn toward the south and climbing to access the bottom of the units. Downhill yarding will be used for both units. Favorable grades from 8 to 17 percent exist on the road. The road was relocated between MP 0.0 and MP 0.3 to avoid a difficult stream crossing.

Wetlands: The proposed road crosses wetland from MP 0.1 to MP 0.3 while making a large turn to gain elevation to access harvest Units 80 and 81. The proposed road also crosses wetland from MP 0.5 to MP 0.7 where wetland runs from the toe to the ridge of the slope.

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: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). The rock pits at MP 1.7 and 2.2 of the 6544 road were noted as potential initial rock sources. After construction of the initial road segment, it is expected that another rock pit will be required, most likely near MP 0.3 and/or MP 0.7 depending on the conditions.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: There is a section from MP 0.90 to 0.95 where the road crosses slopes steeper than a 67 percent gradient. Construction will be completed with full bench and end haul, with no material sidecast (BMP 14.12). Any fill material will be free of loose stumps and slash (BMP 13.10). The road was pinched between a v-notch and steep slopes as it curved around a ridge making it a necessity to go across the steep side slopes.

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

**Stream Crossings
Road No. 51442**

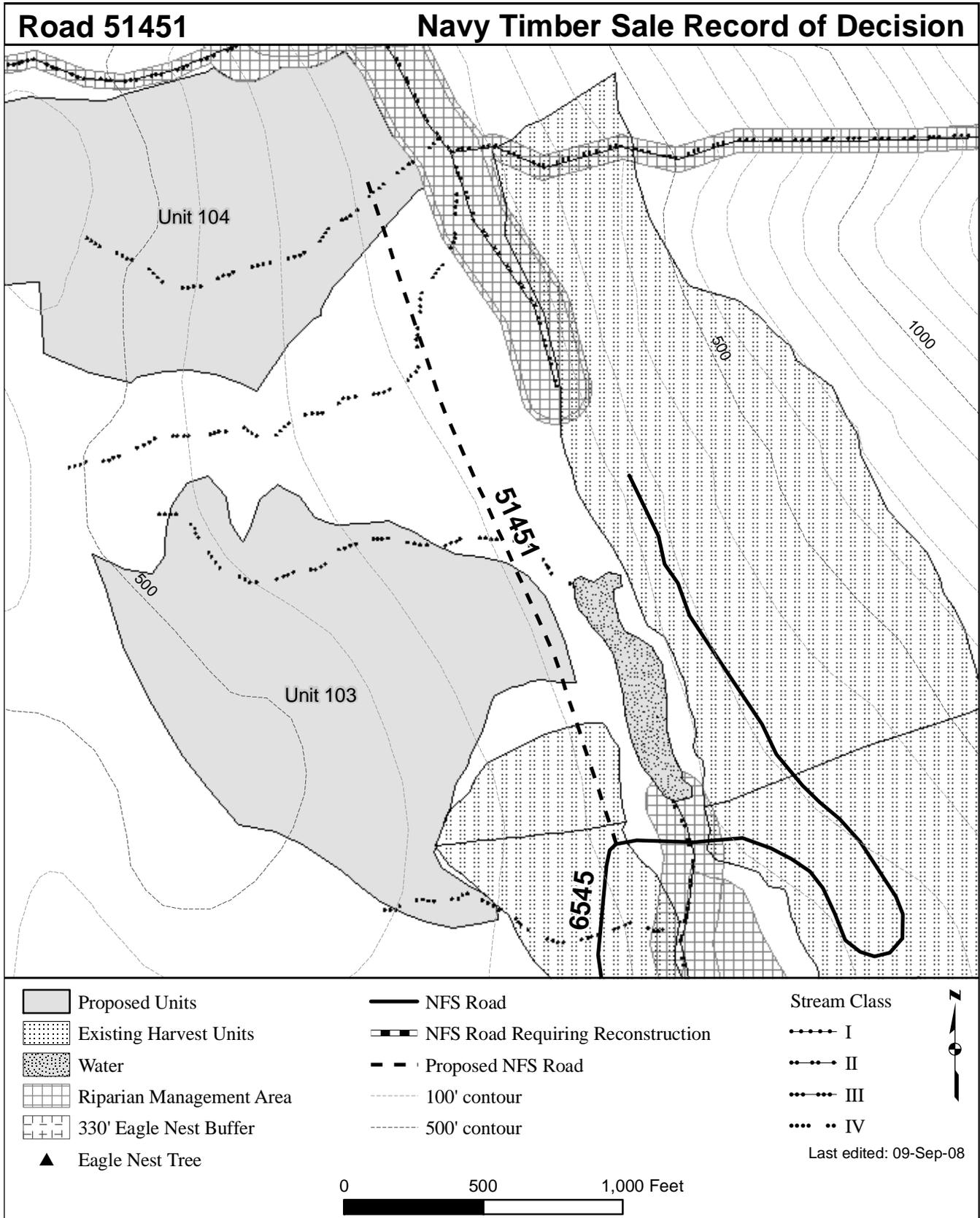
A.) Mi: 0.08	AHMU: III	Channel Type: HC6	BF Width: 8-10 feet	BF Depth: Not noted	Substrate: Bedrock
Gradient: 10-20%	Structure: 30' bridge or 72" pipe	Passage Req'd: No	Timing Dates: None		

Narrative: N/A

B.) Mi: 0.81	AHMU: III	Channel Type: HC6	BF Width: Not noted	BF Depth: Not noted	Substrate: Not noted
Gradient: Not Noted	Structure: 48-60" CMP	Passage Req'd: No	Timing Dates: None		

Narrative: Upstream crossing of stream A.

Appendix 2



Appendix 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 organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

Rock Pits: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). 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 potential initial rock sources. 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.

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

**Stream Crossings
Road No. 51451**

A.) Mi: 0.22	AHMU: IV	Channel Type: HC5	BF Width: 2-4 feet	BF Depth: NA	Substrate: Cobble, gravel, silt
Gradient: 18%	Structure: 18-24" CMP	Passage Req'd: No	Timing Dates:		

