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Ushk Bay Timber Sale(s)

Final Environmental Impact Statement

Volume II



Appendix A

Ushk Bay Project Selection Process

Reasons for Scheduling the Environmental Analysis of the Ushk Bay Project Area

This appendix explains why the Ushk Bay Project Area is scheduled for environmental analysis at this time.

Summary

The Ushk Bay Project Area was scheduled for detailed consideration of timber harvest, in part, to meet contractual obligations under the Alaska Pulp Corporation Long-term Timber Sale Contract. The April 14, 1994, decision to terminate the contract ended APC contract volume obligations. An independent sale program market assessment has been done since the APC contract termination decision and is discussed in the Final EIS Appendix O. Appendix O discusses the rationale for continuing with the environmental analysis for the Ushk Bay project irrespective of APC contract volume obligations. The original reasons for scheduling the Ushk Bay Project Area, that are still applicable, may be summarized as follows:

1. The Ushk Bay Project Area contains a sufficient amount of harvestable volume designated as LUD III or LUD IV, and therefore is appropriate for harvest under the Tongass National Forest Land Management Plan (TLMP). Available information indicates harvest of the amount of timber being considered for this project can occur consistent with Forest Plan Standards and Guidelines and other requirements for resource protection.
2. Harvest of other areas with available timber is expected within the foreseeable future in order to meet timber sale program needs. Effects on subsistence resources are projected to differ little according to which sequence these areas are subjected to harvest. Harvesting other areas on the Tongass National Forest with available timber is expected to have similar potential effects on resources, including those used for subsistence because of widespread distribution of subsistence use and other factors. Harvest of other areas is foreseeable, in any case, over the forest planning horizon under either the existing or proposed revised Forest Plan.
3. It is reasonable to schedule harvest in the Ushk Bay Project Area at present rather than other areas in terms of previous harvest entry and access, level of controversy over subsistence and other effects, and the ability to complete the National Environmental Policy Act (NEPA) process and make timber available. Other areas that are reasonable to consider for harvest in the near future are the subject of other project EISs that are currently ongoing or scheduled to begin soon.

More detail regarding the scheduling of the environmental analysis for the Ushk Bay Project Area is presented in this appendix in five subsections:

Alaska Pulp Corporation Contract Requirements
Tongass Land Management Plan (TLMP) as amended winter 1985-86
TLMP Revision, Supplement to the Draft EIS (TLMP SDEIS)
Forest Plan Implementation
Tongass Independent Timber Sale Schedule

Alaska Pulp Corporation Contract Requirements

Contract Background

In 1956, the Forest Service and Alaska Pulp Corporation (APC) entered into a contract for sale and harvest of timber in Southeast Alaska for a 50-year period beginning in 1961 and ending in 2011. A primary function of this long-term contract was to "establish a new industrial enterprise which will be an important and significant step in the industrial development of Alaska" (Forest Service 1956).

When the Ushk Bay project was scheduled, there was a valid contract between the Forest Service and APC, contract number 12-11-010-1545. This contract bestowed rights and obligations on both parties. One obligation for the Forest Service was to provide the agreed upon volume from an identified contract sale area on the Tongass National Forest. The volume obligation amounted to a minimum "Current Timber Supply" of 240 million board feet specified for harvest beyond what had already been harvested. The Forest Service had until the end of 1995 to increase this supply to at least 360 million board feet.

"Current Timber Supply" was defined in the contract generally as timber which the Forest Service has specified according to Forest Service planning procedures and for which the NEPA process has been completed. The Forest Service specified timber through approving in writing a timber "Offering" under the contract, comparable to an independent timber sale. This approval in writing was represented by issuance of an "A Division" contract document for the Offering. An EIS such as the Ushk Bay Project Area EIS may have covered one or up to several such Offerings, which would have been specified by the Forest Service and therefore added to the contract "Current Timber Supply" concurrently or sequentially after issuance of the Record of Decision (ROD) for the Project. Generally, layout on the ground of roads and harvest units selected in the ROD would have been completed for each Offering prior to issuance of the "A Division" approval document. (See former APC Contract, Section B.6, B0.62 and B0.65.)

Why Areas Outside the Contract Boundary Were Not Considered in Detail

Since authorization of the APC contract in 1956, several laws had changed the land base from which the authorized timber volume could be removed. The Alaska Native Claims Settlement Act (ANCSA) authorized substitution to replace areas selected by the Native Corporations. The Alaska National Interest Lands Conservation Act (ANILCA) authorized substitution for areas designated by Congress as Wilderness in that statute which were in the primary sale area. The substitutions for Native selections and Wilderness selections were accomplished prior to the Ushk Bay Project Area environmental analysis process.

Section B0.3 of the contract, *Sale Area*, stated in part:

The sale area comprised of Allotments B and H, Contingency Area in Allotment C, and to the extent that the Forest Service may designate additional cutting areas in Allotment A-1 under the terms of this contract and to no further extent, such areas in Allotment A-1 as may be designated It is agreed that cutting shall be confined within the boundaries of pulp timber Allotments B and H as shown on said map unless the quantity of timber available for cutting thereon under the terms of this contract is less than 4,974,700,000 board feet.... In event the quantity of timber available for cutting with said pulp timber Allotments B and H ... during the period of this contract is less than 4,974,700,000 board feet, the Forest Service shall designate additional cutting areas within that portion of pulp timber Allotment C designated on Map A as "Contingency Area" to bring the total up to 4,974,700,000 board feet; or in lieu of designating such additional cutting areas within said portion of pulp timber Allotment C, the Forest Service may, at its discretion, designate additional cutting areas within pulp timber Allotment A-1 containing timber not then required to satisfy other timber sale contract obligations of the United States

to bring the total up to 4,974,700,000 board feet...

Section B0.61 of the Contract, *Timber Offering Schedule*, provides in part: "To the extent authorized by law, Offering Areas may be identified for harvest outside the sale area, as needed to meet sale volume requirements."

The Ushk Bay Project Area was within Allotment B described in contract section B0.3. Data indicated that there remained sufficient timber available within the designated sale area, including areas A-1 and C described above, to provide the remaining unharvested portion of the total contract volume of 4,974,700,000 feet, consistent with Forest Plan Standards and Guidelines and other requirements for environmental protection. The most recent Supplement to the Draft EIS for the Tongass Land Management Plan Revision (TLMP SDEIS), which considers reductions in timber base due to the Tongass Timber Reform Act (TTRA), indicates this for the "current direction" alternative. For the current preferred alternative for the TLMP revision, the TLMP SDEIS indicated that there was at the time easily enough available volume within the designated sale area to meet contract volume requirements for the next several years at least, while still meeting all constraints associated with the alternative. This evaluation is incorporated by reference and further described in the last section in this Appendix, *Forest Plan Implementation*.

Therefore, providing volume outside of the sale area was not necessary under the terms of the contract. Modifying the contract did not meet the purpose and need for the project. Although APC had indicated that the Forest Service had the discretion to consider obtaining volume from outside the designated sale area, it had not expressed an interest in modifying the contract to obtain timber from other areas in lieu of the Ushk Bay Project Area. The criteria for modification in 36 CFR 223.112, 113 had not been met, considering the information in the TLMP SDEIS and this EIS. Congress in enacting the Tongass Timber Reform Act declined to modify the contract sale area, and by direction in section 301(e) of the statute that the Secretary of Agriculture report to Congress on the effects of eliminating the sale area, indicated an intent to reserve this decision to the legislature.

Why Providing Less Than the Contract Volume Was Not Considered in Detail

Congress in section 301(e) of the TTRA also indicated its intent to reserve to itself the question of providing less than the contract volume to APC. Providing less than the contract volume would not have met the purpose and need for the Ushk Bay Project. The Forest Service expected a large monetary claim from APC for not meeting contract obligations, for which there was no funding. To the contrary, recent federal legislation had dedicated additional money to providing additional timber offerings to APC and other Tongass National Forest timber purchasers. Volume from independent timber sales or sources outside the Tongass National Forest did not fulfill APC Contract requirements. In any case, there was not sufficient project volume from other sources to meet APC volume requirements.

Logs from Native Corporation lands could not substantially meet the total needs of APC. Owners of private timberland are able to sell their logs on the export market for much higher prices than can be paid by local manufacturing. APC was not prohibited under the Contract from purchasing timber from Native Corporations or other sources, subject to the requirements that, "...at least 70 percent of the log requirements of the pulp mill shall be cut from the areas included in this contract" (APC contract B0.53). There were no provisions in the Contract to offset such purchases by adjusting the Contract timber volume. Harvest from Native Corporation lands was decreasing, reducing potential pulp as well as sawlog availability from these lands (TLMP SDEIS page 3-339).

Canadian timber had been mentioned in the past as a source of supply for Southeast mills. Southeast Alaska pulp mills have purchased pulp logs from British Columbia (BC) in the past. However, the political and economic situation in BC had changed to increase the likelihood of substantial supply from this source.

The June 1988 issue of British Columbia Lumberman, page W14, stated that a substantial increase in demand for BC forest products was expected to decrease log exports. The Forest Minister stated: "Our main objective is to use BC timber to manufacture wood products in this province." It has been more recently stated that British Columbia is considering prohibiting log exports and is facing increased environmental pressures (TLMP SDEIS, page 3-339).

Trying to meet the long-term volume contractual obligations from outside the long-term timber sale boundaries would have decreased the availability of timber for the independent timber sale program, including the Small Business Set Aside Program; obtaining a substantial portion of long-term contract timber from outside the designated sale areas would probably have decreased the independent sale program by an equivalent amount under the current TLMP allowable sale quantity. Under the current plan, an annual average of 271 MMBF net sawlog of the ASQ was needed to meet the long-term sale requirements, leaving an annual average of 179 MMBF net sawlog for the independent program.

The TLMP SDEIS (table 3-134, page 3-368) shows for the current Plan as amended by the TTRA (Alternative C) the contribution to ASQ net sawlog (MMBF) by Allotment Area. Areas of Allotment A and C that were not part of the APC contract area contributed 101 MMBF annual average (22%) to the ASQ. Designating any part of this volume for the long-term sale would have directly reduced the portion of the ASQ available for the independent program. The timber volume included in some of the action alternatives in the Ushk Bay Project Area EIS and scheduled from this area in the TLMP for the long-term contract was greater than the current yearly size of the entire Small Business Administration timber sale program agreed to with the SBA, 80 MMBF. Section 105 of the Tongass Timber Reform Act reflects Congressional intent that the SBA program continue.

APC Timber Supply Schedule

This section provides a look at how the long-term contract timber volume was projected to be available to APC. It includes a tentative schedule projecting how volume was to be made available to meet contract obligations for a timber supply of 240 MMBF for the years 1993 to 1995, and a minimum of 360 MMBF supply by December 31, 1995 (Contract Section B0.65). Table 1 shows the volume available as of January 1, 1993 and displays how timber volume was expected to be scheduled through 1996.

Table 1
Current Timber Supply and Projected Harvest to 1996 ¹

Project Area and Offerings	1/93 Spec. Vol. ²	1993 Harvest	1/94 Spec. Vol. ²	1994 Harvest	1/95 Spec. Vol. ²	1995 Harvest	1/96 Spec. Vol. ²
1981-86 & 86-90							
(1) 8 Fathom	56	12	44	15	29	18	11
(2) Upper Game	47	20	27	15	12	12	0
(3) Freshwater	7	7	0				
(4) Corner Bay	1	1	0				
(5) Sitkoh Bay	20	20	0				
(6) Rowan Bay	7	7	0				
Kelp Bay							
(1) Hanus/Appleton	83	15	68	30	38	28	10
(2) Saook Bay			48	15	38	15	18
SE Chichagof							
(1) Corner Bay		29	0	0	21	5	16
(2) Broad Creek			21	25	35	22	13
(3) Crab Bay			60		17	0	17
(4) Inbetween							
N&E Kuiu (136)							
(1) Offering (40)		29	11	11	0		
(2) Offering (40)			40	29	11	11	0
(3) Offering (40)					40	29	11
(4) Offering (16)							16
Ushk Bay (90)							
(1) Offering (40)					40	0	40
(2) Offering (50)					50	0	50
8 Fathom (127)							
(1) Offering (40)							40
(2) Offering (40)							40
(3) Offering (47)							47
NW Baranof (120)							
(1) Offering (25)							25
(2) Offering (25)							
(3) Offering (35)							
(4) Offering (35)							
Pt. Houghton (100)							
(1) Offering (35)							35
(2) Offering (35)							
(3) Offering (30)							
N&E Kuiu (115)							
(1) Offering (35)							35
(2) Offering (35)							
(3) Offering (45)							
Total Volume	221	140	319	140	326	140	424

Numbers shown in parentheses indicate EISs in progress.

¹ All volume figures shown include sawlog and utility volume and are in MMBF.

² Estimated volume specified for harvest by January 1st of the indicated year. The Environmental Impact Statement and Record of Decision are planned for issuance up to 18 months in advance of specifying timber offerings to allow for final layout and survey of harvest units and roads.

Tongass Land Management Plan (TLMP) As Amended Winter 1985-86

Chapter 1 of this EIS includes an explanation of how this project relates to the Tongass Land Management Plan. That section describes the Land Use Designations (LUDs) which allocated land areas to different types of management. Chapter 1 also explains that these LUDs were assigned to land areas known as Value Comparison Units (VCUs), and that one or more contiguous VCUs were formed into Management Areas (MAs). This section also describes the management emphasis for the Management Areas likely to be affected by the Ushk Bay Project .

The TLMP not only detailed Management Direction/Emphasis for each MA, it also scheduled specific management activities for specific time periods. In particular, it scheduled timber sale preparation activities for 1985-89 and 1990-94. Table 2 displays the MAs scheduled for timber sale preparation during each of these periods.

Management Area	Name	1985-89	1990-94
C27	Mud Bay	TSP	TSP
C28	Neka	TSP	TSP
C29	Tenakee Inlet	TSP	TSP
C30	Freshwater	TSP	TSP
C31	Whitestone	TSP	TSP
C32	Tenakee	TSP	TSP
C34	Crab Bay	TSP	TSP
C37	Corner Bay	TSP	TSP
C39	Ushk Bay	TSP	TSP
C40	Neva-Olga St.	TSP	TSP
C41	Rodman Bay		TSP
C43	Kelp Bay	TSP	TSP
C44	Upper Kruzof		TSP
C45	Mt. Edgecumbe		TSP
C48	Silver Bay		TSP

The Allowable Sale Quantity (ASQ), calculated in TLMP and used in Congressional deliberations and decisions on ANILCA, assumed harvest in all LUD III and LUD IV VCUs, in compliance with the Southeast Area Guide, on a three-entry, 100-year rotation. Some selected areas were scheduled for four entries in 120 years (LUD IV) and six entries in 200 years (LUD III) for visual considerations. A three-entry rotation assumes the first entry will be made within 30 to 40 years. If areas are not entered, and the ASQ is harvested, other areas will have to receive a heavier entry, resulting in a pattern of high percentage first

entries being established, and therefore creating conditions under which the three-entry rotation may not be achievable.

The TLMP as amended also scheduled timber volume ranging from 70 million to 120.6 million annually as anticipated management outputs from the Chatham Area (TLMP, page 5).

Supplement to the TLMP Revision Draft EIS (TLMP SDEIS)

Sufficient Volume for APC Contract Needs in TLMP SDEIS

The TLMP SDEIS Chapter 3 section on timber (pages 3-354 and 355) provides the following summary statements in terms of the timber supply and the long-term timber sale programs:

If utility volume is included, Alternatives B, C, D, and P would meet or exceed the projected demand for National Forest timber (400 MMBF). Alternative A would provide 89 percent of the projected demand.

All of the first decade Allowable Sale Quantity (ASQ, sawlog) in Alternative A would be needed to satisfy long-term contracts; Alternative B would need 82 percent of the ASQ; Alternative C, 69 percent; Alternative D, 66 percent; and Alternative P, 75 percent.

These statements show that the timber supply was adequate to satisfy the long-term timber sale contracts (both APC and KPC). The data to support these statements is displayed in table 3-127 on page 3-355 and 3-135 on page 3-371 of TLMP SDEIS. Table 3-135, in particular, shows the Long-Term and Short-Term Sales program volumes for the decade.

TLMP SDEIS also presents a discussion of timber supply within the former long-term contract sale area. As of October 1990 (the date of the TLMP SDEIS analysis), the remaining APC Long-term Timber Sale Contract volume requirement was 2,458 MMBF, including utility, and 1,942 MMBF expressed in net sawlog measure (TLMP SDEIS, table 3-126, page 3-329; table 3-133, page 3-366). TLMP SDEIS alternatives C, D, and P provide, respectively 2,120 MMBF, 1,920 MMBF, and 1,910 MMBF, net sawlog, from the APC designated sale area, allotments B, H, A-1, and C-Contingency (TLMP SDEIS, table 3-133, page 3-366). So the "current direction" alternative C in the TLMP SDEIS indicated sufficient timber remaining available in the former APC sale area to meet remaining contract volume requirements, consistent with resource protection requirements and other constraints projected in the document. Two other alternatives, including the current preferred alternative, indicate that most of the remaining contractual obligation would be available within the sale area, consistent with the constraints of those alternatives.

Furthermore, TLMP SDEIS displays the number of acres of tentatively suitable lands that are scheduled to be harvested over the planning horizon for each Management Area (TLMP SDEIS, table 3-183, page 3-378). This table indicates that the scheduling of the Ushk Bay Project Area and other project areas over the next several years is anticipated. In addition, this table shows that there are adequate suitable acres in these Management Areas, scheduled to be harvested, to provide that volume. A portion of table 3-138 is displayed below in Table 3. It displays, for Alternative P, the scheduled suitable acres by Management Area. Table 3 is similar to Table 2 which showed the Management Areas scheduled for timber sale preparation during 1991-95. A comparison of these two tables indicates that the Management Areas identified as appropriate for timber harvest activities in the existing TLMP (as amended winter 1985-86) are also identified as appropriate in Alternative P of TLMP SDEIS.

Cumulative Effects

The TLMP SDEIS considered the cumulative effects for forest-wide acres managed for timber production for both the long-term and short-term timber sale programs. These effects are discussed on pages 3-371 through 3-381. Cumulative effects for other resources are discussed at the end of their respective sections.

Analysis pointed to the need to schedule harvest in VCU's assigned management prescriptions which permit consideration of timber harvest, including the VCU's within the Ushk Bay Project Area. These VCU's in the current Forest Plan, and in the draft revised Forest Plan would have been needed to help meet the Tongass National Forest Allowable Sale Quantity. The forest-wide cumulative effects analysis in the TLMP SDEIS supported the conclusion that this harvest could be accomplished within both existing and proposed TLMP standards and guidelines and other requirements for resource protection.

**Table 3
TLMP SDEIS Alternative P Scheduled Acres (selected Management Areas)**

Management Area	Name	Acres Scheduled	Percent of MA	Total MA Acres
C27	Mud Bay	1,600	7.9	21,008
C28	Neka	13,155	16.2	81,130
C29	Tenakee Inlet	14,439	13.8	104,292
C30	Freshwater	23,958	21.2	112,824
C31	Whitestone	21,354	28.9	73,882
C32	Tenakee	5,878	23.6	2,918
C34	Crab Bay	6,051	8.3	72,571
C37	Corner Bay	36,265	27.9	129,489
C39	Ushk Bay	3,131	8.2	38,008
C40	Neva-Olga St.	5,671	3.1	180,489
C41	Rodman Bay	12,628	17.0	74,143
C43	Kelp Bay	8,099	7.8	104,011
C44	Upper Kruzof	6,721	10.5	64,189
C45	Mt. Edgecumbe	80	0.2	52,198
C48	Silver Bay	2,028	2.5	81,649

Subsistence

With the passage of the ANILCA, Congress recognized the importance of subsistence resources to rural residents of Alaska. In particular, prior to any disposition of public lands, an agency must first complete a subsistence effects evaluation, including consideration of the availability of other lands (ANILCA 810(a)).

TLMP SDEIS displays the number of acres that are scheduled to be harvested for each MA (TLMP SDEIS, Table 3-138, page 3-378). In short, all LUD III and IV VCU's adjacent to the Chatham Strait, Peril Strait, Sitka Sound, and Tenakee Inlet would be scheduled for harvest within the next 5 to 10 years, indicating a level of impact to all subsistence use areas. However, the most significant impacts on the subsistence resource habitat would not occur until 20 to 30 years after the timber harvest when the second growth canopy closes. When those impacts to subsistence resources are viewed from a reference point 20 years in the future, the particular importance of which areas are scheduled first during a 50 year period appears to be minor.

In considering communities that may be most affected by any proposed timber harvest in the Ushk Bay Project Area, Sitka, Haines, Petersburg, and Wrangell appear to have the strongest cultural and subsistence ties to the area. Each community has its own level of reliance on subsistence as well as its own level of reliance on the Ushk Bay Project Area for supplying subsistence resources. The following information about subsistence use for each community is a summary of more detailed information provided in chapters 3 and 4 of the project EIS.

Sitka residents harvest a wide variety of resources including deer, bear, seal, waterfowl, furbearers, salmon, shellfish, and marine fish, among others. In 1987, the annual harvest of subsistence resources was 139 pounds per capita. Subsistence provided 24 percent of the meat and fish that year. Sitka residents identify the beach fringe and much of the inland portion of the Ushk Bay Project Area as deer use areas (see Appendix H). On the average Project Area WAAs supply 7 percent of Sitka's deer.

Haines is located on the north end of Lynn Canal on the Chilkat Peninsula and is approximately 100 miles from the Project Area. The beach fringe at Ushk Bay as well as the beach fringe south of Poison Cove were identified by Haines residents as important deer use areas. The beach fringe from Basket Bay in Chatham Strait over to Finger Creek in Peril Strait was also identified as important deer use areas.

Petersburg is located on the northwest shore of Mitkof Island. Petersburg residents harvest deer, bears, moose, salmon, other finfish, waterfowl, clams, crabs and berries. The annual harvest of these subsistence resources in 1987 was 203 pounds per capita, with subsistence providing 31 percent of the household meat supply. Salmon was the largest subsistence item harvested, comprising 23 percent of the total per-capita harvest. However, deer and other finfish (both at 22 percent) and shellfish (17 percent) were also important food items.

Wrangell is located on the northern tip of Wrangell Island. Wrangell residents harvest deer, bears, moose, waterfowl, salmon, halibut, other finfish, other marine fish, shellfish and berries. The annual harvest of subsistence resources was 164 pounds per capita in 1987, with subsistence providing approximately 23 percent of the household meat supply. Shellfish and other finfish were the main subsistence items taken, with each comprising 26 percent of the total per capita harvest. However, salmon (18 percent) was also an important food item.

As a result of several considerations, including the availability of subsistence resources on Chichagof Island, including LUD II areas adjacent to the Project Area, the relative independence of most communities from subsistence resources in the Project Area, as well as analysis contained in the TLMP SDEIS, the Forest Service determined to schedule an environmental analysis of the Ushk Bay Project Area ahead of other

Project Area analyses. Subsequent projects including North Kuiu Island, Eight Fathom, and Northwest Baranof Island will undergo environmental analysis within the next 1 to 3 years.

Extensive forest-wide cumulative effect analysis has been included in the TLMP SDEIS (TLMP SDEIS pages 3-628 through 3-765). That analysis, and the tables of data shown in Appendix K of TLMP SDEIS are incorporated by reference into this document. The data in Appendix K and L indicates subsistence hunting of deer and other uses in virtually every area of the Tongass with substantial quantities of harvestable timber. The following information is extracted directly out of the Draft Tongass Land Management Plan Revision, Supplement to the Draft Environmental Impact Statement, pages 3-762 and 3-763:

In conducting the subsistence evaluation it is determined that, in combination with other past present and reasonably foreseeable future actions, none of the alternatives would pose a significant possibility of significant restriction for salmon, other finfish, marine mammals, invertebrates, plants, mountain goat, moose, waterfowl, sea birds, or other small game. Together these resources account for an average of 79 percent of the total harvest of subsistence resources (Kruse and Muth, 1990).

In considering the impacts of future actions that may take place under the proposed alternatives on deer, two types of analysis were conducted. Potential effects were first determined for those WAAs where residents have successfully harvested deer, then for those WAAs where residents have ever gone to harvest deer. Both 10 percent and 20 percent harvest levels of the deer population were used.

Considering only those WAAs where residents successfully harvested deer and assuming a harvest level of 10 percent of the population, there would be sufficient deer in all alternatives for the next 50 years to meet all subsistence needs for all communities except Gustavus, Hoonah, Kake, Pelican, Sitka, and Yakutat (Appendix K). For these communities, there would be insufficient habitat capability to support harvest by all subsistence users (regardless of the community of origin). However, at 20 percent of the population, all subsistence needs for these communities would be met by all alternative for the next 50 years (Appendix K).

If instead of considering only those WAAs in which hunters were successfully, we consider all WAAs ever hunted by community residents, then there would be sufficient deer habitat capability to support all subsistence hunters in the WAAs used for hunting by all subsistence communities except Pelican and Gustavus. If instead of assuming a 10 percent harvest level, a 20 percent harvest level is used, there would be sufficient habitat capability to support all subsistence harvest in all WAAs used for hunting by all subsistence communities.

As a result of the analysis of the impacts of projects that would be permissible under each of the alternatives considered for adoption in the Forest Plan, it has been determined that all of the alternatives, if all permissible projects were fully implemented, have the potential to impact subsistence uses of deer, brown bear, and furbearers (specifically martens) due to potential effects of projects on abundance/distribution, and competition.

The analysis shown in chapter 4 of this Project EIS is supported by the analysis shown above in the TLMP SDEIS. The conclusion stated above, "it has been determined that all of the alternatives, if all of the permissible projects were fully implemented, have the potential to impact subsistence uses of deer ...," supports the conclusion that any environmental analysis area within the Tongass would have a similar chance of having a significant possibility of a significant restriction on subsistence resources for Sitka Black-tailed deer, and other mammals.

The analysis for ANILCA Section 810 are shown in the Subsistence section of chapter 4, in this EIS. The determinations made from the ANILCA Section 810 analysis and findings is part of the Record of Decision for this projection and were developed in conjunction with the Final EIS.

Forest Plan Implementation

Review of Available Volume

In July 1990, a working group conducted a review of the VCUs available for timber harvest on the Chatham Area for available volume. This analysis was based on computer inventories and Allowable Sale Quantity (ASQ) calculations from TLMP. Worksheets supporting the analysis and conclusions are included in the Ushk Bay planning record and are incorporated by reference.

The working group used the following guidelines to identify likely areas to schedule for environmental analysis in the near future:

- (1) Evaluate by VCU the total volume available. Between 1991 and 1996, there is a need to identify a potential harvest of 600 MMBF.
- (2) Identify a tentative timber sale schedule which addresses volume to be offered from both Stikine and Chatham Areas.
- (3) Prepare a schedule of environmental analysis areas which shows how the Chatham and Stikine Areas will meet tentative timber sale schedule from 1991 through 1996.

The results of the first step by the working group analysis are presented in Table 4. This analysis took into account areas included in the current (at that time) House of Representatives bill HR 987. The results of this volume review, further supported by the draft TLMP revision information, provided the basis for scheduling the next series of environmental analyses.

For each area identified as having sufficient volume available to consider for further environmental analysis at this time, a review was then conducted to decide which areas to schedule first, considering current TLMP and proposed revised TLMP schedule, and other factors.

**Table 4
Available Volume by VCU (9/89)**

Analysis Area	VCUs in Analysis Area	1991-1996 (MMBF)
Areas Free From Legislative Consideration		
AA 1 - Lisianski Lisianski	188, 250, 252, 253, 256-258, 260	25.8
AA 2 - Mud Bay - Neka Saltwater	222	12.0
AA 3 - Freshwater	Scattered 211, 216, 219	30.2
AA 4 - Upper Tenakee Inlet Crab Bay	230, 231, 232, 233, 234	86.7
AA 5 - Hoonah Sound	(proposed Wilderness, see below)	
AA 6 - Lower Tenakee Inlet - Sitkoh Bay Sitkoh	240, 241, 242, 243, 244, 245	61.5
AA 7 - Rodman Bay Saook Bay, Appleton Rodman-Duffield	293, 294 291, 292, 293	71.7 42.9
AA 8 - Sitka Sergius-Fish Kruzof Nakwasina Kalinin Neva	287, 288, 289, 290 303, 306, 308, 309 300 304, 305 302	97.4 44.1 37.7 7.7 28.4
AA 9 - East Baranof Catherine Island Kelp Bay	296, 297 298, 314, 315	54.8 56.9
AA 10 - Silver Bay Silver Bay	319, 320, 321, 322, 323, 324	46.9
	Total Available Excluding HR 987 Areas	704.7
Proposed Wilderness Areas		
AA 1 - Lisianski	189	9.3
AA 2 - Mud Bay - Neka	191-197	141.7
AA 4 - Tenakee Inlet	224-227	64.5
AA 5 - West Hoonah Sound	279-283, 287, 286	115.7
AA 1/4 - North Arm/Hoonah Sound	248, 249, 262, 246, 247	59.7
AA 6 - Kadashan	235, 237	51.8
	Total Inside Wilderness Proposal	410.1

Results of Analysis

Upon completion of the above analysis, two Project Areas were identified and scheduled for environmental analysis. These two areas were Kelp Bay and Southeast Chichagof. Following enactment of Tongass Timber Reform Act (TTRA), a schedule of additional project level environmental analyses were identified for fiscal years 1993 through 1996. This schedule has been reviewed and reaffirmed and is represented in Table 1. The following section presents the rationale for the first four Projects on the Chatham Area..

- Kelp Bay** The East Baranof (AA9) and Saook and Appleton Cove from Rodman Bay (AA7) project area is top priority for analysis of approximately 100 MMBF. It is noted this is an estimated volume, and not a "target." The East Baranof/Rodman Bay area was identified in the 1985-86 Amendment to TLMP as scheduled for harvest in the 1990-1995 period. Historically, the Kelp Bay, and Catherine Island area was scheduled for harvest in 1981-86 EIS. Due to low volumes per acre and poor market conditions this area was not harvested, and was negotiated out of the 1986-90 EIS. With currently higher markets, it is thought this area, if combined with other adjacent areas, might meet the mid market assessment. It was also felt the Kelp Bay/Rodman Bay area has had limited previous entries, making them partially roaded and developed. In terms of political controversy it makes sense to schedule harvest there, rather than attempting to schedule harvest into an area which has not had previous development. This conclusion is consistent with public comments received on the FSEIS 1981-90.
- Southeast Chichagof** Crab Bay, Corner Bay, and False Island transportation systems are to comprise a single project area to analyze harvest of approximately 100 MMBF. This is a combination of Upper Tenakee Inlet (AA4) and Lower Tenakee Inlet-Sitkoh Bay (AA6). Again this is an estimate volume and not a mandated "target."
- Ushk Bay** West Hoonah Sound is scheduled for Fiscal Year 1993. Enactment of TTRA did not change the Land Use Designation for VCU's 279, 280, and 281, making it available to be scheduled as a NEPA project area. This area is next in priority due to the opportunity to efficiently use work done for a previous EIS prepared for the 1986-90 five-year operating plan.
- Eight Fathom** The Mud Bay-Neka (AA2) was the next logical area to schedule for 1994. Similar to West Hoonah Sound, this area was under consideration by Tongass Legislation. Enactment of TTRA did not change the LUDs for VCU's 193, 196-198, 200-202, 222 and 223, making it available to be scheduled for environmental analysis. This area is next in priority to permit the Forest Service to efficiently use work previously completed. The Chicken Creek Logging feasibility study was completed in 1986, making this area a higher priority than other areas where analysis has not been started.

Tongass Independent Timber Sale Schedule

On June 30, 1994, the Forest Service announced a schedule to make 71 million board feet (MMBF) of timber available for bidding by independent sale operators between July 1, 1994 and September 30, 1994 on the Tongass National Forest. The timber sale offerings were rescheduled to utilize some volume from the former Alaska Pulp Corporation (APC) long term timber sale contract area. This timber was available as a result of APC's closure of the Sitka pulp mill and the subsequent termination of the long-term contract. In addition, approximately 100 MMBF was tentatively identified for the independent program in fiscal year 1995.

Included in this schedule for the remaining three months of fiscal year 1994 were six small sales on the Chatham Area. These six sales total about 66 MMBF of the 71 MMBF scheduled. Four additional sales were identified on the Chatham Area for the independent program in fiscal year 1995. These four total about 67 MMBF of the 100 MMBF tentatively selected. One of the four sales scheduled for fiscal year 1995 is the Poison Cove Sale (located in the Ushk Bay Project Area). These four sales are listed below in Table 5.

Table 5 Chatham Area Tentative FY 1995 Independent Timber Sale Schedule			
Sale Name	Project Area	VCUs	Estimated MMBF
Broad Creek	SE Chicagof	246	18.3
Poison Cove	Ushk Bay	279-280	23.0
Hanus Cable Resale	Kelp Bay	196-197	14.7
Hanus Helicopter Resale	Kelp Bay	296-297	11.0

In addition to the independent sale program, some adjustment of the Ketchikan Pulp Company (KPC) long-term contract tentative offering schedule was made to reflect the recent events. Some of the original volume scheduled for the Alaska Pulp Corporation long-term contract (now cancelled) was shifted to the KPC contract. This was not the first time volume has been provided to the KPC contract from outside the KPC sale area. The Stikine Area has supplied volume in the past.

Two offerings for KPC were identified on the Chatham Area for the remaining three months of fiscal year 1994. These two offerings total about 42 MMBF of the 70 MMBF scheduled. One additional offering on the Chatham Area of about 6 MMBF was tentatively selected for KPC in fiscal year 1995.

Appendix B

Public Involvement Activities

APPENDIX B PUBLIC INVOLVEMENT

Date	Activity
March 27, 1992	Meeting with Alaska Department of Fish and Game (ADF&G) to discuss potential fisheries issues
May 8, 1992	Notice of Intent, Federal Register
June 4, 1992	Mailing list finalized to incorporate all interested parties and agencies
June 8, 1992	Mailed scoping newsletter to approximately 400 individuals, organizations, and State and Federal agencies
June 10, 1992	Publication of meeting notice in local newspapers
June 15, 1992	Meeting in Angoon with tribal elders and city officials
June 17, 1992	Public scoping meeting in Sitka that included representatives from the Sitka Tribal Association, Shee Atika Native Corporation, Native Subsistence Commission, ADF&G Commission, and the Alaska Pulp Corporation
July 9, 1992	Public scoping period ends. A total of 85 responses were recorded during the scoping period.
November 15, 1992	Feedback newsletter mailed to approximately 400 individuals, organizations, and State and Federal agencies to review issues resulting from the public scoping process
June 11, 1993	Availability of Draft EIS. Comment deadline initially set at July 26, 1993, later extended to August 25, 1993. Comments received total 295. Mailing list is updated to reflect additional responses.
July 19, 1993	Subsistence hearing and public comment meeting in Sitka. Testimony from 15 people received.
August 9, 1993	Meeting with the Sitka Conservation Society
August 19, 1993	Meeting with the Sitka Tribe of Alaska

LIST OF MEETING ATTENDANTS

ANGOON - JUNE 15, 1992

<u>NAME</u>	<u>REPRESENTING</u>
George Johnson	Mayor of Angoon
Edward Gamble	Former Mayor of Angoon
George Jim	Tribal Elder
Matilda Gamble	Self
Lydia George	Self
Julie Lane	City Clerk
K.J. Metcalf	Planning and Zoning
Dave Every	Dames & Moore
Ed Johnson	Dames & Moore
Janis Burns	Forest Service
Mike Weber	Forest Service

LIST OF MEETING ATTENDANTS

SITKA - JUNE 17, 1992

<u>NAME</u>	<u>REPRESENTING</u>
Herman Kitka, Sr.	Self
Bradley Shaffer	Self
Les Kennear	Fish and Game Advisory Commission Chairman
Pat Joensuu	Alaska Pulp Corporation
Ted Hunt	Self
Larry Edwards	Self
D. Gordon	Self
Gus Adams	Sitka Tribe of Alaska
Dorothea Theodoratus	Sitka Tribe of Alaska
Mark Jacobs, Jr.	Native Subsistence Commission
Robert Ellis	Self
Rebecca Himshoot	Self
Deborah Verrelli	Self
Dave Every	Dames & Moore
Ed Johnson	Dames & Moore
Maureen Sims	Dames & Moore
Dave Janis	Dames & Moore
Mike Weber	Forest Service
Janis Burns	Forest Service
John Sherrod	Forest Service

LIST OF SCOPING RESPONDENTS

Alaska Department of Fish and Game	Kurt Iverson
Alaska Forest Association	Darrell Jack
Gus Adams	Mark Jacobs
Randy Allen	Herman Kitka
Ralph Bachk	Khoi Le
Steven Borrell	Chris Motto
Brian Brown	Foy Nevers
Kevin Brownlee	Roger Sams
Peter Carr	Ray Sapinoro
City and Borough of Sitka	Jim Shoemaker
James Clark	Sitka Tribal Association
Dept. of Interior, Fish and Wildlife Service	Christopher Skoog
Kurt Flynn	Dale Stirling
Glacier Guides, Inc.	Gary Woodall
Paul Hamby	George Woodbury
Audrey Hitch	

Appendix C

Road and Unit Cards

Appendix C

Ushk Bay Project

Road and Unit Cards

The road and unit cards that follow depict final design (after field verification and IDT review) as well as notations based on the field and IDT review . The cards primarily serve as a means to document IDT review and input regarding resource concerns and recommendations for each road segment and harvest unit. Final unit and road design are also depicted on the alternative maps in Chapter 2 of Volume I. The size of some units varies among alternatives in response to the different issues described in Chapter 1. An example of how the final designs evolved during the analysis, based on IDT input, field verification and the issues, is included below. Unit- and road-specific information is displayed in Appendix K for each alternative. Aerial photo overlays showing the final unit and road locations are part of the Ushk Bay Planning Record and will be used for implementation.

Harvest unit 118 is presented here as an example of the planning, field verification and IDT review process described above. This unit was selected to be included in Alternative C and E in an attempt to meet the upper end of the desired volume output for the area. This unit was not included in the other alternatives to reduce the visual impact of harvesting timber along Peril Strait. Thus, its inclusion in some alternatives but not others allows for a comparison of impacts related to both the original purpose and need and the issue of minimizing effects on important viewsheds.

Initially, unit 118 contained approximately 114 acres and extended from the midslope position of one valley wall across the valley to the midslope position on the opposite valley wall. During the field examination of the unit, it was discovered that a Class I fish stream occurs in the bottom of the valley, which requires a TTRA buffer. It was decided to divide unit 118 into two parts along the stream buffer and to rename the portion north and west of the stream as unit 119. Also, the remaining unit 118 was moved further south and west to reduce its impact on the view from Peril Strait and to avoid an area of unstable slope. The final unit 118 is 34 acres and overlaps only a portion of the original unit. The remainder of unit 118 was combined with a portion of unit 119B and was renamed 119 for a total of 48 acres. Unit 119B which was initially 74 acres ceased to exist.

As can be seen in the example of unit 118, the planning process is a dynamic one with changes occasioned by the interplay among the various affected resources. In the above example, soils, visual, and fisheries concerns interacted most prominently. Similar changes occurred on other units with the interaction of resources during field verification and IDT reviews. The specific circumstances at each site, for example eagle nest trees, deer winter range, recreation places, estuarine habitat, and Class I, II, and III streams, were considered as the design of the unit or road segment evolved.