Narrative: N/A

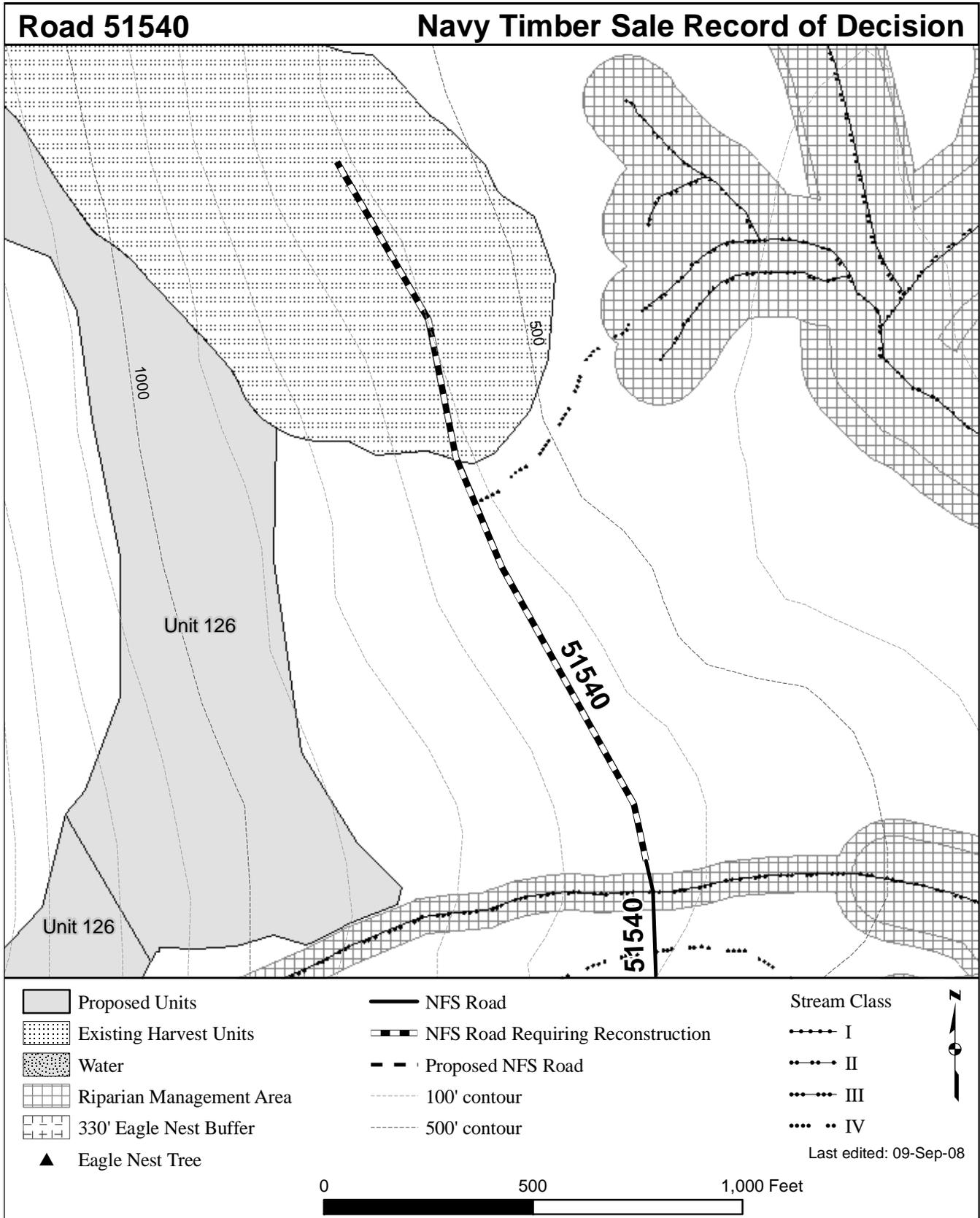
B.) Mi: 0.37	AHMU: IV	Channel Type: HC5	BF Width: 1-3 feet	BF Depth: NA	Substrate: gravel, cobble
Gradient: 15%	Structure: 18-24" CMP	Passage Req'd: No	Timing Dates:		

Narrative: N/A

C.) Mi: 0.47	AHMU: IV	Channel Type: HC5	BF Width: 1-3 feet	BF Depth: NA	Substrate: gravel, cobble
Gradient: 19%	Structure: 18-24" CMP	Passage Req'd: No	Timing Dates:		

Narrative: N/A

Appendix 2



Road Management Objectives

Project/FEIS: Navy		System: Anita Bay		Land Use Designation: TM	
Route Number: 51540		Route Name: Fishtrap		Status: Existing	
Begin MP: 7.71	Length (miles): 0.35	Begin Termini: MP 6.16 of 6540 Rd.	End Termini: MP 8.06 in Section 11		

General Design Criteria and Elements

Functional Class: Local	Service Life: I	Traffic Service Level: D	Surface: Shot rock
Width: 14 feet	Critical Vehicle: Yarder	Design Vehicle: Log truck	Design Speed: 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 Condition	Objective Maintenance Level Desired Condition	AFRPA Class
0.00	7.71	2		Active
7.71	8.06	1		Inactive
Planned Condition				
7.71	8.06	2		Active
0.00	6.91		2	Active
6.91	8.06		1	Inactive

Maintenance Narrative:

AFR&P Regs. “Active” status: Keep culverts, catch basins, ditches and ditch blocks functional. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance. Roadway from MP 7.71 to 8.41 will be reconditioned to meet ML 2 standards prior to log haul.

AFR&P Regs. “Inactive” status: The road from MP 7.71 to 8.06 will be closed after the timber sale. Where feasible, culverts will be left in place with adequate protection, typically waterbars. Waterbars may be added on steep grades. The road will be placed in a self-maintaining state.

Operation Criteria

Highway Safety Act: No	Jurisdiction: National Forest System ownership
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Travel Management Strategies (MP7.71-8.06):

Encourage:	NA
Accept:	Non-motorized use after timber harvest.
Discourage:	NA
Prohibit:	Public motorized vehicles during and after the timber harvest.
Eliminate:	Gate at MP 3.01 eliminates all public motorized traffic.

Travel Management Narrative: Public motorized traffic will be prohibited beyond the gate at MP 3.01 due to environmental concerns before, during and after harvest. After the timber harvest the road from MP 7.71-8.06 will be closed and the structure at MP 7.71 will be removed, which will eliminate motorized administrative access.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 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 7.7. From MP 7.7 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 reconstruction from MP 7.8 to MP 8.1. Reconstruction 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 organic or 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 a rock pit 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: MP 7.71 has a removed bridge that needs to be replaced. 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 (BMP 14.4 and BMP 14.5).

Silviculture: N/A

Wildlife/Botany: The existing road goes through and near a goshawk nesting habitat buffer from MP 1.4 to 2.0. An existing quarry is located near MP 1.6. If quarry expansion and associated blasting occur, timing restrictions may be necessary if nest is occupied.

Lands/Minerals/Geology/Karst: N/A

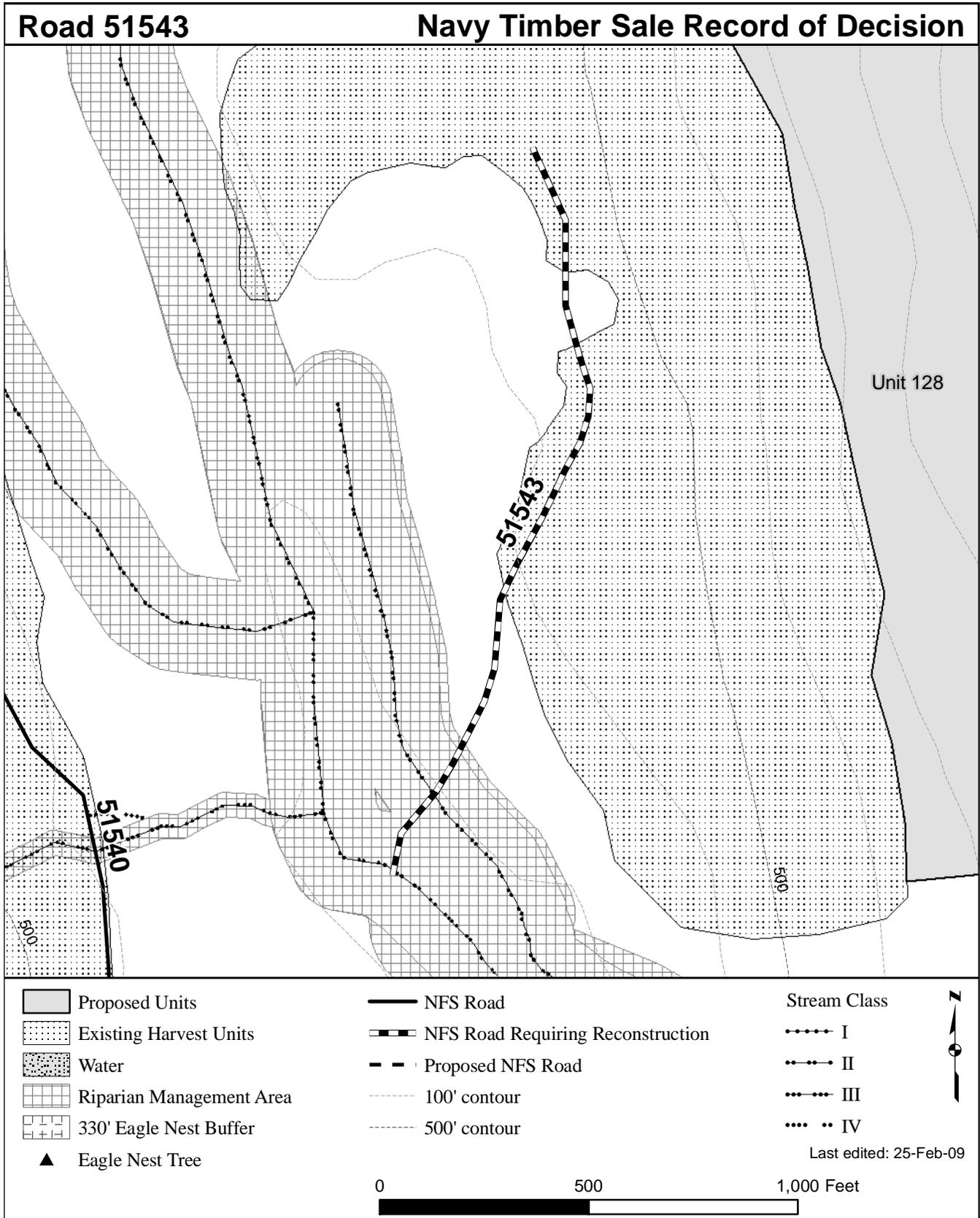
Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings
Road No. 51540

A.) Mi: 7.71	AHMU: III	Channel Type: HC6	BF Width: 29 feet	BF Depth: Not noted	Substrate: boulder, cobble
Gradient: 23%	Structure: Bridge		Passage Req'd: No	Timing Dates: None	
Narrative: N/A					

Appendix 2



Road Management Objectives

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

General Design Criteria and Elements

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

Intended Purpose/Future Use: The intended purpose of this road is for timber management in Units 127-132. 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	0.18	2		Active
0.18	0.53	1		Closed
		Planned Condition		
0.18	0.53	2		Active
0.00	0.53		1	Closed

Maintenance Narrative:

AFR&P Regs. "Active" status: Keep culverts, catch basins, ditches and ditch blocks functional. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance. Roadway from MP 0.18 to 0.53 will be reconditioned to meet ML 2 standards prior to log haul.

AFR&P Regs. "Closed" status: The road from MP 0.18 to 0.53 will be stored after the timber sale. The culverts will be removed and waterbars may be added where necessary.

Operation Criteria

Highway Safety Act: No	Jurisdiction: 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: Public motorized traffic will be prohibited beyond the gate at MP 3.01 of road 51540 due to environmental concerns, before, during, and after harvest. 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.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 2

Site-specific Design Criteria Road No. 51543

Road Location: The purpose of this road reconditioning is to access Units 128 through 131. At MP 0.18 a large bridge has been removed. After that point all cross drains and stream crossing structures have been removed and will need to be replaced before management activities associated with this road commence.

Wetlands: Wetlands exist along proposed road reconstruction from MP 0.0 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 organic or 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 a rock pit 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: MP 0.18 the bridge over Fishtrap Creek will need to be replaced. 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 (BMP 14.4 and BMP 14.5).

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

**Stream Crossings
Road No. 51543**

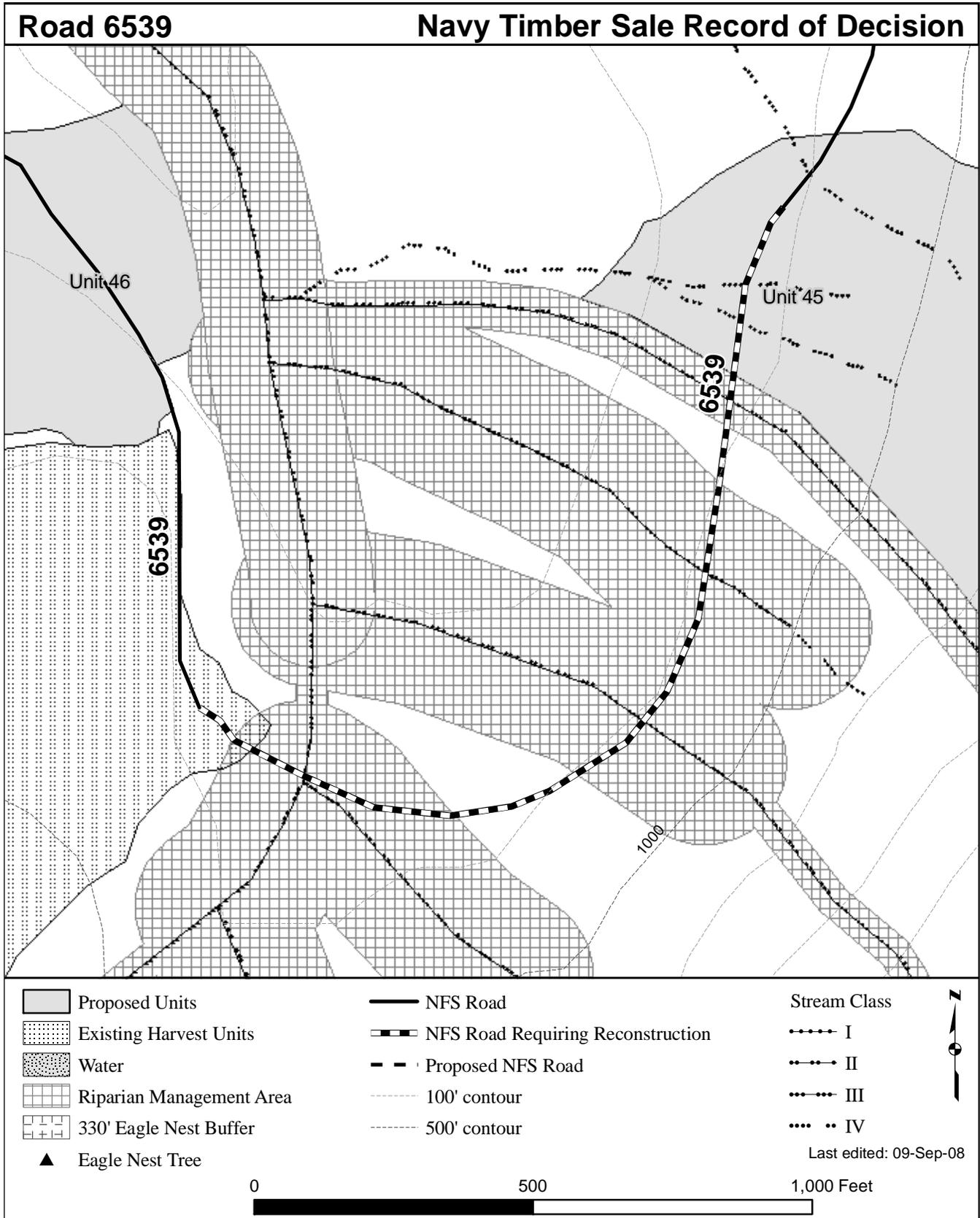
A.) Mi: 0.18	AHMU: II	Channel Type: LC1	BF Width: 35 feet	BF Depth: Not noted	Substrate: bedrock, boulder
Gradient: 2%	Structure: Bridge	Passage Req'd: Yes	Timing Dates: June 1st-September 15th		

Narrative: N/A

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

Narrative: 36" pipe is present but will need to be removed at end of timber sale activities and timing windows may apply for removal.