APPENDIX C

ROAD CARDS










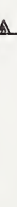
Road Card Ushk Bay EIS

Road Number: 7516-A

Photo Information

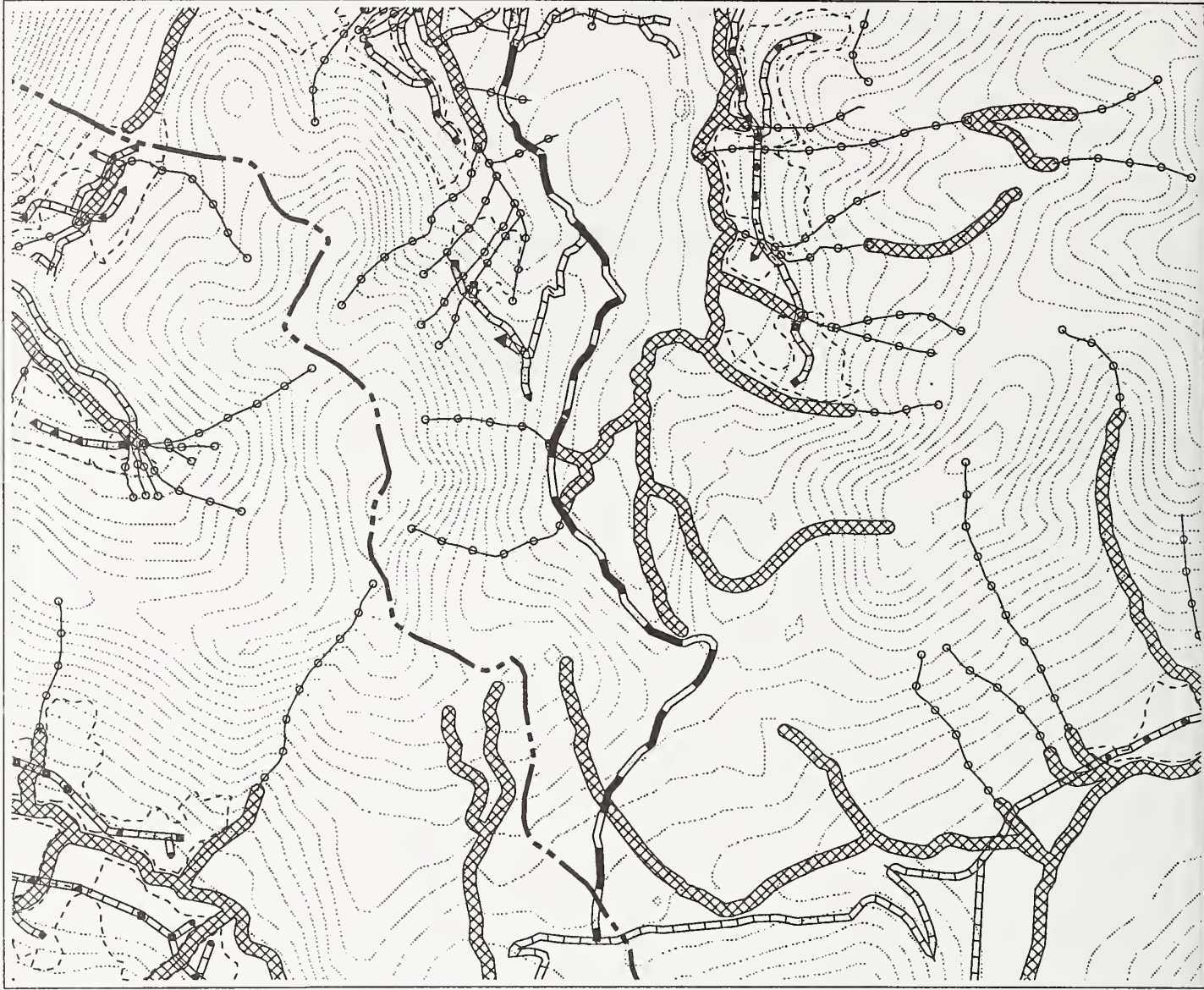
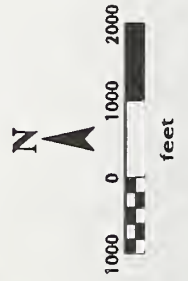
Year: 1986
 Flight Line: 24, 25
 Photo Number: 38-139 & 110-111

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 280
Road No. 7516
Photo No. 138-139 & 110-111 Flt Line 24 425
Scale: 1:24000

Potential collector 2.7m

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: Simple construction thru gentle terrain (mostly) in scrub timber and muskeg. Gentle grades permitting hauling in either direction.

APL Date: 7.2.92

Timber/Logging: Only 1 very small setting assessed directly. Gentle grades, reasonable alignment.

APL Date: 8.6.92

Fisheries/Hydrology: Time construction around fish activities, minimize siltation during construction. Provide fish passage on class I + II streams.

OPN Date: 9/15/92

Soils/Geology: AVOID DEEP CUTS INTO MUSKEG AREAS AND DRAINAGE. PROVIDE ADEQUATE, NON-CENTRALIZED CROSS MUSKEG. BEWARE OF THE CREEP POTENTIAL OF SLOPING STEEP CROSS SLOPES AND OF CUTTING INTO ~~THE~~ THE TOPS OF STEEP SLOPES AND POTENTIALLY UNSTABLE GROUND IN PARTICULAR ALONG THE ALIGNMENT BELOW UNIT 36. Road would provide ^{hydrocarbon} access to high elevation deer summer range. Impacts could be mitigated by closing road following logging. Date: 12/29/92 VLA

Recreation/Visual: Road would not be visible from water. would provide inland access if left open.

Date: GSG 12/30/92

Archaeology:



Date:

IDT Review By:

Date:

See Map Reverse Side


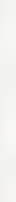





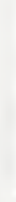


Road Card Ushk Bay EIS

Road Number: 7516-B

Photo Information

Year: 1986
 Flight Line: 25&26
 Photo Number: 109-111&12-14

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279 of 280

Road No. 7576

Photo No. 109-111 & 12-14

Scale: 1:24000

Flt Line 25 + 26 3.0 Miles
Collector.

Road Management Objective:

SEE APPENDIX K.

Date:

Transportation Planning: EASY CONSTRUCTION FOR THE MAJORITY OF THIS SECTION, TWO BRIDGES MAY BE REQUIRED TO CROSS MAJOR CREEKS. RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES.

Date: 7.3-92

Timber/Logging: Location permits productive tower logging in Units 31 and 103

DL Date: 7-3-92

Fisheries/Hydrology Avoid disturbance of muskies during construction of open A3 & 2 crossing to consider beaver dam, possibly put in temporary road crossing. Provide adequate cross drainage on steep slopes.

OVER

DWS Date: 7-9-92

Soils/Geology: AVOID DEEP CUTS INTO THE TOES OF STEEP SLOPES AND CHUTES, AVOID DEEP CUTS INTO MUSKIE AREAS AND PROVIDE ADEQUATE NON-CONCENTRATING, CROSS DRAINAGE. BURNAGE OF THE CREEP POTENTIAL OF SLOPING MUSKIES. DATE: DISAPPEARANCE

Wildlife:

Eastern half of road is high quality habitat for moose, other bears. Denying access after logging would mitigate impacts to other bears.

VLA

Date: 7/23/92

Recreation/Visual:

Switchbacks may be visible from Bison Cove and possibly the Alaska Marine Highway. Recommend L.A. assistance in final alignment

Date: 7-28-92

Archaeology:

Survey complete - no significant cultural resources - M. Kelly

Date: 7/20/92

IDT Review By:

Date:









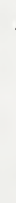
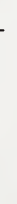
Road Card Ushk Bay EIS

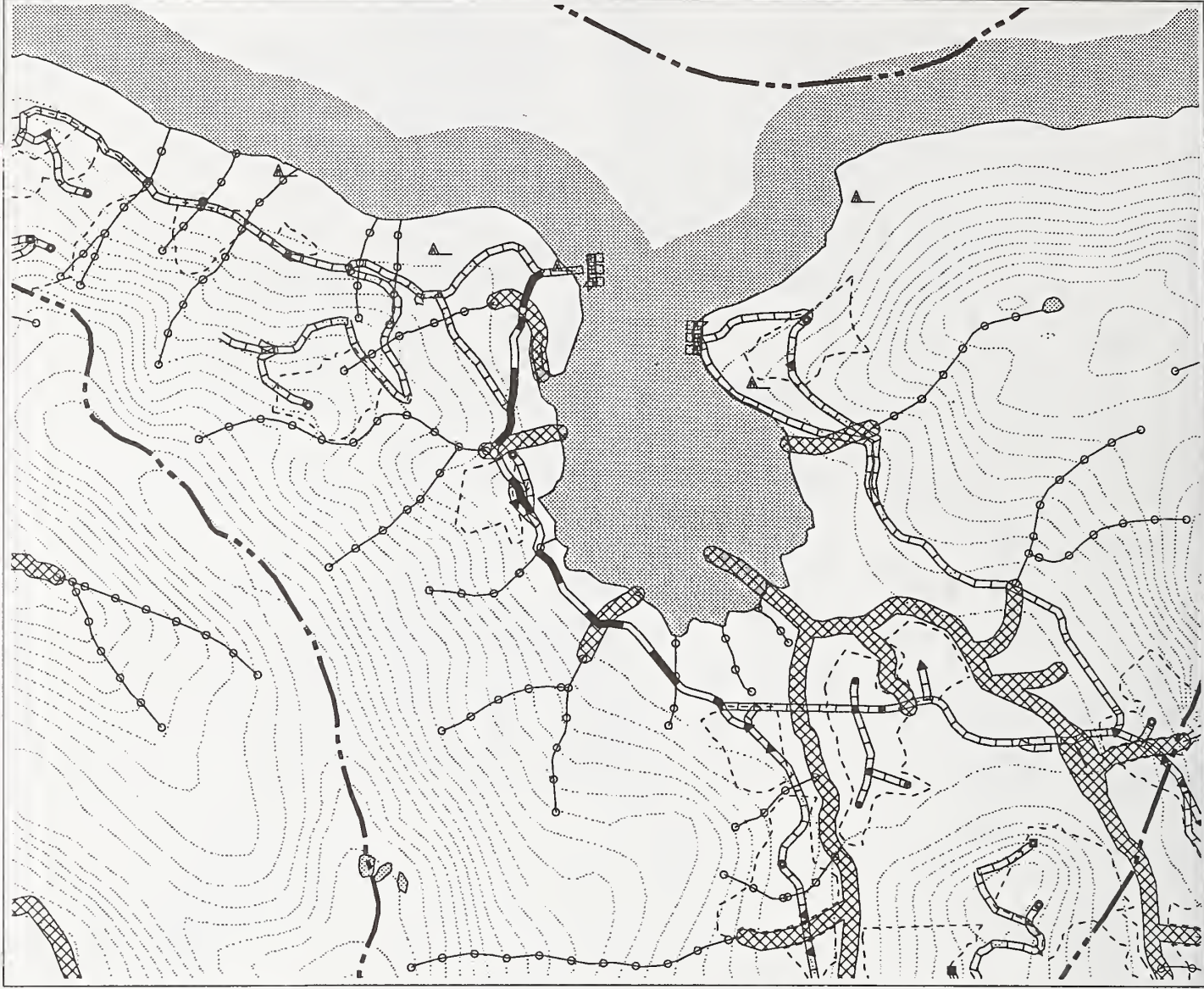
Road Number: 7516-C

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 56-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree



IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93

N



ROAD DESIGN CARD

VCU 279
 Road No. 7516
 Photo No. 56-59 Flt Line 27
 Scale: 1:24000 Collector 0.8 ml

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning: Major constraints are 2 eagle trees. Eastern eagle buffer is avoided by locating road upslope, resulting in expensive crossing (to cuts). Western eagle tree could not be avoided due to excessively unstable nature of crossing upslope/beach downslope. Located road in saddle 180' approx. N. of eagle tree & variance must be sought.
 Date: 7.2.92

Timber/Logging: 2 spurs shown will permit access to landings for downhill yarding. Western landing encrode the beach fringe.

SPZ Date: 7.2.92

Fisheries/Hydrology: Minimize disturbance of mussel banks. Consider temporary crossings of BS channel types crossing in for bedrock & shifting channels with high water volume. Road construction on crossings over Class III streams should minimize amount of siltation entering stream. DDN 9/1/92
 Date:

Soils/Geology: BEWARE OF THE GREAT POTENTIAL OF SLOPING MATERIAL ONTO STEEP CROSS SLOPES. AVOID DEEP CUTS AND SIDECASTING SW'EM END OF THE ALIGNMENT APPEARS MARGINAL. PROVIDE FIELD REVIEW OF THIS AREA. THE MAJOR PROBLEM IS A NOTCH CROSSING NEAR THE EDGE OF UNIT 104 AND FOR THE UNSTABLE WILDLIFE: DISSECTION NEAR THE EDGE OF UNIT 104. ROAD UNIT IS HIGH QUALITY HABITAT FOR MARTEN, BROWN BEAR, OTTER. AVOID CONSTRUCTION/LOGGING DURING EAGLE NESTING SEASON TO MINIMIZE DISTURBANCE OF NESTING ACTIVITIES. VARIANCE IS REQUIRED FOR MIT TREE @ 9%. DENYING VEHICULAR ACCESS AFTER LOGGING WOULD REDUCE IMPACT TO WILDLIFE.
 VLA Date: 7/23/92

Recreation/Visual: Road cuts likely to be visible from bents in Poitern Cove. Would provide future access to hikers and other recreationists.
 Date: 7.28.92

Archaeology: Survey complete - No significant cultural resources identified - M. Kelly
 Date: 7/21/92

IDT Review By:
 Date:





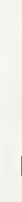




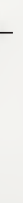
Road Card Ushk Bay EIS

Road Number: 7516-D

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 56-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 279Road No. 7516Photo No. 56-59 Flt Line 27Scale: 1:24000ARTERIAL 2.7 MILES

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: MAINLINE ROAD AVOIDS SEVERAL KEY EAGLE TREE SITES. IMPROVEMENT TRANSPORTATION COST IS SIGNIFICANT, EFFICIENT ACCESS IS PROVIDED FOR LOGGING THIS AREA. CONSTRUCTION IS PRIMARILY EXCAVATION + DRAIN INLET. ADDRESS GRADE RISES AROUND 8% (25 IN. PER 100 FT) TO AVOID BEACH TREES. *JK*

Date: 7-11-92

Timber/Logging: YARDING FROM THIS ROAD IS ~~NEAR~~ BEACH IN ~~NEAR~~ NEARLINE AREA IS MOSTLY FOR SHORT DISTANCES DUE TO BEACH FRINGE

JK Date: 7-11-92

MINIMIZE DISTURBANCE TO MUSKIEG AND RIPARIAN WETLANDS. ROAD CROSSES FISHERIES/HYDROLOGY: C-1 CHANNEL; RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES, DESIGN FOR PEAK FLOW, HIGH BEDLOAD TRANSPORT, AND SHIFTING CHANNEL ALIGNMENT. MULTIPLE V-NOTCH CHANNELS ALONG COAST, REGULARLY SPACE CROSS DRAINS TO DISSIPATE OVERLAND FLOW. Date: 7-21-92

Soils/Geology: ALIGNMENT CROSSES MANY MARGINAL AND RISKY STEEP SLOPE ALONG THE U'VEEN SEGMENT, AND NUMEROUS STEEP CROSS SLOPES AND MULTIPLE, DEEP DISSECTIONS AND DEBRIS CHUTES OCCUR ALONG THE CONDUIT. ~~THE~~ EXTRA CONDUIT COSTS FOR MITIGATION AND SOME FAILURES SHOULD BE ANTICIPATED.

Wildlife: ROAD UNIT IS 730 FT. FROM EAGLE NEST TREE. MINIMIZE DISTURBANCE OF EAGLE BY SCHEDULING CONSTRUCTION/HARVEST ACTIVITIES OUTSIDE OF THE EAGLE NESTING SEASON. SOUTHERN END OF UNIT IS IN BEACH FRINGE AND IS HIGH QUALITY HABITAT FOR MOUNTAIN, OTHER BEAR. MINIMIZE IMPACTS TO WILDLIFE BY DENYING VEHICLE ACCESS AFTER LOGGING. VLA Date: 7/23/92

Recreation/Visual: Road may be visible from Alaska Marine Highway where exposed in harvest units. LTF would likely to provide future access for recreation. Date: *JK* 7-19-92

Archaeology: Survey complete - no significant cultural resources identified - M. Kelly

Date: 7/24/92

IDT Review By:

Date:


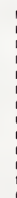








Road Card Ushk Bay EIS

Road Number: 7516-E

Photo Information

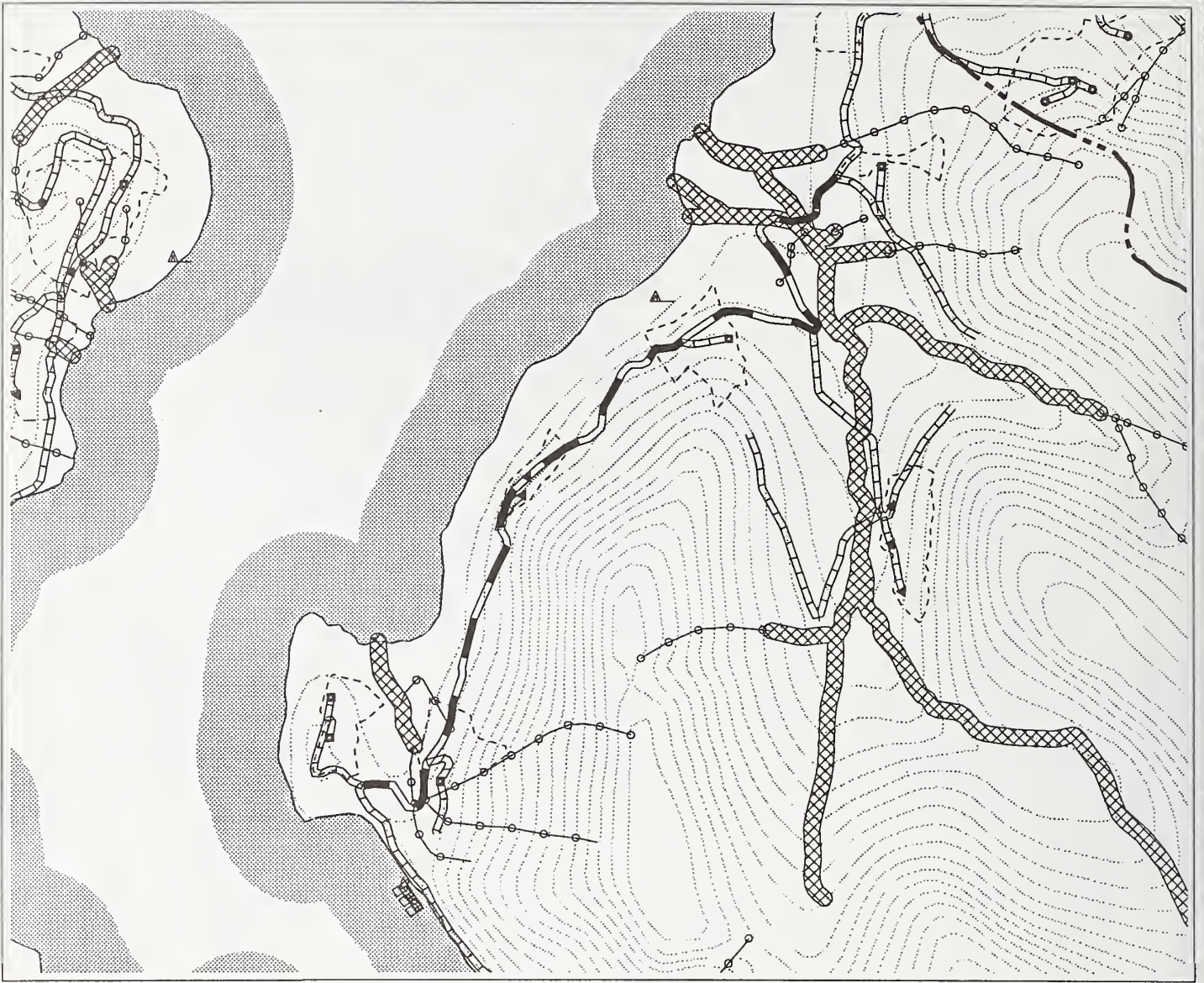
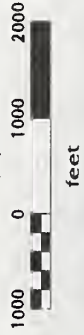
Year: 1986
Flight Line: 26&27
Photo Number: 7-9 & 58-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



ROAD DESIGN CARD

VCU 281
Road No. 7516
Photo No. 7-9 & 58-59 Flt Line 26427
Scale: 1:24000

Collector 2.5 ml.

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: ROAD TRAVERSES MODERATE TO STEEP TERRAIN WITH NUMEROUS CULTURE CROSSINGS AND 3 POSSIBLE BRIDGE INSTALLATIONS. RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES

Date: 7.1.92

Timber/Logging: Road is located primarily for efficient hauling but does create all available landings enroute, in some cases with short spurs. High % of downhill staking yarding due to topog.

SR Date: 7.1.92

Fisheries/Hydrology:

Provide adequate cross-drains to minimize concentrated flow and encourage spreading of flow on forest floor. Road crossings ~~at~~ stream ~~at~~ stream. Road construction of crossings over class III stream should minimize amount of siltation entering stream. SR Date: 7-9-92 9/1/92

Solils/Geology: AVOID DEEP CUTS INTO THE TOES OF SLOPE ONTO STEEP CROSS SLOPES AND CONSIDER FULL BENCH/END WALL CONSTRUCTION IN THESE AREAS. NEAR AND AROUND UNIT 43 THE ALIGNMENT APPEARS FEASIBLE HOWEVER LOGGING THE SLOPES ABOVE AND BELOW THE ALIGNMENT SHOULD BE AVOIDED. AVOIDATE GRUB AND ROCKFALL.

Wildlife: AVOID LOGGING THE ALIGNMENT SHOULD BE AVOIDED. West end of road is in beach fringe habitat. Denying access for logging would mitigate impacts to bear, marten, deer.

VA Date: 7/23/92

Recreation/Visual: Road would likely be screened from view by trees in beach fringe, except where exposed in harvest units.

SR Date: 7-23-92

Archaeology: Most of this work is outside high soil fertility zone. However, take care in a 10% gouge. The soil fertility zone is a 10% gouge. The soil fertility zone is a 10% gouge.

IDT Review By:

Date:


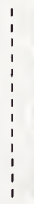





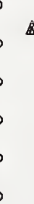
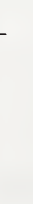
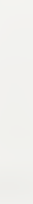
Road Card Ushk Bay EIS

Road Number: 7516-F

Photo Information

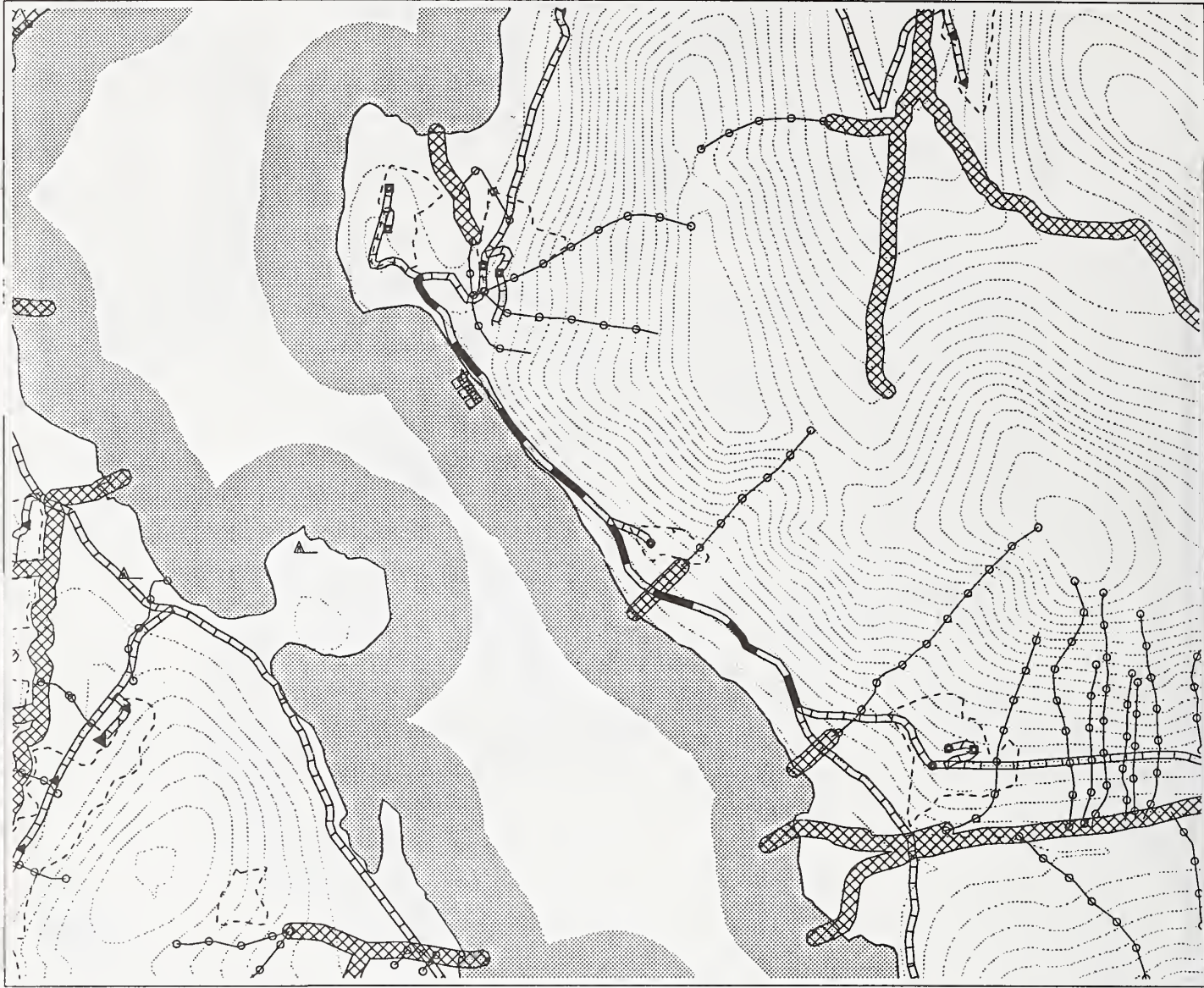
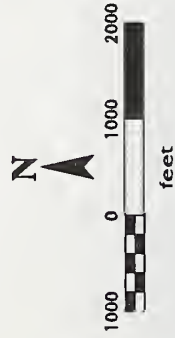
Year: 1986
 Flight Line: 25
 Photo Number: 115-116

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
Road No. 75/6
Photo No. 115-116 Flt Line Z S
Scale: 1:24000
Collector 1.0 mil.

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: The first 0.3 miles from the dump site westward is located by relatively steep terrain some of which will have to be eroded hauld where side slopes are in excess of 55%. The remaining road section is relatively easy road construction. A later, close to the beach could be considered to improve the grade. J.M.V. Date: 7-5-92

Timber/Logging:

N/A

Date:

Fisheries/Hydrology: Design crossings of A3 channels considering bedload removal of springs in alluvial fans at mouth of water to British road design & construction.

No fisheries concern DN 9/1/92

Date:

Soils/Geology: AVOID DEEP CUTS INTO THE TOES OF SLOPES, INTO SLOPES. MASS WASTING DEBRIS, AND INTO STEEP CROSS ACTIVE AREAS AND AVOID SIDECASTING MATERIAL ON STEEP SIDE SLOPES. CONSIDER MOVING THE ALIGNMENT DATE: A LITTLE CLOSER TO THE BEACH AWAY FROM THE MUD V-NOTCH MOUNTAIN OF WASTING.

Wildlife: NE half of road is high quality for entire unit is in beach fringe habitat. Impact to wildlife could be mitigated by denying vehicle access after logging. DSUBSHEUR 27 AUG 92

VLA Date: 7/23/92

Recreation/Visual: Road would likely be visible from beach. in Utek Bay if trees in beach fringe removed. Recommend maintain buffer of trees between road and beach Potential access point for recreation CF Date: 7-28-91

Archaeology: Survey complete - no significant cultural resources identified - M. Kelly

Date: 7/23/91

IDT Review By:

Date:










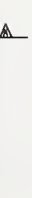
Road Card Ushk Bay EIS

Road Number: 7516-G

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 112-115

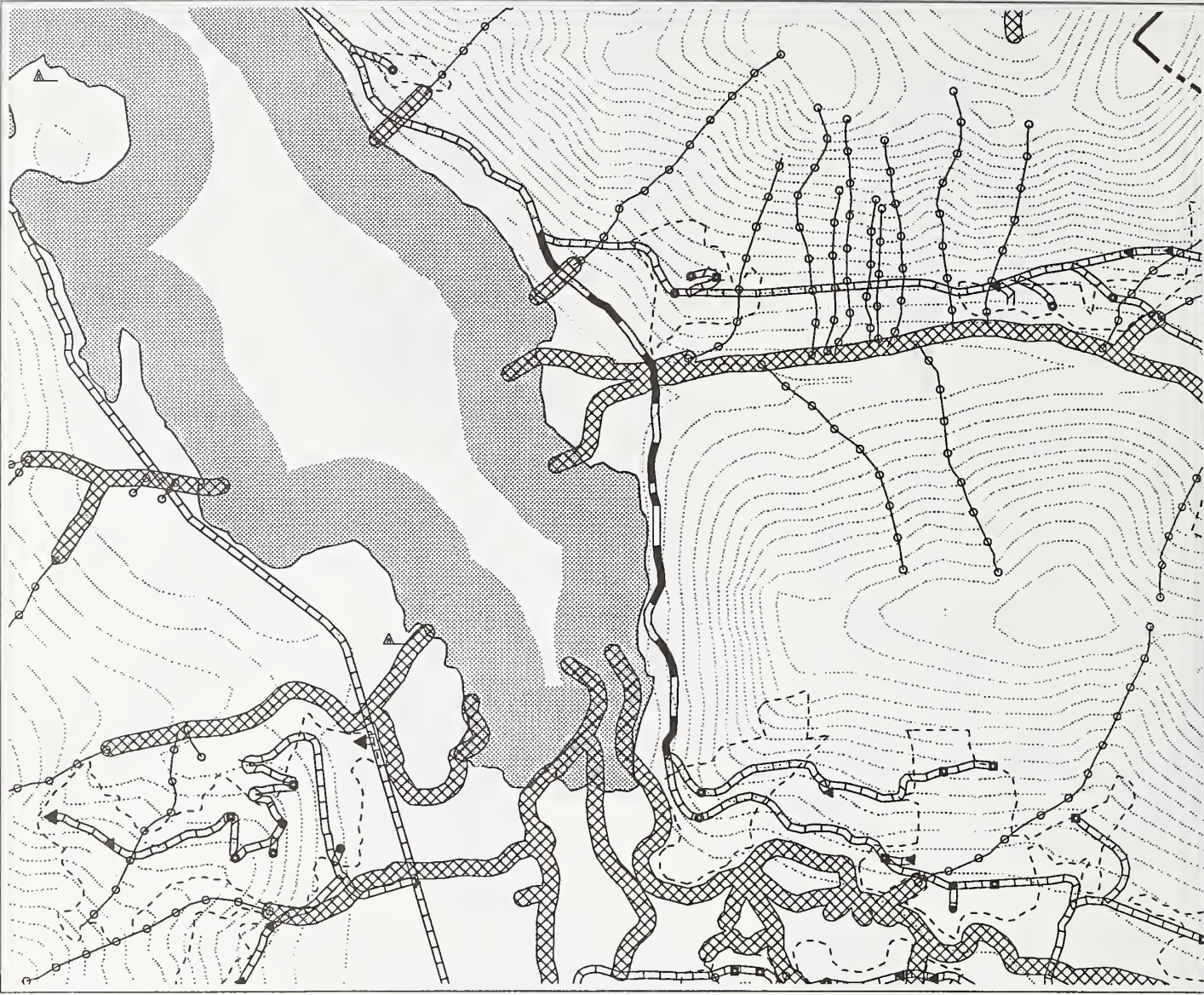
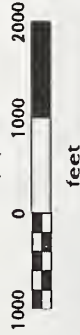
Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93

N



VCU 281
 Road No. 7516
 Photo No. 112-115 Flt Line 25
 Scale: 1:24000 Collector 1.1 ml.

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning:

GENTLE GRADES ON MODERATE TERRAIN, STREAM CROSSING IN EAST MAY NEED BRIDGE, RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURE.

Date: 8-6-92

Timber/Logging: N/A

Date: 8.6.92

Fisheries/Hydrology: Time restriction around fish-activities, minimize siltation during construction. Provide fish passage on class I-II stream.

DDN Date: 9/15/92

Soils/Geology: AVOID CUTTING INTO STEEP SLOPES AND INTO THE TOES OF STEEP SLOPES. AVOID SIDECASTING MATERIAL ONTO STEEP SLOPES AND CONSIDER USING PARTIAL FULL BENCH/END HALL CONSTRUCTION IN THESE AREAS. BEWARE OF SHEDDING CHANNELS IN DEBRIS MATERIAL AT THE BASE OF SLOPES.

Wildlife: Road would impact beach fringe habitat and moderate/high quality habitat for otters and brown bears.

Date: VLA 12/29/92

Recreation/Visual: Visible in foreground from Ushk Bay. Position road to take advantage of shoreline trees to screen.

Archaeology:

Date: GSG 12/30/92

Date:

IDT Review By:

Date:

Road Card Ushk Bay EIS

Road Number: 7516-H

Photo Information

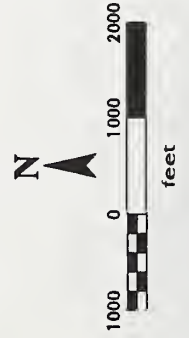
Year: 1986
 Flight Line: 133-136
 Photo Number: 15-12

Legend

- VCU Boundary
- - - Harvest Unit Boundary
- ▬ Road Card Segment
- ▬ Other Proposed Roads
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU
Road No. 281
7516
Photo No. 15-12 + 133-136 Flt Line 23+24
Scale: 1:24000

Collector J. G. M.

Road Management Objective:

SEE Appendix K.

Date:

Transportation Planning: GENTLE GRADES ON MODERATE TERRAIN. ROAD CROSSES S. USHK CR. RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURE. CLASS I STREAM; PROVIDE FOR FISH PASSAGE. VERY SHORT SEGMENTS FULL BENCH AND AND HAUL. NEW ROUTE TO AVOID BAD CROSSINGS NEAR HEAD OF USHK BAY

Date: 8-2-92

Timber/Logging: Road provides access to logical shored and tower landings.

J. G. M. Date: 8-2-92

Fishes/Hydrology: PROVIDE FISH PASSAGE ON CLASS I AND II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION MATERIAL PLACEMENT AND INSTREAM OPERATIONS (TIMING) IN FISH STREAMS.

Date: 9-23-92

Soils/Geology: Road avoids unstable slopes. Isolated sections with sides slopes steeper than 70% will require full bench & end hauling.

R. L. Date: 9-14-92

Wildlife: North end of road would impact estuary fringe habitat, high quality other and marten habitat, and moderate quality bear habitat.

VLA Date: 12/29/92

Recreation/Visual: Only the portion that rounds the slope would be visible from Ushk Bay. majority of road would be unseen.

Date: 6/5/92

Archaeology:

Date:

IDT Review By:

Date:

See Map Reverse Side


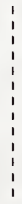






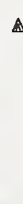
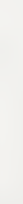
Road Card Ushk Bay EIS

Road Number: 751601

Photo Information

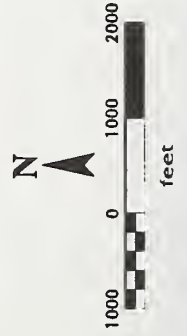
Year: 1986
 Flight Line: 23,24
 Photo Number: 15-12,133-136

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
 Road No. 75 1401
 Photo No. 15-12 + 133-136 Flt Line 23-24
 Scale: 1:24000 LOCAL 0.9 MILES

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning: NO BRIDGES, SIDE CREEKS ARE SMALL & HANDLED WITH CULVERTS; RECOMMEND EROSION CONTROL & SPURRED CUT CONSTRUCTION.

VA Date: 7-2-92

Timber/Logging: ROAD ACCESS'S FLATS FOR SMOKE LOGGING AND SAVINGS ARE POSITIONED FOR LEAVING ADJACENT SLATS

VA Date: 7-2-92

Fisheries/Hydrology: DESIGN, LOCATE AND CONSTRUCT ROAD TO MINIMIZE TO MUSKES AND REMAIN WETLAND. BS CHANNEL IN CENTRAL PORTION OF ROAD. DESIGN FOR PEAK FLOW AND HIGH BEADLOAD CONDITIONS. DESIGN CULVERTS FOR PEAK FLOW AND HIGH BEADLOAD TENSURE. REGULARLY SPACE CROSS ROAD DRAINS TO DISSIPATE OVERLAND FLOW

Soils/Geology: FEW SOILS CONCERNS. AVOID CUTTING INTO CROSS DRAINAGE. MUSKES AND PROVIDE ADEQUATE, NON-CONCENTRATING, AT THE BASE OF THE SLOPE NEAR THE DATE: DS WASHINGTON BOUNDARY OF UNITS 73 AND 74. Date: 26 AUG 92

Wildlife: Southern tip of road would impact high quality habitat for water, bear, and other. Impacts could be mitigating by denying access to water after logging.

VLA Date: 7/23/92

Recreation/Visual: Road would be unseen. would provide hunters access to other inland access

CE Date: 7-29-92

Archaeology: Survey complete - no significant cultural resources identified. M. Kelly

Date: 7/20/92

IDT Review By:

Date:





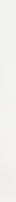



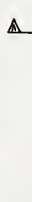

Road Card Ushk Bay EIS

Road Number: 751603

Photo Information

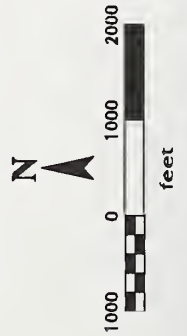
Year: 1986
 Flight Line: 23,24
 Photo Number: 15-12,133-136

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
Road No. 751603
Photo No. 15-12 4 133-136 Flt Line 23 +24
Scale: 1:24000
Local D.9mē

Road Management Objective:
SEE APPENDIX K.
Date:

Transportation Planning: Alignment traverses 2 deep draws. Some fill bench/end haul. Favorable grades.
Date: 7.8.92

Timber/Logging: Road accesses landings permitting efficient tower logging. Landings at south end is tight w. 18% grades.
Date: 7.8.92

See Map Reverse Side

Design/Construct road to minimize disturbance to muskies and riparian Fisheries/Hydrology/wetlands. Peak flow and high bedload. Requiring special culverts to dissipate stream flow. Design culverts for peak flow conditions.

no fisheries concern DDN 9/1/92 PLS Date: 7-21-92

Soils/Geology: BEWARE OF THE HAZARDOUS SOILS CONDITIONS ALONG THE N/ERN SEGMENT OF THE ROAD THAT SIDE SLOPES AND SUBPARALLEL A V-NOTCH DRAINAGE. AVOID CUTTING INTO AND SIDECASTING ONTO UNSTABLE GROUND IN THIS AREA. CONSIDER KEYING IN FILL SECTIONS IN THE ACTIVE AREAS. BEWARE OF THE GREAT POTENTIAL OF SLUMPING Northern end of unit is in estuary fringe habitat and provides high quality habitat for muskies, otter, and moderate quality habitat for brown bear. Mitigate impacts to wildlife by denying vehicle access after logging.
VLA Date: 7/23/92

Recreation/Visual: Northern end of road may be visible from boats in Velle Bay - would provide recreation access to higher elevations
Date: 7.29.92

Archaeology: Outside Sensitive Area- No Survey Necessary
Date: 7-24-92

IDT Review By:
Date:

Road Card Ushk Bay EIS

Road Number: 751605

Photo Information

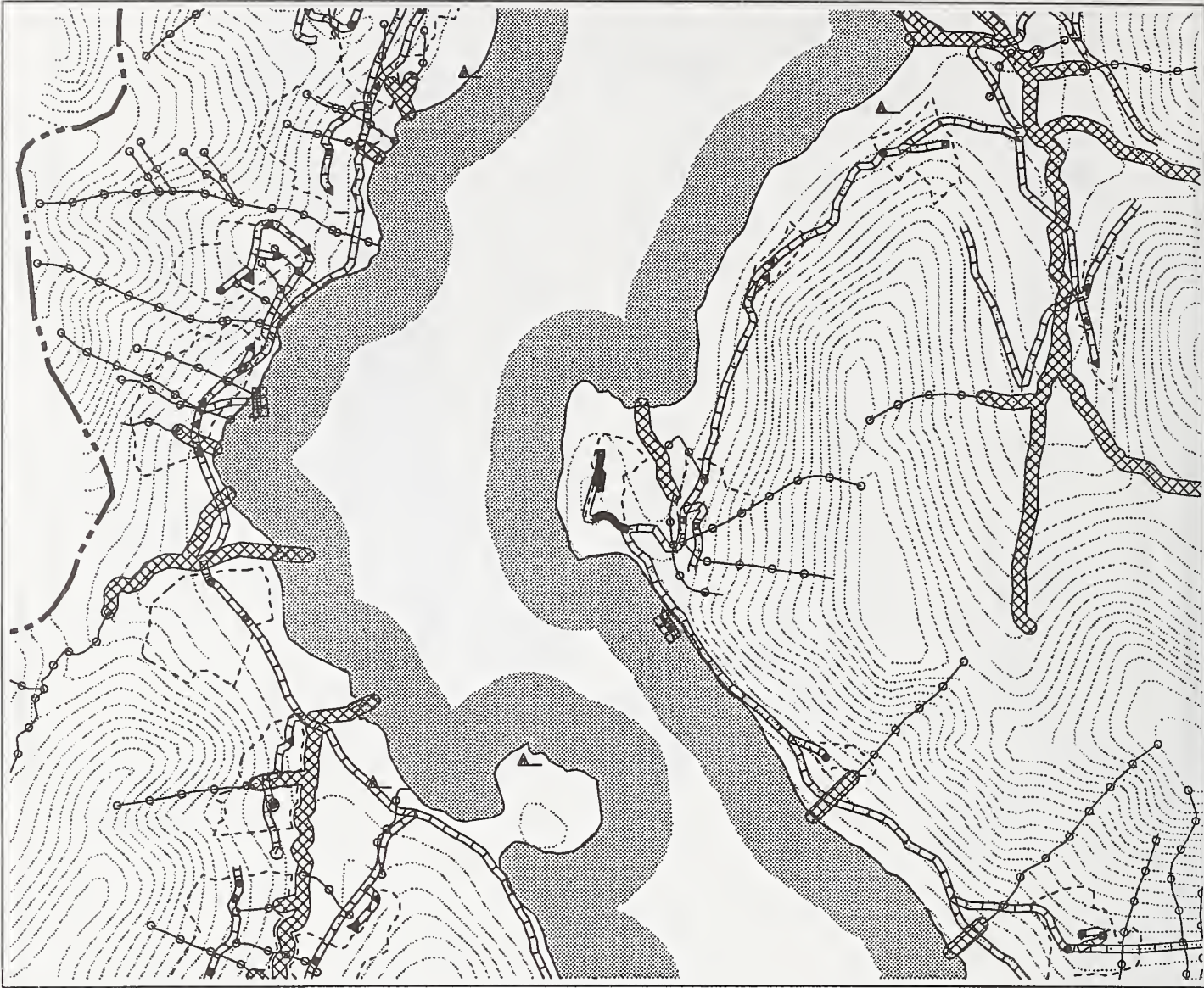
Year: 1986
 Flight Line: 26,27
 Photo Number: 7-9,58-59

Legend

- VCU Boundary
- - - Harvest Unit Boundary
- ▬ Road Card Segment
- ▬ Other Proposed Roads
- ⋯ Contour Interval (100 feet)
- ▲ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
Road No. 751605
Photo No. 7-9 & 58-59 Flt Line 26427
Scale: 1:24000

Local 0.3 mi.