Appendix 2



Road Management Objectives

Project/FEIS: Navy		System: Anita Bay		Land Use Designation: TM	
Route Number: 6539		Route Name: Snow Ridge		Status: Existing	
Begin M.P.: 0.85	Length (miles): 0.36	Begin Termini: MP 4.85 of the 6540 Rd.		End Termini: MP 1.21 in Section 2.	

General Design Criteria and Elements

Functional Class: Local	Service Life: I	Traffic Service Level: D	Surface: Shot rock
Width: 14 feet	Critical Vehicle: Mobile yarder	Design Vehicle: Log truck	Design Speed: 10 mph

Intended Purpose/Future Use: The intended purpose of this road is timber management in Unit 45. 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	1.21	2		Active
0.00	1.21		1	Inactive

Maintenance Narrative:

AFR&P Regs. "Active" status: Keep culverts, catch basins, ditches and ditch blocks functional. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance.

AFR&P Regs. "Inactive" status: Road is closed. Stream crossing structures in the high-vulnerability area (MP 0.85 to MP 1.21) will be removed. Other culverts may be removed and waterbars may be added.

Operation Criteria

Highway Safety Act: No	Jurisdiction: National Forest System ownership
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Travel Management Strategies:

Encourage:	NA
Accept:	Motorized use after timber harvest until road is closed.
Discourage:	Public use during the timber harvest.
Prohibit:	NA
Eliminate:	NA

Travel Management Narrative: During the timber harvest, motorized traffic will be discouraged due to safety considerations. After the timber harvest, the road will remain open to motor vehicle use until the road is closed.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 2

Site-specific Design Criteria Road No. 6539

Road Location: The purpose of this road reconditioning is to access Unit 45. The existing 6539 road should be adequate for hauling with minimal maintenance up to MP 0.85. From MP 0.85 to MP 1.21 the road needs substantial maintenance, including replacing shot rock and cleaning ditches and catch basins. The existing road provides access directly to Unit 45 where downhill yarding is the most feasible means to extract the timber. The road provides favorable haul along its length.

Wetlands: No wetlands exist along this proposed road reconstruction.

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: Due to the relatively minor nature of the road reconditioning, pit development will not be needed for this road. It is likely that a rock pit 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: There are several erosion features located on the existing road. There are also sections of the existing road that have been washed out and are nearly undrivable. Ditch and culvert cleaning will be necessary and new structures may have to be added in this dynamic area (BMP 14.4 and BMP 14.5). The current road location is on an alluvial fan.

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings

Road No. 6539

A.) Mi: 0.88	AHMU: III	Channel Type: HC5	BF Width: 14.5 feet	BF Depth: Not noted	Substrate: Cobble and boulder
Gradient: 17%	Structure: Existing modular bridge		Passage Req'd: No	Timing Dates: None	

Narrative: Maintenance may be needed for the deck on this 50' modular bridge. The stream is encroaching on the sills, may need repair by the time the road is reconstructed but the sills are okay for now.

B.) Mi: 1.022	AHMU: III	Channel Type: AF2	BF Width: Not noted	BF Depth: Not noted	Substrate: Not noted
Gradient: Not noted	Structure: Existing 18" CMP		Passage Req'd: No	Timing Dates: None	

Narrative: N/A

C.) Mi: 1.078	AHMU: III	Channel Type: AF2	BF Width: Not noted	BF Depth: Not noted	Substrate: Not noted
Gradient: Not noted	Structure: Existing 18" CMP		Passage Req'd: No	Timing Dates: None	

Narrative: N/A

D.) Mi: 1.14	AHMU: III	Channel Type: HC5	BF Width: 6.5 feet	BF Depth: Not noted	Substrate: Not noted
Gradient: 25%	Structure: Existing 36" CMP.		Passage Req'd: No	Timing Dates: None	

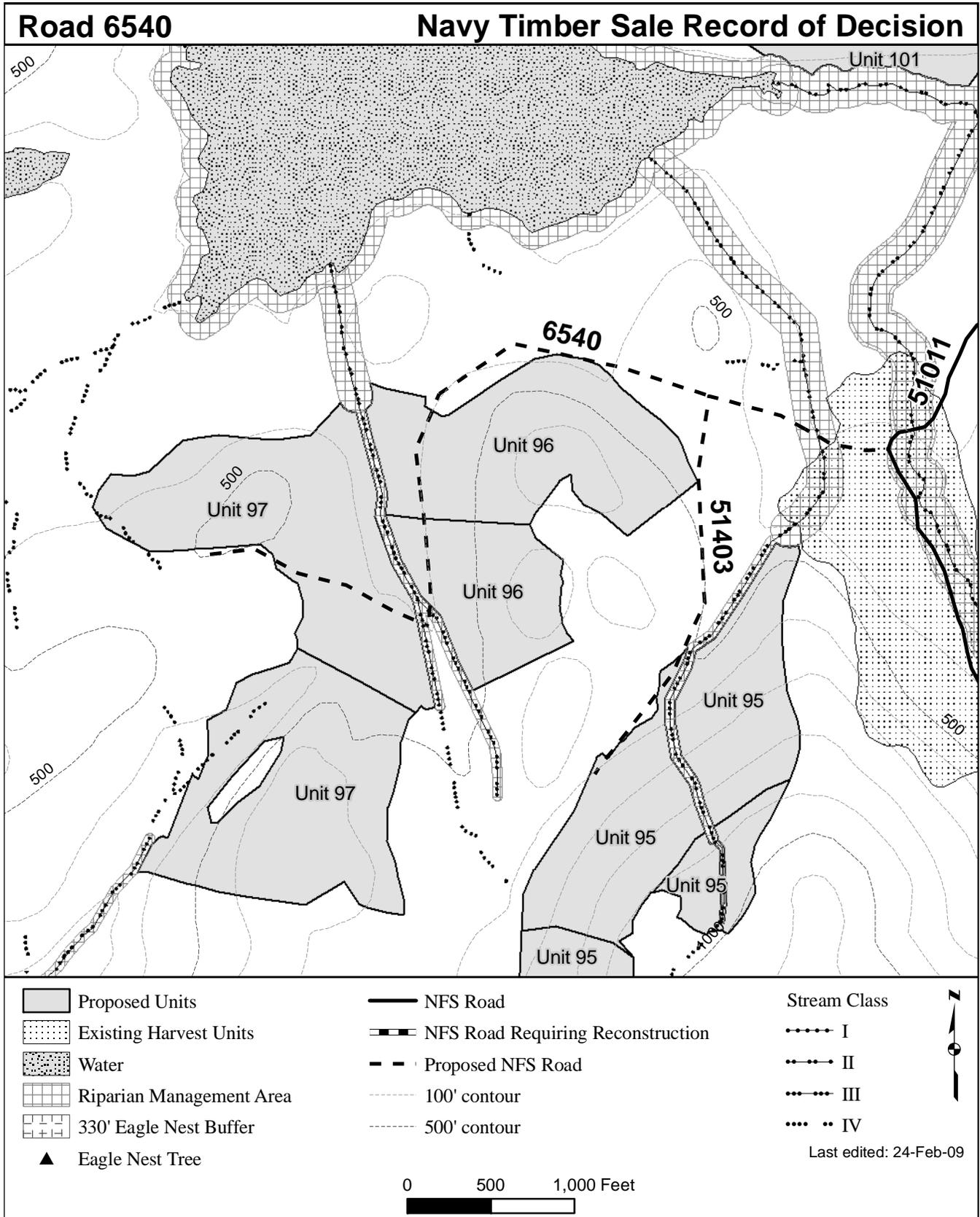
Narrative: MP 1.12 RCS. No maintenance requirements noted.

E.) Mi: 1.164	AHMU: IV	Channel Type: HC5	BF Width: 1-2 feet	BF Depth: Not noted	Substrate: cobble, boulder
Gradient: 40%	Structure: drivable waterbar		Passage Req'd: No	Timing Dates: None	

Narrative: This is an intermittent stream that flows only during high rainfall events.

F.) Mi: 1.176	AHMU: IV	Channel Type: HC5	BF Width: 1-2 feet	BF Depth: Not noted	Substrate: cobble, boulder
Gradient: 50%	Structure: drivable waterbar		Passage Req'd: No	Timing Dates: None	

Narrative: This is an intermittent stream that flows only during high rainfall events.



Appendix 2

Site-specific Design Criteria Road No. 6540

Road Location: The purpose of this road is to access Units 96 and 97 and provides access to the beginning of the proposed 51403 road. The existing 6540 road should be adequate for hauling with minimal maintenance. From MP 10.7 to the end (MP 11.82) the road climbs as it goes through Units 96 and 97. This enables uphill yarding for much of Unit 97, which minimizes soil disturbance and gives more options for silvicultural systems.

Wetlands: This area is largely wetland, so it is difficult to avoid crossing them. For the most part, the roads skirt around the edges of muskegs and cross them only where engineering constraints such as stream crossings or grades make it a requirement. Wetlands exist from MP 10.73 to MP 11.3 and from MP 11.6 to MP 11.82 on the proposed road.

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: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). This road travels through areas of visual concern and therefore attention to visual effects will be necessary when selecting location, size, and layout of a rock pit along this road. MP 10.3 was noted as an initial potential rock source. Other potential initial rock sources are at MP 10.7 (end of existing road) or other nearby existing rock pits.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: The new construction has a Class II crossing at MP 10.814. A hydro site will need to be completed and adequate structure installed. There are two Class III crossings at MP 11.530 and MP 11.544 - hydro sites may be necessary here. All other stream crossings will need adequate structures (BMPs 13.16, 14.3, and 14.5).

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings
Road No. 6540

A.) Mi: 10.813	AHMU: II	Channel Type: MC1	BF Width: 6-10 feet	BF Depth: Not noted	Substrate: Gravel, Cobble
Gradient: 1-2%	Structure: Bridge		Passage Req'd: Yes	Timing Dates: Additional field data necessary during layout.	

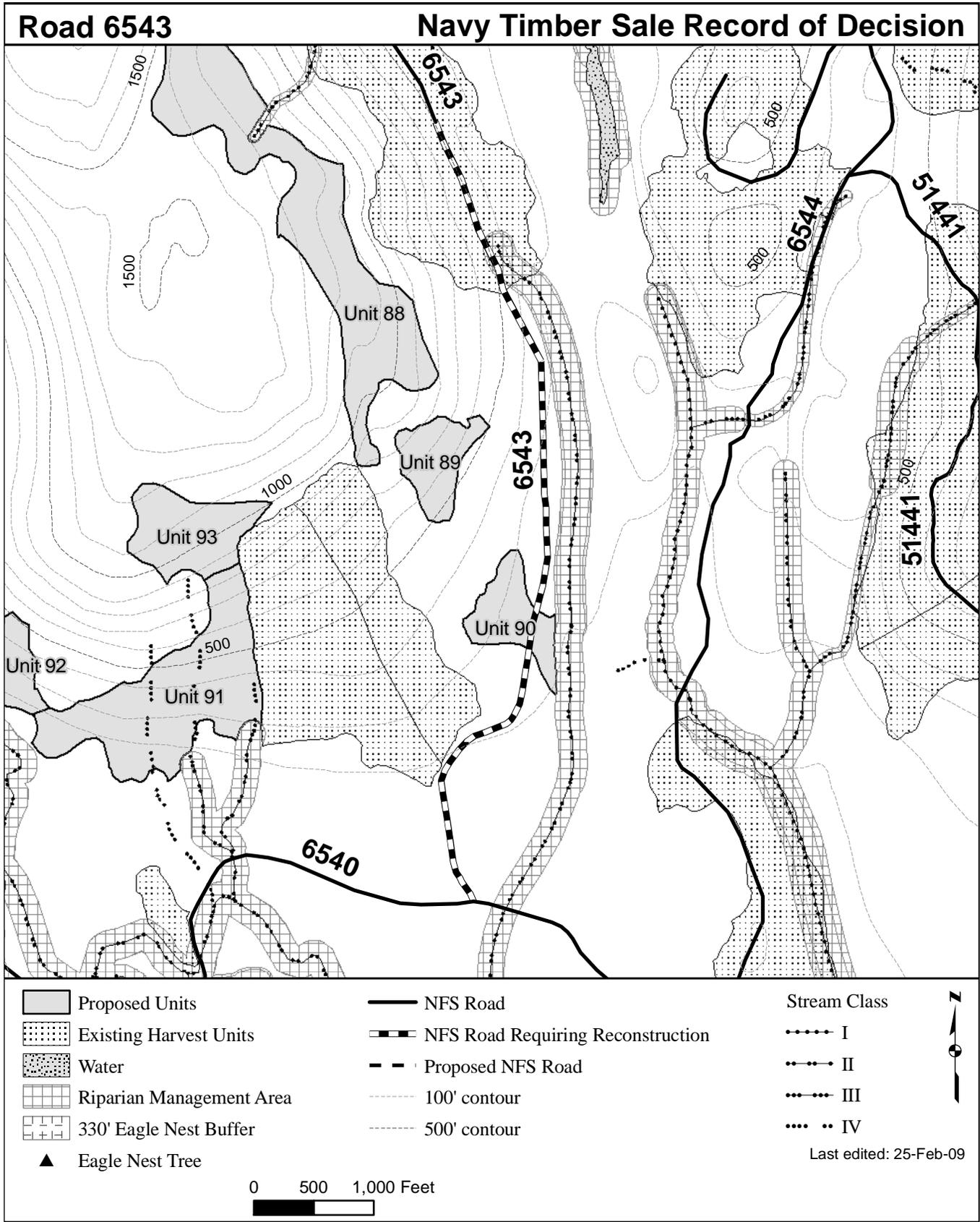
Narrative: N/A

B.) Mi: 11.530	AHMU: III	Channel Type: HC5	BF Width: 5-8 feet	BF Depth: Not noted	Substrate: Boulder, bedrock, gravel
Gradient: 15%	Structure: 60" CMP		Passage Req'd: No	Timing Dates: None	

Narrative: N/A

C.) Mi: 11.554	AHMU: III	Channel Type: HC5	BF Width: 4-6 feet	BF Depth: Not noted	Substrate: Cobble, gravel
Gradient: 24%	Structure: 48" CMP		Passage Req'd: No	Timing Dates: None	

Narrative: N/A



Road Management Objectives

Project/FEIS: Navy		System: Anita Bay		Land Use Designation: TM, ML	
Route Number: 6543		Route Name: Little Lake		Status: Existing	
Begin MP.: 0.00	Length (miles): 1.68	Begin Termini: MP 8.54 6540 Rd	End Termini: MP 1.68 in Sec. 29		

General Design Criteria and Elements

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

Intended Purpose/Future Use: The intended purpose of this road is to provide access for timber management activities in Unit 90. 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	1.68	2		Active
0.00	1.68		1	Inactive

Maintenance Narrative:

AFR&P Regs. “Active” status: Keep culverts, catch basins, ditches and ditch blocks functional from MP 0.00 to 1.35. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance. Reconstruction of this road will be necessary before log haul.