See Map Reverse Side

Road Management Objective:
SEE Appendix K

Date:

Transportation Planning: Spur road on reasonably easy terrain. Asst. of cut haul to avoid impact to slopes below grade. 1 switchback of 50' radius.

RS Date: 7.10.92

Timber/Logging: Road ~~crosses~~ handings logical for up hill timber yarding.

RS Date: 7.10.92

Design/locate and construct road to minimize impact to muskrats and Fisheries/Hydrology: riparian wetlands. Regularly spill cross road drains to dissipate overland flow and side culvert for peak flows.

No Fisheries concern 00N 9117Z Date:

Soils/Geology: FEW SOILS CONCNS. AVOID DEEP CUTS INTO NEAR THE SLOPE. AND SIDE CASTING ONTO STEEP CROSS SLOPES. CONSIDER USING BENCH AND ERO HAVE CONSTRUCTION IN THIS AREA. Date: 27/10/92

Wildlife: southern half of road is a beach fringe habitat and provides high quality habitat for martens & offer. Impacts to wildlife could be mitigated by denying vehicle access after logging. Road would also impact moderate/high quality deer winter range. Date: 7/23/92

Recreation/Visual: Portion of road would likely be visible from boats in Usble Bay.

RS Date: 7.29.92

Archaeology: Survey Complete - No significant cultural resources identified

S. Flint Date: 7-24-92

IDT Review By:

Date:


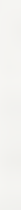
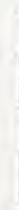

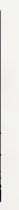





Road Card Ushk Bay EIS

Road Number: 751607

Photo Information

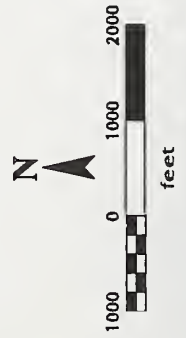
Year: 1986
 Flight Line: 27
 Photo Number: 56

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

iDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279
 Road No. 751607
 Photo No. 56
 Scale: 1:12000
 Fit Line 27
Arterial 0.3 miles

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning: Purpose of road is to permit hauling on gentle favorable grade to LTF on South side of Poison Cove. Easy construction.

J.M. Date: 8.6.92

Timber/Logging:
 N.A.

J.B. Date: 8.6.92

Fisheries/Hydrology: Road construction on crossings over class III streams should minimize amount of siltation entering streams.

Date: DON 9/2/92

Soils/Geology: FEW SOILS CONCERNS. BEWARE OF THE DEEP CUTS INTO MUSKIE AREAS AND PROVIDE ADEQUATE NON-CONCENTRATING, CROSS DRAINAGE.

Date: DSWINSTRUM 9/2

Wildlife: Portion of road would impact estuary fringe habitat and moderate/high quality habitat for marten, otter, and bear.

Date: VLA 12/29/92

Recreation/Visual: Additional unaffected beach fringe would help conceal this road somewhat. would still allow future access from Poison Cove for recreation.

Date: 8.17.92

Archaeology:

Date:

IDT Review By:

Date:










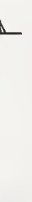
Road Card Ushk Bay EIS

Road Number: 751608

Photo Information

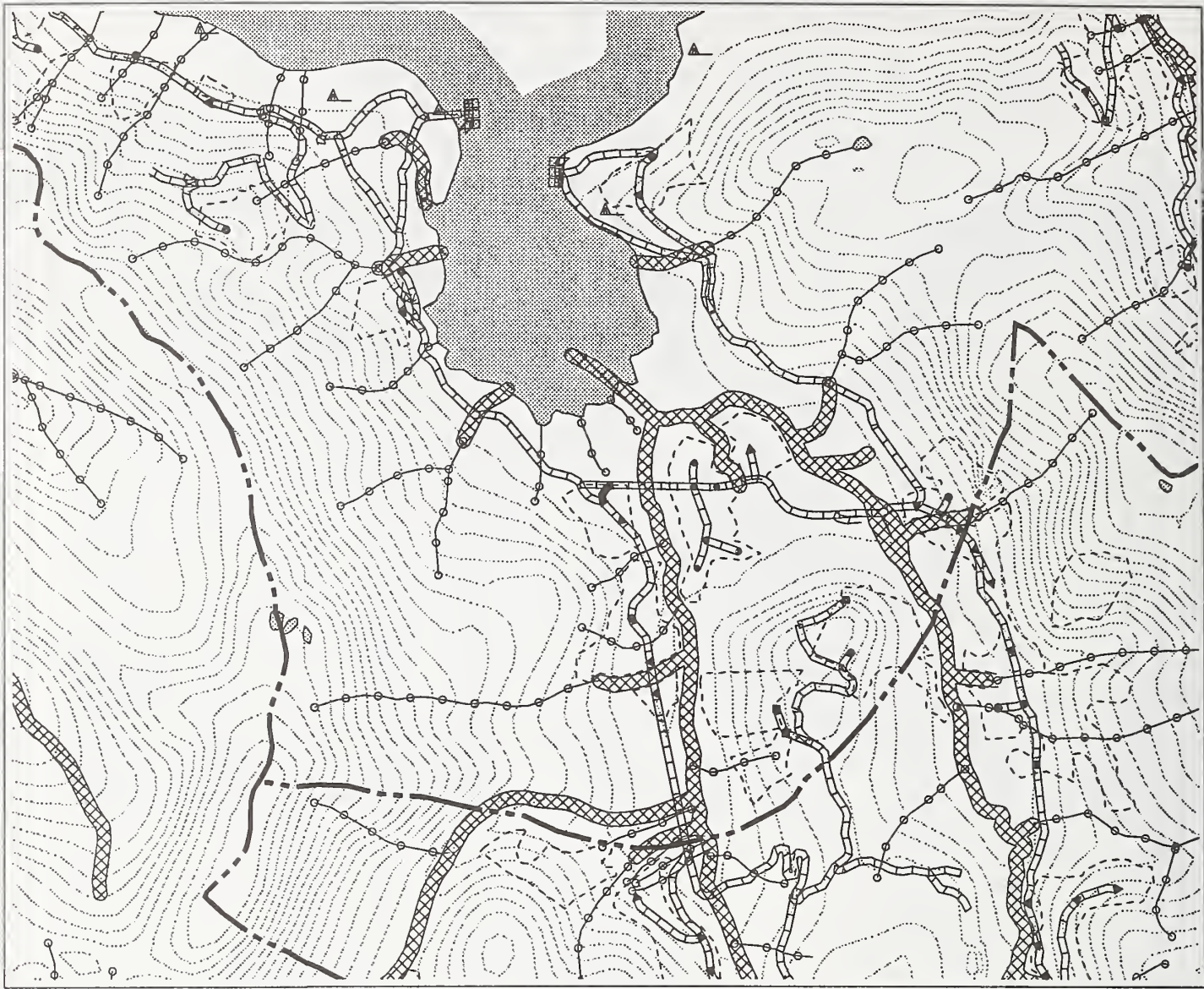
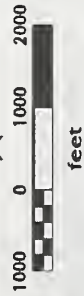
Year: 1986
 Flight Line: 27
 Photo Number: 56

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279
Road No. 751608
Photo No. 56 Fit Line 27
Scale: 1:1200
Arterial 0.3 miles

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: Purpose of road is to permit hauling on gentle favorable grade to LTF on South side of Poison Cove. Easy construction.

J.N. Date: 8.6.92

Timber/Logging:

N.A.

J.N. Date: 8.6.92

Fisheries/Hydrology: Road construction on crossings over class III streams should minimize amount of siltation entering streams

Date: Nov 9/2/92

Soils/Geology: FEW SOILS CONCERNS. BEWARE OF THE DEEP CUTS INTO MUSKOGEE AREAS AND PROVIDE ADEQUATE NON-CONCENTRATING CROSS DRAINAGE.

Date: DSUNSHURN 9/2/92

Wildlife: Portion of road would impact estuary fringe habitat and moderate/high quality habitat for marten, otter, and bear.

Date: VLA 12/29/92

Recreation/Visual: Additional unaffected beach fringe would help conceal this road somewhat. would still allow future access from Poison Cove for recreation.

Date: 8.17.92

Archaeology:



Date:

IDT Review By:

Date:


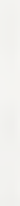







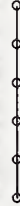
Road Card Ushk Bay EIS

Road Number: 75161

Photo Information

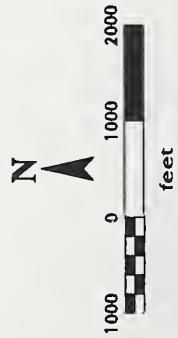
Year: 1986
 Flight Line: 25
 Photo Number: 112-115

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 75161
 Photo No. 112-115 Flt Line 25
 Scale: 1:24000 Collector 2.6 miles located

Road Management Objective:
 SEE APPENDIX K.
 Date:

Transportation Planning: *First 1/2 mile from Mainline steep ground to 85% and 2 debris chutes. The next 1/2 mile from the Mainline contains many debris chutes (9) which may require some and hauling of material where side slopes exceed 55%. Gullions may be required in some drainages to stabilize fill material.*
 P.H. Date: 7-5-92

Timber/Logging:
 Location permits productive logging in Units 40, 69, 38 and 70.
 P.H. Date: 7-5-92

Fisheries/Hydrology: *design channel crossing's on steep adjacent channels. Provide sufficient cross drainage on steep slopes to minimize stream concentration flow. Avoid Springs in Delta area at base of road & stream*
 Date: (over)

Soils/Geology: MOST OF THE ALIGNMENT IS MARGINAL AND WASTING HAZARDOUS GROUND. HIGH RISK, EXPENSE FOR DEVELOPMENT, AND MAINTENANCE WILL LIKELY OCCUR. A SLIGHTLY LESS RISKY ROUTE TO ACCESS THE HEAD OF THE

Wildlife: *VALLEY MAY BE POSSIBLE ON THE W SIDE OF THE ROAD. North end of road is beach fringe habitat and provides high quality habitat for ~~mountain~~ brown bear and other. Impacts to wildlife could be mitigated by denying vehicle access after logging.*
 VLA Date: 7/23/92

Recreation/Visual: Road would likely not be visible. would provide recreation access into inland areas.
 Date: 7-28-92

Archaeology: Outside a high sensitivity zone -
 No Survey required.
 Date: 7-26-92

IDT Review By:
 Date:

See Map Reverse Side

Road Card Ushk Bay EIS

Road Number: 7516105

Photo Information

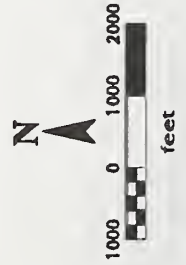
Year: 1986
 Flight Line: 25
 Photo Number: 112-115

Legend

- VCU Boundary
- - - Harvest Unit Boundary
- ▬ Road Card Segment
- ▬ Other Proposed Roads
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
Road No. 761605
Photo No. 112-115
Scale: 1:24000

Flt Line 25
Loc. 1 / 0.7 miles located

Road Management Objective:

SEE APPENDIX K.

Date:

Transportation Planning: Relatively easy construction for this section. Several short sections will require end hauling where side slopes exceed 55%.

H.V. Date: 7-5-92

Timber/Logging: location of roads permits productive tower logging.

H.V. Date: 7-5-92

Fisheries/Hydrology: AVOID DISTURBANCE OF MUSKELG DURING ROAD CONSTRUCTION. PROVIDE SUFFICIENT CROSS DRAINAGE ON STEEP SLOPES. PROVIDE FISH PASSAGE ON CLAS I+II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT, AND INSTREAM OPERATIONS (TIMING) IN FISH STREAMS. Date: 9-2-92

Soils/Geology: ALIGNMENT APPEARS MARGINAL BUT FEASIBLE ASSUMING EXTRA FUNDS ARE SPENT TO MITIGATE THE GEO-HAZARDS, 2) LONG TERM MAINTENANCE IS PROVIDED, 3) BERM UPSLOPE AND DOWNSLOPE OF THE ROADWAY CROSSINGS ARE NOT LOGGED. FURTHER FIELD REVIEW BEFORE CONSTRUCTION IS HIGHLY RECOMMENDED. ALL SLOPES, DSW 27416-2

Wildlife: Northern end of road will impact high quality habitat for marter, bear, and otter. Impacts could be mitigated by denying vehicle access following logging.

VLA Date: 7/23/92

Recreation/Visual: Unseen. would provide additional access into inland area

H.V. Date: 7-24-92

Archaeology: outside high sensitivity zone - 110 survey required Zulkooski

Date: 7-24-92

IDT Review By:

Date:

See Map Reverse Side








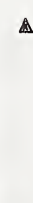
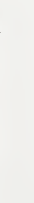
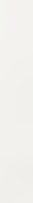
Road Card Ushk Bay EIS

Road Number: 75162

Photo Information

Year: 1986
 Flight Line: 26,27
 Photo Number: 7-9,58-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
Road No. 75162
Photo No. 7-9 # 58-59 Flt Line 26427
Scale: 1:24000
Local 0.2 ml.

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: Spur road designed to access small area. Favorable 15% grade on side slopes up to 65%. Road was not continued into drainage proper as a less expensive route was located.
Date: 8.4.92

Timber/Logging:

Accesses / Good landing in Unit 44. Could be extended to access / additional landing in future.
Date: 8.4.92

Fisheries/Hydrology: no fisheries concern. 00N-92/2/2

Date:

Soils/Geology: AVOID DEEP CUTS INTO TOES OF SLUMPS AND ON STEEP CROSS SLOPES. CONSIDER PRACTICAL FULL BENCH / END HAIL CONSTRUCTION ACROSS UNSTABLE AREAS. AVOID BLOCKING V-NOTCH CREEKS. Date: 27 AUG 92

Wildlife:

Road would impact high quality marten habitat and moderate quality deer winter range
Date: 12/29/9

Recreation/Visual: Road would likely not be noticeable

Archaeology:

Date: 8.17.92

IDT Review By:

Date:





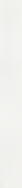

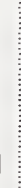


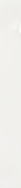
Road Card Ushk Bay EIS

Road Number: 7516205

Photo Information

Year: 1986
 Flight Line: 26,27
 Photo Number: 7-9,58-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
Road No. 1516206
Photo No. 7-9 & 58-59 Fit Line 26427
Scale: 1:24000
0.5 miles // local

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: MOSTLY SIMPLE CONSTRUCTION THROUGH GENTLE TERRAIN. ONE STREAM CROSSING MAY REQUIRE BRIDGE; RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURE.

Date: 8-2-92

Timber/Logging:

Road terminates at border 41-3: Tight landing suitable for swing yarder. Temporary spurs branch from this to 57-1 and 41-2 & -1.

Date: 8.2.92

Fisheries/Hydrology:

Head crossing over class II stream needs to allow free passage for resident fish. Road construction on class II stream should minimize amount of siltation entering stream.

Date: 9/2/92

Soils/Geology: AVOID CUTTING INTO MUSKOGEE AREAS AND PREVENT ADEQUATE, NON-COMPACTING CROSS DRAINAGE BEWARE OF THE CREEP POTENTIAL OF SLOPED MUSKOGEE. AVOID CUTTING INTO THE TOES OF STEEP SLOPES AND DEBRIS AT THE BASE OF SLOPES, PARTICULARLY ALONG THE WEST END OF THE ROAD

Wildlife:

No concerns for bear, marten, otter, deer

VLA

Date: 12/29/92

Recreation/Visual:

would likely not be visible from US44 Bay

Archaeology:

Date: 7.29.92

Date:

IDT Review By:

Date:











Road Card Ushk Bay EIS

Road Number: 75163

Photo Information

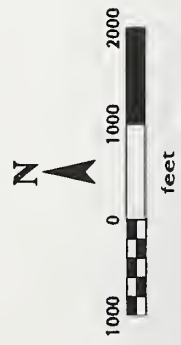
Year: 1986
 Flight Line: 26,27
 Photo Number: 7-9,58-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
 Road No. 75163
 Photo No. 7-9 & 58-59 Flt Line 26 & 27
 Scale: 1:24000 0.6 Miles Local

Road Management Objective:

SEE Appendix K

Date:

Transportation Planning: CONSTRUCTION INCLUDES EXCAVATOR
 & FILL DUMP. FIRST 745 IS NOTED THE REMAINING IS SPHINX'S
 HAS BEEN WALKED. GRADE VARIES 8-10". RECOMMEND LOADING
 LOADS TO 2-45 BEFORE CONSTRUCTING REMAINING SPURS.
 NOTE THIS IS A TEMPORARY ROAD.

Date: 8-1-92 *W*

Timber/Logging:

ROAD NEARLY AVAILABLE TIMBER. GRADERS IN THE LOADING AREA
 VARY BETWEEN 5' 11" TO 12". TWO SWING YARD & DRIVING HAVE BEEN
 LOCATED.

See Map Reverse Side

Date: 8-4-92 *W*

Fisheries/Hydrology: No fisheries concern —

ON DATE: 9/2/92

Soils/Geology: FEW SOILS CONCERNS. AVOID DEEP CUTS IN
 THE TOES OF SLOPES, INTO DEEPS AT THE END
 OF SLOPES AND ACROSS MODERATELY STEEP CROSS SLOPES,
 PARTICULARLY NEAR THE SIX END OF THE TEMPORARY ROAD.
 CONSIDER STABILIZATION AND REVEGETATION ~~HERE~~ ON THESE
 SECTIONS AFTER THE ROAD IS RETURNED.

Wildlife:

No concerns for bear, marten, otter, deer

VA Date: 12/29/92

Recreation/Visual: Upper portion of road may be visible from
 boats in Ushk Bay. Recommend cut/fill minimized to
 maintain screening by downstage trees.
 Provides access to higher elevation (VA) Date: 7-28-92

Archaeology:

Date:

IDT Review By:

Date:










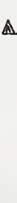
Road Card Ushk Bay EIS

Road Number: 75164

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 56-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279
 Road No. 75164
 Photo No. 56-59 Fit Line 27
 Scale: 1:24000 LOCAL 0.6 MILES

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: PROVIDES ACCESS TO BORN UNIT CO. & SB. GRUBS RAMP FROM 1 TO 20%. CONSTRUCTION BY EXCAVATOR, RIPPING & SCRE IS AVOIDING AIRBORNE. DRAINAGE SHOULD BE BUILT IN 75% ROAD TO SUPPORT LANDING 2

Date: VI 8.7-92

Timber/Logging: LANDING 1 & 30 EGO (MAYBE UPHILL) DOWNHILL WINDING (MOSTLY UPHILL). L02-SB IS A SWAMPY MAREK LANDING (-2500 → 1400) MULTI STUMP AREAS MANY ARE REQUIRE THIS ROUTE HAS RESTRICTIONS OF 20% GRADE TO REACH THE UPPER SLOPES, RECONSTRUCTING LANDING 2 14 BEFORE CONSTRUCTION IS STARTED

Date: VI 8.7 92

Fisheries/Hydrology: NO FISHERIES CONCERN ROAD 9/2/92

Date:

Soils/Geology: AVOID DEEP CUTS INTO STEEP CROSS SLOPES ALONG THE M'RA SECTION INTO MUSKOG, AND INTO THE TORS OF SLUMPS ALONG THE S'IGN PORTION OF THE ALIGNMENT. USE PARTIAL AND FULL BENCH/END HAUL CONSTRUCTION WHERE NECESSARY.

Date: VI 8/27/92

Wildlife:

NO CONCERN FOR DEER, BEAR, MARTEN, OTTER

VI Date: 12/29/92

Recreation/Visual:

Large cut/cill would likely be visible from Alaska Marine Highway and where road is exposed in harvest unit

VI Date: 7/24/92

Archaeology:



Date:

IDT Review By:

Date:


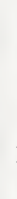





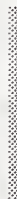


Road Card Ushk Bay EIS

Road Number: 75165

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 56-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 279
 Road No. 75165
 Photo No. 56-59 Flt Line 27

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: ROAD ACCESSES ARIZONA WITH FEWER SWITCHBACKS THAN PLANNED. EXCAVATORS & DRILLING EQUIPMENT IS REQUIRED FOR MOST OF THE REMOTE UPPER LANDINGS REQUIRED TO GET GRADE TO ACCESS.

AV Date: 7-2-92

Timber/Logging: LANDINGS ARE WELL PLACED TO PROVIDE UP HILL YARDING IN THIS VISUALLY SENSITIVE AREA. CHAIR YARDING IS THE REMAINING METHOD OF LOGGING.

AV Date: 7-2-92

Design, construct, and locate roads to minimize disturbance to muskies and Fisheries/Hydrology: riparian wetlands. Regularly space cross road drains to dissipate overland flow. Size culverts for peak flow conditions. Do not pile fill in the heads of V-notch drainages. Minimize siltation during construction.

DOW 9/2/92

PL Date: 7-22-92

Soils/Geology: BEWARE OF THE DEEP POTENTIAL OF SLOPING INTO STEEP CROSS SLOPES, AND DEEP CUTS INTO MUSKIE AREAS OF V-NOTCHES AND CHUTES, IN PARTICULAR NEAR THE 3RD SHARP BEND AND ALONG THE N SECTION OF THE ROAD.

Wildlife:

No concerns for brown bear, otter, marten.
 Road would impact moderate/high quality deer winter range.

WT Date: 7/23/92

Recreation/Visual: Fewer switchbacks would reduce contrast cut/fill for switchbacks would be highly visible from Alaska Marine Highway.
 would provide access to higher elevation

WT Date: 7/28/92

Archaeology: Survey of portion w/ high-sensitivity zone complete - no significant cultural resources identified - M. Kelly

Date: 7/24/92

IDT Review By:

Date:


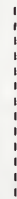


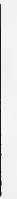





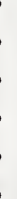
Road Card Ushk Bay EIS

Road Number: 75166

Photo Information

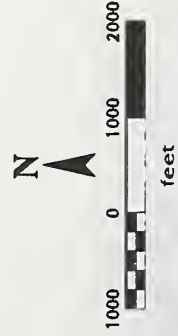
Year: 1986
 Flight Line: 25,26
 Photo Number: 109-111,12-14

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279 + 280
 Road No. 751616
 Photo No. 109-III + 12-14 Flt Line 25 + 26
 Scale: 1:24000 Collector Z. S. Mil

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: SIMPLE CONSTRUCTION IN STABLE LOCATION, NUMEROUS CROSSINGS OF SMALL DRAINAGES WITH A LARGE BED-LOAD OF ROCK AND WOOD. ONE MAJOR CROSSING, RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES.

Date: 7-2-92

Timber/Logging: Location permits productive tower-and-stave logging with excellent landings. Complex anchors required for landing 100-9 - consider deadmen under or behind road.

[Signature] Date: 7.2.92

MINIMIZE DISTURBANCE TO MUSKOG AND RIPARIAN WETLANDS. Fisheries/Hydrology: ROAD CROSSES C-1 CHANNEL, DESIGN TO ACCOMMODATE SHIFTING CHANNEL ALIGNMENT, FISH PASSAGE, PEAK FLOW AND HIGH BED-LOAD TRANSPORT. RECOMMEND THREE CULTURTS FOR ROAD'S ROAD DRAINAGE. PROVIDE FISH PASSAGE ON CLAS I & II STREAMS. FOLLOW BWP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT AND WASTE (TIMING) OPERATIONS IN FISH STREAMS. Date: 7-2-92

Soils/Geology: BEWARE OF CUTTING INTO MUSKOG AND ANTICIPATE AND TRIBUTARY SHIFTING CHANNELS IN DEBLS AT THE BASE OF SLOPES IN UNIT 32. AVOID CUTTING INTO THE TOES OF SLOPES AND BLOCKING MAJOR V-NOTCH CHUTES. ~~BEWARE OF THE~~ ~~TOES OF~~ ~~SLOPES.~~ ~~BEWARE OF THE~~ ~~TOES OF~~ ~~SLOPES.~~

Wildlife: ~~ALONG THE WETLAND PORTIONS OF THE~~ ~~ROAD.~~ ~~AVOID~~ Most of road will impact high quality habitat areas for marten, bear, and other. Impacts could be mitigated by denying vehicle access after logging.

VLA Date: 7/23/92

Recreation/Visual: Would likely be unseen. Road would provide future recreation access into inland areas.

Date: 7-29-92

Archaeology: Survey Complete - No Cultural Resources Identified

S. Flint Date: 7-24-92

IDT Review By:

Date:










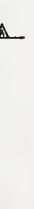
Road Card Ushk Bay EIS

Road Number: 751665

Photo Information

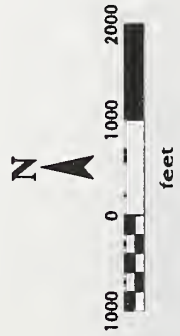
Year: 1986
 Flight Line: 26
 Photo Number: 12-14

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279
Road No. 751665
Photo No. 12-14 Flt Line 26
Scale: 1:24000
1.7 miles (arterial).

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning:

Road is main link to South Poison LTF. Adjacent to LTF, rock cut in 100% ground next to beach. Several 30' + cuts/fills in first mile from LTF.

RA Date: 8.1.92

Timber/Logging: No timber accessed along route.

RA Date: 8.1.92

Fisheries/Hydrology: PROVIDE FISH PASSAGE ON CLASS I + II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT, AND INSTREAM OPERATIONS (TIMING) IN FISH STREAMS. Date: 9-2-92

Soils/Geology: ANTICIPATE CONSOLIDATION OF MUSKIE AND TO CROSS SLUMPED SIDE SLOPES OF THE HEAD OF POISON CONE BEYOND OF THE MAJOR V-NOTCH CROSSING AND THE APPARENTLY INSTABLE SIDE SLOPE TO THE ~~HEAD~~ UNN OF MIT 105. PROVIDE FIELD REVIEW.

Wildlife: North half of road would impact beach fringe habitat and estuary fringe habitat, and high quality habitat for bear & marten. VLA Date: 12/29/92

Recreation/Visual: Road cut in 100% slope would result in significant contrasts visible from Alaska Marine Highway. Road would provide future access into inland areas. RA Date: 6.15.92

Archaeology:

Date:

IDT Review By:

Date:










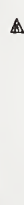
Road Card Ushk Bay EIS

Road Number: 75167

Photo Information

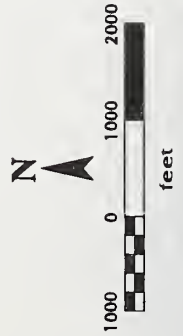
Year: 1986
 Flight Line: 25,26
 Photo Number: 109-111,12-14

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279 + 280
Road No. 75167
Photo No. 109-111 + 12-14
Scale: 1:24000

Flt Line 25 + 26

Locat 0.4 miles located

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: Easy construction, first 900ft in scrub timber. Overall road grade averaging 10%. Road and landing near N.E. corner of Unit 35 was field verified. Road location to Unit 34 was assessed and determined to be not viable due to steep side slopes (up to 40%) on the creek separating Unit 34 and Unit 35. Date: 7-3-92

Timber/Logging: Location of lower landings on benches permits easy tower logging. The N.E. landing in Unit 35 is on steeper ground but suitable for tower. Unit 34 suitable for helicopter logging. Date: 7-3-92

Fisheries/Hydrology: ^{1. Design crossing for peak flow design for peak flow and shifting channel alignment.} Avoid deep cuts into muskeg and beware. Avoid deep cuts into the toes of steep slopes and debris at the base of slopes. The west end of Unit 35 looks marginal. Provide field review of the unstable areas. Minimize siltation during construction. Date: 7-27-92

00N 9/2/92
OLS Date: 7-27-92

Soils/Geology: AVOID DEEP CUTS INTO MUSKEG AND BEWARE. AVOID DEEP CUTS INTO THE TOES OF STEEP SLOPES AND DEBRIS AT THE BASE OF SLOPES. THE WEST END OF UNIT 35 LOOKS MARGINAL. PROVIDE FIELD REVIEW OF THE UNSTABLE AREAS.

Wildlife: West portion of road near creek is in high quality bear & other habitat. Impacts to wildlife could be mitigated by denying access to vehicles after logging. VLA Date: 7/23/92

Recreation/Visual: Road would be unseen

Date: 7-29-92

Archaeology: outside high sensitivity area. No survey required. Date: 7-24-92

IDT Review By: Date:

See Map Reverse Side




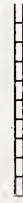





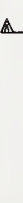
Road Card Ushk Bay EIS

Road Number: 75168

Photo Information

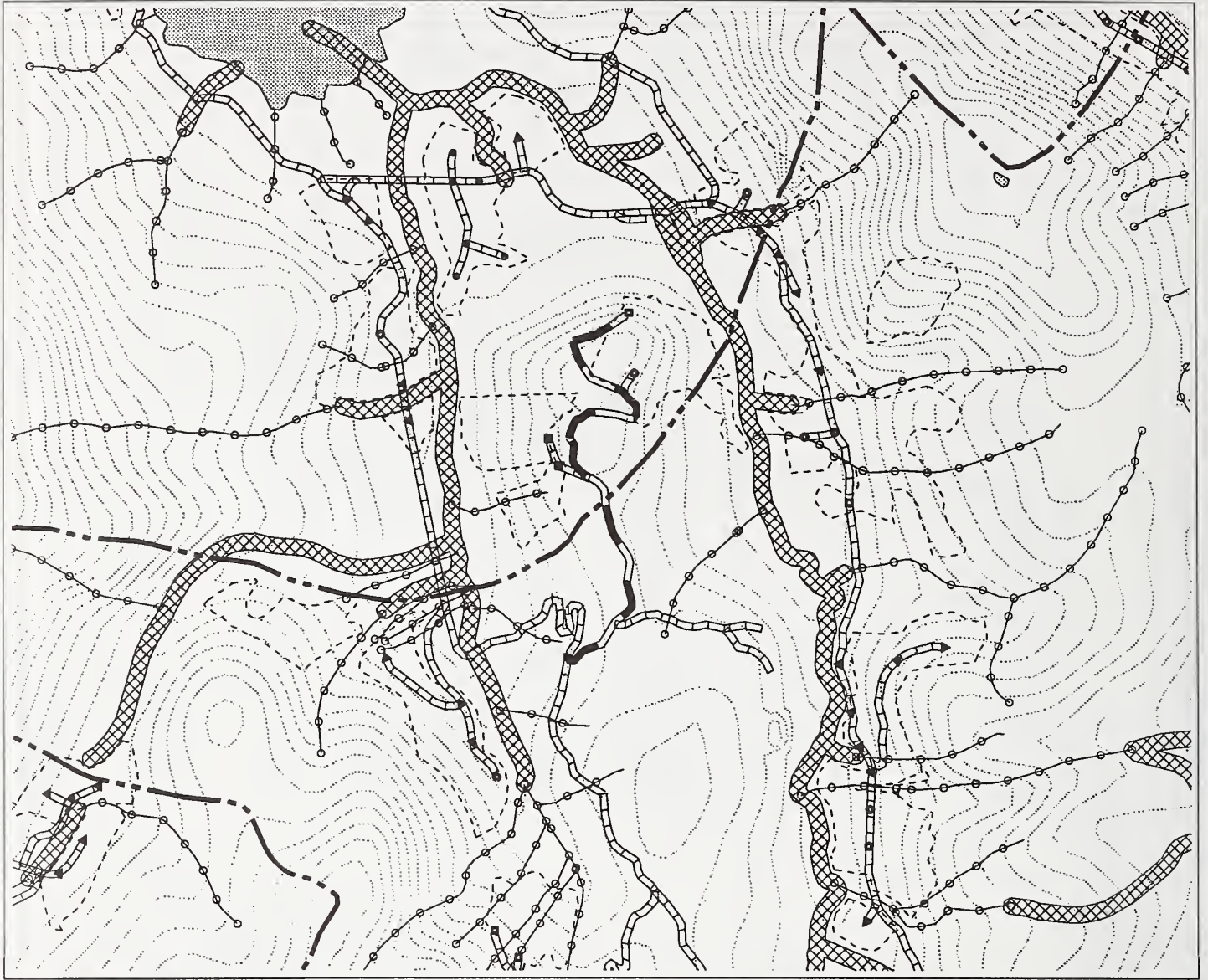
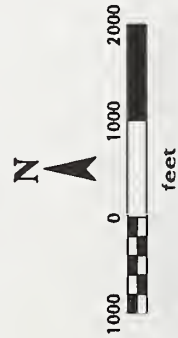
Year: 1986
 Flight Line: 25,26
 Photo Number: 109-111,12-14

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 279 + 280
 Road No. 7516B 1.2 miles as located
 Photo No. 109-111 + 12-14 Flt Line 25 + 26
 Scale: 1:24000 Local

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: Easy construction, mainly thru scrub and muskeg - high % of end-dump constr. Temporary spurs as shown. Junction with 7516 involves tight switchback.

JFL Date: 7.2.92

Timber/Logging: Temporary spurs required to stub into suitable landings. Must consider burying deadmen under road (or ~~in~~ in slope) for guyline anchors for unit 27.

JFL Date: 7.2.92

Design, locate, and construct road to minimize disturbance of muskegs. Fisheries/Hydrology: use riparian wetlands. Proper size culvert crossing at mid slope. V-notch drainages for peak flow conditions. Avoid placement of road/fill at the top of V-notch drainages. Regularly space cross road drains to dissipate overland flow. DON 9/2/92 No fisheries concern PLS Date: 7-21-92

Soils/Geology: AVOID CUTTING INTO MUSKES AND PROVIDE ADEQUATE THE CREEP POTENTIAL OF MUSKES. AVOID CONSTRUCTION ON THE SHOULDERS OF STEEP SLOPES, ESPECIALLY ABOVE DISSECTIONS. AVOID CUTTING INTO AND SIDELASTING MATERIAL ONTO STEEP CROSS SLOPES, ESPECIALLY IN UNIT 102. OSWALD 9/29

Wildlife: No concerns for brown bear, otter, marten, or deer

VLA Date: 7/23/92

Recreation/Visual: Switchback facing Poison Cove may be visible would provide access to higher elevation for hunting

JFL Date: 7/28/92

Archaeology: Outside Sensitive Area - No Survey Necessary

S. Flind Date: 7-24-92

IDT Review By:

Date:










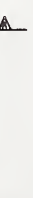
Road Card Ushk Bay EIS

Road Number: 75169

Photo Information

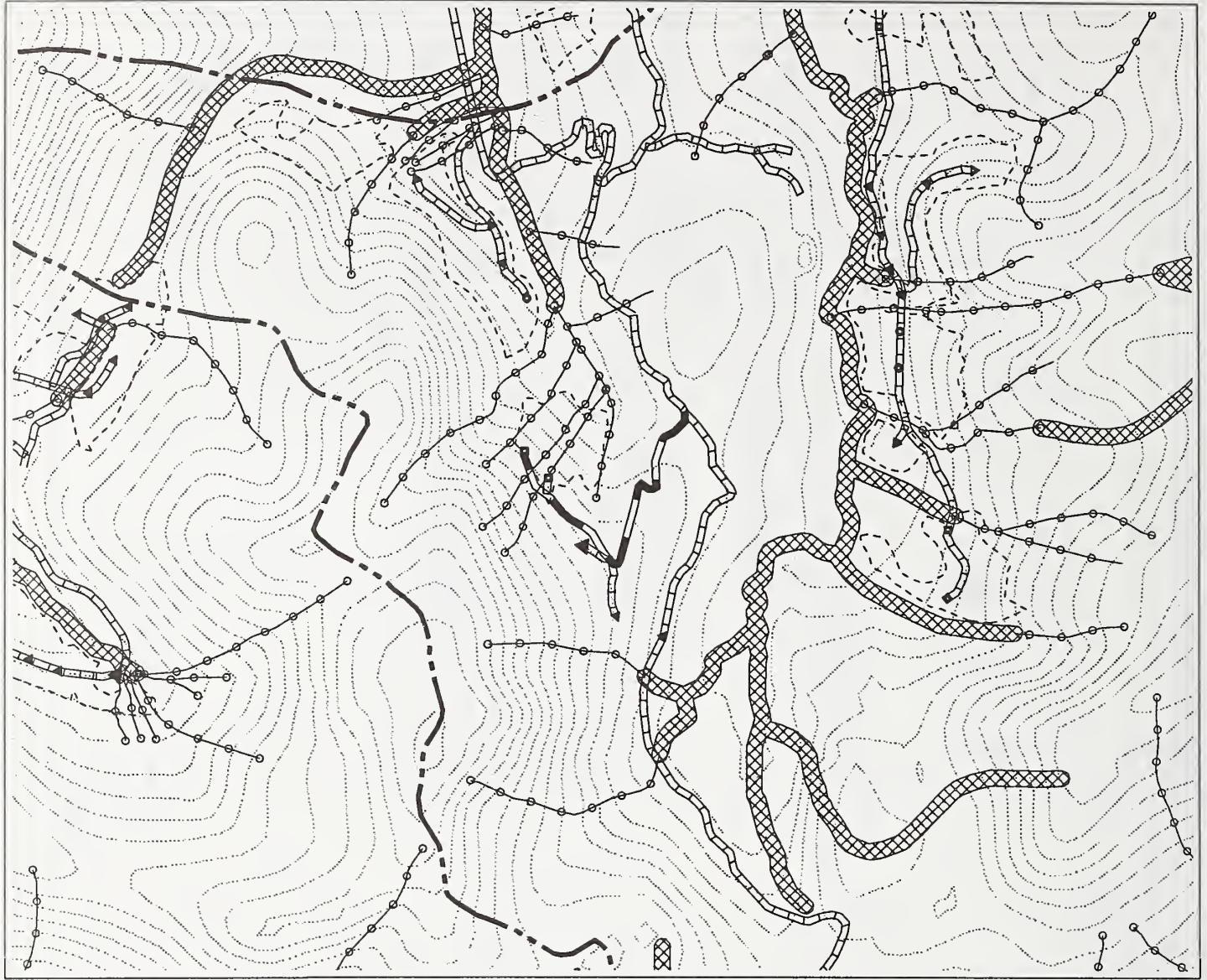
Year: 1986
 Flight Line: 24,25
 Photo Number: 138-139,110-111

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 280
 Road No. 75764
 Photo No. 138-138 & 110-111 Flt Line 24 & 25
 Scale: 1:24000 Local 0.8 miles located

Road Management Objective:

SEE APPENDIX K.

Date:

Transportation Planning: Easy construction majority of road is in open muskeg with scrub timber. Majority of road averages 10-12% grades. High % of sand dump construction. Temporary spurs were field verified and shown on map.

D.V. Date: 7-3-92

Timber/Logging: Unit is suitable for tower logging. Two short spurs (200') were field verified to be north and east portions of unit. Extensions to existing will be required to provide unit 106 + 111 (Hold)

D.V. Date: 7-3-92

Design, locate, and construct road to minimize disturbance of muskeg and Fisheries/Hydrology: Riparian wetlands. Regularly spaced cross drains to dissipate overland flow. Size culverts for peak flow conditions. Use bridges over mid-slope v-notch drainages and design for peak flow and high bedload transport. Minimize siltation during construction. DPN 9/2/92

PLS Date: 7-27-92

Soils/Geology: AVOID CUTTING INTO MUSKEG. BEWARE OF THE CUTTING INTO THE TOPS OF SLOPES, FAILURES, AND DROBS AT THE BASE OF SLOPES, AVOID CUTTING INTO AND SIDECASTING INTO STEEP CROSS SLOPES. THE MIDDLE PORTION OF THE ROAD LOOKS VERY MARGINAL AND SHOULD BE AVOIDED.

Wildlife:

No concerns for bear, marten, otter, or deer

VLA Date: 7/23/92

Recreation/Visual: Road would be unseen. Would provide recreation user access to higher inland areas.

Date: 7/23/92

Archaeology: Outside High Sensitivity Zone - No survey required

Date: 7/23/92

IDT Review By:

Date:









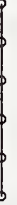
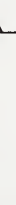
Road Card Ushk Bay EIS

Road Number: 7517

Photo Information

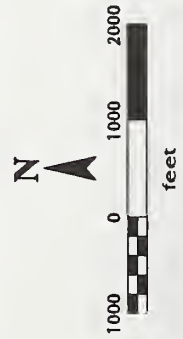
Year: 1986
Flight Line: 27
Photo Number: 51-53

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



ROAD DESIGN CARD

VCU 279
 Road No. 7511
 Photo No. 51-53
 Scale: 1:18000

COLLECTOR 1.7 MILES
 Flt Line 27

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: GORG CREEK MAINLINE
GRADE RUGHT BETWEEN 15152. IT PROVIDES EASY
ACCESS FOR GORG CREEK DAM. OTHER THAN THE LTF, NO
MAJOR STRUCTURES ARE REQUIRED.
CONSTRUCTION WITH EXCAVATOR & SOME DRILL WORK WILL
BE REQUIRED. NOTE TWO SPURS ARE TRIBUTARY TO THIS ROAD.

Date: 8-14-92 ✓✓

Timber/Logging: FIVE LANDINGS ARE POSITIONED AHEAD THE REMAINING
THE REMAINING UNITS 118 & 114-B SKIDLINE SYSTEMS ARE PLANNED
FOR THE NORTH SIDE OF THE VALLEY. SKIDLINE WITH DUMP LUMP
CARRIAGE ARE PLANNED FOR THE SOUTH SIDE. NOTE SOME WORK
WILL BE CUT THROUGH THE SWIFTER.

Date: 8-14-92 ✓✓

Fisheries/Hydrology: PROVIDE FISH PASSAGE ON CLASS I & II
STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL
PLACEMENT, AND INSTREAM OPERATIONS (TIMING) IN FISH
STREAMS.

Date: 8-15-92

Soils/Geology: BEWARE OF THE POTENTIALLY UNSTABLE, SLUMPY
GROUND ABOVE WHERE THE ROAD TRANSITIONS INTO
THE LTF. BEWARE OF CUTTING INTO THE TOES OF STEEP SLOPES.
BEWARE OF POSSIBLE SHIFTING CHANNELS IN THE DEBRIS AT
THE BASE OF THE U-NOTCH ON THE W SIDE OF UNIT 110.

Wildlife: AVOID DEEP CUTS INTO MUSKIEG AND ANTICIPATE
CREEP ON SLOPING MUSKIEG. SW THIRD OF RD. APPEARS
TO PASS UNDER & ON MARGINAL SLOPES, FIELD CHECK.
Portions of road would impact high quality habitat for bear,
marten, and other, and moderate quality deer habitat. VLA 12/29/92

Recreation/Visual: Majority of road would likely not be
visible from Peril Exrnit. A portion nearest shoreline
may be visible from Alaska marine Highway. Road would
provide inland access for recreation. Date: 8-17-92

Archaeology:

Date:

IDT Review By:

Date:


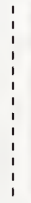






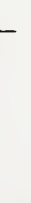
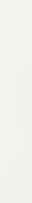
Road Card Ushk Bay EIS

Road Number: 75171

Photo Information

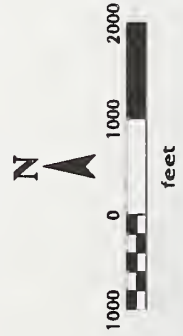
Year: 1986
Flight Line: 27
Photo Number: 51-53

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



ROAD DESIGN CARD

VCU 279
Road No. 75171
Photo No. 51-53 Flt Line 27
Scale: 1:18000 LOCAL 0.7 MILES

See Map Reverse Side

Road Management Objective:
SEE APPENDIX K

Date:

Transportation Planning:

GRADE RANGE BETWEEN 1 & 20%, THE INSTANTANEOUS OF LOW ALLOW ACCESS TO A KEY LANDING THAT PERMITS LOGGING IN THE VISUALLY SENSITIVE AREA. NOTE THIS ROAD WOULD SPLIT IN THE VISUAL AREA. CONSTRUCTION SHOULD BE SEQUENCED WITH YARDING, -- LOGGING LANDING BEFORE CONSTRUCTING THE NEXT SEGMENT, CONSTRUCTION WITH EXCAVATOR SCRIP. SOME FLOODHULL MIGHT BE REQUIRED
Date: 8-14-92 VJ

Timber/Logging: NOTE EACH LANDING SHOULD YARDED BEFORE CONSTRUCTING THE NEXT SEGMENT. THIS WILL REDUCE COSTS & LOWER SOIL IMPACT. RECOMMEND TOTAL CLEAR CUT BELOGGED AT ONE TIME TO AVOID WHEAT HEST & VISUAL IMPACT OF WIND THROWN TIMBER. THE 8% ROAD SEGMENT (2477-3370) IS DESIGNATED FOR LOGGING YARDING LANDING & IS A KEY PART OF LOGGING PLAN.
Date: 8-14-92 VJ

Fisheries/Hydrology: No Fisheries concern

ODJ Date: 9/15/92

Soils/Geology: AVOID DEEP CUTS INTO STEEP CROSS SLOPES AND INTO THE TOES OF THE MINOR SLUMP FEATURES ON THE SLOPE ALONG THE MIDDLE THIRD OF THE ROAD. CONSIDER BENCH/END HAUL ON THOSE UNSTABLE PORTIONS OF THE ROAD
Date: DSJ 9/13/92

Wildlife: Portions of road would impact high quality bear & other habitat, and moderate quality deer winter range.

VLA Date: 12/29/92

Recreation/Visual: Road would be visible from Alaska Marine Highway where exposed by harvest units. Road would provide access to coastal upland areas
Date: 8-17-92

Archaeology:



Date:

IDT Review By:

Date:


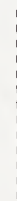








Road Card Ushk Bay EIS

Road Number: 75172

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 51-53

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



ROAD DESIGN CARD

VCU 279
 Road No. 75-172
 Photo No. 51-53 Flt Line 27
 Scale: 1:18000
LOCAL 0.2 MILES

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning: SORT TRUCK USE. ROAD GRADES RANGE 1 TO 20%. FILL DUMPS & EXCAVATOR CONSTRUCTION IS PLANNED. ONE TEMPORARY BRIDGE (SE-1) ACROSS CREEK CREATES ACCESS DUE TO LANDING.

Date: 8-14-92 *dy*

Timber/Logging: ONE LANDING IS PLANNED FOR IN MAY TO 1 1/2" SKYLIME MACHINE. NOTE DENDROMYX MAY BE REQUIRED. THE ROAD GRADE MAY BE AN EXCELLENT PLACE FOR BURNING THEM. THE BELLYMATED LANDING PROVIDE EXCELLENT LIFT FOR STACKLINE OPERATIONS.

Date: 8-14-92 *dy*

Fisheries/Hydrology: PROVIDE FISH PASSAGE ON CLASS IV II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION MATERIAL PLACEMENT, AND INSTREAM OPERATIONS (TIMING) IN FISH STREAMS

Date: 9-15-92

Soils/Geology: MINIMIZE THE NUMBER OF CREEK CROSSINGS AT THE BASE OF THE SLOPE WHERE 75172 TIES INTO 7517 AND ALONG THE ROAD CROSSINGS NEAR THE V-NOTCH ON THE S. SIDE OF GOAL CREEK. AVOID DEEP CUTS INTO AND

Wildlife: SIDE CASTING ONTO STEEP CROSS SLOPES, OSW 73'S NO CONCERNS FOR BEAR, OTHER, MARTEN, DEER.

VLA Date: 10/29/92

Recreation/Visual: Road would likely be screened by beach fringe trees

Archaeology:

Date: 8.17.92



Date:

IDT Review By:

Date:










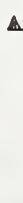
Road Card Ushk Bay EIS

Road Number: 7518-A

Photo Information

Year: 1986
 Flight Line: 24,25
 Photo Number: 132-133,117

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 757A 365+37 → 504+50
 Photo No. 118, 6, 61 Flt Line 25, 26, 27
 Scale: 1:24000
 Collector 3.6 miles.

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: Most of road is straight forward construction on gentle terrain. At location indicated by arrow fill bench/ end haul constr. req'd to cross slide. Full bench/ end haul req'd on other very short (few sta.) segments. Grades gentle (to 6% adverse, 10% fav.) except for few sta. of 15% adverse at east end. NOA Date: 84-92

Timber/Logging: Road permits access to logical landings for tower logging.

DD Date: 8.4.92

Fisheries/Hydrology: Time construction around fish activities, minimize siltation during construction. Provide fish passage on class I and II streams.

DD Date: 9/3/92

Soils/Geology: AVOID CUTTING INTO THE TOES OF SLIDES AND SUMPS. KEY IN FULL BENCH FILL SECTIONS IN ACTIVE AREAS IF NECESSARY. AVOID CUTTING INTO MUSKEG AREAS AND PROVIDE ADEQUATE, NON-CONCENTRATING DRAINAGE

Wildlife: ~~BE PARTICULARLY AWARE OF THE SLIDES BELOW~~ PORTIONS OF ROAD WOULD IMPACT BEACH TRINSE HABITAT, high quality habitat for martin, other and bear, and moderate quality winter and range for deer. Date: 1/12/2002

Recreation/Visual: Road would parallel coast and would likely be visible from boats in Uelke Bay. Also maybe visible from Alaska Marine Highway (2+ miles) where exposed by harvest units. would provide recreation access. Date: 1/12/2002

Archaeology:

Date:

IDT Review By:

Date:









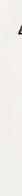
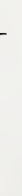
Road Card Ushk Bay EIS

Road Number: 7518-B

Photo Information

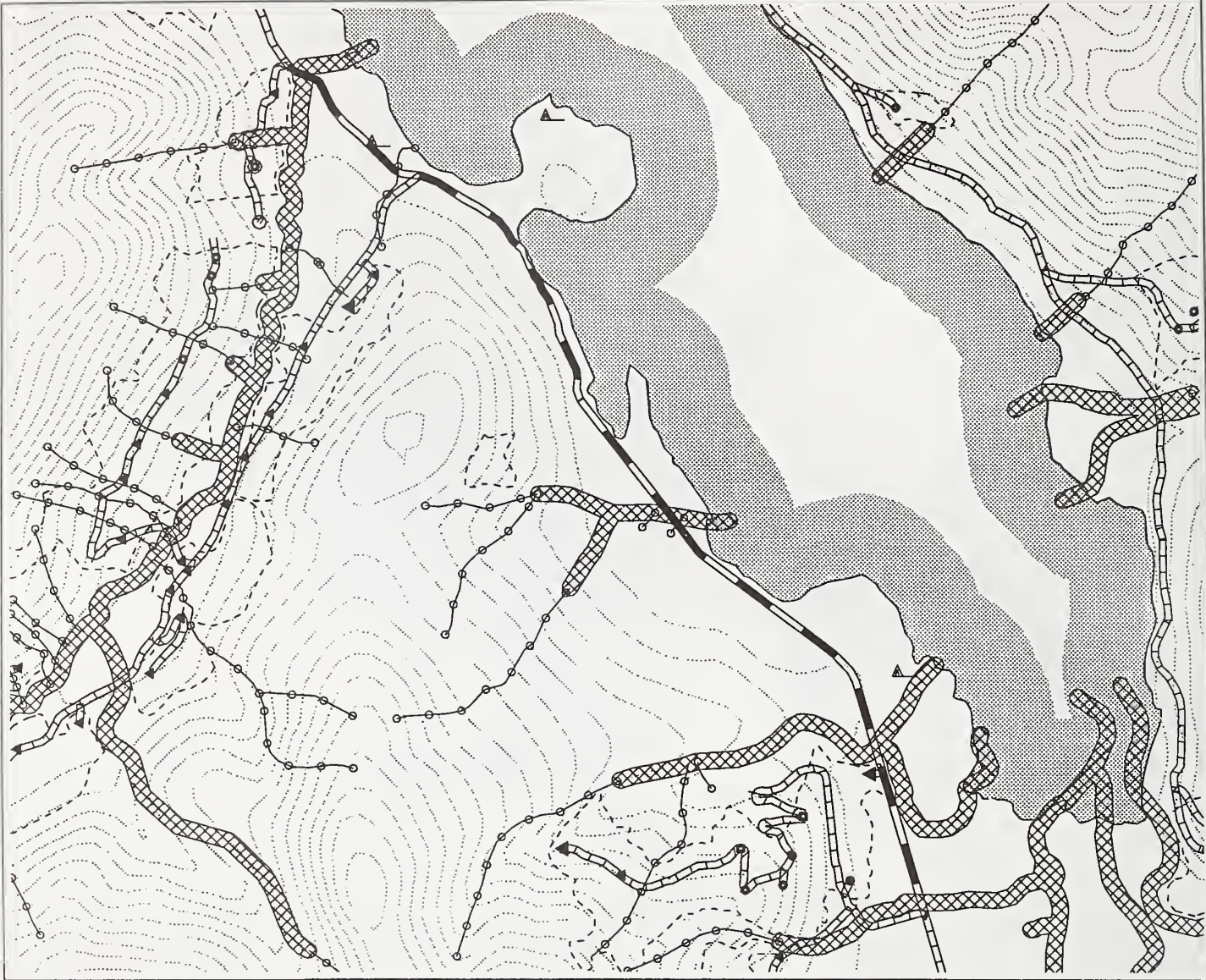
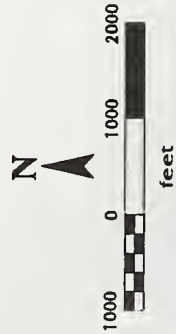
Year: 1986
 Flight Line: 24,25
 Photo Number: 132-133,117

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281

Road No. 175/18

Photo No. 132-133, 117

Flt Line 24, 25

Scale: 1:24000

COLLECTOR 3.6 MILES

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: NO LARGE BRIDGES, OVER 33% OF THE ROAD REQUIRES AN EXCAVATOR FOR CONSTRUCTION. SIGNIFICANT ROCK CUTS ARE REQUIRED TO MAINTAIN THE GRADE WEST AT THE EAST END OF THIS SEGMENT. THE REMAINS LOCATED CLOSE TO THE BEACH BETWEEN STATIONS 305100 TO 305110 TO MAINTAIN FAVORABLE ALIGNMENT FOR APPROX. 305110 TO 305120 TO AVOID EXCESSIVE GRADES. ROCK CUTS AT STATION 305110 TO 305120 TO AVOID EXCESSIVE GRADES.

Date: 7-5-92

Timber/Logging: LOCATION PROVIDES EFFICIENT ACCESS FOR SCHEDULED FUTURE LOGGING OPERATIONS

See Map Reverse Side

Fisheries/Hydrology: At stream crossing desirability of channel shifting and aggrading bed, consider avoidance of temporary crossing with abandonment of the construction around fish habitat. Minimize siltation during construction. Provide fish passage on class I and II streams

DDM 9/15/92 DMS Date: 7-9-92

Soils/Geology: AVOID DEEP CUTS INTO STEEP SIDE SLOPES OR INTO THE TOES OF STEEP SLOPES, CONSIDER PARTIAL OR FULL BENCH/END HAVL CONSTRUCTION IN THE AREAS. AVOID CUTTING INTO MUSKOGEE AND PROVIDE

Wildlife:

ADEQUATE, NON-CONCENTRATING CROSS DRAINAGE PORTIONS OF ROAD WOULD IMPACT BEACH FRINGE HABITAT, HIGH QUALITY OTTER HABITAT AND MODERATE QUALITY BEAR HABITAT

Date: 12/12/92

Recreation/Visual: Portions of road in beach fringe would likely be visible from boats in Ushak Bay, would provide recreation access along coast of bay

Date: 7/28/91

Archaeology:

Survey completed - no significant cultural resources identified. M. Kelly

Date: 7/24/93

IDT Review By:

Date:





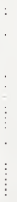

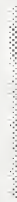


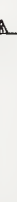
Road Card Ushk Bay EIS

Road Number: 7518-C

Photo Information

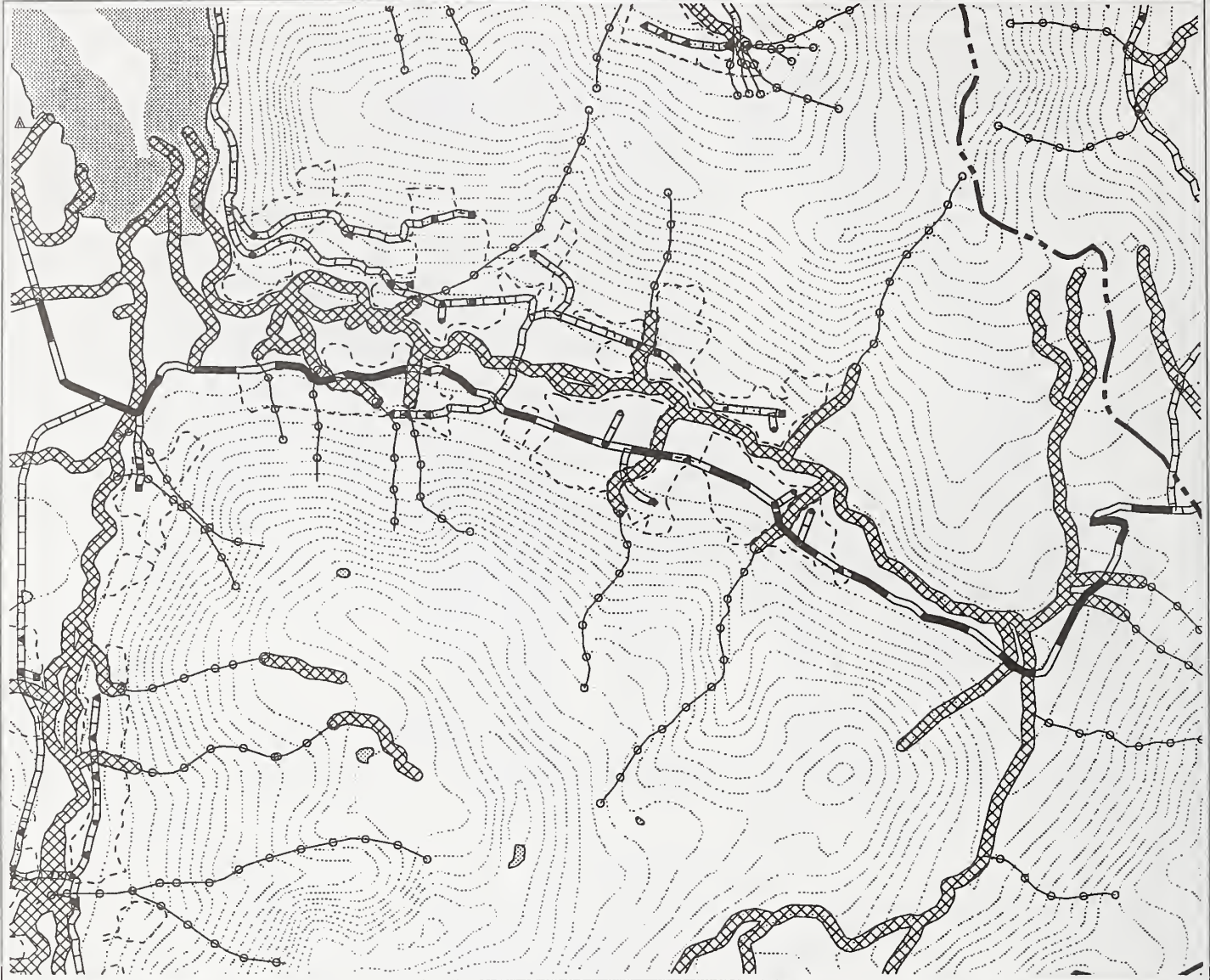
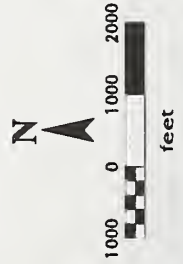
Year: 1986
 Flight Line: 23, 24
 Photo Number: 12-15, 133-136

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
Road No. 7576
Photo No. 15-12 + 133-136 Flt Line 23-24
Scale: 1:24000 ~~Collector~~ 4.7 Miles

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: FOUR CROSSINGS MAY REQUIRE BRIDGING; RECOMMEND HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES. RECOMMEND REMOVING LOG DEBRIS UP STREAM AT STATION 52+26/52+74

Date: 7-2-92

Timber/Logging: LOCATION ALLOWS FOR EFFICIENT CARBIDE YARDING OF STEEP SLOPS AND SHOVEL LOADING OF THE FLATS.

See Map Reverse Side

LF. Date: 7-2-92

MINIMIZE DISTURBANCE OF MUSKOG AND RIPARIAN WETLANDS. FISHERIES/HYDROLOGY: DURING CONSTRUCTION, DESIGN CROSSINGS CONSIDERING POSSIBLE CHANNEL SHIFTING AND AGGRAVATING BED. PROVIDE FISH PASSAGE ON CLASS 2+ STREAMS, ALLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT AND INSTREAM OPERATIONS IN FISH STREAMS. Date: 7-9-92

Soils/Geology: FEW SOILS CONCERNS. AVOID CUTTING INTO MUSKOG AREAS AND PROVIDE ADEQUATE, NON-CONCENTRATING CROSS DRAINAGE. AVOID CUTTING INTO THE TOE OF THE STEEP E-FACING SLOPE NEAR THE BOUNDARY OF UNITS 77 AND 15. BEWARE OF THE ~~DEEP~~ CLOPP POTENTIAL

Wildlife: Portions of road would OF SLOPING MUSKOG. impact high quality habitat for bear, otter, and marten, and moderate quality deer winter range. Date: 12/29/92 VLA

Recreation/Visual: northern portion of road may be visible from boats in Ushik Bay Road would provide access inland for recreation. Date: 7-28-92

Archaeology: Survey of portion w/ high sensitivity zone completed. no significant cultural resources identified. M. Kelly Date: 7/20/92

IDT Review By:

Date:


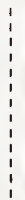






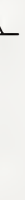
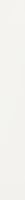
Road Card Ushk Bay EIS

Road Number: 7518-D

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 8-12

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 751B DEEP BAY SIDE
 Photo No. 8-12 Flt Line 23
 Scale: 1:24000 ARTERIAL I. & B. LINES

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning: FIFTEEN STATIONS OF 12% GRADE WAS REQUIRED. EXCAVATOR & RIGID DRILL EQUIPMENT WILL BE REQUIRED.

AY

Date: 7-2-92

Timber/Logging: NA

Y/A

Date: 7-2-92

MINIMIZE DISTURBANCE OF WETLAND AREAS AND MUSKIEG FISHERIES/HYDROLOGY: DURING CONSTRUCTION AND AS PART OF DESIGN, PROVIDE FISH PASSAGE ON CLASS I & II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT, AND INSTREAM OPERATIONS IN FISH STREAMS. Date: 7-9-92

Soils/Geology: AVOID DEEP CUTS INTO MUSKIEG AND PROVIDE ADEQUATE, NON-CONCENTRATING, CROSS DRAINAGE. BEWARE OF THE GREAT POTENTIAL OF SLOPING MUSKIEG. AVOID CUTTING INTO THE TOES OF STEEP SLOPES. BEWARE OF THE POSSIBLE WASTABLE GROUND (SLUMP SCARS) ~~BEFORE~~ AND STEEP CROSS SLOPES NEAR THE SWITCHES, DSW #13
 Wildlife: ^{hunter} Road would provide access to high elevation deer summer range. Closing road following lossing would mitigate impacts to deer. Date: 12/29/92 VLA

Recreation/Visual: Road would be unexciting. Would provide connection inland between Deep Bay and Uble Bay
 Date: ~~7/29/92~~ 7/29/92

Archaeology: Outside high-sensitivity zone - no survey required. 11 Wells
 Date: 7/29/92

IDT Review By:
 Date:

Road Card Ushk Bay EIS

Road Number: 7518-E

Photo Information

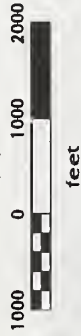
Year: 1986
 Flight Line: 24
 Photo Number: 140-143

Legend

- VCU Boundary
- - - Harvest Unit Boundary
- ▬ Road Card Segment
- ▬ Other Proposed Roads
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 280

Road No. 751B

Photo No. 140 - 143

Scale: 1:24000

Fit Line 24

COLLECTOR APPRUA 2.2 MILES

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: SOME CREEKS MAY REQUIRE BRIDGING. RECOMMEND HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURE. ALTERNATIVE ROAD FLAGGED, STATION 95+00 TO 106+00 TO REDUCE ENCROACHMENT ON STREAM BUFFER BUT TRAVERSES UNSTABLE SOILS.

Date: 6-30-92

Timber/Logging: ROAD PROVIDES EFFICIENT ACCESS FOR CABLE YARDING OF HILLSIDES & SENECA LOGGING THE FLATS.

See Map Reverse Side

Date: 6-30-92

Fisheries/Hydrology: Design crossings considering bed aggradation and potential channel shifting or creation of new channels, consider temporary roads and abandonment or bridges. Minimize disturbance to riparian wetlands. Time construction around high flows, minimize siltation during construction. Provide fish passage on bays. Date: 7-9-92 DMW

Soils/Geology: AVOID DEEP CUTS INTO MUSKIEG AND BEAULIE BEWARE OF THE GREAT POTENTIAL OF SLIPING MUSKIEG OF THE SLOPES. AVOID DEEP CUTS INTO THE TOES AND ACROSS STEEP SLOPES. AVOID SIDECASTING ONTO STEEP SLOPES.

Wildlife: Portions of road would impact high quality bear, marten, and other habitat, and moderate quality deer winter range. Impacts could be mitigated by closing road following logging. Date: 12/29/92 VLA

Recreation/Visual: May be partially visible as line in distance from bays in Deep Bay would provide inland access for recreation. Date: 7-28-92

Archaeology: Survey completed - no significant cultural resources identified. Date: 7-28-92

IDT Review By:

Date:

Date: 7/20/92


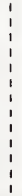







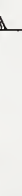
Road Card Ushk Bay EIS

Road Number: 7518-F

Photo Information

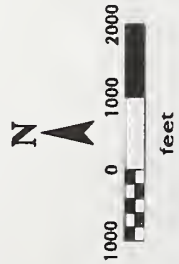
Year: 1986
 Flight Line: 25
 Photo Number: 104, 105

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 7518F
 Road No. 280
 Photo No. 104, 105 Flt Line 25
 Scale: _____

Road Management Objective:

SEE Appendix K,

Date:

Transportation Planning: ROAD CROSSES DEEP BAY CREEK. RECOMMEND HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION TO DETERMINE DRAINAGE STRUCTURES

Date: 6/30

Timber/Logging:

ROAD PROVIDES ACCESS TO DEEP BAY LTF FROM UNITS IN DEEP BAY CREEK VALLEY.

Date: 6/30/92

Fisheries/Hydrology: FOLLOW BMP GUIDELINES FOR EXCAVATION MATERIAL PLACEMENT, AND INSTREAM OPERATIONS IN FISH STREAMS.

Date: 6/30/92

Soils/Geology: NO MAJOR SOILS PROBLEMS. AVOID SIDIE CASTING ON STEEPER SECTION

Date: 6/30/92

Wildlife: ROAD WOULD AFFECT HIGH QUALITY BROWN BEAR, MARTEN AND RIVER OTTER HABITAT; LOW QUALITY DEER HABITAT.

Date: 6/30/92

Recreation/Visual: PORTIONS OF THE ROAD AND THE LTF WOULD BE VISIBLE FROM SMALL BOATS WOULD PROVIDE INLAND ACCESS FOR RECREATION

Date: 6-30-92

Archaeology: SURVEY COMPLETED - NO SIGNIFICANT CULTURAL RESOURCES IDENTIFIED

Date: 6-30-92

IDT Review By:

Date:


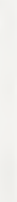
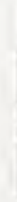




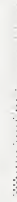


Road Card Ushk Bay EIS

Road Number: 751801

Photo Information

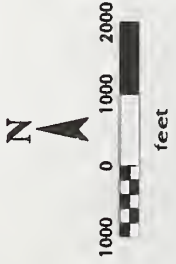
Year: 1986
 Flight Line: 25,26,27
 Photo Number: 118,6,61

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281

Road No. 751801

Photo No. 118, 6, 61

Scale: 1:24000

Flt Line 25, 26, 27

0.09 MILES

751801 (LTF ACCESS ROAD)

Road Management Objective: UPON COMPLETION OF LOGGING ACTIVITIES IN USAK BAY, DRAINAGE STRUCTURE IN ROAD WILL BE REMOVED AND ROAD ALLOW TO REVERT BACK TO RECREATE.

Prepared by: [Signature] Date: 10/24/93

Transportation Planning: ACCESS ROAD FROM MINIMUM # 7518 TO NORTH SHORE USAK BAY. LTF SCORE ROAD WHERE POSSIBLE TO REDUCE VISUAL IMPACTS FROM FERRY ROUTE.

[Signature] Date: 10/22/93

Timber/Logging: N/A

See Map Reverse Side

Fisheries/Hydrology: Road crosses small streams, which could be class II up to road. Minimum sediment input and allow fish passage if field review substantiates any class II channel. Review by [Signature] Date: 10/22/93

Soils/Geology: Soils are mapped as the Kupreanof-Tuxekan complex which are deep & moderately well to well drained. Mass wasting and sediment delivery potentials are low. The road appears to cross small, unmapped streams which should be protected. R.H. Wheeler Date: 10/21/93

Wildlife: The road is in beach fringe and high value clear winter range. Closing road after harvest would mitigate impacts to deer and moose. No eagle trees in immediate vicinity. [Signature] Date: 10/21/93

Recreation/Visual: High probability of impacts to visual resource clearing ~~area~~ should be kept to minimum to preserve tree screen of road surface. Utility will meet VOP of PR should meet midfunction. E.K. [Signature] Date: 02-02-93

Archaeology: Area surveyed August 27, 1993. No cultural resources identified during systematic survey. Area recommended as cleared & any cultural resource identified stop work & notify Forest Archaeologist. [Signature] Date: 10-22-93

IDT Review By: [Signature] Date: 10/22/93
FS IDT Leader










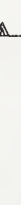
Road Card Ushk Bay EIS

Road Number: 751806

Photo Information

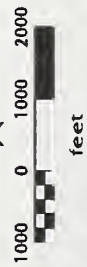
Year: 1986
 Flight Line: 24
 Photo Number: 140-143

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 280
Road No. 7518 06
Photo No. 140 - 143
Scale: 1:24000

Filt Line 24

~~COLLECTOR~~ 0.6 MILES

Road Management Objective:
SEE APPENDIX K.

Date:

Transportation Planning:

ROAD CROSSES MAJOR STREAM (DEEP CREEK).
RECOMMEND HYDROLOGIC ANALYSIS FOLLOWING
FINAL LOCATION TO DETERMINE DRAINAGE
STRUCTURES.

Date: 6.30-92

Timber/Logging: ROAD ACCESS PRICES INSUFFICIENT
LOGGING

See Map Reverse Side

Date: 6-30-92

Fishes/Hydrology: TWO CLASS I CROSSINGS FOLLOW GUIDELINES FOR
EXCAVATION, MATERIAL ALIGNMENT AND INSTALLATION
OPERATIONS IN ANADROMOUS FISH STREAMS. DESIGN, LOCATE AND CONSTRUCT
TO MINIMIZE DISTURBANCE OF FISH AND FISHING METHODS. REQUIRE SPA
CROSSINGS TO BE CONSTRUCTED WITH PROTECTIVE STRUCTURES. DATE: 7-22-92

Soils/Geology:

ROUTE DELETED NA

DSWASTRUBUM
Date: 2 SEPT 92

Wildlife:

Most of road (all except NW segment) passes through high quality habitat
for brown bear, river otter, and marten. Southern portion is in
estuarine fringe habitat. Impacts could be mitigated by denying
vehicle access after logging.

VLA Date: 7/23/92

Recreation/Visual:

Road may be visible from tracks in Deep
Bay area line in distance would provide access for
recreation in inland areas from bay (Date: 7/29/92)

Archaeology: Outside high sensitivity zone -

No Survey Required
Z. Koehn

Date: 7.24.92

IDT Review By:

Date:











Road Card Ushk Bay EIS

Road Number: 751809

Photo Information

Year: 1986
 Flight Line: 25,26,27
 Photo Number: 118,6,61

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 751809
 Photo No. 118, 6, 61 Flt Line 25, 26, 27
 Scale: 1:24000 0.3M local

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K Date:

Transportation Planning:

Road was relocated to permit access to landings. 4-5 stations full bench/end haul, plus 1 fill 25ft. otherwise easy construction. Grades up to 18% favorable. Soils reasonably stable.

JBR Date: 8.6.92

Timber/Logging:

Road accesses 2 well-placed landings.

JBR Date: 8.6.92

Fisheries/Hydrology: Minimize siltation dur. wdg construction

DDJ Date: 2/2/92

Soils/Geology: AREA IS MARGINAL AND UNIT 94 SHOULD POSSIBLY BE AVOIDED DUE TO FREQUENT DISSECTIONS AND SLIDE SCARS. CONSIDER TEMPORARY ROAD IF NECESSARY. AVOID SIDECASTING MATERIAL ON UNSTABLE AREAS. USE FULL

BENCH FULL SECTIONS IN ACTIVE HEADS. PROVIDE FREQUENT DRAINAGE. PROVIDE FIELD REVIEW

Road would impact moderate to high quality deer winter range.

Date: VA 12/29/92

Recreation/Visual: Road would likely be visible from boats in Ushik Bay and the Alaskan Marine Highway where it would be exposed in Unit 94

CG Date: 7.29.92

Archaeology:

Date:

IDT Review By:

Date:


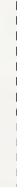








Road Card Ushk Bay EIS

Road Number: 75181

Photo Information

Year: 1986
 Flight Line: 25,26,27
 Photo Number: 118,6,61

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
Road No. 75181
Photo No. 118, 6, 61 Flt Line 25, 26, 27
Scale: 1:24000 0.6 mi local

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning:

Road traverses 60-70% slopes for approx 10-12 sta, requires extensive blasting & end haul. Stable slope. Also 4-6 sta near east end located immediately above unstable slope, requiring full bench / end haul consty.

ABJ Date: 8.6.92

Timber/Logging:

Road accesses an excellent landing. In future can be extended to settings higher on the hill.

ABJ Date: 8.6.92

Fisheries/Hydrology:

minimize siltation during construction

POW Date: 9/2/92

Soils/Geology: PORTIONS OF UNITS 94 AND 95 ARE MARGINAL WHERE SLOPES EXCEED 65 TO 65%. IF THOSE AREAS ARE AVOIDED THEN THIS SPUR MAY NOT BE NECESSARY. AVOID CUTTING INTO STEEP SLOPES OR ~~BE~~ UNSTABLE AREAS AND USE FULL BENCH/END HAUL CONSTY IN MARGINAL AREAS.

Wildlife:

Portion of road would impact moderate quality deer winter range and high quality marten habitat.

Date: 11/12/92

Recreation/Visual: would likely be highly visible from boats in Voth Bay and Alaskan Marine Highway where exposed in harvest unit and large cut/fill areas

Date: 7.24.92

Archaeology:

Date:

IDT Review By:

Date:


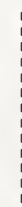


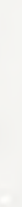

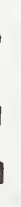


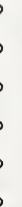
Road Card Ushk Bay EIS

Road Number: 75182

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 5,6

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
Road No. 7578 Z
Photo No. 5-6
Scale: 1:24000

Flt Line 26
Locat. 0.7 Miles

Road Management Objective:
SEE APPENDIX K

Date:

Transportation Planning: THIS SPUR PROVIDES ACCESS TO THE HIGH BRANCH IN UNIT 93. THE LOWER PORTION OF THE SPUR WILL REQUIRE DRILLING AND EXCAVATION. THE UPPER SECTION CAN BE BUILT USING AN EXCAVATOR AND RUNUP CONSTRUCTION. GRADE RANGE BETWEEN 84 AND 1470
Date: 8-31-92 ✓

Timber/Logging: THE UPPER PORTIONS OF THE UNIT CAN BE EFFICIENTLY YARDED DOWNHILL USING SKYLING AND/OR RUNNING SKYLING. THE LOWER HANDINGS INCLUDING 2 STATIONS OF 1/4 ACRES ARE WELL SUITED FOR SWING YARDED OPERATIONS
Date: 8-31-92

Fisheries/Hydrology: Class III streams only, no-fisheries concern
Date: 8-31-92

Soils/Geology: ALIGNMENT APPEARS MARGINAL WHERE IT CROSSES AN ACTIVE AREA THAT APPEARS TO BE OVERSTEPPED, HAS OLD LANDSLIDE SCARS, AND HAS RECENTLY SLID TO THE WATER LINE. AVOID CROSS SLOPES OVER 65%. AVOID THE EXTREME HAZARD AREAS. PROVIDE FIELD REVIEW. Date: DSW 2 SEPT 92
DOW Date: 9/23/92

Wildlife: Road would impact beach fringe habitat, high quality deer winter range, and high quality habitat for marten & otter. Date: 10/29/92 vlx

Recreation/Visual: Road would be highly visible in harvest units to foreground views from Pevil Strait. May meet VAO of modification if group selection harvest. Date: 6/26 12/30/92

Archaeology: _____
Date:

IDT Review By: _____
Date:


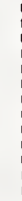
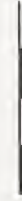

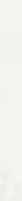
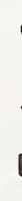



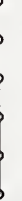
Road Card Ushk Bay EIS

Road Number: 75183

Photo Information

Year: 1986
 Flight Line: 24,25
 Photo Number: 129-130,117-118

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
 Road No. 75783
 Photo No. 129-130 117-118 Flt Line 24, 25
 Scale: 1:24000
Local 0.1 miles

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: THIS SPUR PROVIDES EFFICIENT ACCESS FOR UNIT 3-A. THE REMAINING PART OF THE SPUR ACCESSES THE REST OF 3-A & UNIT 89. THIS IS A TEMPORARY SPUR WITH BRGY CONSTRUCTION. THE REMAINING SPUR WILL BE BUILT WITH AN EXCAVATOR.