AFR&P Regs. “Inactive” status: Road is closed. Where feasible, culverts will be left in place with adequate protection; typically waterbars. Waterbars may be added on steep grades. The road will be placed in a self-maintaining state.

Operation Criteria

Highway Safety Act: No	Jurisdiction: 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 timber harvest, motorized traffic will be discouraged due to safety considerations. After the timber harvest the road will be closed and motor vehicle use will be prohibited.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 2

Site-specific Design Criteria Road No. 6543

Road Location: The purpose of this road reconditioning is to access Unit 90. From MP 0.0 to MP 1.35, the road needs maintenance including replacing shot rock and cleaning ditches and catch basins. The existing road provides access directly to Unit 90 where downhill yarding is the most feasible means to extract the timber. After the timber sale, the entire road from MP 0.00 to 1.68 will be closed.

Wetlands: Wetlands exist from MP 0.0 to 0.9 along this proposed road reconstruction. No additional fill material will be placed in 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 organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

Rock Pits: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). The rock pit at MP 7.9 of the 6540 road was noted as a potential rock source for shot rock replacement.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: Road is failing where it was constructed on steep slopes; if road is moved into slope, buttress the cutslope with rock or other suitable material (e.g. log crib). Buttress eroding cut slopes in old harvest unit (beyond area that is failing. Clean ditches and culverts as needed (BMPs 14.4 and BMP 14.5)

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

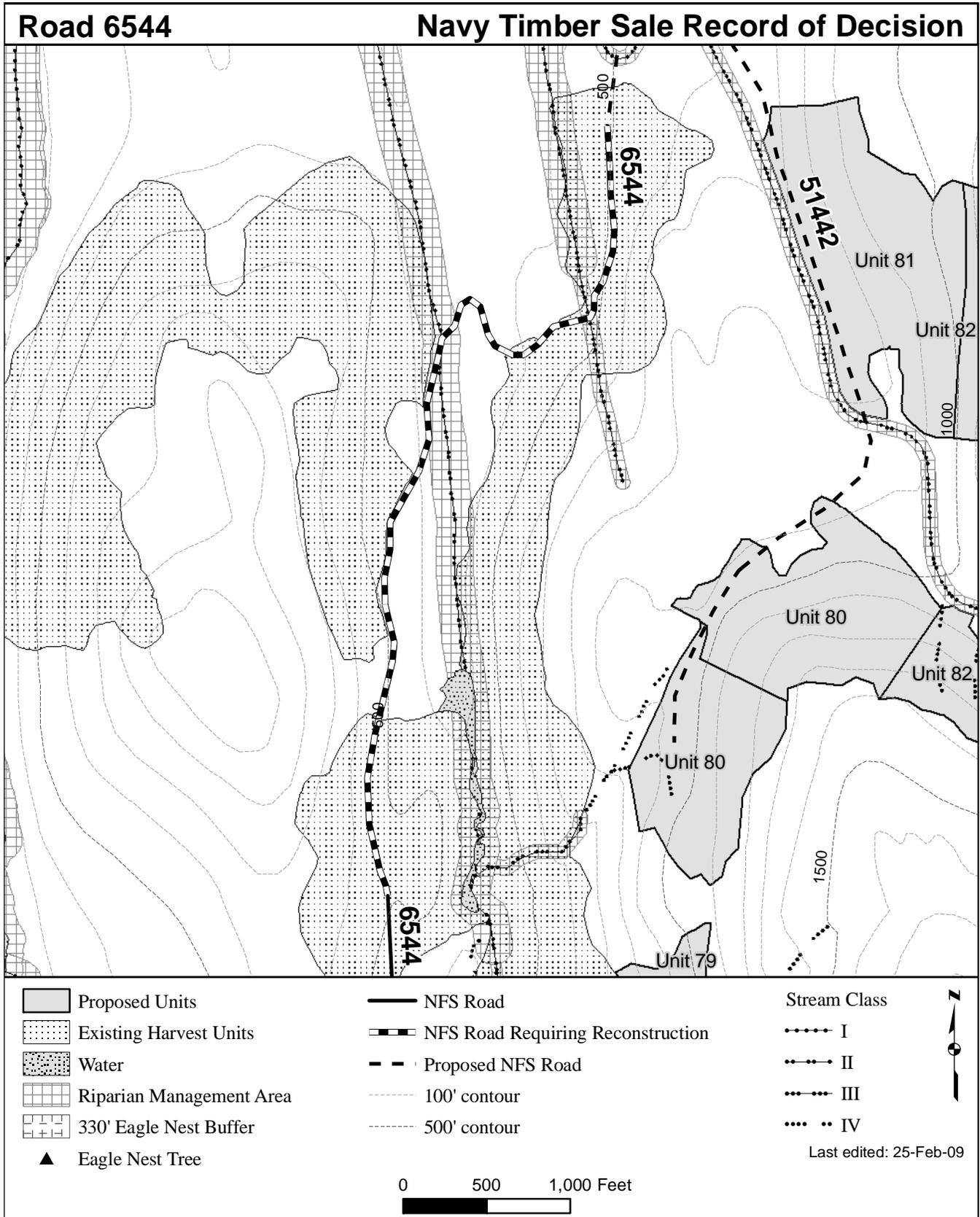
Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings
Road No. 6543

A.) Mi: 0.39	AHMU: IV	Channel Type: HC	BF Width: 3 feet	BF Depth: Not noted	Substrate: Not noted
Gradient: 16%	Structure: Existing 24" CMP	Passage Req'd: No	Timing Dates: None		

Narrative: N/A



Road Management Objectives

Project/FEIS: Navy		System: Anita Bay		Land Use Designation: TM, ML, SV	
Route Number: 6544		Route Name: Ribbon Chert Pit		Status: Existing	
Begin M.P.: 1.91	Length (miles): 1.07		Begin Termini: MP 8.06 6540 Rd	End Termini: MP 2.98 in Section 20	

General Design Criteria and Elements

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

Intended Purpose/Future Use: The intended purpose of this road is to help access timber management activities in Units 80-82. 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	1.91	2	2	Active
1.91	2.98	1		Inactive
		Planned Condition		
1.91	2.98	2		Active
0.00	2.98		1	Inactive

Maintenance Narrative:

AFR&P Regs. "Active" status: Keep culverts, catch basins, ditches and ditch blocks functional. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance. Roadway from MP 1.91 to MP 2.98 will be reconstructed to meet ML 2 standards before log haul.

AFR&P Regs. "Inactive" status: Road is closed. Where feasible, culverts will be left in place with adequate protection; typically waterbars. Waterbars may be added on steep grades. The road will be placed in a self-maintaining state.

Operation Criteria

Highway Safety Act: No	Jurisdiction: 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 timber harvest, motorized traffic will be discouraged due to safety considerations. After the timber harvest, the road will be closed (stored) from MP 1.91 to 2.98 and motor vehicle use will be prohibited.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 2

Site-specific Design Criteria Road No. 6544

Road Location: The purpose of this road reconditioning is to provide access to the beginning of the 51442 road, which will in turn access Units 80-82. The existing 6544 road from MP 0.0 to MP 1.9 should be adequate for hauling with minimal maintenance. From MP 1.9 to MP 3.0, the road will require reconditioning, including replacing shot rock where necessary, clearing alder, and cleaning ditches and catch basins.

Wetlands: Wetlands exist from MP 2.2 to MP 2.7 along the proposed road reconstruction. No additional fill material will be placed in 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 organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8).

Rock Pits: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). The existing rock pits at MP 1.7 and 2.2 of the 6544 road were noted as a potential rock source for shot rock replacement.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: Road has several erosion features present that will be corrected during the road reconditioning. Road has been stored beyond 2.65 so additional structures may be needed where structures were removed.

Silviculture: N/A

Wildlife/Botany: N/A

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

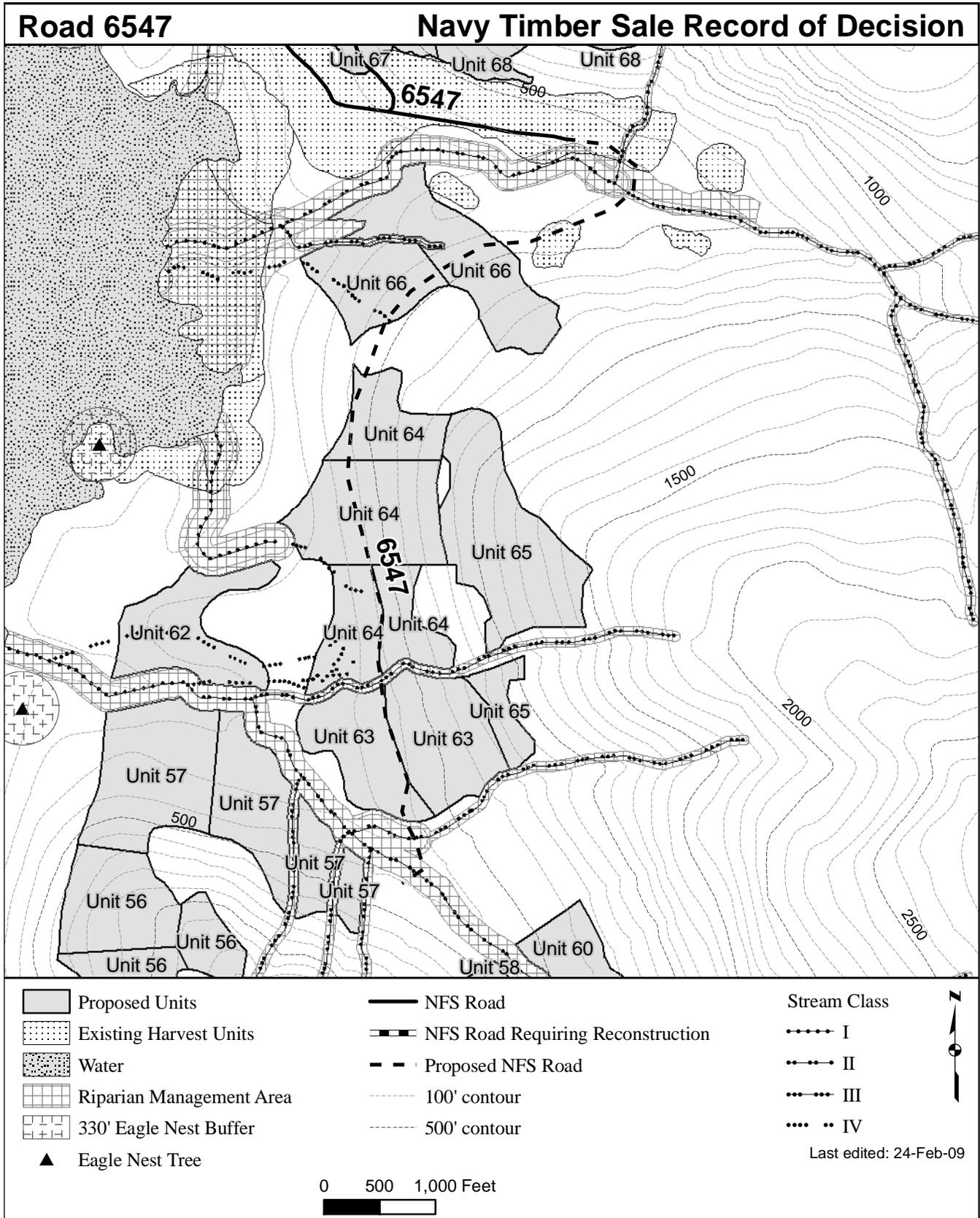
Stream Crossings
Road No. 6544

E.) Mi: 2.52	AHMU: II	Channel Type: MM	BF Width: 11 feet	BF Depth: Not noted	Substrate: Coarse gravel and cobble
Gradient: 5%	Structure: Existing 84" CMP		Passage Req'd: N/A	Timing Dates: N/A	

Narrative: No maintenance requirements noted. Existing red pipe.

B.) Mi: 2.74	AHMU: III	Channel Type: HC	BF Width: 2 feet	BF Depth: Not noted	Substrate: Coarse gravel and cobble
Gradient: 5%	Structure: 18-24" CMP needed		Passage Req'd: N/A	Timing Dates: N/A	

Narrative: There is a mapped Class III stream crossing (not correct) here but is not much of a stream.



Road Management Objectives

Project/FEIS: Navy		System: Anita Bay		Land Use Designation: TM, SV	
Route Number: 6547		Route Name: Burnett Inlet		Status: Existing/Opportunity	
Begin M.P.: 1.19	Length (miles): 1.68		Begin Termini: MP 0.96 of the 6540 Rd.	End Termini: MP 2.87	

General Design Criteria and Elements

Functional Class: Local	Service Life: I	Traffic Service Level: D	Surface: Shot rock
Width: 14 feet	Critical Vehicle: Mobile yarder	Design Vehicle: Log truck	Design Speed: 10 mph

Intended Purpose/Future Use: The intended purpose of this road is for timber management in Units 57-66. 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	1.16	2	2	Active
1.16	1.19	1	1	Closed
		Planned Condition		
1.19	2.87	2		Active
1.19	2.87		1	Closed

Maintenance Narrative:

AFR&P Regs. “Active” status: Keep culverts, catch basins, ditches and ditch blocks functional. Grade as needed to maintain crown and running surface. Control roadside brush to maintain sight distance. Road from 0.00 to 1.16 will be maintained and repaired as necessary prior to log haul. Existing road from MP 1.16 to 1.19 will require reconstruction.

AFR&P Regs. “Closed” status: Road is closed. The culverts will be removed and waterbars will be added where necessary.

Operation Criteria

Highway Safety Act: No	Jurisdiction: National Forest System ownership
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Travel Management Strategies (MP 1.16-2.87):

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 timber harvest, motorized traffic will be discouraged due to safety considerations. After the timber harvest, the road will be closed from MP 1.16 to 2.87 and motor vehicle use will be prohibited.

/s/ Melissa Cady

District Ranger Approval (signature): (for) Mark Hummel

Date: March 3, 2009

Appendix 2

Site-specific Design Criteria Road No. 6547

Road Location: The purpose of this road is to access Units 57 through 66. The existing 6547 road is adequate for hauling with pre-haul maintenance due to alder growth. From MP 1.1 to 2.9 the road extends from the existing portion of the 6547, across Detailer Creek where it ends. Partial and full bench construction will be needed between MP 2.2 and 2.4. Temporary roads climb from the end of the 6547 road to enable uphill yarding for many of the units. Uphill yarding minimizes soil disturbance and gives more options for silvicultural systems.

Wetlands: Wetlands are encountered at two of the major stream crossings, from MP 1.5 to MP 1.6. There is also a section from MP 1.8 to MP 2.0 where the road goes through wetlands as it climbs above the beach buffer while avoiding steep side slopes higher on the hillside.