Date: 8-31-92 *WJ*

Timber/Logging: A LARGE PORTION OF UNIT 3-A IS ACCESSIBLE BY HANDING. THE TEMPORARY SPUR TO UNIT 89 OFFERS OPPORTUNITIES FOR SWING UNDER LANDINGS. THE LARGE BEACH IN UNIT 89 PROVIDES EXCELLENT LANDINGS FOR HARVESTING THIS UNIT.

Date: 8-31-92 *WJ*

Fisheries/Hydrology: Minimize siltation during construction. Time construction around fish activities

DDW Date: 9/23/92

Soils/Geology: AVOID DEEP CUTS INTO THE TOES OF SLUMPS AND STEEP SLOPES ON UNIT 3A. CONSIDER AT LEAST PARTIAL BENCH CONSTRUCTION IN THESE AREAS. ALSO BEWARE OF CUTTING INTO OCEANIC AND STEEP SLOPES ABOVE THE BENCH IN UNIT 89 NEAR THE END OF ~~THE~~ THE TEMP. SPUR.

Wildlife: Road would impact estuary fringe habitat, high quality habitat for bear, marten and other, and high quality deer winter range.

VLA Date: 12/25/92

Recreation/Visual: Road would be highly visible to foreground views from Little Bay, especially in harvest units.

Date: GTC 12/30/92

Archaeology:



Date:

IDT Review By:

Date:










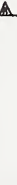
Road Card Ushk Bay EIS

Road Number: 75184

Photo Information

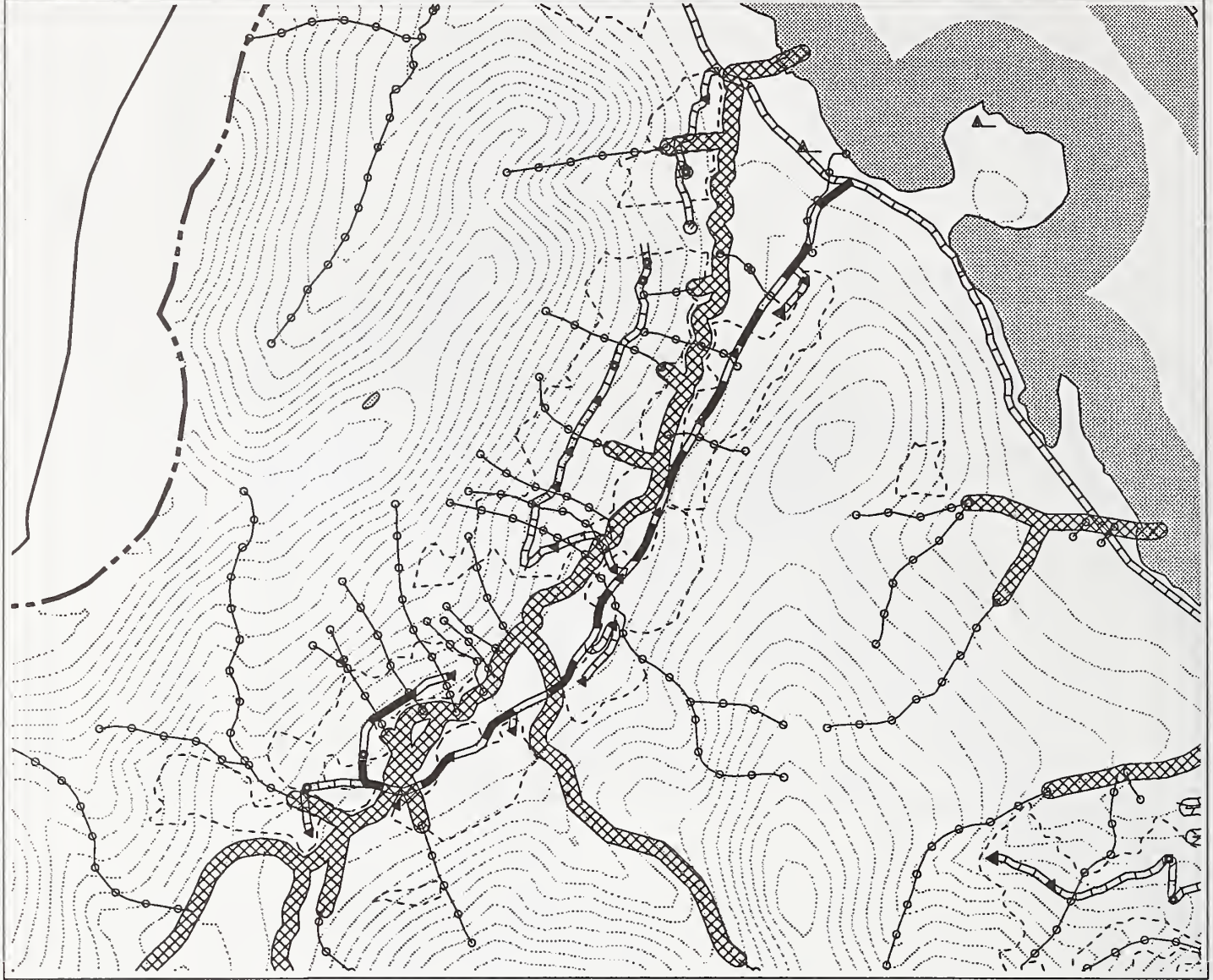
Year: 1986
 Flight Line: 24,25
 Photo Number: 129-130,117-118

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 75184
 Photo No. 129-130
 Scale: 1:24000

Flt Line 24, 25

Collector: 2.1 miles

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning:

Simple construction on gentle terrain. Z crossings of fish streams

RAK Date: 8.7.92

Timber/Logging: Road accesses logical landings for productive cable logging.

RAK Date: 8.7.92

Fisheries/Hydrology: PROVIDE FISH PASSAGE ON CLASS I+II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT, AND INSTREAM OPERATIONS (TIMING) IN FISH STREAMS.

Date: 9-3-92

Soils/Geology: AVOID CUTTING INTO MUSKIEG AREAS AND PROVIDE ADEQUATE, NON-CONCENTRATING, CROSS DRAINAGE. AVOID CUTTING INTO THE TOES OF STEEP SLOPES AND UNSTABLE GROUND, USE PARTIAL OR FULL ~~BERM~~ BENCH

Wildlife: CONSTRUCTION IN THESE AREAS IF NECESSARY. BEWARE OF THE FREQUENT DISSECTIONS AND SOUTH END OF MARGINAL GROUND ON THE N END N OF THE CK. road would impact beach fringe habitat.

Date: 12/29/92

Recreation/Visual: Portion of road near beach fringe may be visible from boats in Ushk Bay. Road would provide inland access for recreation if left open

Date: *AK* 7/29/92

Archaeology:

Date:

IDT Review By:

Date:











Road Card Ushk Bay EIS

Road Number: 751843

Photo Information

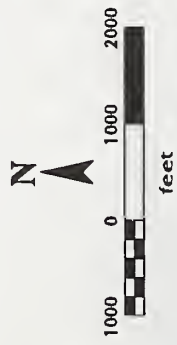
Year: 1986
 Flight Line: 24,25
 Photo Number: 129-130,117-118

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 756843
 Photo No. 129-130 | 117-118 | Flt Line 24 25
 Scale: 1:24000 | Local | 1.2 miles

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning:

Road location crosses numerous V notch gulches (7) requiring fill in excess of 14 feet. Overall side slopes average 45%.

N.J. Date: 7-15-92

Timber/Logging:

Liming skyline will be used to log Unit 85 and the upper portion of Unit 4. Skidline system will be used to log lower portion of Unit 4

N.J. Date: 7-15-92

Fisheries/Hydrology: DESIGN B-S CHANNEL AND V-NOTCH DRAINAGE TRANSPECT. REGULARY SPACE CROSS DRAINAGE TO DISSIPATE OVERLAND FLOW, PROVIDE FISH PASSAGE ON CLASS I & II STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT AND INSTREAM OPERATIONS IN FISH STREAM. DATE: 7-22-92

Soils/Geology: AVOID DEEP CUTS INTO STEEP CROSS SLOPES AND INTO THE TOES OF STEEP SLOPES AND UNSTABLE GROUND, USE PARTIAL OR FULL BENCH/END HAY CONTROLS

IN THESE AREAS IF NECESSARY, PARTICULARLY ALONG THE UPPER REACHES OF UNIT 4. KEY IN FILL SECTIONS IN WILDLIFE: THE V-NOTCHES AND AVOID BLOWING THE DRAINAGES. Western portion of road will impact high quality habitat for brown bear, other martens. Impact could be mitigating by denying vehicle access following logging.

and moderate to high NA Date: 7/23/92

Recreation/Visual: Quality deer winter range. Road may be visible from boats in Little Egg when road would be exposed in harvest units (A, B, C, D) on slope. Would provide road access to upland area for hunting and other recreation

CF Date: 7-29-92

Archaeology: Outside Sensitive Area - No Survey Necessary

S. Fluid Date: 7-24-92

IDT Review By:

Date:


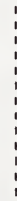








Road Card Ushk Bay EIS

Road Number: 75185

Photo Information

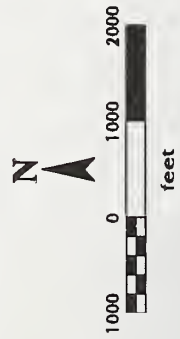
Year: 1986
 Flight Line: 24,25
 Photo Number: 132-133,117

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 75185
 Photo No. 132-133, 117 Flt Line 24, 25
 Scale: 1:24000
 Collector 1.7 ml.

See Map Reverse Side

Road Management Objective:
 SEE APPENDIX K

Date:

Transportation Planning: Location changed significantly; (a) to reduce mileage (b) to obtain deflection in Unit 62. 5-switchbacks. Mostly easy construction; several stations of full bench/level haul: 16700 - 25700 and 73000 and 77700 and 79000 and 82000 - 87150. Temp. spur into south part-unit 62. improve 25% grade: must sub trucks/equipment. ~~Site~~ Date: 7/10/92.

Timber/Logging: Road access logical ~~for~~ ~~harding~~. 25% grade on temp. spur is issue for hauling and equipment access - subbing machine is required. - This spur has been abandoned from consideration - ~~Part~~ 8/15/92

~~Site~~ Date: 7/10/92

Design/locate, and construct roads to minimize disturbance to water and Fisheries/Hydrology: riparian wetlands. Design location considering riparian flow and fish bedrock fragment. Regularly pave cur road ditch to disperse overflow - erosion of bank flows. Consider temporary roads and pull out and project abandoned section with. Minimize siltation during construction down slope plus Date: 7-22-92

Soils/Geology: BEWARE OF CONSTRUCTION ON POSSIBLE MASS WASTING DEBRIS ON THE LOWER S-FACING SLOPE OF UNIT 13. AVOID DEEP CUTS AND SIDECASTING ON THE STEEP CROSS SLOPES. KEY IN FULL BENCH/LEVEL HAUL

FULL SECTIONS ACROSS THE V-NOTCHES AND MINOR WILDLIFE: GRASSLAND ON THE N-MOST SEGMENT IN UNIT 92. Southern tip of road is in estuary fringe habitat and high quality habitat for marten, otter, bear. Central portion of road also passes through high quality marten habitat. Impacts to wildlife could be mitigated by denying vehicle access after logging and moderate quality deer winter range.

Recreation/Visual: Switchbacks would be highly visible from boats in Usilk Bay where exposed by harvest units (15, 92). Road would provide upland access to recreationists. Date: 7/23/92

Archaeology: Most of this road is outside 1974 ~~and~~ ~~1976~~ ~~zone~~ - Yr low, (southern portion) via. Survey of no significant ~~archaeology~~ resources were located. Date: 2/20/92

IDT Review By:

Date:











Road Card Ushk Bay EIS

Road Number: 75186

Photo Information

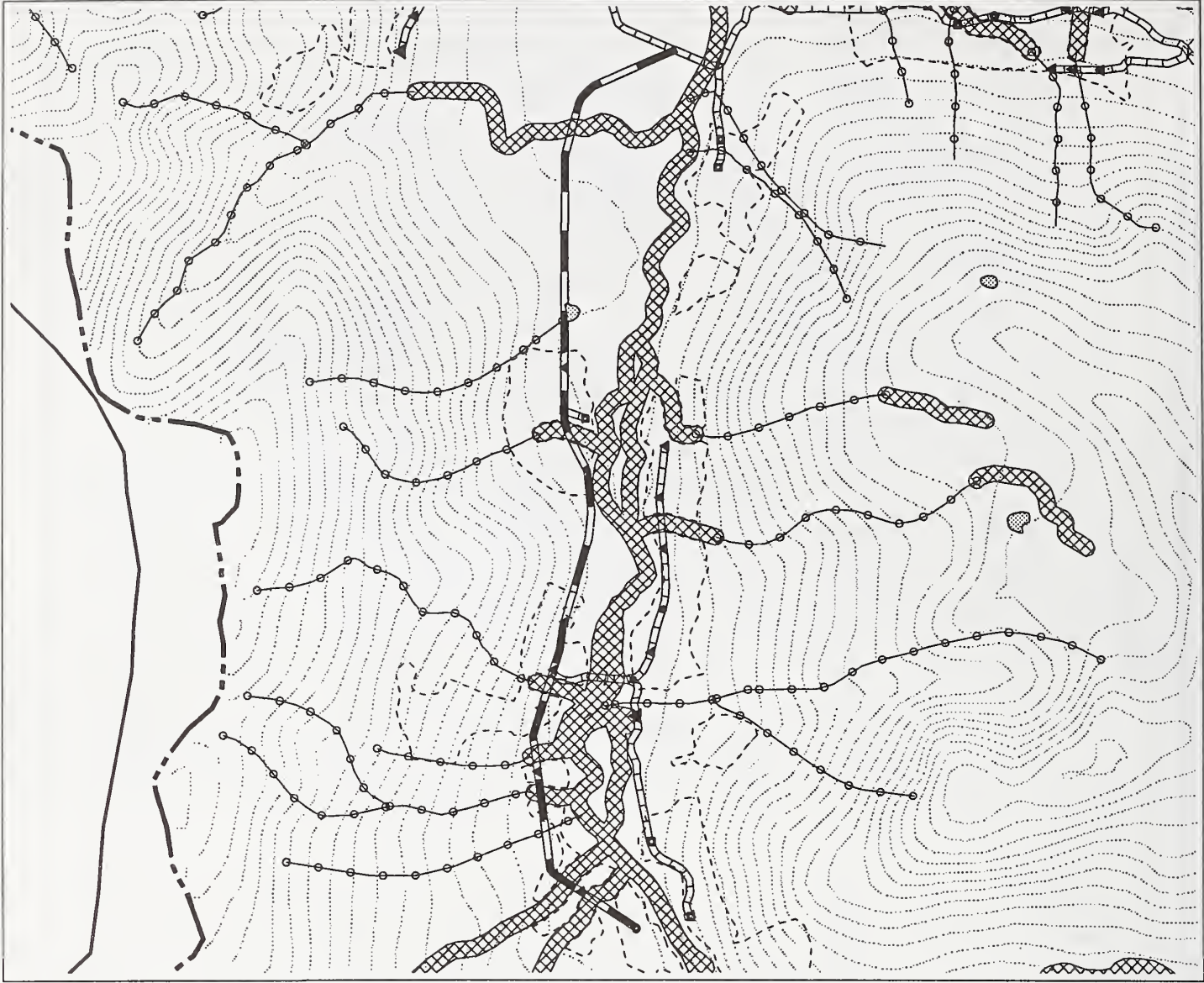
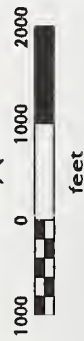
Year: 1986
 Flight Line: 22,23
 Photo Number: 163-164,14-15

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 75186
 Photo No. 163-164
 Scale: 1:24000

Flt Line 22, 23
LOCAL 2.3 miles

See Map Reverse Side

Road Management Objective:
 SEE Appendix K

Date:

Transportation Planning:

Simple construction near majority of roads. Where
 Asloves concerns have required the road to
 be located on steeper side hills endhauling
 will be required (Sta 6400-7300)
 Some crossing locations need a
 culvert between hydrology &
 vehicle safety. 7/22/92

Date: 7-15-92

Timber/Logging:

The road location allows efficient cobb. logging
 while protecting the fisheries concerns

Date: 7-15-92

MINIMIZE DISTURBANCE TO MUSKIE AND RIPARIAN WETLANDS. ROAD
 FISHERIES/HYDROLOGY: CROSSES C-1, B-1, A-3, & B-5 CHANNELS THAT
 EXCEED 10' WIDTH. REQUIRE HYDROLOGIC ANALYSIS SHOWING FINAL
 LOCATION TO DETERMINE DRAINAGE STRUCTURES, DESIGN FOR PEAK
 FLOW, HIGH BEDROCK, SHIFTING ALIGNMENT, REGULARLY SPACE
 CROSS DRAINS, PROVIDE FISH PASSAGE ON
 CLASS I & II STREAMS, FOLLOW BMP GUIDELINES. Date: 9-2-92

Soils/Geology: AVOID CUTTING INTO MUSKIE AREAS AND PROVIDE
 ADEQUATE, NON-CONCENTRATING, CROSS DRAINAGE.
 AVOID DEEP CUTS INTO THE TOES OF THE STEEP SLOPES ON
 UNITS # 11 & 79 AND INTO MASS WASTING DEBRIS ON UNITS
 # 10 & 78. CONSIDER PARTIAL TO FULL ~~REINFORCEMENT~~ BENCH / GRAD

Wildlife:

Most of road unit will impact high quality habitat for moose, otter,
 and brown bear. Impacts to wildlife could be mitigated by denying
 vehicle access (after logging) and moderate/high quality VLA
 deer winter range.

Date: 7/23/92

Recreation/Visual: Road would be unseen. Road would provide
 future inland access for recreation if left open

Date: 7/23/92

Archaeology: Portions of road through Sensitive Areas have
 been surveyed. No Significant Cultural
 resources were identified
 5. Flint

Date: 7-24-92

IDT Review By:

Date:


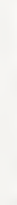








Road Card Ushk Bay EIS

Road Number: 7518608

Photo Information

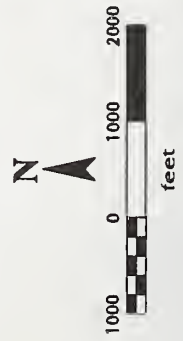
Year: 1986
 Flight Line: 22,23
 Photo Number: 163-164,14-15

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
 Road No. 7518608
 Photo No. 163-164 Flt Line 22, 23
 Scale: 1:24000 Local 0.6 ml.

See Map Reverse Side

Road Management Objective:
 SEE Appendix K.

Date:

Transportation Planning: GENTLE GRADES ON EASY TERRAIN. ROAD CROSSES MAJOR STREAM (W. USHK CREEK) AND A SIDE CREEK. RECOMMEND A HYDROLOGIC ANALYSIS SHOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES. TEMPORARY ROADS BRANCH TO EAST AND WEST.

Date: 8-6-92

Timber/Logging: Road accesses logical landings, except for E. end of unit I where landing involves yarding across excessive dead ground. This is less uneconomical than building road to timber, where there is not a gulch/creek.

Fisheries/Hydrology: Time construction around fish activities, minimize station during construction. Provide fish passage on close I + II streams.

Done Date: 9/22/92

Soils/Geology: AVOID CUTTING INTO MUSKIE AREAS AND DRAINAGE. PROVIDE ADEQUATE, NON-CONCENTRATING, CROSS BEWARE OF THE POTENTIAL OF SLOPING MUSKIE CHANNELS, LANDSLIDES, AND LARGE SNOW BANKS. RUNNING OUT THE DRAINAGE ALONG THE SW SIDE OF

Wildlife:

Date:

Recreation/Visual:

Date:

Archaeology:

Date:

IDT Review By:

Date:


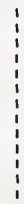






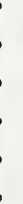
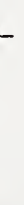
Road Card Ushk Bay EIS

Road Number: 7518609

Photo Information

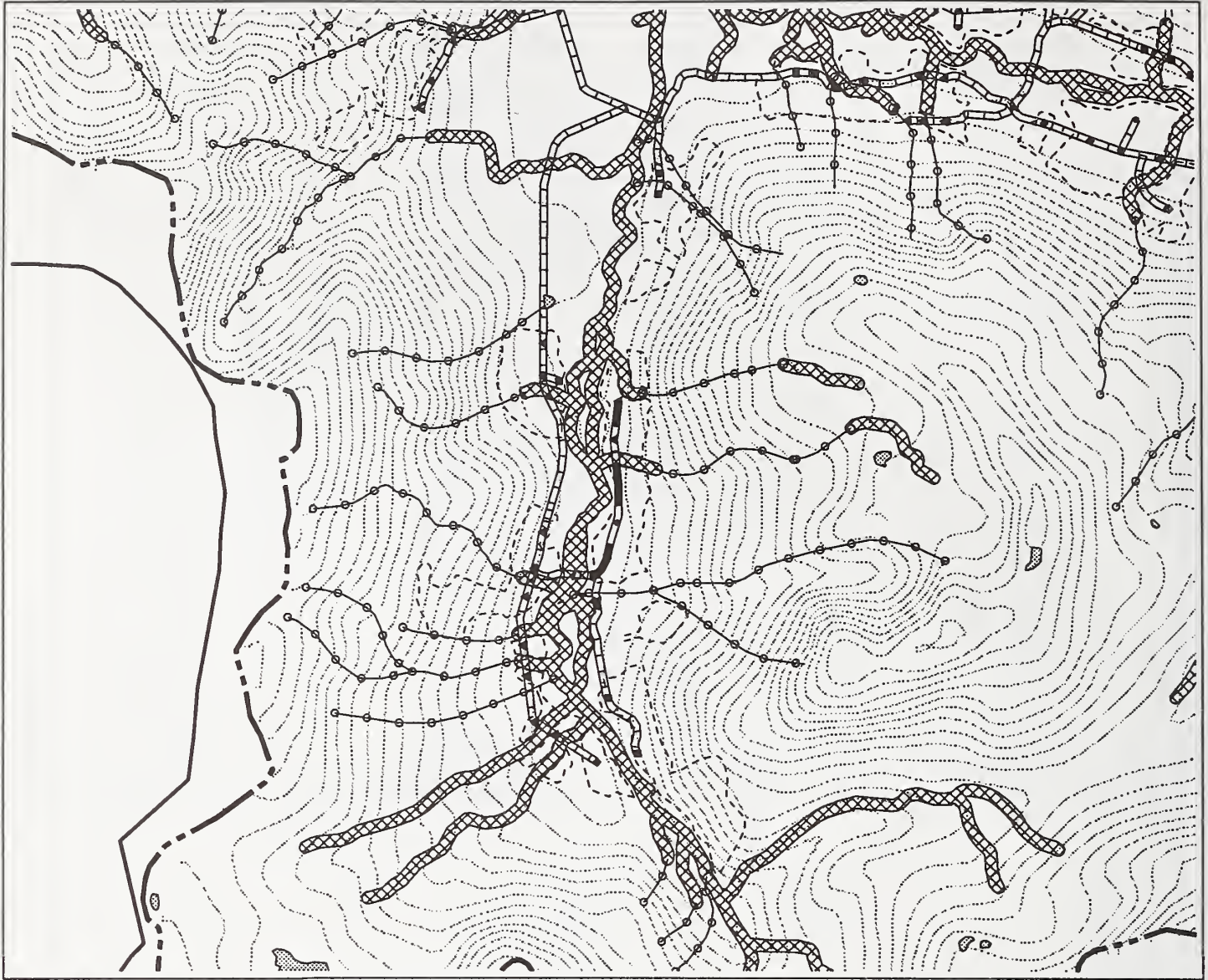
Year: 1986
 Flight Line: 22,23
 Photo Number: 164,14,15

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU 281
 Road No. 7518609
 Photo No. 164, 14, 15
 Scale:

Flt Line 22 + 23

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: GENTLE GRADES ON EASY TERRAIN. ROAD CROSSES CLASS I STREAM. RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION TO DETERMINE DRAINAGE STRUCTURE.

/S/ D.W. Date: 8-6-92

Timber/Logging: ROAD ACCESSES LANDINGS IN UNIT 79 AND 79A.

See Map Reverse Side

/S/ D.W. Date: 8-6-92

Fisheries/Hydrology: PROVIDE FISH PASSAGE ON CLASS I STREAMS. FOLLOW BMP GUIDELINES FOR EXCAVATION, MATERIAL PLACEMENT, AND INSTREAM OPERATIONS (TIMING) IN FISH STREAMS B/DON Date: 9-23-92

Soils/Geology: PROVIDE ADEQUATE CROSS DRAINAGE. AVOID CUTTING INTO MUSKEG AREAS.

/S/ D.S.W. Date: 9-2-92

Wildlife: ROAD WOULD IMPACT HIGH QUALITY HABITAT FOR MARTEN, OTTER AND BROWN BEAR, AND MODERATE QUALITY DEER HABITAT. IMPACTS COULD BE MITIGATED BY DENYING VEHICLE ACCESS AFTER LOGGING

Date: 12/29/92

Recreation/Visual: ROAD IS IN AN UNSEEN AREA

/S/ GG Date: 7-28-92

Archaeology:

NO SIGNIFICANT CULTURAL RESOURCES WERE IDENTIFIED

/S/ S.F. Date: 7/24/92

IDT Review By:

Date:










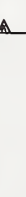
Road Card Ushk Bay EIS

Road Number: 75188

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 8-12

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



ROAD DESIGN CARD

VCU 281
Road No. 75188
Photo No. 8-12 Flt Line 23
Scale: 1:24000 local 1.04 miles

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K.

Date:

Transportation Planning: Road 75188 begins at F-Line on station 181+90. Easy construction on gentle terrain. Road crosses two main creeks. Recommend hydrologic analysis following final location to determine drainage structures.

H₁ Date: 8-6-92

Timber/Logging: Road access provides for logging unit 138 through two landings

H₂ Date: 8-6-92

Fisheries/Hydrology: minimize siltation during construction

DDW Date: 9/23/92

Soils/Geology: Avoid deep cuts into the toes of steep slopes, debris at the base of slopes or into muskeg. Provide adequate, non-concentrated cross drainage and beware of the deep potential ~~base~~ of muskeg.

Wildlife:

Road would impact moderate/high deer winter range.

Date: 10/29/92 VLA

Recreation/Visual: Road would be unseen.

Date: 10/29/92

Archaeology:

Date:

IDT Review By:

Date:


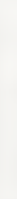








Road Card Ushk Bay EIS

Road Number: 75189

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 140-143

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Road Card Segment
-  Other Proposed Roads
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



VCU

280

Road No. 75109

Photo No. 140 - 143

Flt Line 24

Scale: 1:24000

LOCAL ~~LOCATION~~ 0.5 MILES

See Map Reverse Side

Road Management Objective:

SEE APPENDIX K

Date:

Transportation Planning: ROAD CROSSES MAJOR STREAM (DEEP CREEK) AND A SIDE CREEK. RECOMMEND A HYDROLOGIC ANALYSIS FOLLOWING FINAL LOCATION, TO DETERMINE DRAINAGE STRUCTURES. INTERSECTION WITH 751B IS WITHIN TTRA BUFFER

Date: 6-30-92

Timber/Logging: LIMIT CAN BE SHOWN LOGGED. HIGH LEAD IS AN OPTION.

kt Date: 6-30-92

Fisheries/Hydrology: TWO CLASS I STREAMS CLASSIFIED. FOLLOW UPDRAINAGE FOR ELEVATION, MATERIAL MOVEMENT, AND INSTREAM OPERATIONS (FISHING) IN ANADROMOUS FISH STREAMS. OF CONCERN REGARDING WELLS & CHANNEL SHIFTING AT CROSSINGS FOR DELTA. DMS MINIMIZE DISTURBANCE OF RIPARIAN WETLANDS. Date: 7-1-92

Soils/Geology: FEW SOILS CONCERNS. BEWARE OF SHIFTING CHANNELS AND DEBRIS.

OSWASHURKA Date: 3 SEPT 92

Wildlife:

Most of road unit passes through high quality habitat areas for marten, brown bear, and other. Impacts to wildlife could be mitigated by denying vehicle access after logging.

VLA Date: 7/23/92

Recreation/Visual: Road would likely not be visible from Deep Bay

Date: 7/24/92

Archaeology: Survey completed - no significant cultural resources identified.

M. Kelly

Date: 7/24/92

IDT Review By:

Date:



APPENDIX C

UNIT CARDS



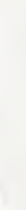
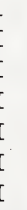
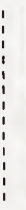






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 2
VCU: 281
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 5-6

Legend

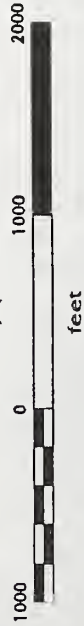
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK	LUD: VCU: 281	UNIT: 2	ACRES: 16																																																																																					
MANAGEMENT AREA:																																																																																								
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)																																																																																								
<p>Recommended system is clear-cut. Natural regeneration of hemlock should be adequate. Consider planting unit with Cedar to maintain current species composition. If necessary, a pre-commercial thinning at 15-20 yrs. is recommended. The plant assoc. is predominantly WH-YC/BB, which is moderately productive. If possible maintain 2 snags per acre for diversity. Steep slope pitches and shelves occur.</p> <p>UNIT CHANGE NOTES: The upper third of the unit contains slopes over 80%, ~15 acres were eliminated. Cedar stripping and mistletoe in hemlock is evident in pockets of unit.</p> <p><i>OPENINGS WILL HAVE TO BE CUT IN BEACH FRINGE FOR YACING. UNIT HAS BEEN SCHEDULED FOR SLABS. LANDINGS ARE CLOSE TO AVOID SIDE HILL. NEED TO ADD TO REDUCE SOIL DISTURBANCE. SNAGS ARE A SURVIVAL HAZARD FOR LANDINGS CREWS. REMAINING 13 ACRES ARE TO BE HELILOGGED.</i></p> <p><i>Log away from water drainages and not within them. Consider full log suspension. Prevent debris from entering drainages and if it does, remove it. Many V-notch channels in unit. Maintain channel integrity. Do not yad through channels.</i></p>																																																																																								
TIMBER/SILVICULTURE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Tim Type</th> <th>H44</th> <th>H45</th> <th>X44</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>Acres</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>BB</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/As</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prevalent Plant Assoc.</td> <td>210</td> <td>210</td> <td>110</td> <td></td> </tr> <tr> <td>Site Index</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Regen Method</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Wind Hazard (H,M,L) H</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc.)</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Tim Type	H44	H45	X44	TOTAL	Acres					MBF/Species					WH					BB					YC					MH					Other					TOTAL					MBF/As					Prevalent Plant Assoc.	210	210	110		Site Index					Regen Method					Gross Growth					N. Goshawk					Wind Hazard (H,M,L) H					Damage (Insect, disease, animal, etc.)						
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Trail: N/A																																																																																								
Perspective Plots:																																																																																								
Field Review: 6/16/92																																																																																								
ARCHAEOLOGICAL CULTURAL																																																																																								
Field Review: N/A																																																																																								



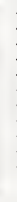
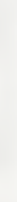







Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 2
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 5-6

Legend

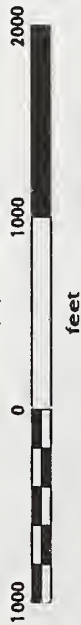
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
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-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN GRAD

PROJECT: USHK LUD: VCU: 201 UNIT: 2 ACRES 19

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommended system is clear-cut. Natural regeneration of hemlock should be adequate. Consider planting unit with Cedar to maintain current species composition. If necessary, a pre-commercial thinning at 15-20 yrs. is recommended. The plant assoc in precommercially WH-YC|BB, which is moderately productive. If possible maintain 2 snags per acre for diversity. Steep slope pitches and shelves occur.

UNIT CHANGE NOTES: The upper third of the unit contains slopes over 80%, ~15 acres were eliminated. Cedar stripping and mistletoe in hemlock is evident in pockets of unit.

CRADINGS WILL HAVE TO BE CUT IN BEACH FRINGE FOR YALDING. UNIT HAS BEEN IMPROVED DUE TO SLABS. LANDINGS ARE CLOSE TO AVOID SIDE HILL IMPROVEMENT TO REDUCE SOIL DISTURBANCE. SNAGS ARE A SUBSTANTIAL HAZARD FOR LIGNING CREWS. REMAINING 13 ACRES ARE TO BE HELILOGGING YARDED.

Log away from v-notch drainages and not within them. Consider full log suspension. Prevent debris from entering drainages and if it does, remove it. Many v-notch channels in unit. Maintain channel integrity. Do not yab through channels.

AVOID SLOPES > 55%. AVOID AND PROTECT V-NOTCHES, LANDSLIDES, AND AVALANCHE CHUTES AND TRACES. POSSIBLY AVOID THE ENTIRE UNIT DUE TO THE FREQUENT DISSECTION, POORLY DRAINED SOILS, EXISTING FAILURES, CONCAVE SLOPE, AND SUSPECTED LANDSLIDES. USE PARTIAL LOG SUSPENSION LOGGING. FIELD REVIEW STABILITY DURING LOGGING.

Harvesting SE corner of unit will result in loss of high quality habitat for marten. Harvesting Southern half of unit will impact high & moderate quality deer winter range and will result in fragmentation of remaining winter range.

WOULD NOT MEET VAD on POS. VIABLE FROM SMALL BOATS IN USHK-BAY.

Outside designated high-sensitivity area - no cultural resources survey required.

Tim Type	H 44	H 45	X 44	TOTAL
Acres				
MBF/Species				
WH				
BS				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	210	210	110	
Site Index				
Repen Method				
Gross Growth				
N. Goshawk	none seen			
Wind Hazard (H,M,L) H				
Damage (Insect, disease, animal, etc.)				

LOGGING/TRANSPORTATION

Landing: 2
Profile: 2-1-42
Field Review: 7/18-92

WATERSHED/FISHERIES
PLS 7-18-92
Field Review: 6/30/92

SOILS/GEOLOGY
PLS & RRL 7/7 92
Field Review:
OSW 7/26 92

WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/20/92

Stand Exam: 6/16/92 S. Allen/T. Pusina
Stand Exam Type: Plots
Silvicultural Review: S.J. Smith
7/25/92

LOGGING/TRANSPORTATION

Landing: 2
Profile: 2-1-42
Field Review: 7/18-92

WATERSHED/FISHERIES
PLS 7-18-92
Field Review: 6/30/92

SOILS/GEOLOGY
PLS & RRL 7/7 92
Field Review:
OSW 7/26 92

WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/20/92

Visual/Recreation
Perspective Plots:
Field Review: 6/16 7/20/92

LOGGING/TRANSPORTATION

Landing: 2
Profile: 2-1-42
Field Review: 7/18-92

WATERSHED/FISHERIES
PLS 7-18-92
Field Review: 6/30/92

SOILS/GEOLOGY
PLS & RRL 7/7 92
Field Review:
OSW 7/26 92

WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/20/92



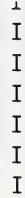







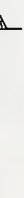
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 2
VCU: 281
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 5-6

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK LUD: VCU: 20 UNIT: 2 ACRES: 50

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommended system is clear-cut. Natural regeneration of hemlock should be adequate. Consider planting unit with Cedar to maintain current species composition. If necessary, a pre-commercial thinning at 15-20 yrs. is recommended. The plant assoc is predominantly WH-YC/BB, which is moderately productive. If possible maintain 2 snags per acre for diversity. Steep slope pitches and shelves occur.

UNIT CHANGE NOTES: The upper third of the unit contains slopes over 80%, 15 acres were eliminated. Cedar stripping and mistletoe in hemlock is evident in pockets of unit.

CHANGES WILL HAVE TO BE CUT IN BEACH FRINGE FOR YALDING. UNIT HAS BEEN SCHEDULED TO SLABS. LANDINGS ARE LEASE TO AVOID SIDE HILL YALDING. ADD TO REDUCE SOIL DISTURBANCE. SNAGS ARE A SAFETY HAZARD FOR LOGGING CREWS. REMAINING 13 ACRES ARE TO BE HELIANTHIC YALDING.

Log away from v-notch drainages and not within them. Consider full log suspension. Prevent debris from entering drainages and if it does, remove it. Many v-notch channels in unit. Maintain channel integrity. Do not yerd through channels.

AVOID SLOPES > 55%. AVOID AND PROTECT V-NOTCHES, LANDSLIDES, AND AVALANCHE CHUTES AND TRACES. POSSIBLY AVOID THE ENTIRE UNIT DUE TO THE FREQUENT DISSECTION, POORLY DAMMED SOIL, EXISTING FAILURES, CONCAVE SLOPE, AND SUSPECTED LANDSLIDES. USE PARTIAL LOG SUSPENSION LOGGING. FIELD REVIEW STABILITY DURING LOGGING.

Harvesting SE corner of unit will result in loss of high quality habitat for marten. Harvesting Southern half of unit will impact high & moderate quality deer winter range and will result in fragmentation of remaining winter range.

WOULD NOT MEET VAD on POS. VISIBLE FROM SMALL BOATS IN USHK BAY.

Outside designated high-sensitivity area - no cultural resources surveys required.

Tim Type	H 44	H 45	X 44	TOTAL
Acres				
MBF/Species				
WH				
99				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	210	210	110	
Site Index				
Perpet Method				
Gross Growth				
N. Goshawk	none seen			
Wind Hazard (H.M.L) H				

Damage (Insect, disease, animal, etc.) Mistletoe/CEAS/STORM

Stand Exam: 6/16/92 S. Allen / T. Pusina
 Stand Exam Type: Silviculture/let Review: S.J. Smith
 7/25/92

LOGGING/TRANSPORTATION
 Landing: 2
 Pioness: 2-1-92
 Field Review: 4/1 6-2-92

WATERSHED/FISHERIES
 PLS 7-18-92
 Field Review: 6/30/92

SOILS/GEOLOGY
 PLS & RLL 7/7 92
 Field Review: OSW 7/26 92

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/20/92

VISUAL/RECREATION
 VAO: R/L
 VAC: LOW
 Visibility: MIDDLE/POOR
 ROC: PRIMITIVE
 Recreation Site: USHK BAY
 Trail: N/A

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A



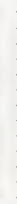
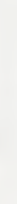
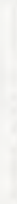



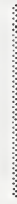


Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 3
VCU: 281
Alternative(s): B C

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-119

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



feet

UNIT DESIGN CARD

PROJECT: USHK LUD: VCU: 2-81 UNIT: 3-5 ACRES: 21
 RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)
 Recommend Clearcut System. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to maintain Stand Composition. A P&T may be necessary to enhance growth.
 WH/YC/BS is predominant Disturbance, indicating moderate productivity.

Management Area:	Tim Type	Acres	MBF/Species	WH	BS	YC	MH	Other	TOTAL	TOT/AC
	MBF/Species									
	WH									
	BS									
	YC									
	MH									
	Other									
	TOTAL									
	MBF/AC									
	Prevalent Plant Assoc.									
	Site Index									
	Regen Method									
	Gross Growth									
	N. Goshawk							None Observed		
	Wind Hazard (H,M,L,H)									
	Damages (Insect, disease, animal, etc.)									

LOGGING/TRANSPORTATION
 Landings: 313-2-509
 Profiles: 313-2-509
 Field Review: 7-31-92 J.U.
 WATERSHED/FISHERIES
 PLS 7-18-92
 Field Review: 6/30/92 JLF
 SOILS/GEOLOGY
 Field Review: OSJ 7/20/92
 WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/20/92
 VISUAL/RECREATION
 Perspective Plots:
 Field Review: G/LF 7/20/92
 ARCHEOLOGICAL/CULTURAL
 Field Review: 7-22-92 S. Flint
 No Significant Cultural Resources Identified -











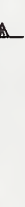
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 3
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-119

Legend

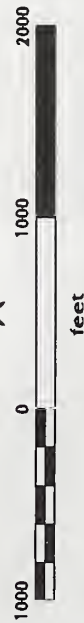
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.91 UNIT: 3 ACRES: 77
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend clear-cut system. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to keep stand composition. A PCT may be necessary in 2.15-20 yrs to enhance growth. Maintain 2 snags/acre.
 WH/BB/DC and WH/BB/SC are the prevalent Plant Associations in the southern portion of the Unit, indicating highly productive and moderately productive sites, respectively.

Tim Type	X45	X44	X35	TOT/AVG
Acres				
MBF/Species				
WH				
BB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.				
Site Index				
Regen Method				
Groes Growth				
N. Goshawk	none observed			
Wind Hazard (H,M,L) ft				
Damage (Insect, disease, animal, etc.)				

SMALL CANS ON WEST SIDE OF UNIT CAN BE YARDED DOWN WITH USING A DREDGE CHANNEL. THE WEST SIDE IS BEING RECLAIMED AND USED FOR SOLIDIFICATION TO YARDING. THE EAST SIDE OF THE UNIT CAN BE YARDED DOWN TO THE BOUNDARY. LEAVING SNAGS IS NOT SAFE FOR LEAVING CREEKS.

Maintain minimum 500 ft. buffer in Estuary, 100 ft buffer on class I streams, 100 ft buffer on class II stream on south border of unit. Class III stream on west boundary of unit. Consider increased erosion in steep incised channels if banks are disturbed. Log away from large channels & prevent logs from debris from entering channels. Consider wind firm buffer on class III streams if possible.

AVOID & PROTECT V-RANGES TO WINDFIRM. AVOID SCORES > 65%. USE PARTIAL LOG SUSPENSION YARDING. FIELD REVIEW STABILITY LOGS AS NECESSARY.

Harvest will result in loss of high quality habitat for marten, otter, and brown bear. Harvesting SE half of unit will result in loss of estuary fringe habitat. Harvesting northern half of unit will impact high quality deer winter range.

WOULD NOT MEET VAD on P.O's. VISIBLE FROM 3/4 M. BOATS IN USH-K-107.

No significant cultural resources identified - Spring-board cuts in stumps along creek indicate early logging

Tim Type	X45	X44	X35	TOT/AVG
Acres				
MBF/Species				
WH				
BB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.				
Site Index				
Regen Method				
Groes Growth				
N. Goshawk	none observed			
Wind Hazard (H,M,L) ft				
Damage (Insect, disease, animal, etc.)				

LOGGING/TRANSPORTATION
 Landing: 27
 Profiles: 10 7-31-92 VV
 Field Review:

WATERSHED/FISHERIES
 Field Review: GVV, GSR
 6/29/92
 7/3/92 DMB, DSW

SOILS/GEOLOGY
 Field Review:
 DSO 7/20/92

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/20/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 7/22/92
 M. Kelly

ARCHAEOLOGICAL/CULTURAL
 Field Review: 7/22/92
 M. Kelly

Harvest Unit Design Card



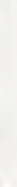
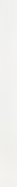
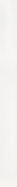






Ushk Bay EIS

Harvest Unit: 3
 VCU: 281
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 118-119

Legend

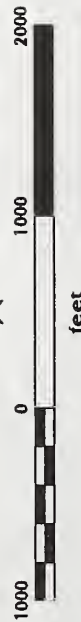
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.8 UNIT: 3 ACRES: 3
 RESOURCE (Name/Date) RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X45	H44	X44	X45	TOT/AVG
Acres					
MBF/Species					
WH					
SS					
YC					
MH					
Other					
TOTAL					
MBF/AC					
Prevalent Plant Assoc.					
Site Index					
Regen Method					
Gross Growth					
N. Goshawk	None observed				
Wind Hazard (H.M.I.) ft					
Damage (Insect, disease, animal, etc)					

RECOMMEND clear-cut system. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to keep stand composition. A PCT may be necessary in 215-20 Ys to enhance growth. Maintain 2 snags/acre.
 WH/BB/DC and WH/BB/SC are the prevalent Plant Associations in the southern portion of the Unit, indicating highly productive and moderately productive sites, respectively.

SNAKE CREEK ON WEST SIDE OF UNIT CAN BE YARDED DOWN WITH USING A DRAPING CABLE. THE WEST SIDE IS FLAT AND THE WEST SIDE HAS A SAND SYSTEM TO YARDING. THE EAST SIDE OF THE UNIT CAN ALSO BE YARDED DOWN. LEAVING SNAGS IS NOT SAFE FOR LEARNING CREEK S.

Maintain minimum 500 ft. buffer in Estuary, 100 ft buffer on Class I streams, 200 ft buffer on Class II streams, and 100 ft buffer on Class III stream on south border of Unit. Class III stream on west boundary of unit. Consider increased erosion in steep incised channels if banks are disturbed. Log away from these channels & prevent logs from entering channels. Consider wind firm buffer on Class III streams if possible.

AVOID & PROTECT V-RANGES TO WINDFIRM. AVOID SCRAPES >65%. USE PARTIAL LOG SUSPENSION TACKLING. FIELD REVIEW STABILITY USING UNDOST.

Harvest will result in loss of high quality habitat for marten, otter, and brown bear. Harvesting SE half of unit will result in loss of estuary fringe habitat. Harvesting northern half of unit will impact high quality deer winter range.

WOULD NOT MEET VBO on POs. VISIBLE FROM SM. BOATS IN USHK BAY.

No significant cultural resources identified - spring-board cuts in stamps along creek indicate early logging

PP
 LOU
 MS
 SPM
 USHK BAY
 VOO:
 VAC:
 Visibility:
 ROS:
 Recreation Site:
 Trail: N/A

LOGGING/TRANSPORTATION
 Landing: 27
 Profiles: 12 7-31-92 VV
 Field Review: 7-31-92 VV

WATERSHED/FISHERIES
 Field Review: GVW, GSR
 6/29/92
 7/3/92 DMB, DSW

SOILS/GEOLOGY
 Field Review:
 DSO 7/20 92

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/20/92

Visual/Recreation
 Perspective Plots:
 Field Review: 7/22/92 99/16

ARCHAEOLOGICAL/CULTURAL
 Field Review: 7/22/92
 M. Kelly



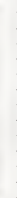
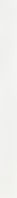


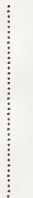



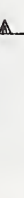
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 4
VCU: 281
Alternative(s): B F

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-119

Legend

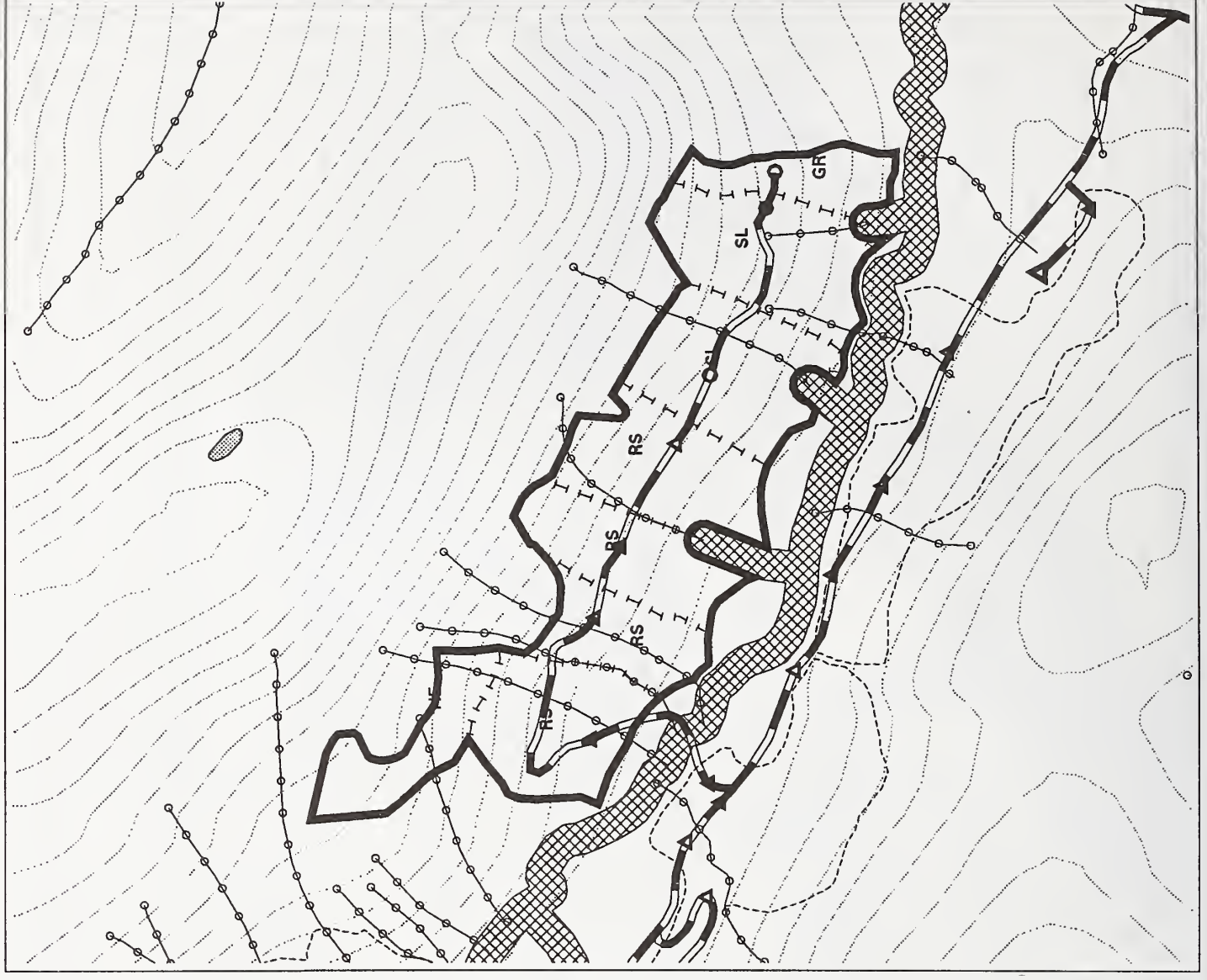
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN MAP

PROJECT: USHK MANAGEMENT AREA: VCU: 28 UNIT: 4 ACRES: 119

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED SYSTEM IS CLEARCUT. NATURAL REGEN. OF HEMLOCK SHOULD BE ADEQUATE. CONSIDER PLANTING UNIT w/ YC/BBR TO MAINTAIN CURRENT SPECIES COMPOSITION. PLANTING/SITE REGEN. OF S. SPRUCE ALONG MAIN CREEKS FOR ADEQUATE REGEN. MAY BE NECESSARY. IF NECESSARY, A PRE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED. THE PRE. DOMINANT PLANT ASSOC. IS WH-YC/BB, WHICH IS MODERATELY PRODUCTIVE. IF POSSIBLE, LEAVE 2 SNAGS/AC. FOR DIVERSITY. STEEP PITCHES AND V. NOCHES OCCUR. DIRECTIONALLY FALL TREES AWAY FROM V. NOCHES.

Stock line should provide adequate suspension for uphill yarding and running skyline for downhill yarding. Extensions may be required for uphill yarding. Unit boundary is altered where terrain slopes

PROVIDE MINICUT OR WINDFIRM BUFFER ON CLASS I AND II STREAMS. SUGGEST KEEPING UNIT OUT OF AIRBATH (WETLAND) AREAS. SPLIT HARROW OVER V-NOCHES IF APPROPRIATE. TO REDUCE potential increased erosion in steep incised channels log away from channel & prevent debris & timber from falling into channel. Maintain wetlands in valley floor which are important for base flow in stream channels.

AVOID SLOPES > 55% WHERE HIGHLY DISTURBED. AVOID SLOPES > 65%. AVOID & PROTECT V-NOCHES TO WINDFIRM. AVOID & PROTECT LANDSLIDE & AVALANCHE CHUTES & TERRACES TO WINDFIRM. USE PARTIAL LOG SKIDDING ON THE SLOPES NEAR THE TOWER TOWER.

Harvest of southern portion of unit (pasture along creek) will result in loss of high quality habitat for moose, other, brown bear. Harvesting entire unit will impact high quality habitat for deer winter range, and will result in fragmentation of remaining deer winter range.

WOULD NOT MEET VOO ON FOS. VISIBLE FROM SMALL BOATS ON USHK-BAY MAY BE

Outside designated high-sensitivity area - no surveys necessary

Tim Type	X	44	X	45	444	546	TOTAL
Acres							
MBF/Species							
WH							
BB							
YC							
MH							
Other							
TOTAL							
MBF/AC							
Plant Assoc.		110	210	210	210	363	
Site Index							
Regen. Method							
Gross Growth							
N. Goshawk		NONE			SEEN		
Wind Hazard (H,M,L,H)							

Damage (Insect, disease, animal, etc.) HEM FLUTTER / BEAR SIGNATURE

CLASS III
CONSIDER WINDFIRM

LOGGING/TRANSPORTATION
Landing: 4-19-92, 3-4-3
Profile: XA
Field Review: XA 7-11-92
WATERSHED/FISHERIES
Field Review: GSR/GUV
6-29-92
7/3/92 DMS
SOILS/GEOLOGY
DSD
Field Review: OSW & RLL 6/1/92
WILDLIFE/SUBSISTENCE
Field Review: VLA 7/20/92
VISUAL/RECREATION
Perspective Plots:
Field Review: 6/2/92 7/2/92
ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

Partial Attention
LDN
MIDLEVELGROUND
TRIMMITIVE I
USHK-BAY

VAC:
VAC:
Visibility:
ROG:
Recreation Site:
Trail:

Outside designated high-sensitivity area - no surveys necessary

WOULD NOT MEET VOO ON FOS. VISIBLE FROM SMALL BOATS ON USHK-BAY MAY BE

Outside designated high-sensitivity area - no surveys necessary

Outside designated high-sensitivity area - no surveys necessary

Outside designated high-sensitivity area - no surveys necessary

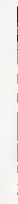


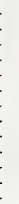
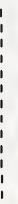






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 4
VCU: 281
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-119

Legend

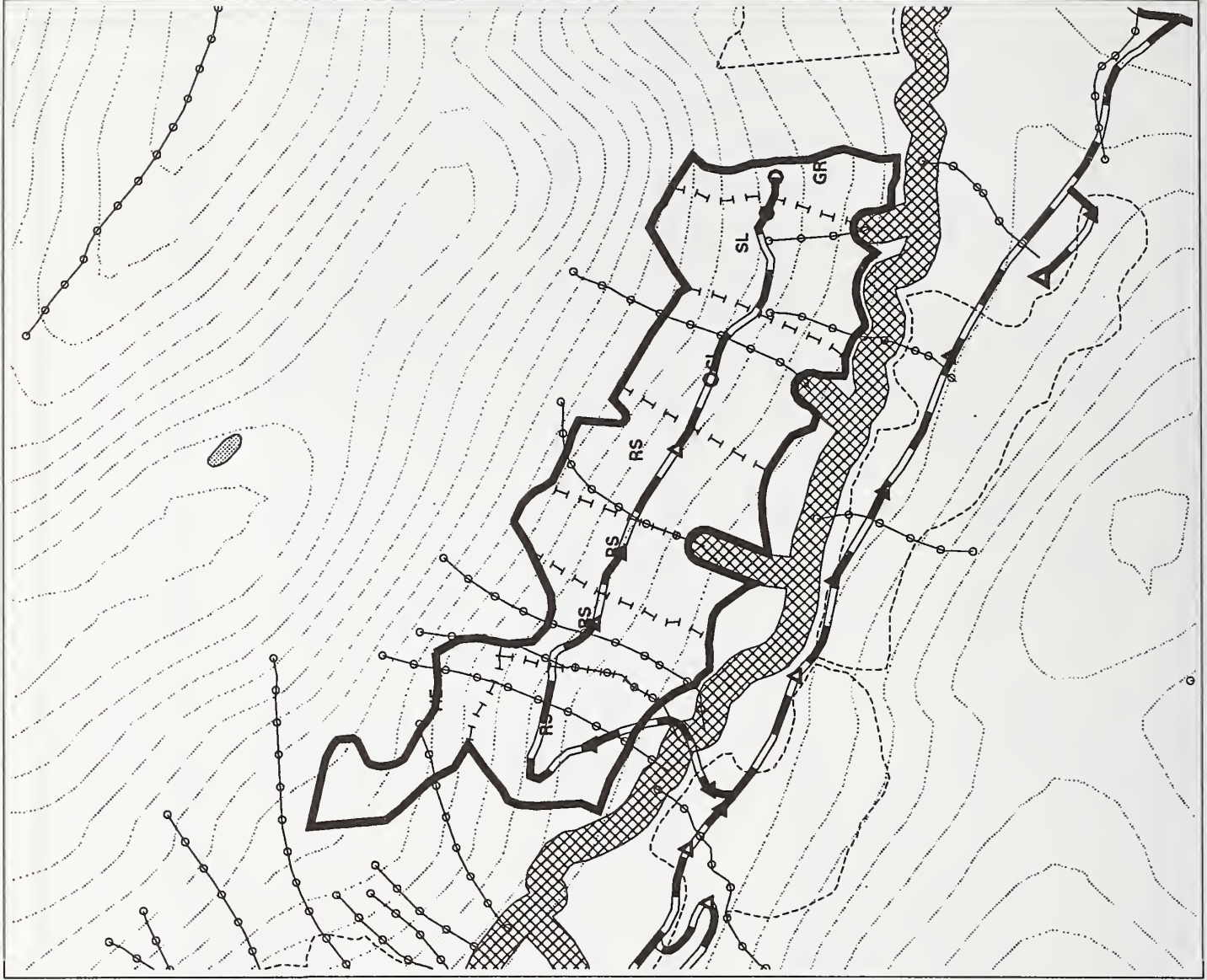
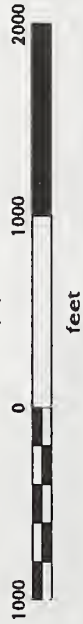
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: IISHK LUD: VCU; 281 UNIT: 4 ACRES: 546/24

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED SYSTEM IS CLEARCUT. NATURAL REGEN. OF HEMLOCK SHOULD BE ADEQUATE. CONSIDER PLANTING UNIT W/ YCEDAR TO MAINTAIN CURRENT SPECIES COMPOSITION. PLANTING / SITE PREP. OF S. SPRUCE ALONG MAIN CREEKS FOR ADEQUATE REGEN. MAY BE NECESSARY. IF NECESSARY, A. PACE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED. THE PRE. DOMINANT PLANT ASSOC. IS WH-YC/BB, WHICH IS MODERATELY PRODUCTIVE. IF POSSIBLE, LEAVE 2 SPACES/AC. FOR DIVERSITY. STEEP PITCHES AND V-NOTCHES OCCUR. DIRECTIONALLY FALL TREES AWAY FROM V-NOTCHES.

Tim Type	X 4 4	X 4 5	H 4 4	S 4 6	TOTAL
Acres					
MBF/Species					
WH					
BB					
YC					
MH					
Other					
TOTAL					
MBF/AC					
Prevalent Plant Assoc.	110	210	210	353	
Site Index					
Regen Method					
Gross Growth					
N. Goshawk	NONE	SEEN			
Wind Hazard (H,M,L) H					
Damage (Insect, disease, animal, etc.)					

Stock line should provide adequate suspension for uphill yarding and running skyline for downhill yarding. Extensions may be required for uphill yarding. Habitat boundary is altered where terrain slopes occur.

PROVIDE MINIMUM 40' WINDFIRM BUFFER ON CLASS I AND II STREAMS. BUFFER OR UP TO SLOPE BREAK. SUGGEST KEEPING UNIT OUT OF RIPARIAN (WETLAND) AREAS. SPLIT HARROW OVER V-NOTCHES IF PRACTICAL. TO REDUCE POTENTIAL INCREASED EROSION IN STEEP INCISED CHANNELS LOGGING FROM CHANNEL & PREVENT DEBRIS & TIMBER FROM FALLING INTO CHANNEL. WEEDS IN WETLANDS IN VALLEY FLOOR ARE IMPORTANT FOR BASE FLOW IN STREAM (GAINBEN). AVOID SLOPES > 55% WHERE HEAVILY DISTURBED. STRIPDOWN AVOID SLOPES > 65%. AVOID & PROTECT V-NOTCHES TO WINDFIRM. AVOID & PROTECT LANDSLIDE & AVALANCHE CHUTES & TRACES TO WINDFIRM. USE PRUDENTIAL LOG SKIDWAY LOCATIONS ON THE SLOPES NEAR THE HEAVILY DISTURBED.

Harvest of southern portion of unit (particularly along creek) will result in loss of high quality habitat for moose, other, brown bear. Harvesting entire unit will impact high quality habitat for deer winter range, and will result in fragmentation of remaining winter range.

WOULD NOT MEET VDO OR FOS. VISIBLE FROM SMALL BOATS ON USHIK-BAY MAY BE

Outside designated high-sensitivity area - no survey necessary

LOGGING/TRANSPORTATION

Landing: 4-14-2, 4-5-43

Profiles:

Field Review: 7/11/92

WATERSHED/FISHERIES

Field Review: GSR/GUV

6-29-92

7/19/92 DMS

SOILS/GEOLOGY

Field Review: 6/1/92

OSD & REL 6/1/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Field Review: 6/1/92

ARCHAEOLOGICAL CULTURAL

Field Review: N/A




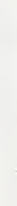







Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 4
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-119

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 201 UNIT: 4 ACRES: 66

RESOURCE (Name/Date) RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X 4 4	X 4 5	W 4 4	S 4 6	TOTAL
Acres					
MBF/Species					
WH					
BB					
YC					
MH					
Other					
TOTAL					
MBF/AC					
Prevalent					
Plant Assoc.					
Site Index					
Regen Method					
Gross Growth					
N. Goshawk					
Wind Hazard (H,M,L) H					
Damages (Insect, disease, animal, etc.)					

RECOMMENDED SYSTEM IS CLEARCUT. NATURAL REGEN. OF HEMLOCK SHOULD BE ADEQUATE. CONSIDER PLANTING UNIT w/ CEDAR TO MAINTAIN CURRENT SPECIES COMPOSITION. PLANTING / SITE PREP. OF S. SPRUCE ALONG MAIN CREEPS FOR ADEQUATE REGEN. MAY BE NECESSARY. IF NECESSARY, A PRE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED. THE PRE-DOMINANT PLANT ASSOC. IS WH-YC/BB, WHICH IS MODERATELY PRODUCTIVE. IF POSSIBLE, LEAVE 2 SPACES/AC. FOR DIVERSITY. STEEP PITCHES AND V-NOTCHES OCCUR. DIRECTIONALLY FALL TREES AWAY FROM V-NOTCHES.

Stock line should provide adequate suspension for uphill yarding and running skyline for downhill yarding. Extensions may be required for uphill yarding. Logit boundary is altered where terrain slopes are steep. 65%.

PROVIDE MINICUT OR WINDFIRM BUFFER ON CLASS I AND II STREAMS. SUGGEST KEEPING UNIT OUT OF AIRPAIN (WETLAND) AREAS. SPUR HARROWING OVER V-NOTCHES IF PRACTICAL. TO REDUCE potential increased erosion in steep incised channels log skidding from channel & prevent debris & timber from falling into channel. Use stream bank in valley floor which are important for base flow in stream channels.

AVOID SLOPES > 55% WHERE HIGHLY DISSECTED. THINNING WINDFIRM. AVOID & PROTECT V-NOTCHES TO CHUTES & TRACES TO WINDFIRM. USE PARTIAL LOG SKIDDING ON THE SLOPES NEAR THE TAILED TOWN.

Harvest of southern portion of unit (parkway along creek) will result in loss of high quality habitat for moose, other brown bear. Harvesting entire unit will impact high quality habitat for deer winter range, and will result in fragmentation of remaining winter range.

WOULD NOT MEET VDO ON FOS. VISIBLE FROM SMALL BOATS ON USHI-BAY MAY BE

Outside designated high-sensitivity area - no survey necessary

LOGGING/TRANSPORTATION
Landing: 4-14-92, 3, 4-3
Profiles: NA, 7-11-92

WATERSHED/FISHERIES
Field Review: GSR/GW 6-29-92 DMS

SOILS/GEOLOGY
Field Review: OSW & RLL 6/1/92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/20/92

VISUAL/RECREATION
Perspective Plots:
Field Review: 6/16/92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A




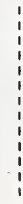






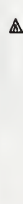
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 5
VCU: 281
Alternative(s): B C D E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 129-130

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK

LUD: VCU: 281 UNIT: 5

ACRES: 29

MANAGEMENT AREA:

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

TIMBER/SILVICULTURE

Stand Exam: 6/23/92
S. Allen/T. Pusina

Stand Exam Type: Plots

Silviculturist Review:

S. Smith

7/25/92

Tim Type	X4-5	H44	X44	TOT/AVG
Acres				
MBF/Species				
WH				
SB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	110	210		
Site Index				
Reopen Method				
Gross Growth				
N. Goshawk				None seen
Wind Hazard (H,M,L) H				
Damage (Insect, disease, animal, etc.)				LEDAR DECLINE

LOGGING/TRANSPORTATION

Landing: 5-1, 5-2, 5-3, 5-4, 5-5

Profiles: 5-1, 5-2, 5-3, 5-4, 5-5

Field Review: Dec. 7-26-92

WATERSHED/FISHERIES

Field Review: CSR x GW

6-29-92 DMS/DSW

7/3/92

SOILS/GEOLOGY

Field Review:

DSW & RRL 6/1/92

WILDLIFE/SUBSISTENCE

Field Review:

VLA 7/20/92

VISUAL/RECREATION

Perspective Plots:

Field Review: 6/1/92 initial

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Recommended cutting method is clear-cut. Natural regeneration of hemlock should be adequate. A pre-commercial thin at 15-20 years may be necessary. Predominant plant assoc. is WH/BB. Variations of this major association occur, i.e. YC found in higher area of unit and in South arm. Planting of YC may be necessary. Productivity is moderate. Numerous drainages and V notches occur, particularly in western half of main portion of unit. These notches are deep with thin ridges/fingers between them. Possible volume reduction due to V notches.

Numerous V-notches in north of unit - unit. SE portion is yard of access road to 83-1; must cut skyline roads thru with stream buffer, consider helicopter instead. Sky retention is a significant factor in timber yield. Skyline is approximately 7/4" or 1-1/2" s.l. wood. Sky retention is a significant factor in timber yield.

PROVIDE MINIMUM 100 FT OR WIND-FIRM BUFFER ON CLASS I AND II STREAMS. STOP BUFFER UP TO SLOPE BREAK ON CLASS III STREAMS. NOTE SIDE CHANNELS. SLOUGH-LIKE AREA IN NORTHWEST CORNER OF UNIT. WETLAND FIELD ASSESSMENT RECOMMENDED. Maintain wetlands in valley bottom of main stem stream because of importance in base flow. Avoid entry of logging debris into channels. Remove any debris that does enter the steep incised channels to minimize erosion. Plants

Avoid slopes > 65%. Avoid & protect V-notches to wind-firm. Avoid & protect lag-logs and slash-chutes & traces to wind-firm. Avoid full of the unit due to N. USHW. Check due to the frequent

DISBURSING. USE PARTIAL SUPPRESSION ON SENSITIVE V-LINE VOLUME. Harvest of northern half of unit will result in loss of high quality habitat for marten, other, brown bear. Logging most of unit will impact high & moderate quality deer winter range.

WIND NOT MEET VLD ON PDS

WIND NOT MEET VLD ON PDS
MAY BE PARTIALLY VISIBLE IN DISTANT MIDDLEGROUND. (3+ MILES.)

Outside sensitive Area - No Survey Necessary




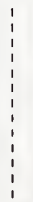





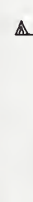

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 5-A
VCU: 281
Alternative(s): B C D E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 129-130

Legend

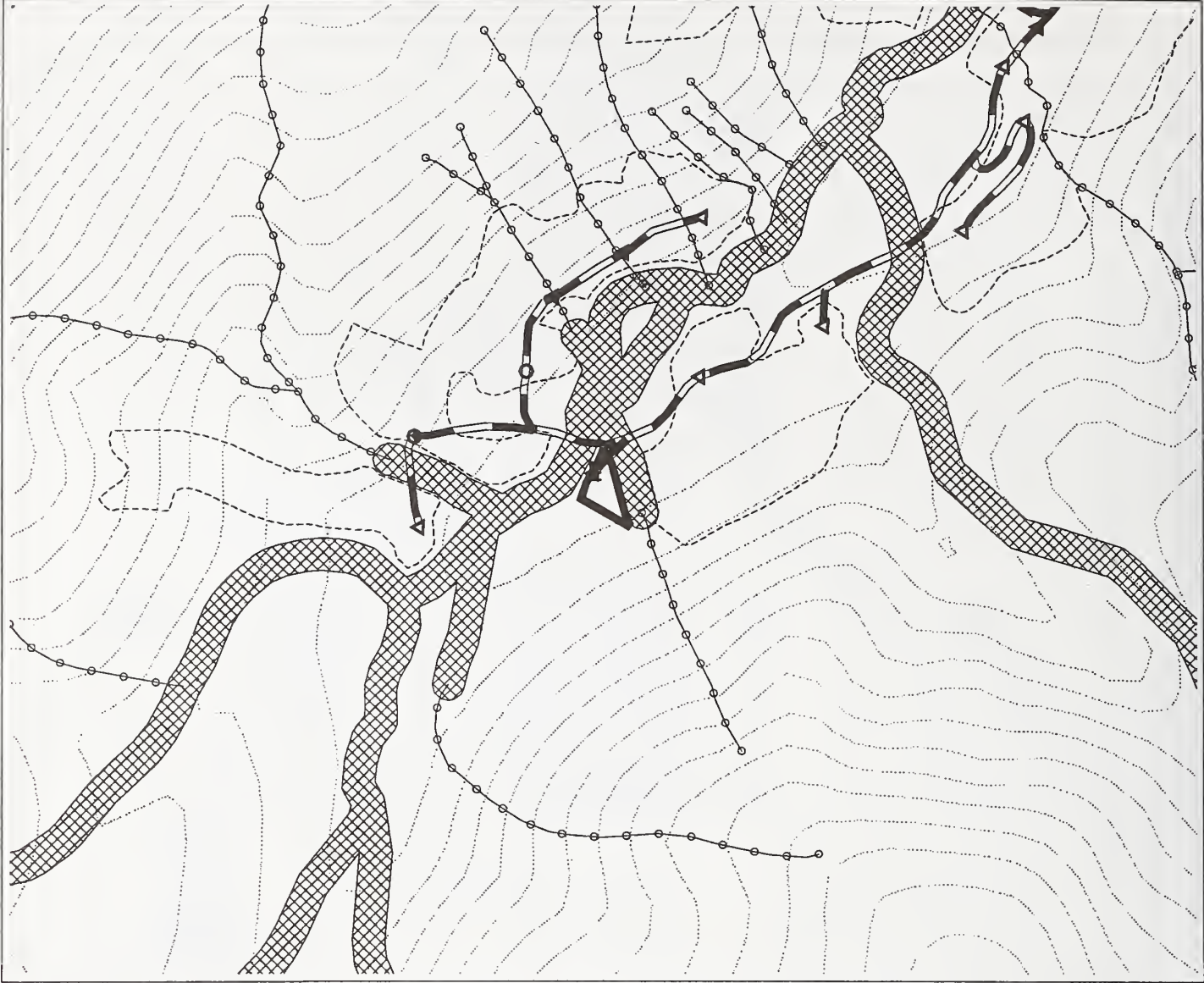
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK LUD: VCU; 281 UNIT: 5 ACRES: 1
 MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RESOURCE (Name/Date)	Tim Type	X4-E	H44	X44	X44	TOT/AVG
TIMBER/SILVICULTURE	Acres					
	MBF/Species					
	WH					
	SB					
	YC					
	MH					
	Other					
	TOTAL					
	MBF/AC					
	Prevalent					
	Plant Assoc.	110		210		
	Site Index					
	Pagein Method					
	Gross Growth					
	N. Goshawk					
	Wind Hazard (H,M,L) H					
	Damage (Insect, disease, animal, etc.)					
	LEDAR RECORD					

LOGGING/TRANSPORTATION
 Landing: 5-1, 5-2, 5-3, 5-4, 5-5-1
 Profile: 5-2
 Field Review: 8/11/92
WATERSHED/FISHERIES
 Field Review: CSR 9GW
 6-29-92 DMS/DSW
 7/3/92

SOILS/GEOLOGY
 Field Review: DSD & RFL 6/1/92

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/20/92

VISUAL/RECREATION
 Perspective Photo:
 Field Review: 6/6/92 7/31/92
 VOO: P/P
 VAC: LOW
 Visibility: MS
 ROC: PRIMITIVE
 Recreation Site: USH/CRBY
 Trail:

ARCHEOLOGICAL CULTURAL
 Field Review: N/A

Recommended cutting method is clear-cut. Natural regeneration of hemlock should be adequate. A pre-commercial thin at 15-20 years may be necessary. Predominant plant assoc. is WH/BB. Variations of this major association occur, i.e. YC found in higher area of unit and in South arm. Planting of YC may be necessary. Productivity is moderate. Numerous drainages and V notches occur, particularly in western half of main portion of unit. These notches are deep with thin ridges/fingers between them. Possible volume reduction due to V notches.

Numerous V-notches in north of unit - omit. SE portion is yard of grass near to 89-1; must cut skyline roads thru with stream buffer. Consider helicopter instead. Any retention is a safety issue. 5-2 suitable only for thinning skidding. Timber for 70" in 1-5/2/92. 5-2 suitable only for thinning skidding. Timber for 70" in 1-5/2/92. PROVIDE MINIMUM 100 FT OR WINDFIRM BUFFER ON CLASS I AND II STREAMS. 50 FT BUFFER UP TO SLOPE BREAK ON CLASS III STREAMS. NOTE SIDE CHANNEL SLOUGH-LIKE AREA IN NORTHWEST CORNER OF UNIT. WETLAND FIELD ASSESSMENT RECOMMENDED. Maintain wetlands in valley bottom of mainstem stream because of importance in baseflow. Avoid entry of logging debris into channel; remove any debris that does enter the steep incised channels to minimize erosion bank.

AVOID SLOPES > 65%. AVOID & PROTECT UNNOTCHED TO WINDFIRM. AVOID & PROTECT LANDSLIDE AND AVALANCHE CHUTES & TRACES TO WINDFIRM. AVOID ALL OF THE UNIT NEAR N. USH/CRBY DUE TO THE FREQUENT DISPERSED USE PARTIAL SUSPENSION ON SEVERE SLOPES. HARVEST OF northern half of unit will result in loss of high quality habitat for marten, otter, brown bear. Logging most of unit will impact high & moderate quality deer winter range.

WOULD NOT MEET VOO ON FOX
 MAY BE PARTIALLY VISIBLE IN DISTANT MIDDLEGROUND. (3+ MILES.)

Outside sensitive Area - No Survey Necessary

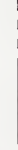

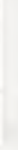




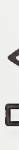



Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 6
VCU: 281
Alternatives: C E

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 129-130

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

RS	Running Skyline	HE	Helicopter
SL	Slackline	SV	Shovel
SSL	Small Slackline	GR	Gravity return
H	Highlead		

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: VCU: 281 UNIT: 6 ACRES: 3

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL VEGETATION OF HEMLOCK SHOULD BE ADEQUATE. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/BB/DC PLANT ASSOCIATION, WITH MC/BB AT HIGHER ELEVATIONS. TIMBER PRODUCTIVITY IS HIGH ON GREATER SLOPES.

Stagnation is a safety issue. Major part of unit deleted for cutting due to extreme slope stability concerns with safe failure and entry of spikes into Class I creek probable. See revised unit boundary.

PROVIDE 100 FT BUFFER ON CLASS I AND II STREAMS WITH SOFT BUFFER AND UP TO SLOPE BREAK ON CLASS III (FLOW INTO CLASS I OR II). IN CASE OF BUFFERING POTENTIAL INCREASED CHANNEL EROSION, AVOID ENTRY OF LOGGING DEBRIS INTO STEEP INCISED CHANNELS AND REMOVE DEBRIS THAT ENTERS THOSE CHANNELS.

AVOID SLOPES > 55%. AVOID 2 HAZARDOUS LANDSCAPES AND AVOID THE SHOULDER OF FAILURE ON SW BOUNDARY. AVOID STEEP DISSECTED SLOPES ON NW SIDE AND THROUGH THE CENTRAL NE PORTION OF THE UNIT. USE PARTIAL LOG SUSPENSION PRACTICES. FIELD REVIEW SCHEDULED FOR 7/21/92. Harvest will result in loss of some high quality habitat for moose and some moderate quality habitat for deer.

MAY MEET VAD; 2+ MILES FROM VIEWER ON USHK BAY. WOULD NOT MEET ROS.

Outside Sensitive Area - No Survey Necessary

Tim Type	X 44	X 45	TOT/AVG
Acres	29	19	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	140		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	ABOVE	OBSERVED	
Wind Hazard (H, M, L, N)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 6", 8", 4". Profile: 726-72. 726-72

WATERSHED/FISHERIES

Field Review: GSK & G UW 6-29-92 DMS/D SW 7/19/92

SOILS/GEOLOGY

Field Review: DSW & RLL 5/21/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Perspective Plots: MG PRIMITIVE VISUAL KEY

Field Review: 6/15 7/19/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Harvest Unit Design Card




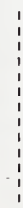

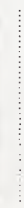




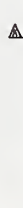
Ushk Bay EIS

Harvest Unit: 7
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 22
 Photo Number: 163-164

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 281 UNIT: 7 ACRES: 156
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X45	Alder	TOT/AVG
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent			
Plant Assoc.	210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk		(Cons. observed)	
Wind Hazard (H,M,L)			
Damage (Insect, disease, animal, etc.)			CEGAR STEPPING

TIMBER/SILVICULTURE
 Stand Exam: 6/12/92 M. White/T. Pusina
 Stand Exam Type: Plots - Variable & Fixed
 Silviculturalist Review: A Smith
 7/25/92

Recommend Clear cut followed by Natural Regeneration.
 Some planting of 1/4 may be necessary. A PCT at 15 yr. may be necessary to enhance growth.
 Predominantly a white/yellow plant Assoc. Somewhat scattered throughout upper 1/2 of stand. Unit has various U-notches occurring.
 On SW portion of stand. Possible HE logging should be done on this area. Unit contains some areas of steep pitches. Site is moderately productive.

LOGGING/TRANSPORTATION
 Landing: 7-1, 7-2.
 Profiles: 7-1-7-5
 Field Review: 7-28-92
WATERSHED/FISHERIES
 PLS/DW 7-20-92
 Field Review: Don 8/2/92

Center part of unit omitted to exclude sub-metric wood - see changes on boundary - snag retention is safety issue.
 Upper part of unit omitted - stability issue in V-notches. Long V-notches across muskeg to 7-2 to avoid road construction.
 Log away from V-notch drainages and consider tall log suspension to prevent debris from entering drainages and if it does remove it. Minimize disturbance of muskegs.
 No Fisheries concern

SOILS/GEOLOGY
 Field Review: DSW & RRL 5/31/92

Avoid slopes over 60% avoid stands. Use partial log suspension.

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/20/92

Harvest will result in loss of high quality habitat for marten. No concerns for deer, brown bear, or river otter.

VISUAL/RECREATION
 Field Review: 26/12 7/19/92

WOUND NOT MEET POS.