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: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6). Rock pits will require site-specific erosion control plans (BMP 14.18). This road travels through areas of visual concern and therefore attention to visual effects will be necessary when selecting location, size, and layout of a rock pit along this road. The rock pit at MP 0.74 of the 51720 road was noted as an initial potential rock source. Other potential initial rock sources are at MP 1.1 of the 6547 road (near the end of the existing road) or other nearby existing rock pits. After construction of the initial road segment, it is expected that rock pits will be required at 1-1.5 mile increments depending on the conditions.

Resource Information (If applicable):

Timber/Logging: N/A

Soils/Water: Ensure that existing culverts are cleaned and properly function (BMP 14.4 and BMP 14.5). At MP 1.37 there is a Class III crossing. At 1.46 there is a Class III crossing that will need a hydro site survey. At 2.64 there is a Class III crossing that will need a large structure.

The crossing at MP 2.94 is mapped as an alluvial fan Class II stream crossing. A hydro site survey will be needed. If possible, relocate road above alluvial fan.

MP 3.01 is the Class II crossing of Detailer Creek, a bridge will be needed at this location. MP 3.11 is a Class IV stream crossing and may need a hydro site survey. All other stream crossings will need adequate structures (BMPs 13.16, 14.3, and 14.5).

Wildlife/Botany: A small section of this road is within one half mile of an bald eagle nest and may be subject to timing restrictions for blasting under the Interagency Bald Eagle MOU.

Road construction is proposed near a goshawk nesting habitat buffer. Permit no continuous disturbance likely to result in nest abandonment within 600 feet of an active goshawk nest from March 15 to August 15.

Lands/Minerals/Geology/Karst: N/A

Scenery/Recreation: N/A

Heritage: N/A

Stream Crossings

Road No. 6547

A.) Mi: 1.37	AHMU: III	Channel Type: HC5	BF Width: Not noted	BF Depth: Not noted	Substrate: Not noted
Gradient: Not noted	Structure: 36" or smaller CMP		Passage Req'd: No		Timing Dates: None

Narrative: N/A

B.) Mi: 1.46	AHMU: III	Channel Type: HC2	BF Width: Not noted	BF Depth: Not noted	Substrate: Not noted
Gradient: Not noted	Structure: 36" or smaller CMP		Passage Req'd: No		Timing Dates: None

Narrative: N/A

C.) Mi: 1.97	AHMU: IV	Channel Type: HC5	BF Width: 1-2 feet	BF Depth:	Substrate: cobble
Gradient: 26%	Structure: 24" CMP		Passage Req'd: No		Timing Dates: None

Narrative: N/A

D.) Mi: 2.64	AHMU: III	Channel Type: HC5	BF Width: 2-6 feet	BF Depth:	Substrate: cobble, bedrock, boulder
Gradient: 48%	Structure: 48" CMP		Passage Req'd: No		Timing Dates: None

Narrative: N/A

E.) Mi: 2.94	AHMU: II	Channel Type: AF2	BF Width: 5-8 feet	BF Depth:	Substrate: cobble, boulder
Gradient: 6-12%	Structure: 60"-84" CMP		Passage Req'd: Yes		Timing Dates: Will determine during layout

Narrative: This site will be examined during layout to determine several factors including fish presence, channel verification, and structure design. A title 41 concurrence checklist will need to be completed for this structure prior to any instream work.

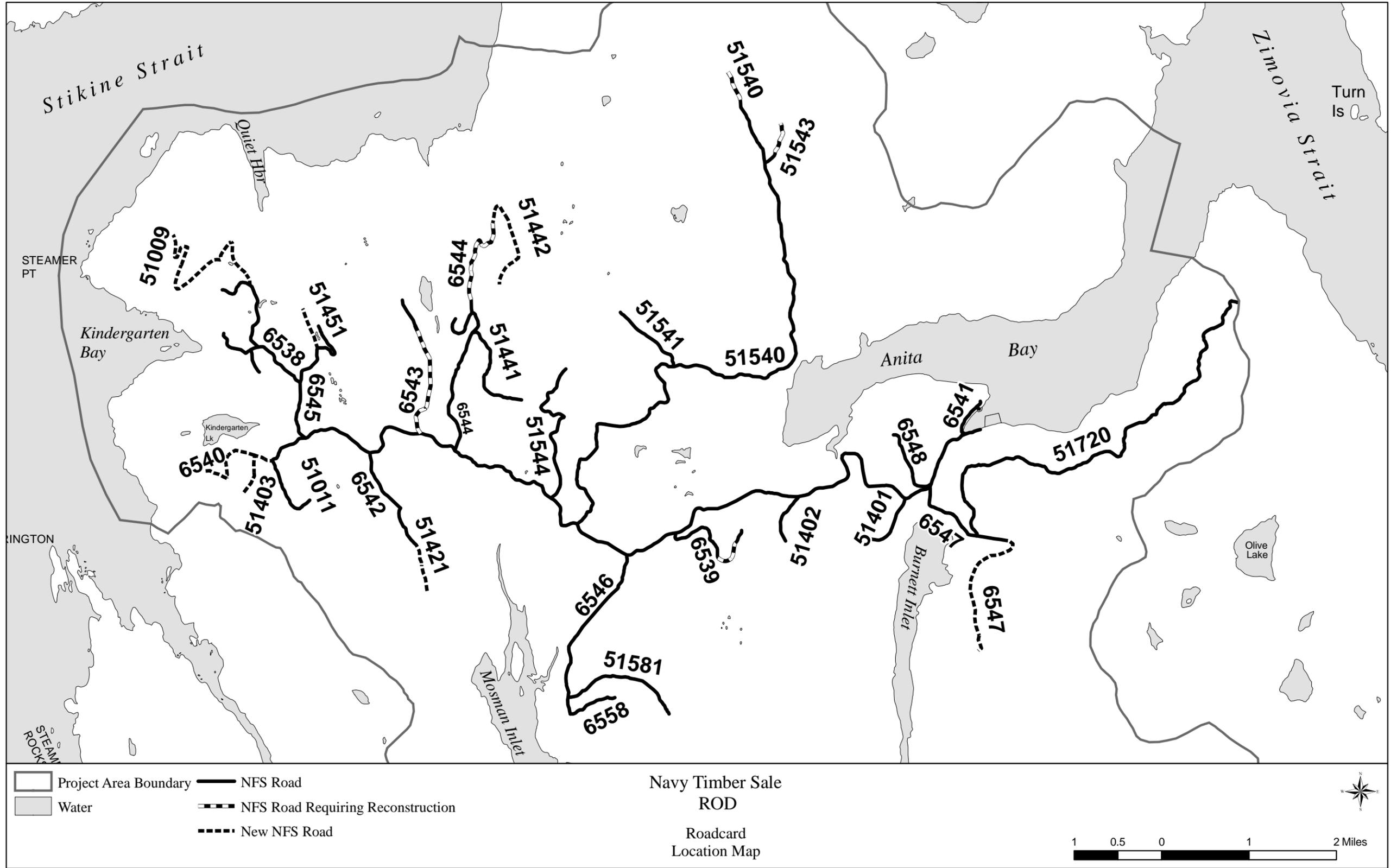
F.) Mi: 3.01	AHMU: II	Channel Type: MC3	BF Width: 12-15 feet	BF Depth:	Substrate: boulder, bedrock, cobble
Gradient: 5%	Structure: Structure: 50' log stringer bridge		Passage Req'd: Yes		Timing Dates: June 1 – Sept. 15

Narrative: Main Detailer Creek bridge crossing will need design information for this structure. Log stringers noted near MP 2.6. Will need approximately a 10-foot approach fill on the south side of the bridge.

There are several small stream crossings at the end of this road but more information will need to be collected during layout for specific site information.

Appendix 2

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