VGO: MODIFICATION
 VAC: LOW
 Visibility: LIFEY UNSEEN
 ROS: PRIMITIVE
 Recreation Site: CREEK BAY.
 Trail:

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A

Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card


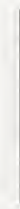

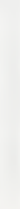


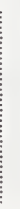




Ushk Bay EIS

Harvest Unit: 7
 VCU: 281
 Alternative(s): D

Photo Information

Year: 1986
 Flight Line: 22
 Photo Number: 163-164

Legend

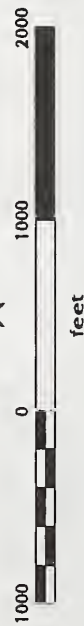
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: Is/ E. Johnson
 Date: 9/29/93



PROJECT: USHK	MANAGEMENT AREA:	RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)																																																																				
TIMBER/SILVICULTURE Stand Exam: 6/12/92 M. White/T. Pusina Stand Exam Type: Plots - Variable & Fixed Silviculturalist Review: A Smith 7/25/92	<table border="1"> <thead> <tr> <th>Tim Type</th> <th>X45</th> <th>Alder</th> <th>TOT/AVG</th> </tr> </thead> <tbody> <tr> <td>Acres</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>89</td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/AC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prevalent Plant Assoc.</td> <td>210</td> <td></td> <td></td> </tr> <tr> <td>Site Index</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Regen Method</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td>None observed.</td> <td></td> <td></td> </tr> <tr> <td>Wind Hazard (H,M,L)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc.)</td> <td colspan="3">CEDAR STRIP/PAVIL</td> </tr> </tbody> </table>	Tim Type	X45	Alder	TOT/AVG	Acres				MBF/Species				WH				89				YC				MH				Other				TOTAL				MBF/AC				Prevalent Plant Assoc.	210			Site Index				Regen Method				Gross Growth				N. Goshawk	None observed.			Wind Hazard (H,M,L)				Damage (Insect, disease, animal, etc.)	CEDAR STRIP/PAVIL			Recommend clear cut followed by Natural Regeneration. Some planting of YC may be necessary. A PCT at 15 yrs may be necessary to enhance growth. Predominantly a WH-YC/AB Plant Assoc. Some mt scattered throughout upper 1/2 of stand. Unit has various U-notches occurring on SW portion of stand. Possible HE logging should be done on this area. Unit contains some areas of steep pitches. Site is moderately productive.
Tim Type	X45	Alder	TOT/AVG																																																																			
Acres																																																																						
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Damage (Insect, disease, animal, etc.)	CEDAR STRIP/PAVIL																																																																					
LOGGING/TRANSPORTATION Landing: 7-1, 7-2. Profiles: 7-1-15 Field Review: 7/22/92 PLS/BSW 7-20-92		Center part of unit omitted to exclude sub-metric wood - see changes on boundary - snag retention is safety issue. Upper part of unit omitted - stability issue in U-notches. Long handling across muskeg to 7-2 to avoid road construction. Log away from U-notch drainages and consider full log sus decision. Prevent debris from entering drainages and if it does remove it. Minimize disturbance of muskegs.																																																																				
WATERSHED/FISHERIES Field Review: DON 8/2/92		No Fisheries concern																																																																				
SOILS/GEOLOGY Field Review: DSW & RRL 5/31/92	AVOID SLOPES OVER 60% AVOID STANDS. USE PARTIAL LOG SUSPENSION	& PROTECT U-NOTCHES AND SLIDE CHUTES TO WINDFIRM																																																																				
WILDLIFE/SUBSISTENCE Field Review: VLA 7/20/92		Harvest will result in loss of high quality habitat for marten. No concerns for deer, brown bear, or river otter.																																																																				
VISUAL/RECREATION Perspective Plots: Field Review: 6/6/92 7/21/92	VAO: MODIFICATION VAC: LOW Visibility: LIFEY UNSEEN ROF: PRIMITIVE Recreation Site: CHIEF CRY. Trail:	WOULD NOT MEET ROS.																																																																				
ARCHAEOLOGICAL/CULTURAL Field Review: N/A		Outside Sensitive Area - No Survey Necessary																																																																				

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 7-A
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 22
 Photo Number: 163-164

Legend

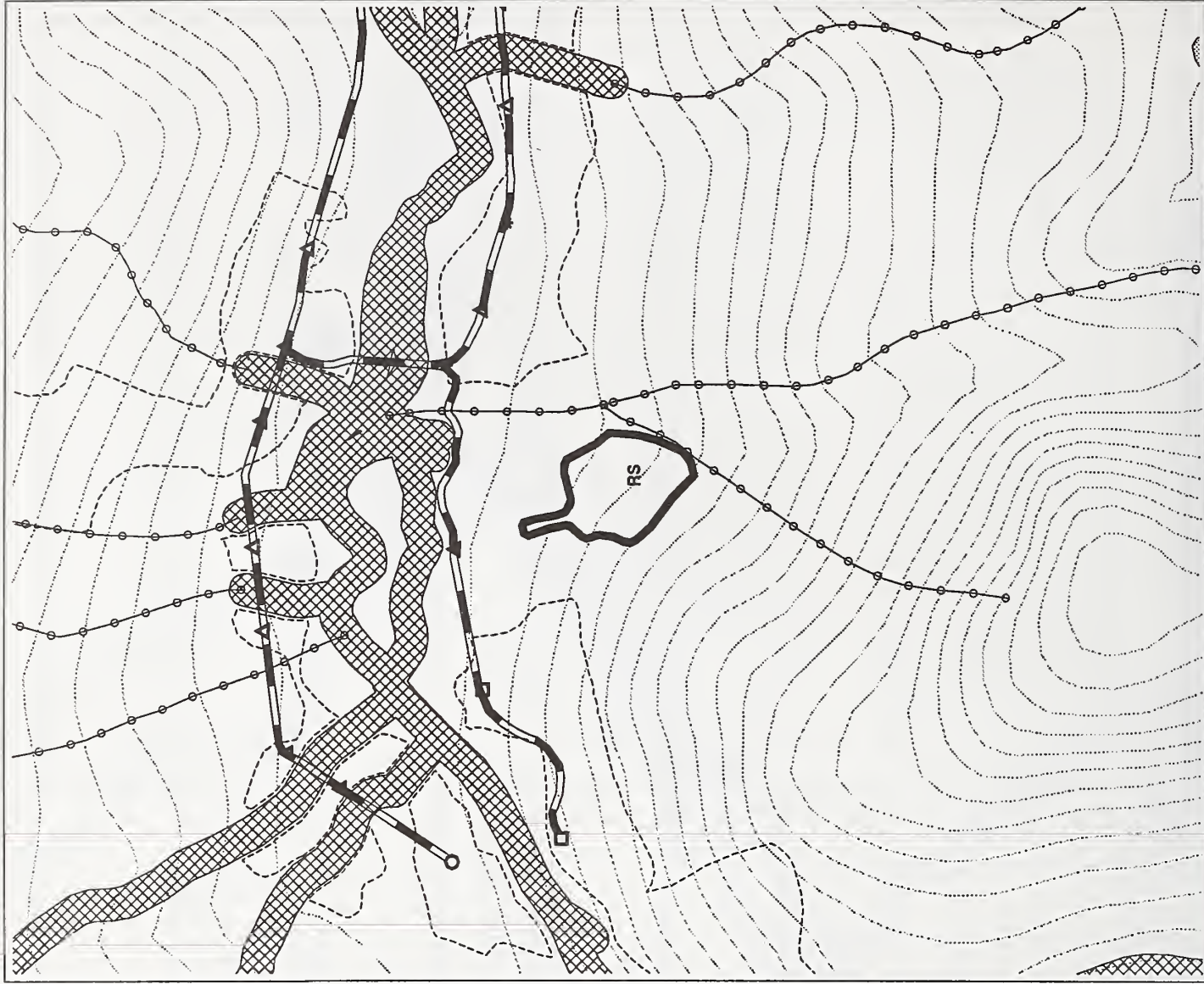
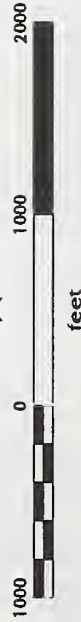
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK		MANAGEMENT AREA:				LUD:	VCU: 281	UNIT: 7-A	ACRES:
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)									
TIMBER/SILVICULTURE Stand Exam: 6/12/92 M. White/T. Pusina Stand Exam Type: Plots - Variable & Fixed Silviculturalist Review: J Smith 7/25/92	Tim Type	X15	Alder	TOT/AVG					
	Acres								
	MBF/Species								
	WH								
	SB								
	YC								
	MH								
	Other								
	TOTAL								
	MBF/Ac								
Prevalent Plant Assoc.		210							
Site Index									
Regain Method									
Gross Growth									
N. Goshawk			None observed.						
Wind Hazard (H,M,L)									
Damage (Insect, disease, animal, etc.)									
LOGGING/TRANSPORTATION									
Landing: 7-1, 7-2.									
Profiles: 7-1-75									
Field Review: 5/28 7:25/92									
WATERSHED/FISHERIES									
PUS/PSW 7-20-92									
Field Review: DON 8/2/92									
SOILS/GEOLOGY									
Field Review: DSJ & RRL 5/21/92									
WILDLIFE/SUBSISTENCE									
Field Review: VLA 7/20/92									
VISUAL/RECREATION									
VOC: MODIFICATION									
VAC: LOW									
Visibility: LIFEY UNSEEN									
ROF: PRIMITIVE									
Recreation Site: CASHIE BAY.									
Trail:									
Perspective Photo: 6/18 7/20/92									
ARCHAEOLOGICAL/CULTURAL									
Field Review: N/A									
Recommended Clear cut followed by Natural Regeneration. Some planting of YC may be necessary. A PCT at 15 yrs may be necessary to enhance growth. Predominantly a WH-YC/BB Plant Assoc. Some MH scattered throughout upper 1/2 of stand. Unit has various V-notches occurring on SW portion of stand. Possible the logging should be done on this area. Unit contains some areas of steep pitches. Site is moderately productive. Center part of unit omitted to exclude sub-metric wood - see changes on boundary - snag retention is safety issue. Upper part of unit omitted - stability issue in V-notches. Long winding access must be 7-2 to avoid road construction. Log away from V-notch drainages and consider tall log sus debris. Minimize prevent debris from entering drainages and if it does remove it. Minimize disturbance of muskrats. No Fisheries concern & PROTECT V-NOTCHES AND SLIDE CHUTES TO WINDFIRM STANDS. USE PARTIAL LOG SUSPENSION Harvest will result in loss of high quality habitat for marten. No concerns for deer, brown bear, or river otter. WOULD NOT MEET POS. Outside Sensitive Area - No Survey Necessary									

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 8
 VCU: 281
 Alternative(s): B C E F

Photo Information
 Year: 1986
 Flight Line: 24
 Photo Number: 130-131

Legend

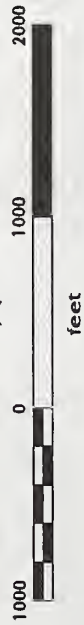
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- Proposed Road
- ... Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK LUD: VCU: 281 UNIT: 8 ACRES: 44
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	Y44	S46	TOT/AVG
Acres			
MBF/Species			
WH			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent	210'	220'	
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	observed	
Wind Hazard (H,M,L)			
Damage (insect, disease, animal, etc)			

RECOMMEND clear cut system. Natural regen of hemlock should be adequate. Planting of YC may be necessary. A PCT act is 15-20 yrs to enhance growth. Predominantly a WH-YC/BB Plant Assoc. WH-YC/BB/SC + MC/BB/SC do occur on the lower slopes. Site productivity is moderate.

Fish creeks in the northern portion of the Unit may require directional felling

PROVIDE MINIMUM 100' BUFFER OR WINDFIRM BUFFER FOR CLASS I STREAM IN NORTH CORNER OF UNIT. MINIMIZE disturbance of muskog above main channel due to its importance in spring water flow. Maintain flows in stream. To minimize potential channel erosion, avoid entry of logging debris into steep incised channels and remove debris that falls in.

AVOID SLOPES > 65%. AVOID A PROTECT V-NOTCHES TO WINDFIRM. USE PRACTICAL LOG SUSPENSION YARDING ON SLOPES ABOVE THE VALLEY BOTTOM.

Harvesting northern portion of stand will result in loss of high quality habitat for martens, brown bear, other. No concerns for deer.

MAY NOT MEET VOD. WOULD NOT MEET FOS. MAY BE VISIBLE FROM SM. BOATS ON USUK BAY.

outside Sensitive Area - No Survey Necessary

TIMBER/SILVICULTURE

Stand Exam: 6/23/92 M. White/K. Seitz.
 Stand Exam Type: Variable Plots; Fixed Plots
 Silviculturalist Review: S. Smith
 7/25/92

LOGGING/TRANSPORTATION
 Landing: 8-1 5-2
 Profiles: 8-2-209 8-2-229
 Field Review: S.J.

WATERSHED/FISHERIES
 Field Review: GUN & DU & GSR
 6-29-92
 7/3/92 DMS/DW

SOILS/GEOLOGY
 PLS 6/14 7/3 92
 Field Review: DSD Field 92

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/20/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6-6/92 7/21/92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A




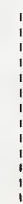

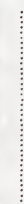




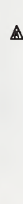
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 8
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 130-131

Legend

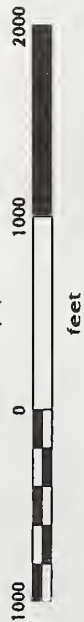
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 28 UNIT: 8 ACRES: 17

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend clear cut system. Northern region of hemlock should be adequate. Planting of YC may be necessary. A PCT at $\approx 15-20$ yrs to enhance growth. Predominately a WH/YC/BB Plant Assoc. with YC/BB/SC + MC/BB/SC do occur on the lower slopes. Site productivity is moderate.

Fish creeks in the northern portion of the Unit may require directional falling

PROVIDE MINIMUM 100' BUFFER OR WINDFIRM BUFFER FOR CLASS I STREAM IN NORTH CORNER OF UNIT. MINIMIZE DISTURBANCE OF BANKS ABOVE UNIT & LEANED DUE TO ITS IMPACT IN STAYING WATER PUNISHING FLOWS IN STREAM. TO MINIMIZE POTENTIAL CLEANER EVENT, AVOIDANCE OF LOGGING DEBRIS INTO STREAMS AND REMOVE DEBRIS THAT FALLS IN.

AVOID SLOPES > 60%. AVOID A PROTECT WINDFIRM TO WINDFIRM. USE PRACTICAL LOG RESPONSES. AVOID ON SLOPES ABOVE THE VALLEY BOTTOM.

Harvesting northern portion of stand will result in loss of high quality habitat for martens, brown bears, etc. No concerns for deer.

MAY NOT MEET VBO. WOULD NOT MEET FOS. MAY BE VISIBLE FROM SM. BOATS ON USHK BAY.

outside Sensitive Area - No Survey Necessary

Tim Type	X-Y	S-46	TOT/AVG
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent	210	220	
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	observed	
Wind Hazard (H.M.I.)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 8-1, 5-2
 Profiles: 8-2-209, 8-2-224
 Field Review:

WATERSHED/FISHERIES

Field Review: GUN & DUB & CSR
 6-29-92
 7/3/92 DAVIS/DW

SOILS/GEOLOGY

PLS ERL 7/3/92
 Field Review:
 DSD 7/10/92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/20/92

VISUAL/RECREATION

Field Review: 6/6/92 7/20/92
 Perspective Plots:
 VBO:
 VAC:
 Visibility:
 ROC:
 Recreation Site:
 Trail:

ARCHAEOLOGICAL CULTURAL

Field Review: N/A



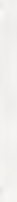
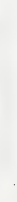
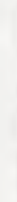



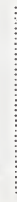


Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 10
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

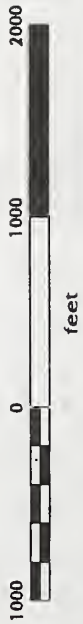
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK LUD: VCU: 281 UNIT: 10 ACRES: 21

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REVEGETATION OF HEALICK SHOULD BE ADEQUATE. A RECOMMERCIAL THIN AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. A WH/VC/BB PLANT ASSOC. WITH A FAIR REPRESENTATION OF SS/PLC & SS/BB SITE HAS MODERATE PRODUCTIVITY. BRUSH CONTROL MAY BE NECESSARY.

Tim Type	X 44	X 45	TOTI/AVG
Acres	16	50	
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.		210	
Site Index			
Region Method			
Gross Growth			
N. Goshawk		NOTE OBSERVED	
Wind Hazard (H, M, L) M			
Damage (Insect, disease, animal, etc.)			

Directionally fall yard away from buffers. snag retention is a safety issue.

Log among from V-notch drainages are consider fall log suspension prevent debris from entering drainages and if it does remove it. minimize disturbance to muskrats. Buffers from streams should be 100 feet and wide from. Maintain 100' buffer from class I streams. suggest 50' buffer around class II where situation will occur wetlands in eastern section should have 100' buffer used by fish for overwintering.

AVOID THE N/E CORNER OF THE UNIT AND PROTECT V-NOTCHES, LANDSLIDES, AND CUTS TO WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF SLOPES. USE PARTIAL LOG SUSPENSION YARDING ON THE SLOPES ALONG THE VALLEY BOTTOM

Harvest of stand will result in loss of high quality habitat for marten, otter, brown bear. Harvesting northern strip of unit will impact high & moderate quality deer winter range.

MAY BE SEEN FROM SM. POATS IN USHK-BRY WOULD NOT MEET FDS.

Outside high-sensitivity area - no survey required

VOID: MODIFICATION
VAC: LOW
Viability: ME (?)
ROGS: PERMITIVE I
Recreation Site: PLACE USHK-BRY
Trail:

VOID: MODIFICATION
VAC: LOW
Viability: ME (?)
ROGS: PERMITIVE I
Recreation Site: PLACE USHK-BRY
Trail:

Stand Exam: 6/10/92 K. SEITZ M. WHITE
Stand Exam Type: PLOTS (VARIABLE) & Fixed
Biculturalist Review: A. Smith
7/25/92

Field Review: 6/6/92 7/29/92

Field Review: 10-9-91, 8-11-91-1
Profiles:
Field Review: DW 6.22.92
PWS/DMS/DJW 7-6-92
Field Review: DOW 8/2/92

Field Review: N/A



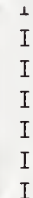
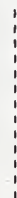

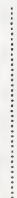



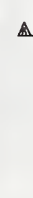

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 10
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 22
 Photo Number: 163-164

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X44	X45	TOT/AVG
Acres	16	50	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC	210		
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None Observed		
Wind Hazard (H.M.I.)	M		
Damage (Insect, disease, animal, etc.)			

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REVEGETATION OF HEMLOCK SHOULD BE ADEQUATE. A RECOMMERCIAL THIN AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. A WH/YC/BB PLANT ASSOC. WITH A FAIR REPRESENTATION OF SS/DC & SS/BB SITE HAS MODERATE PRODUCTIVITY. BRUSH CONTROL MAY BE NECESSARY.

directionally fall yard away from buffers. snag retention is a safety issue.

log coming from V-notches, debris from entering drainage and if it does remove it minimize disturbance to muskrats. buffers from streams should be 100-foot and wide from. maintain 100' buffer from class II streams. suggest 50' buffer around class III where siltation has occurred. wetlands in each section should have 100' buffer - used by fish for overwintering.

AVOID THE NE CORNER OF THE UNIT DUE TO UNSTABLE GROUND. AVOID SLOPES OVER 70%. AVOID AND PROTECT V-NOTCHES, LANDSLIDES, AND CHUTES TO WINDFARM STANDS, AVOID CUTTING BELOW THE TOES OF SLIDES. USE PARTIAL LOG SUSPENSION YARDING ON THE SLOPES ALONG THE VALLEY BOTTOM.

Harvest of stand will result in loss of high quality habitat for marten, otter, brown bear. Harvesting northern strip of unit will impact high a moderate quality deer winter range.

DO NOT BE SEEN FROM SMO. COATS IN USHK-BRY WOULD NOT MEET FOS. Outside high-sensitivity area - no survey required

Tim Type	X44	X45	TOT/AVG
Acres	16	50	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC	210		
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None Observed		
Wind Hazard (H.M.I.)	M		
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 10-7, -8, -11, -1 Profiles: Field Review: DNL 6.22.92

WATERSHED/FISHERIES
PUS/DN/DPW 7-6-92
Field Review: DON 5/2/92

SOILS/GEOLOGY
Field Review: DSW & RRL 5/30/92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/20/92

VISUAL/RECREATION
Perspective Plots: Field Review: 6/6/92 7/29/92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 10-A
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line:
Photo Number:

Legend

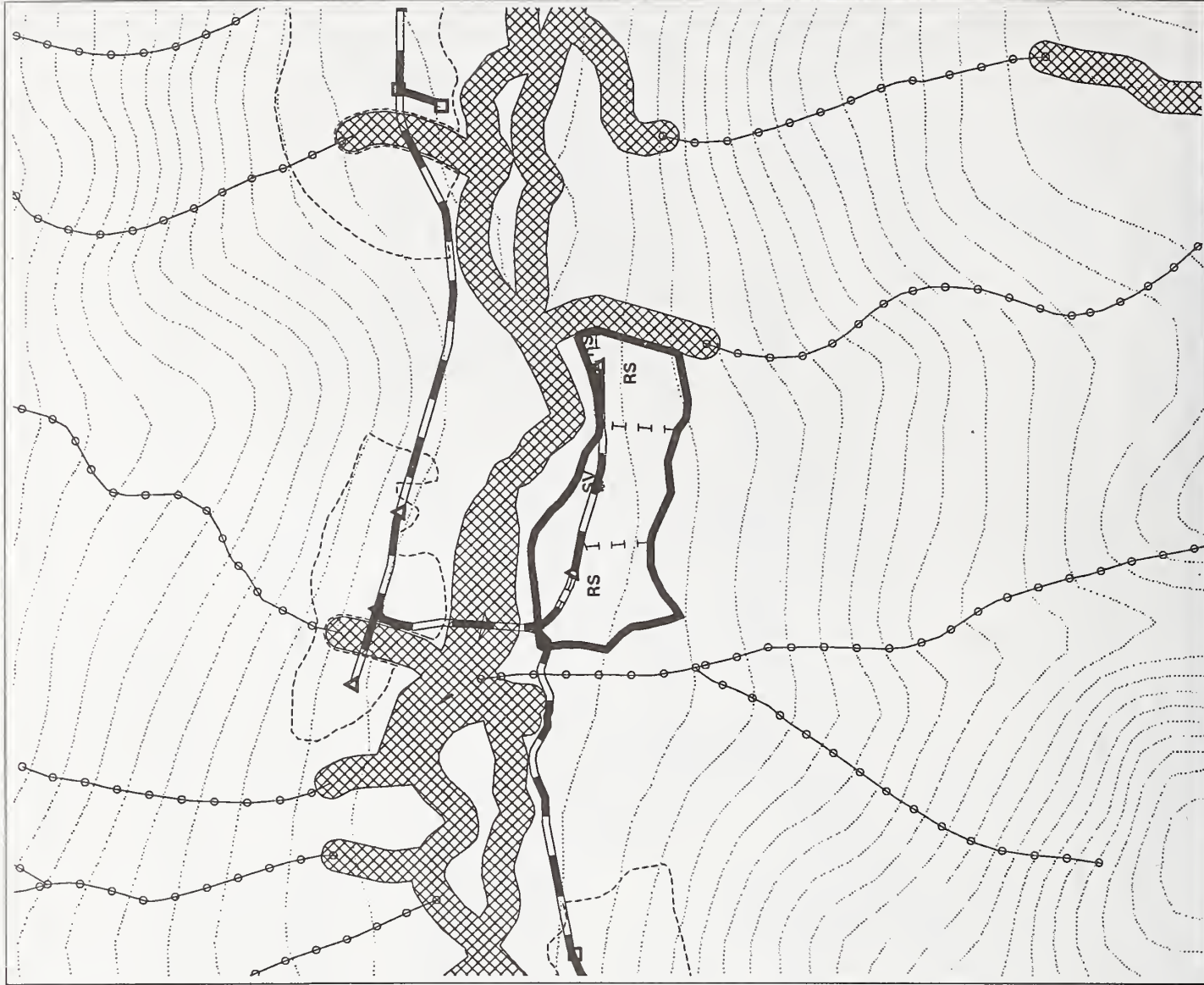
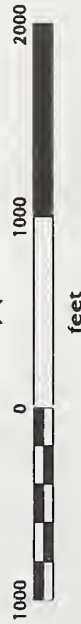
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK LUD: VCU: 281 UNIT: 10 ACRES: 27
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMEND CLEAR-CUT SYSTEM. NATURAL REVEGETATION OF HEMLOCK SHOULD BE ADEQUATE. A PRECOMMERCIAL THIN AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. WITH A FAIR REPRESENTATION OF SS/PL & SS/BB SITE HAS MODERATE PRODUCTIVITY. BRUSH CONTROL MAY BE NECESSARY.

Management Area	TimType	X44	X45	TOT/AVG
Acres		16	50	
MBF/Species				
WH				
89				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevent		210		
Plant Assoc.				
Site Index				
Regen Method				
Gross Growth				
N. Goshawk		NONE OBSERVED		
Wind Hazard (H.M.I.)		M		
Damage (insect, disease, animal, etc.)				

LOGGING/TRANSPORTATION
 Landing: 10-7, -8, -11, -1
 Profiles:
 Field Review: DW 6.22.92
WATERSHED/FISHERIES
 OUS/DN/DSW 7-6-92
 Field Review:
 0-0-0 8/2/92
SOILS/GEOLOGY
 Field Review:
 DSW & RRL 5/30 92
WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/20/92
VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/15 7/29/92
ARCHEOLOGICAL/CULTURAL
 Field Review: N/A

Directionally fall yard away from buffers. snag retention is a safety issue.
 Log away from V-notch drainages and consider fall log suspension prevent debris from entering drainage and if it does remove it. minimize disturbance to muskrats. buffers from streams should be 100 feet and in some cases maintain 100' buffer from class II streams. suggest 50' buffer around release III where silting will occur. wetlands in stream section should have 100' buffer - used by fish for overwintering.
 AVOID THE UVE CORNER OF THE UNIT DUE TO UNSTABLE GROUND. AVOID SLOPES OVER 70%. AVOID AND PROTECT V-NOTCHES, LANDSLIDES, AND CHUTES TO WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF SLOPES. USE PARTIAL LOG SUSPENSION YARDING ON THE SLOPES ALONG THE VALLEY BOTTOM.
 Harvest of stand will result in loss of high quality habitat for marten, otter, brown bear. Harvesting northern strip of unit will impact high a moderate quality deer winter range.
 MAY BE SEEN FROM SM. EDGE IN USHK BAY WOULD NOT MEET FOS.
 Outside high-sensitivity area - no survey required

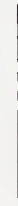
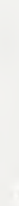
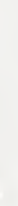
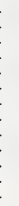
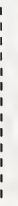






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 11
VCU: 281
Alternative(s): B C D E F

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

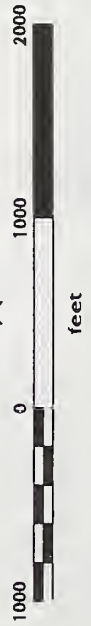
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 28 UNIT: 11 ACRES: 34

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommended clear cut system. Natural regen of hemlock should be adequate. Planting of YC may be necessary. A PCT may be necessary to enhance growth in ± 15-20 yrs. Unit predominantly WH/BS/IF. Site productivity is high.

Tim Type	Acres	245	244	TOT/AVG
MBF/Species				
WH				
BS				
YC				
MI				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	120			
Bite Index				
Regen Method				
Gross Growth				
N. Goshawk	None observed			
Wind Hazard (H,M,L) /M				
Damage (Insect, disease, animal, etc.)				

Mostly downhill yarding. Some moderately severe sidehill. Directionally fall yard away from stream buffers. Snag retention is a safety issue.

Log away from v-notch for catch and consider full log suspension on slopes. Prevent debris from entering drains and if it does, remove it. Minimize disturbance to workers. Buffers from streams should be 100 feet and wind firm. Maintain 100' buffer from class I streams.

AVOID SLOPES OVER 70%. AVOID WINDFIRM STANDS. AVOID CUTTING LOG SUSPENSION YARDING ABOVE & PROTECT V-NOTCHES AND SLIDE CHUTES TO THE VALLEY BOTTOMS. Harvest of eastern half of unit will result in loss of high quality habitat for martens, otter, brown bear. Harvesting most of unit will impact moderate and high quality deer winter range.

WIND NOT MEET POS. MAY BE SEEN BY VIEWERS ON SMALL BOATS IN USHK BAY.

NO Significant Cultural Resources found

LOGGING/TRANSPORTATION

Landing: 11-1-92
 Profiles: 11-1-92, 11-2-92
 Field Review: DIM 6-10-92
 DNS/DSW 1-6-92
 Field Review:

WATERSHED/FISHERIES

Field Review:

SOILS/GEOLOGY

Field Review:
 OSW & PRL 6/1/92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/20/92

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/1/92 7-24-92

ARCHEOLOGICAL/CULTURAL

Field Review: 7-13-92

Harvest Unit Design Card




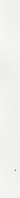


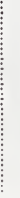




Ushk Bay EIS

Harvest Unit: 12
 VCU: 281
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 14-15

Legend

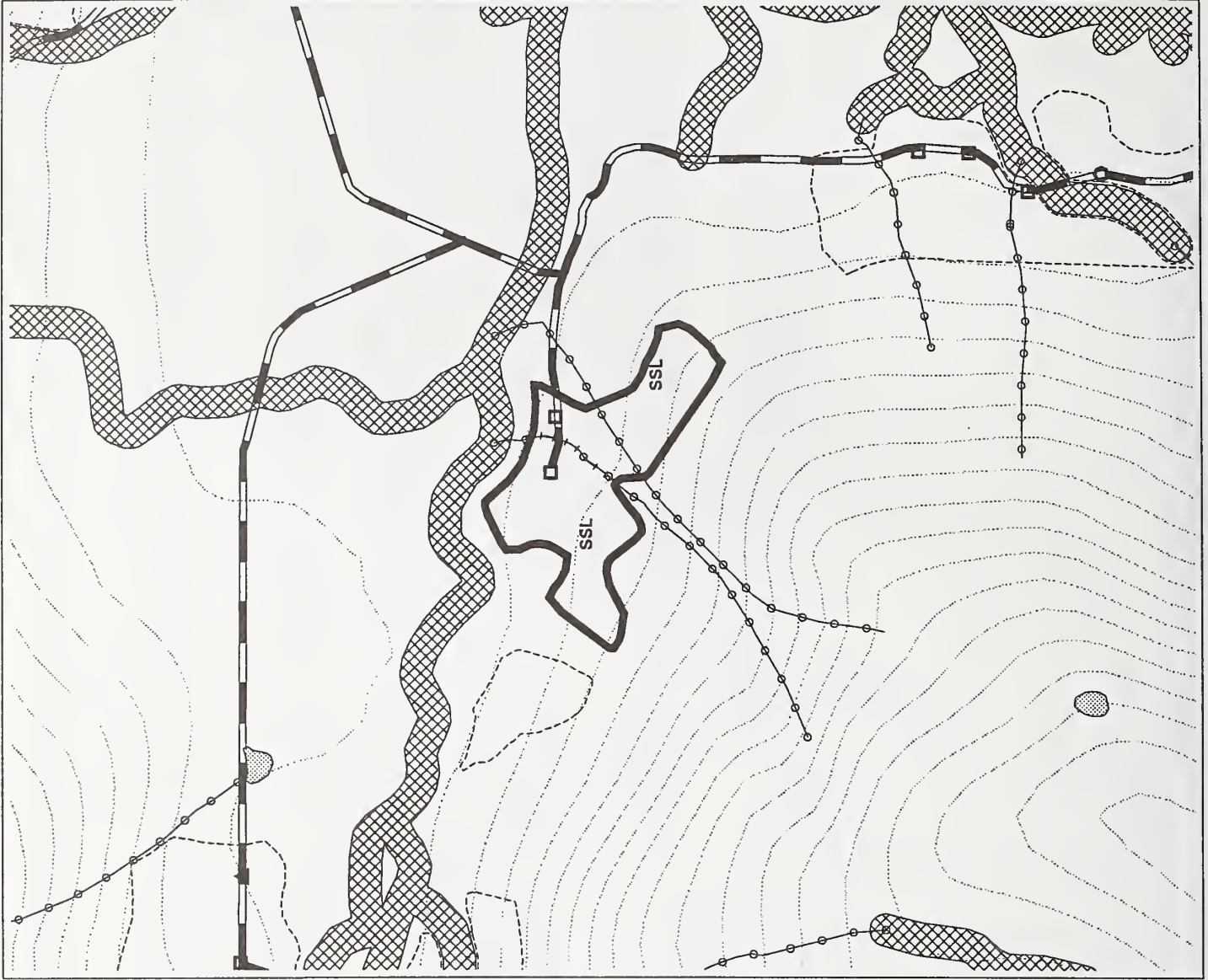
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK	MANAGEMENT AREA:	LUD: 281	VCU: 281	UNIT: 12	ACRES: 27
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)					
<p>Recommended cutting system is clearcut. Natural regeneration of hemlock should be adequate. A pre-commercial thin at 15-20 years will probably be necessary for growth enhancement.</p> <p>Predominant plant association is WH/BB/SF, which is highly productive. Unit is defined by steep notches which form a V. Consult with geologist about possible definition of upper portion (arrows) adjacent to notch. Steep slopes, shallow rocky soils and prevailing winds should be noted. Old blow down exhibits.</p> <p>Unit upper slopes over 65%.</p> <p>Swag retention is a safety issue. See revised boundary.</p> <p>Log away from V-notch drainages and consider fall log suspension. Prevent debris from entering drainages and if it does remove it. Minimize disturbance to muskrats. Buffer for streams should be 100 feet and wind firm. Maintain 100' buffer for class I streams. Recommend 50' buffer on class III streams posing siltation problems, BUT ONLY IF WINDFIRM ARE</p>					
<p>Harvest of NW portion of unit will result in loss of high quality habitat for brown bear & other. Harvesting entire unit will result in loss of high quality habitat for marten. Harvesting SE tip of unit will impact moderate quality deer winter range.</p> <p>WOULD NOT MEET POS. MAY BE SEEN BY BOATS ON LAKE BODY.</p>					
<p>No significant Cultural Resources found</p>					
<p>Stand Exam: 6/11/92 S. Allen/K. Seitz Stand Exam Type: plots Silvicultural Review: A. Smith 7/25/92</p>	<p>Tim Type</p> <p>Acres</p> <p>MBF/Species</p> <p>WH</p> <p>BB</p> <p>YC</p> <p>MH</p> <p>Other</p> <p>TOTAL</p> <p>MBF/AC</p> <p>Prevent</p> <p>Plant Assoc.</p> <p>Site Index</p> <p>Regen Method</p> <p>Gross Growth</p> <p>N. Goshawk</p> <p>Wind Hazard (H.M.I.) H</p> <p>Damage (Insect, disease, animal, etc.) blowdown</p>	X45	X44	TOT/AVO	
LOGGING/TRANSPORTATION					
<p>Landing: 12-1, 12-2, 12-3</p> <p>Profiles:</p> <p>Field Review: 5/22, 7-25-92</p>					
WATERSHED/FISHERIES					
<p>DNR/DSD 7-6-92</p> <p>Field Review:</p> <p>00N 8/2/92</p>					
SOILS/GEOLOGY					
<p>Field Review:</p> <p>OSW & BCL 6/1/92</p>					
WILDLIFE/SUBSISTENCE					
<p>Field Review:</p> <p>VL-A 7/20/92</p>					
VISUAL/RECREATION					
<p>VAC: PR</p> <p>Visibility: LOW</p> <p>ROC: MG</p> <p>Recreation Site: PRIMITIVE</p> <p>Trail:</p>					
ARCHAEOLOGICAL/CULTURAL					
<p>Field Review: 6/24 7-24-92</p> <p>W. Skorsky 7-18-92</p>					

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 13
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 132-133

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▧ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK **MANAGEMENT AREA:** VCU; 281 **UNIT:** 13 **ACRES:** 5282

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. PREDOMINANTLY A WH/YC/BB/SC PLANT ASSOC. ALSO WH/BB and WH/YC/BB OCCUR FREQUENTLY. SITE IS LOW TO MODERATELY PRODUCTIVE.

Some landings suited to 1-1/8" lower, some to 1-3/8" depending on stump size.

Log gully from V-notch drainages and entering drainages and if it does, remove it. Minimize disturbance to muskrats. Consider fisherries concern.

NO FISHERIES CONCERN

AVOID SLOPES OVER 65%. AVOID WINDFURM STANDS. USE PARENT LOG SUSPENSION LOGGING.

Harvesting S half of unit will result in loss of high quality habitat for marten. Harvesting most of unit would impact moderate to high quality deer winter range.

UNWOUND NOT MEET POS. ON UPPER-H RUFF. MAY NOT BE VISIBLE FROM USH-K TRAIL.

110 Significant cultural resources identified

Tim Type	X44	X45	TOTAL
Acres	39	25	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AG			
Prominent Plant Assoc.	220		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None	OBSERVED	
Wind Hazard (H, M, L, H)			
Damage (Insect, disease, animal, etc.)			Some Decayed Postwork

LOGGING/TRANSPORTATION

1234-285
Landing: 13-1, 2, 3, 4, 5
Profile: 13-1, 2, 3, 4, 5

WATERSHED/FISHERIES

PLS/RRL 7-9-92
Field Review: 7-9-92
ODN 8/7/92

SOILS/GEOLOGY

PLS & RRL 7/9 92
Field Review: 7/9 92
OSW 7/21 92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Perceptive Plots: PF / SPM
LOW
MGT
PRIMITIVE I

Field Review: 6/2/92 7-24-92
Recreation Site: Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: 7/22/92
Ill. Kelly

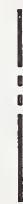









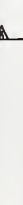
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 13
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 132-133

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 281 UNIT: 13 ACRES: 5.12/

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION.

A WH/YC/BB/SC PLANT ASSOC. ALSO WH/BB and WH/YC/BB OCCUR FREQUENTLY. SITE IS LOW TO MODERATELY PRODUCTIVE.

Some landings suited to 1-1/2" taper, some to 1-3/8" depending on stump size.

Log quality from V-notch drainages and enter-logs drainages and if it does, remove it. Minimize disturbance to muskrats. Consider fisher's concern.

AVOID SLOPES OVER 65%. AVOID & PROTECT V-NOTCHES AND SLIDE CUTS TO WINDFIRM STANDS. USE PARENT LOG SUSPENSION LOGGERS.

Harvesting 5 half of unit will result in loss of high quality habitat for martens. Harvesting most of unit would impact moderate to high quality deer winter range.

WOOD NOT MEET POS. ON UPPER H BRF. MAY NOT BE VISIBLE FROM USHK BRF.

No significant cultural resources identified.

Tim Type	X44	X45	TOT/AVG
Acres	39	25	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Percent Plant Assoc.	220		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	NONE	OBSERVED	
Wind Hazard (H.M.I.)	14		
Damage (Insect, disease, animal, etc.)	SOME DECLARANT PRESENT		

LOGGING/TRANSPORTATION

Landing: 13-18, 2, 4, 5
 Profiles: 13-18, 2, 4, 5
 Field Review: 7/10/92

WATERSHED/FISHERIES

PLS/RRL 7-9-92
 Field Review: 8/7/92

SOILS/GEOLOGY

PLS & RRL 7/9 92
 Field Review: 7/21 92

WILDLIFE/SUBSISTENCE

Field Review: VA 7/20/92

VISUAL/RECREATION

Perspective Photo:
 Field Review: 6/18 7-24-92

ARCHAEOLOGICAL/CULTURAL

Field Review: 7/22/92
 M. Kelly

Stand Exam: G. K. Setzler/Allen
 Stand Exam Type: Variable Plot; Fixed Plots
 Silvicultural Review: S. Smith
 7/25/92

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 14
VCU: 281
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 116-117

Legend

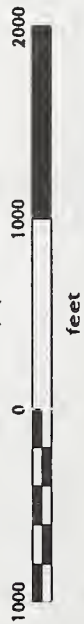
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▬ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN BAND

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 20 UNIT: 14* ACRES: 7
 RESOURCE (Name/Date): RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	Acres	X44	TOT/AVG
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.		210	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk		None observed	
Wind Hazard (H,M,L) F			
Damage (insect, disease, animal, etc)			

Recommend Clearcut system. Natural regeneration of unit should be adequate for hemlock. YC may need to be planted to maintain species composition. Site productivity is moderate. A PCT at \approx 15-20 yrs may be necessary to enhance growth. Q with YC/BB Plant Assoc.

Ravines throughout most of unit. Majority of species are YC.

Yard into Uskik Prg.

Log away from V-notch drainage and not within them. Consider well-water logging. Prevent debris from entering drainages and if it does remove it. Minimize disturbance to muskeg. No fisheries concerns.

AVOID SLOPES > 65%. AVOID AND PROTECT V-NOTCHES TO WINDFIRM. USE PARTIAL LOG SUSPENSION YARDING

No concerns for brown bear, otter, marten. Harvesting SE tip of unit will impact estuary fringe habitat. Harvesting entire unit will impact moderate quality deer winter range.

WOULD NOT MEET ROS. MAY BE SEEN FROM USHK BAY.

FP
LOW
MGT/FP
FEMININE I

Outside designated high-sens. Tr. unit Area - no cultural resources survey necessary

LOGGING/TRANSPORTATION

Lending: 14-1

Profiles: P122 7-28-92

WATERSHED/FISHERIES

P15 7-18-92

Field Review: DDN 8/2/92

SOILS/GEOLOGY

Field Review: DSW 7/20/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Field Review: P15 7-28-92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A



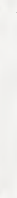
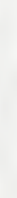
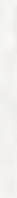






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 14
VCU: 281
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 116-117

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK		MANAGEMENT AREA:		LUD: VCU: 20 UNIT: 14* ACRES: 57	
RESOURCE (Name/Date)		RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)			
TIMBER/SILVICULTURE		Tim Type	X44	TOT/AVG	
Stand Exam: 6/23/92 M. White/K. Seitz		Acres			
Stand Exam Type: Variable Plot; Fixed Plots		MBF/Species			
Silviculturalist Review: Smith 7/25/92		WH			
		BB			
		MH			
		YC			
		Other			
		TOTAL MBF/AC			
		Prevalent Plant Assoc.	210		
		Site Index			
		Regen Method			
		Gross Growth			
		N. Goshawk	None observed		
		Wind Hazard (H,M,L)			
		Damage (Insect, disease, animal, etc)	GEORGE STARBUCK		
LOGGING/TRANSPORTATION					
Lending: 14-1					
Profiles:					
Field Review: 7/28/92					
WATERSHED/FISHERIES					
PLS 7-18-92					
Field Review: DDN 8/2/92					
SOILS/GEOLOGY					
Field Review: DSW 7/20/92					
WILDLIFE/SUBSISTENCE					
Field Review: VLA 7/20/92					
VISUAL/RECREATION					
Field Review: VQA: PF					
Perspective Plots: VAC: LOW					
Field Review: G/LF 7-29-92					
ARCHAEOLOGICAL/CULTURAL					
Field Review: N/A					

Recommend Clearcut system. Natural regeneration of unit should be adequate for hemlock. YC may need to be planted to maintain species composition. Site productivity is moderate. A PCT at 15-20 yrs may be necessary to enhance growth. Q with YC/BB Plant Assoc.

Ravines throughout most of unit. Majority of species are YC.

Yard into Ustick Pkgs.

Log away from V-notch drainages and not within them. Consider well-walker logging. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskegs. No fisheries concerns.

AVOID SLOPES > 65%. AVOID AND PROTECT V-NOTCHES TO WINDFIRM. USE PARTIAL LOG SUSPENSION YARDING.

No concerns for brown bear, other, marten. Harvesting SE tip of unit will impact estuary fringe habitat. Harvesting entire unit will impact moderate quality deer winter range.

WOULD NOT MEET ROS. MAY BE SEEN FROM USHK Pkgs.

Outside designated high-sensitivity area - no cultural resources survey necessary

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 15
 VCU: 281
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 11-12

Legend

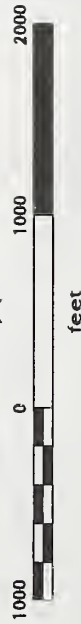
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 28 UNIT: 15 ACRES: 16																																																																																	
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)																																																																																	
RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. A PRECOMMERCIAL THIN AT 15-20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/OB PLANT ASSOC. ALSO WH/OB/SF AND WH/BB/DC ARE FREQUENT. SITE PRODUCTIVITY IS MODERATE. LOWER PORTION OF UNIT HAS GOOD PRODUCTIVITY LG. DBH TREES.																																																																																	
<table border="1"> <tr> <td>Tim Type</td> <td>X45</td> <td>X46</td> <td>H44</td> <td>TOTAL</td> </tr> <tr> <td>Acres</td> <td>38</td> <td>22</td> <td>5</td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>BB</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL MBF/AC</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prevent Plant Assoc.</td> <td>110</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Site Index</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Repen Method</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td>NONE</td> <td>OBSERVED</td> <td></td> <td></td> </tr> <tr> <td>Wind Hazard (H.M.I.)</td> <td>3</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc.)</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Tim Type	X45	X46	H44	TOTAL	Acres	38	22	5		MBF/Species					WH					BB					YC					MH					Other					TOTAL MBF/AC					Prevent Plant Assoc.	110				Site Index					Repen Method					Gross Growth					N. Goshawk	NONE	OBSERVED			Wind Hazard (H.M.I.)	3	1			Damage (Insect, disease, animal, etc.)					<p>MOST OF AREA WEST OF ROAD SHOULD BE YARDED DOWN WITH EITHER HIGHLEAD OR SHACKLING SYSTEM AREA TO EAST OF ROAD CAN BE SHACKLED OR HIGH LEAD YARDED. SIGNIFICANT CREEK WILL BE SPILT YARDED. DRAIN WAS NOT USED DUE TO EXCESSIVE SLOPES / POLE TOWER. UNIT LINE MOVED TO ACCOMMODATE YARDING. X</p> <p>Recommened additional setbacks from riparian wetlands. Minimize disturbance in wetlands & use logs to prevent debris from falling into channels if it does vent out. Maintain 100' buffer cur class II stream forming eastern boundary unit. Recommend 50' buffer for class III stream if siltation will happen, BUT ONLY IF WINDFIRM</p>
Tim Type	X45	X46	H44	TOTAL																																																																													
Acres	38	22	5																																																																														
MBF/Species																																																																																	
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Wind Hazard (H.M.I.)	3	1																																																																															
Damage (Insect, disease, animal, etc.)																																																																																	
LOGGING/TRANSPORTATION	<p>Landing: 4</p> <p>Profile: 1/1</p> <p>Field Review: 1/1</p>																																																																																
WATERSHED/FISHERIES	<p>DMS 7/5/92</p> <p>Field Review: 1/1</p> <p>DDN 8/15/92</p>																																																																																
SOILS/GEOLOGY	<p>Avoid slopes over 75%. Avoid immediately upslope multiple dissections. Avoid & protect V-notches to windfall stands. Use partial log suspension above the valued bottom.</p>																																																																																
Field Review:	<p>OSD & PBL 6/2/92</p>																																																																																
WILDLIFE/SUBSISTENCE	<p>Harvesting entire unit will impact high quality habitat for brown bear, marten, and river otter. Harvesting northern portion of unit will impact moderate quality deer winter range.</p>																																																																																
Field Review:	<p>WOULD NOT MEET FOS. WOULD NOT BE SEEN BY VIEWERS ON USHK BAY.</p>																																																																																
VISUAL/RECREATION	<p>QAQ: MODIFICATION</p> <p>VAC: IMMEDIATE</p> <p>Viability: UNSEEN</p> <p>ROG: TRIMMITIVE I</p> <p>Recreation Site: _____</p> <p>Trail: _____</p>																																																																																
Perspective Photo:																																																																																	
Field Review:	<p>6/1/92 7-26-92</p>																																																																																
ARCHAEOLOGICAL/CULTURAL	<p>Outside Sensitive Area - No Survey Necessary</p>																																																																																
Field Review:	N/A																																																																																

* SNAGS AREA HAZARD FOR LOGGING CREWS



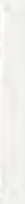
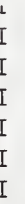


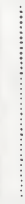




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 16
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 12-13

Legend

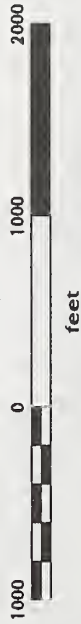
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE, PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN DIVERSITY. A PRECOMMERCIAL THIN A 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/BG, WITH WH/BSF, WH/BB/DL ALSO FREQUENT. SITE PRODUCTIVITY IS MODERATE UNIT CHANGE NOTES: ELIMINATED ~ 20 ACRES ALONG UPPER BOUNDARY DUE TO SLOPES OF CONSISTANT 76% AND ABOVE.

Tim Type	H44	X45	X46	TOTAL
Acres	43	22	28	
MBF/Species				
WH				
BS				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent	210			
Plant Assoc.				
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	NONE	OBSERVED		
Wind Hazard (H, M, L, N)				
Damage (Insect, disease, animal, etc.)				

WEST SIDE OF UNIT CAN BE VIEWED WITH TRAINING SKYLIGHT SYSTEM. LANDINGS ARE POSITIONED TO KEEP DEER OUT OF SILE CHANNELS. EAST SIDE OF UNIT CAN BE SEEN FROM LOGGED. SAFETY HAZARD FOR LOGGING CREWS.

MINIMIZE disturbance to muskrat and riparian wetlands. Keep debris out of channels. If it does fall in nearest it. maintain 100' buffer on class. If streams on east and south sections of unit.

AND PROTECT V-NOTCHES AND CHUTES TO WIND FIRM TOE OF FAILURES. USE PARTIAL LOG SUSPENSION ON SLOPES ABOVE THE VALLEY BOTTOM.

Avoid slopes over 70%, avoid STANOS, avoid cutting below the on slopes above the valley bottom.

Harvesting southeastern portion of unit will result in loss of high quality habitat for marten, other, brown bear. Harvesting eastern half of unit will impact moderate quality deer habitat.

Would not meet pos. would not be visible from USJK-13BY.

Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card






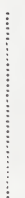




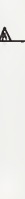
Ushk Bay EIS

Harvest Unit: 16-A
 VCU: 281
 Alternative(s): B

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 11-12

Legend

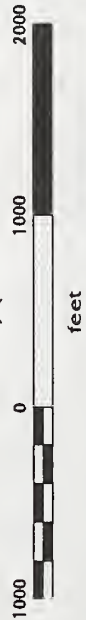
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	H44	X45	X46	TOTAL
Acres	43	22	28	
MBF/Species				
WH				
SB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	210			
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	NONE OBSERVED			
Wind Hazard (H, M, L, N)				
Damage (Insect, disease, animal, etc.)				

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE, PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN DIVERSITY. A PRECOMMERCIAL THIN A 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/SB, WITH WH/BSF, WH/BB/DL ALSO FREQUENT. SITE PRODUCTIVITY IS MODERATE UNIT CHANGE NOTES: ELIMINATED ~ 20 ACRES ALONG UPPER BOUNDARY DUE TO SLOPES OF CONSTANT 76% AND ABOVE.

WEST SIDE OF UNIT CAN BE VIEWED WITH KUNINGA SKYLITE SYSTEM. LANDINGS ARE POSITIONED TO KEEP DEBRIS OUT OF SUE CREEKS. EAST SIDE OF UNIT CAN BE SEEN AT LOGGED ~~EDGE~~ SNAGS ARE A SAFETY HAZARD FOR LOGGING CREWS.

Minimize disturbance to nesting and riparian wetlands. Keep debris out of channels. If it does fall in nearest it. Maintain 100' buffer on class. If streams on east and south sections of unit.

AND PROTECT V-NOTCHES AND CUTS TO WIND FIRM TOE OF FAILURES. USE PACTUAL LOG SUSPENSION.

Harvesting southern portion of unit will result in loss of high quality habitat for moose, other, brown bear. Harvesting eastern half of unit will impact moderate quality deer habitat.

WOULD NOT MEET POS. WOULD NOT BE VISIBLE FROM USBLK-15.PY.

LOGGING/TRANSPORTATION	
Landing: 2	
Profile: 1/4	
Field Review:	
WATERSHED/FISHERIES	
DWS/DSW 7/8/92	
Field Review:	
DDW 8/3/92	
SOILS/GEOLOGY	
Field Review:	
OSW & RRL 6/2/92	
WILDLIFE/SUBSISTENCE	
Field Review:	
VISUAL/RECREATION	
Perspective Plots:	
Field Review: 6/1/92 7/26/92	
ARCHAEOLOGICAL/CULTURAL	
Field Review: N/A	

Outside Sensitive Area - No Survey Necessary






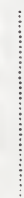




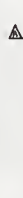
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 16-A
VCU: 281
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 11-12

Legend

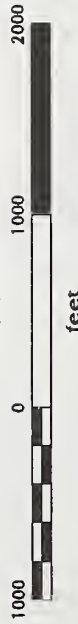
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 28 UNIT: 16-A ACRES: 574

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE, PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN DIVERSITY. A PRECOMMERCIAL THIN A 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/RG, WITH WH/BS(SF, WH/BB(DC ALSO FREQUENT. SITE PRODUCTIVITY IS MODERATE UNIT CHANGE NOTES: ELIMINATED 20 ACRES ALONG UPPER BOUNDARY DUE TO SLOPES OF CONSISTANT 75% AND ABOVE.

Tim Type	H44	X45	X46	TOT/AVG
Acres	43	22	28	
MBF/Species				
WH				
89				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevent	210			
Plant Assoc.				
Site Index				
Regen Method				
Gross Growth				
N. Goosawk	NONE	OBSERVED		
Wind Hazard (H.M.I.)	M			
Damage (insect, disease, animal, etc.)				

WEST SIDE OF UNIT CAN BE VIEWED WITH TURNING SKYLINE VISIBILITY CHANGING ARE POSITIONED TO KEEP TREES OUT OF SIDE CREEKS EAST SIDE OF UNIT CAN BE SEEN FROM LOGGING CREWS. A SAFETY HAZARD FOR LOGGING CREWS.

Minimize disturbance to nesting and riparian wetlands. Keep debris out of channels if it does fall in remove it. Maintain 100' buffer on class II streams on east and south sections of unit.

AVOID SLOPES OVER 70%. AVOID STANOS. AVOID CUTTING BELOW THE ON SLOPES ABOVE THE VALLEY BOTTOM.

AND PROTECT V-NOTCHES AND CHUTES TO WIND FIRM TOE OF FAILURES. USE PARTIAL LOG SUSPENSION

Harvesting southwestern portion of unit will result in loss of high quality habitat for marten, other, brown bear. Harvesting eastern half of unit will impact moderate quality deer habitat.

WOULD NOT MEET FOX. WOULD NOT BE VISIBLE FROM USUK 15 BY.

Outside Sensitive Area - No Survey Necessary

LOGGING/TRANSPORTATION	LOGGING/TRANSPORTATION
Landing: 2	
Profiles:	
Field Review:	
WATERSHED/FISHERIES	WATERSHED/FISHERIES
DWS/BSW 7/8/92	
Field Review:	
DOJ 8/3/92	
SOILS/GEOLOGY	SOILS/GEOLOGY
Field Review:	
OSW & PRL 6/2 92	
WILDLIFE/SUBSISTENCE	WILDLIFE/SUBSISTENCE
Field Review:	
VISUAL/RECREATION	VISUAL/RECREATION
Perspective Photo:	RETENTION/MODIFICATION
Field Review: 6/16 729-92	INT. / LOW
	UNSEEN
	FRAM 1
	Recreation Site:
	Trail:
ARCHEOLOGICAL/CULTURAL	ARCHEOLOGICAL/CULTURAL
Field Review: N/A	






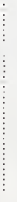



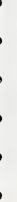
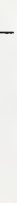
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 16-A
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 11-12

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK		MANAGEMENT AREA:				LUD: VCU: 28 UNIT: 16 - A	ACRES: 71
RESOURCE (Name/Date)		RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)					
TIMBER/SILVICULTURE Stand Exam: 6/4/92 H. WHITE T. PUSINA Stand Exam Type: VARIABLE PLOT; Fixed Plots Silvicultural Review: <i>S. Smith</i> 7/25/92		Tim Type	444	445	446	TOT/AVO	RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE, PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN DIVERSITY. A PRECOMMERCIAL THIN A 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/AG, WITH WH/AB(SF, WH/BB/DL ALSO FREQUENT. SITE PRODUCTIVITY IS MODERATE UNIT CHANGE NOTES: ELIMINATED ~ 20 ACRES ALONG UPPER BOUNDARY DUE TO SLOPES OF CONSISTANT 75% AND ABOVE. WEST SIDE OF UNIT CAN BE VISITED WITH TURNING SKYLITE SYSTEM. LADINGS ARE POSITIONED TO KEEP BEAKS OUT OF SURE CREWS. EAST SIDE OF UNIT CAN BE SHOWN LADGERS. ESTABLISHED SNAWS ARE A SAFETY HAZARD FOR LOGGING CREWS. Minimize disturbance to <u>wading and riparian wetlands</u> . Keep debris out of channels if it clogs fall in narrow it. Mountain 1001 buffer on class II streams on east and south sections of unit. AND PROTECT V-NOTCHES AND CHUTES TO WIND FIRM TOE OF FAILURES. USE PARTIAL LOG SUSPENSION Harvesting southeastern portion of unit will result in loss of high quality habitat for moose, other, brown bear. Harvesting eastern half of unit will impact moderate quality deer habitat. WOULD NOT MEET FOR. WOULD NOT BE VISIBLE FROM USJK-150Y.
		Acres	43	22	28		
		MBF/Species					
		WH					
		BB					
		YC					
		MH					
		Other					
		TOTAL					
		MBF/AG					
		Prevent Plant Assoc.	210				
		Site Index					
		Region Method					
		Gross Growth					
		N. Goshawk	NONE	OBSERVED			
		Wind Hazard (H.M.U.)	M				
		Damage (Insect, disease, animal, etc.)					
LOGGING/TRANSPORTATION		Landing: 2					
		Profile: 14					
WATERSHED/FISHERIES		Field Review: 14					
		DWS/Dsw 7/8/92					
		Field Review:					
		DDW 8/3/92					
SOILS/GEOLOGY		Field Review:					
		OSW & RRL 6/2 92					
WILDLIFE/SUBSISTENCE		Field Review:					
		VCO: PERENTION/MODIFICATION					
		VAC: INT. / LOW					
		Viability: UNSURE					
		ROC: PRM. 1					
		Recreation Site:					
		Trail:					
VISUAL/RECREATION		Field Review: 6/18 7/29/92					
ARCHEOLOGICAL/CULTURAL		Field Review: N/A					
		Field Review: N/A					

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 16-A
VCU: 281
Alternative(s): F

Photo Information
Year: 1986
Flight Line: 23
Photo Number: 11-12

Legend

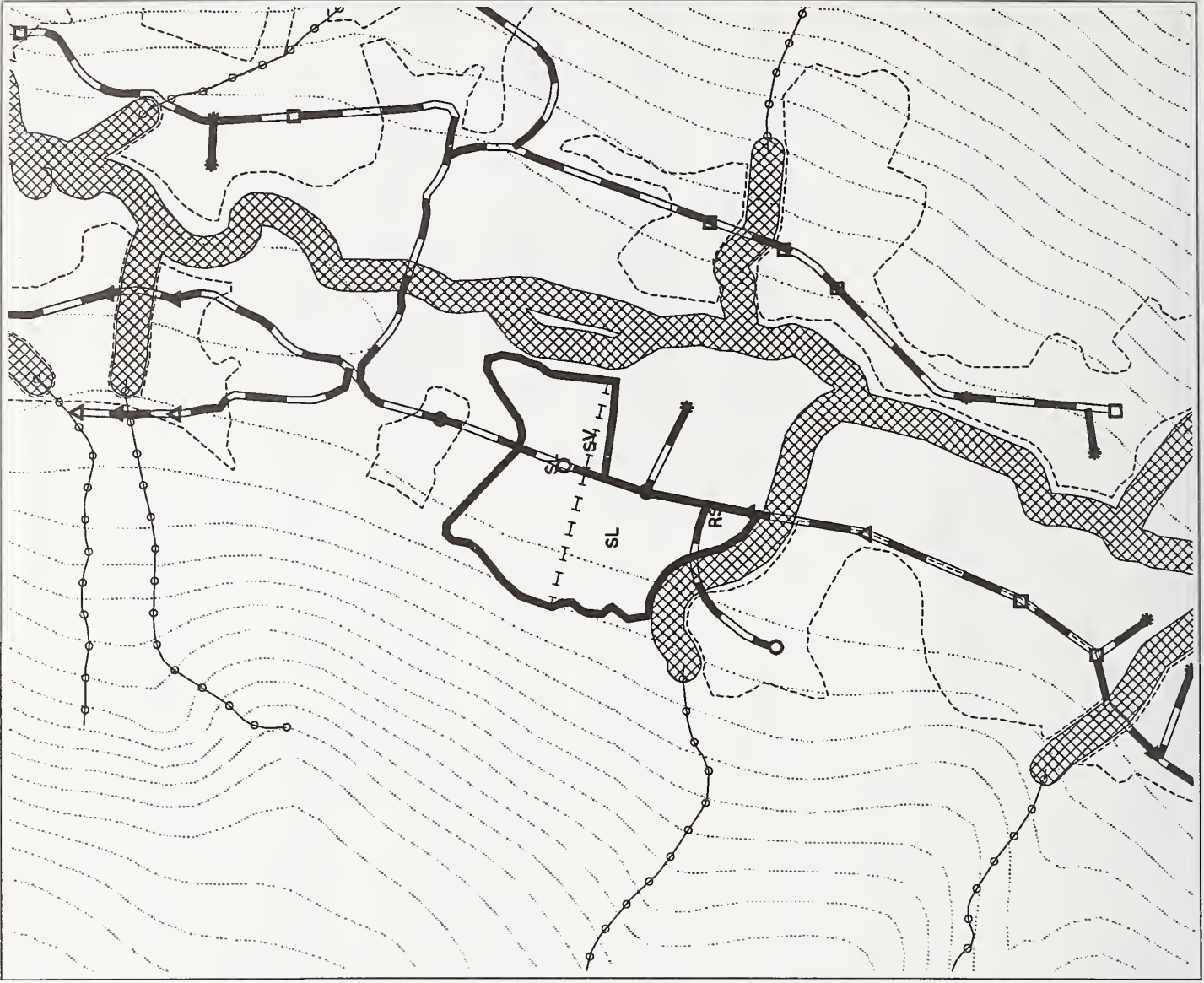
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 28 UNIT: 16-A ACRES: 37

RESOURCE (Name/Date):
 TIMBER/SILVICULTURE
 Stand Exam: 6/4/92 H. WHITE T. PUSINIA
 Stand Exam Type: VARIABLE PLOT; Fixed Plots
 Silvicultural Review: S. Smith
 7/25/92

Tim Type	H44	X45	X46	TOT/AVG
Acres	43	22	28	
MBF/Species				
WH				
BB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevent Plant Assoc.	210			
Ble Index				
Regen Method				
Gross Growth				
N. Goshawk	NONE	OBSERVED		
Wind Hazard (H.M.I.)	M			
Damage (Insect, disease, animal, etc.)				

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE, PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN DIVERSITY. A PRECOMMERCIAL THIN A 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/BB, WITH WH/BB/DC ALSO FREQUENT. SITE PRODUCTIVITY IS MODERATE UNIT CHANGE NOTES: ELIMINATED 20 ACRES ALONG UPPER BOUNDARY DUE TO SLOPES OF CONSISTANT 75% AND ABOVE.

WEST SIDE OF UNIT CAN BE VISITED WITH TURNING SKYLINE SYSTEM. LANDINGS ARE POSITIONED TO KEEP DRIVERS OUT OF SURE CREEKS. EAST SIDE OF UNIT CAN BE SEVERAL LOGGERS. ~~SEVERAL~~ SNAGS ARE A SAFETY HAZARD FOR LOGGING CREWS.

Minimize disturbance to nesting and riparian wetlands. Keep debris out of channels if it clogs fall in nearest it. Maintain 100' buffer on class II streams on east and south sections of unit.

AVOID SLOPES OVER 70%. AVOID CUTTING BELOW THE STANDS. AVOID CUTTING ABOVE THE VALLEY BOTTOM. ON SLOPES ABOVE THE VALLEY BOTTOM.

AND PROTECT V-NOTCHES AND CHUTES TO WIND FIRM TOE OF FAILURES. USE PARTIAL LOG SUSPENSION.

Harvesting southeastern portion of unit will result in loss of high quality habitat for moose, other, brown bear. Harvesting eastern half of unit will impact moderate quality deer habitat.

WOULD NOT MEET FOX. WOULD NOT BE VISIBLE FROM USHKB-15BY.

Outside Sensitive Area - No Survey Necessary

LOGGING/TRANSPORTATION

Leading: 2
 Profiles:
 Field Review: *JK*

WATERSHED/FISHERIES
 DWS/Dsw 7/8/92
 Field Review:
 DDJ 8/3/92

SOILS/GEOLOGY

Field Review:
 OSW & PRL 6/2/92

WILDLIFE/SUBSISTENCE

Field Review:

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/16 7/29/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

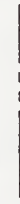


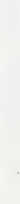


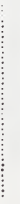




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 19
VCU: 280
Alternative(s): C D E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 140-141

Legend

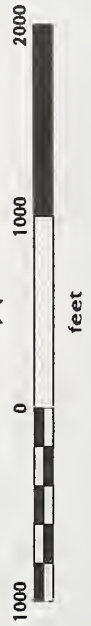
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 19 ACRES: 27

RESOURCE (Name/Date)	Tim Type	X 45	TOTAL
TIMBER/SILVICULTURE	Acres		
	MBF/Species		
	WH		
	89		
	YC		
	MH		
	Other		
	TOTAL		
	MBF/AC	352	
	Prevalent Plant Assoc.		
	Site Index		
	Regen Method		
	Gross Growth		
	N. Goshawk	None SIGHTED	
	Wind Hazard (H,M,L)		
	Damage (Insect, disease, animal, etc.)		
LOGGING/TRANSPORTATION			
Landing: 5-24-92			
Profile: 600			
Field Review: 8-5-92			
WATERSHED/FISHERIES			
DDW 6/4/92			
Field Review:			
DMS/DJW 7/7/92			
SOILS/GEOLOGY			
Field Review:			
OSW & RL 6/4 92			
WILDLIFE/SUBSISTENCE			
Field Review: VLA, DEE 7/14/92			
VISUAL/RECREATION			
Perspective Plots:			
Field Review: G/LF 7-18-92			
ARCHAEOLOGICAL/CULTURAL			
Field Review: M. Kelly 7-16-92			

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCKS SHOULD BE SUFFICIENT. PLANTING OF SPACE FOR REGENERATION/SITE PREPARATION IS ADVISED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS RECOMMENDED AT 15-20 YEARS TO MAINTAIN GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAGS/AC. TO MAINTAIN DIVERSITY. THE PREVALENT PLANT ASSOCIATION IN THE UNIT IS SS-RH/DC WHICH IS MODERATE TO HIGHLY PRODUCTIVE. THIS UNIT CONTAINS PATCHES OF OPEN CANOPY UNDER WHICH THERE ARE LARGE AMOUNTS OF DEVIL'S CLUS AND ALDER.

VERY GENTLE TERNING, SIGNIFICANT FERTILIZER WOULD BE NEEDED. LOGGING, SIGNIFICANT EXPOSURE WILL BE SPILT YANDED. SNAGS ARE A SAFETY HAZARD FOR LOGGING CREWS.

Log away from water channels & consider full suspension (in pastures). Prevent debris from entering channels & if it does remove it. Minimize debris bank in waterway. Maintain 100' buffer for Class I streams in unit.

NO SOILS CONCERNS NOTED.

Harvesting unit will impact high quality habitat for Marten, River Otter, and Brown Bear.
 Harvesting NE portion of unit will impact moderate quality deer winter range.

WOUND NOT MEET POS. WOUND NOT BE VISIBLE.

No significant cultural resources identified.

Harvest Unit Design Card












Ushk Bay EIS

Harvest Unit: 20
 VCU: 280
 Alternative(s): C

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 140-141

Legend

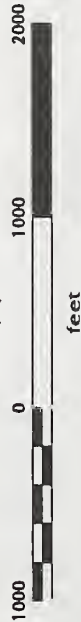
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: ACRES: 64																																																																	
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)																																																																	
Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is recommended to maintain current species composition. A pre-commercial thin at 15-20 years is suggested to enhance growth. The prevalent plant associations are (variations of) WH-Vc/BB, which is a moderately productive site and SS(RA)PC, which is moderate to highly productive. Flat areas have numerous tributaries and boggy areas, along with patches of thick brush. The west-facing slope had a patch of cedar decline. Numerous slides and drainage run through the unit.																																																																	
<table border="1"> <thead> <tr> <th>Tim Type</th> <th>H44</th> <th>S45</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>Acres</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>BB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL MBF/AC</td> <td>210</td> <td>352</td> <td></td> </tr> <tr> <td>Prevalent Plant Assoc.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Site Index</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Region Method</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td>None Seen</td> <td></td> <td></td> </tr> <tr> <td>Wind Hazard (H,M,L)</td> <td>L</td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc.)</td> <td>CEDAR PEEPLINE</td> <td></td> <td></td> </tr> </tbody> </table>		Tim Type	H44	S45	TOTAL	Acres				MBF/Species				WH				BB				YC				MH				Other				TOTAL MBF/AC	210	352		Prevalent Plant Assoc.				Site Index				Region Method				Gross Growth				N. Goshawk	None Seen			Wind Hazard (H,M,L)	L			Damage (Insect, disease, animal, etc.)	CEDAR PEEPLINE		
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Landing: 34 Profile: 20-1-98/ 8-5-92 Field Review: JH																																																																	
WATERSHED/FISHERIES																																																																	
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Field Review: PERSPECTIVE PLOTS: 6/14 7-25-92																																																																	
ARCHAEOLOGICAL/CULTURAL																																																																	
Field Review: M. Kelly 7-16-92																																																																	




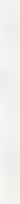
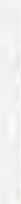

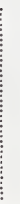




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 20
VCU: 280
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 140-141

Legend

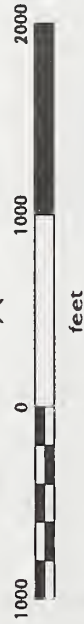
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE (Name/Date)	Tim Type	H44	S45	TOTIANG
TIMBER/SILVICULTURE	Acres			
Stand Exam: 7/14/92 S. Allen/T. Pusina	MBF/Species			
Stand Exam Type:	WH			
plots	BS			
Bilviculturalist Review:	YC			
S. Smith	MH			
7/25/92	Other			
	TOTAL			
	Prevalent	210	352	
	Plant Assoc.			
	Site Index			
	Regen Method			
	Gross Growth			
	N. Goshawk	None seen		
	Wind Hazard (H.M.U.)			
	Damage (Insect, disease, animal, etc.)	CEDAR DECLINE		

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is recommended to maintain current species composition. A pre-commercial thin at 15-20 years is suggested to enhance growth. The prevalent plant associations are (Variations of) WH-Vc/BB, which is a moderately productive site and SS(RA)PC, which is moderate to highly productive. That area here numerous tributaries and boggy areas, along with patches of thick brush. The west-facing slope had a patch of cedar decline. Numerous swales and drainage run through the unit.

LOGGING/TRANSPORTATION
 Landing: 34
 Profiles: 20-1-98 ✓ 8-5-92
 Field Review: ✓
WATERSHED/FISHERIES
 DON 8/4/92
 Field Review:
 DMB/JSW 7/6/92

SOILS/GEOLOGY
 Field Review:
 OSW & RRL 6/4/92

WILDLIFE/SUBSISTENCE
 Field Review:
 LLA, DEE

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/14 7-24-92

ARCHAEOLOGICAL/CULTURAL
 Field Review:
 M. Kelly
 7-16-92

LOGGING/TRANSPORTATION
 THE UNIT IS PLANNED TO BE LOGGED IN THE NEXT SEVERAL YEARS. PARTIAL SUSPENSION IS PLANNED. SWALES ARE A SAFETY HAZARD FOR LOGGING CREWS.

WATERSHED/FISHERIES
 Log away from V-notch channels & consider fill a partial suspension. Accrual debris from cutting channels if it does remove it. Minimize disturbance in watershed. Maintain 100' buffer on class I stream on unit's southwestern border. Recommend 50' buffer on class II streams if silting a concern - BUT ONLY IF WINDFIRM.

SOILS/GEOLOGY
 AVOID SLOPES OVER 65%. AVOID CUTTING AREAS AT THE HEADS OR EASTERN EDGE OF THE UNIT. USE PARTIAL LOG SUSPENSION YARDING ON THE HILLSIDE.

WILDLIFE/SUBSISTENCE
 Harvesting unit will impact high quality habitat for brown bear & river otter. Harvesting eastern tip will impact moderate quality deer winter range.

VISUAL/RECREATION
 WOULD NOT MEET POS. WOULD NOT BE VISIBLE FROM USHK BOY.

ARCHAEOLOGICAL/CULTURAL
 No significant cultural resources identified.

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 20
VCU: 280
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 140-141

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is recommended to maintain current species composition. A pre-commercial thin at 15-20 years is suggested to enhance growth. The prevalent plant associations are (variations of) WH-VC/BB, which is a moderately productive site and SS(RA)PC, which is moderate to highly productive. Flat areas have numerous tributaries and boggy areas, along with patches of thick brush. The west-facing slope has a patch of cedar decline. Numerous swales and drainages run through the unit.

THE UNIT IS A PARTIAL SUSPENSION UNIT. THE NOT-MAINTAINED BUT RECOMMENDED FOR PARTIAL SUSPENSION IS REFINED, LANDINGS ARE POSITIONED TO MINIMIZE SOIL DISTURBANCE, PARTIAL SUSPENSION IS PLANNED. SWAPS ARE A SAFETY HAZARD FOR LOGGING CREWS

Log crews from V-notch channels & consider full or partial suspension. Avoid debris from entering channels if it does remain it. Minimize disturbance in working. Maintain 100' buffer on class I stream on units. Southwestern border. Recommend 50' buffer on class II streams if silviculture a concern - BUT ONLY IF WINDFIRM.

AVOID SLOPES OVER 65%. AVOID CUTTING ALONG THE HEADS OF EASTERN EDGE OF THE UNIT. USE V-NOTCHES SLIDES, AND CUTS. BE AWARE OF THE TOES OF THE HILLSIDE. PARTIAL LOG SUSPENSION YARDING ON THE HILLSIDE. Harvesting unit will impact high quality habitat for brown bear & river otter. Harvesting eastern tip will impact moderate quality deer winter range.

WOULD NOT MEET POS. WOULD NOT BE VISIBLE FROM USHKBAY.

No significant cultural resources identified

Tim Type	H44	S45	TOT/AVG
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent	210	352	
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None seen		
Wind Hazard (H M L)	L		
Damage (Insect, disease, animal, etc.)	CEDAR DECLINE		

LOGGING/TRANSPORTATION

Landing: 34
Profile: 20-1-98/8-5-92
WATERSHED/FISHERIES
DMS/DJW 7/6/92

SOILS/GEOLOGY

Field Review: OSW & RRL 6/4/92

WILDLIFE/SUBSISTENCE

Field Review: L-LA, DEE

VISUAL/RECREATION

Field Review: Perspective Plots: 16/14 7-26-92

ARCHAEOLOGICAL/CULTURAL

Field Review: M. Kelly 7-16-92

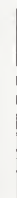





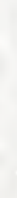
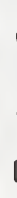



Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 20
VCU: 280
Alternative(s): F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 140-141

Legend

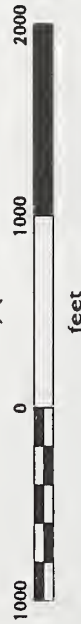
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is recommended to maintain current species composition. A pre-commercial thin at 15-20 years is suggested to enhance growth.

The prevalent plant associations are (variations of) WH-Vc/BB, which is a moderately productive HtL and SS(RA)PC, which is moderate to highly productive. Flat areas have numerous tributaries and boggy areas, along with patches of thick brush. The west-facing slope has a patch of cedar decline. Numerous, wild and drainage run through the unit.

Log away from V-notches & consider full or partial suspension. Avoid cutting channels if it does remain it. Minimizing disturbance in nursery. Maintain 100' buffer on class I stream on unit's southwestern border. Recommend 50' buffer on class II streams if silviculture a concern - BUT ONLY IF WINDFIRM.

Harvesting unit will impact high quality habitat for brown bear & river otter. Harvesting eastern tip will impact moderate quality deer winter range.

WOULD NOT MEET FOS. WOULD NOT BE VIABLE FROM USHKBAY.

No significant cultural resources identified

Tim Type	H44	S45	TOT/AVG
Acres			
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/AC	210	352	
Prevalent Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None seen		
Wind Hazard (H,M,L)	L		
Damage (Insect, disease, animal, etc.)	CEPHEAR DECLINE		

LOGGING/TRANSPORTATION

Landing: 34
 Profiles: 20-1-98 / 8-5-92
 Field Review: ✓

WATERSHED/FISHERIES

POW 8/14/92
 Field Review:
 DMB/JSW 7/6/92

SOILS/GEOLOGY

Field Review:
 OSW & RRL 6/4 92

WILDLIFE/SUBSISTENCE

Field Review:
 LLA, DEE

VISUAL/RECREATION

Field Review: 16/16 7-26-92

ARCHAEOLOGICAL/CULTURAL

Field Review: M. Kelly 7-16-92

Resource	Name/Date	Reviewer	Date
TIMBER/SILVICULTURE	Stand Exam: 7/14/92 S. Allen/T. Pusina	Silviculturalist Review: S. Smith	7/25/92
LOGGING/TRANSPORTATION	Landing: 34 Profiles: 20-1-98 / 8-5-92 Field Review: ✓		
WATERSHED/FISHERIES	POW 8/14/92 Field Review: DMB/JSW 7/6/92		
SOILS/GEOLOGY	Field Review: OSW & RRL 6/4 92		
WILDLIFE/SUBSISTENCE	Field Review: LLA, DEE		
VISUAL/RECREATION	Field Review: 16/16 7-26-92		
ARCHAEOLOGICAL/CULTURAL	Field Review: M. Kelly 7-16-92		

Harvest Unit Design Card



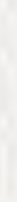
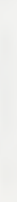
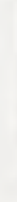



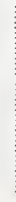


Ushk Bay EIS

Harvest Unit: 21
 VCU: 280
 Alternative(s): C D E F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 142-143

Legend

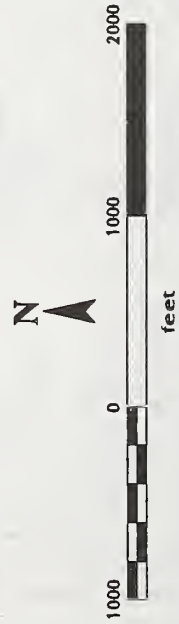
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 21 ACRES: 35

RESOURCE (Name/Date) RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

TimType	X45	TOT/AVO
Acres		
MBF/Species		
WH		
88		
YC		
MH		
Other		
TOTAL		
MBF/AC	120	
Prevalent Plant Assoc.		
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	SIGHTED	
Wind Hazard (H.M.I.)	M	

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING SITE PREP OF SITKA SPECIES MAY BE NECESSARY FOR ADEQUATE REGEN. IN THIS UNIT. A PRE-COMMERCIAL THINNING AT 15-20 YRS IS RECOMMENDED. THE PRE-DOMINANT PLANT ASSOC. IS WH/BG/SF WHICH IS HIGHLY PRODUCTIVE. THE WHOLE UNIT IS FLAT. A NORTHERN GOSHAWK WAS SIGHTED BUT NO NEST WAS LOCATED. IF POSSIBLE, LEAVE 2 SPMS PER ACRE FOR DIVERSITY.

A SMALL PORTION OF THIS UNIT IS ON SLOPING GROUND WHICH WILL BE CHISEL HARROWED. THE PLANT MATIATION WILL BE SHUVEL LOGGED YARDING ALONG STREAM SHOULD NOT BE A SIGNIFICANT ISSUE.

Log away from V-notch channels and consider fall on partial suspension. Avoid debris from entering channels if it does invade it. Maintain 100' buffer on Class I streams in unit.

AVOID SLOPES OVER 65%. AVOID WINDFIRM STANDS. AVOID CUTTING FACIURES. AVOID THE UPPER QUARTER OF THE UNIT DUE TO FREQUENT DISSECTIONS. USE PARTIAL LOG SUSPENSION ON THE HILLSIDE.

A northern goshawk was observed in the unit on 6/27/92. Harvesting the unit will impact high quality habitat for otter, marten, and brown bear. No concern for deer.

None not noted for.

No significant cultural resources identified

LOGGING/TRANSPORTATION
Landing: 2
Profiles: 4/16-15-92
Field Review: 4/16-15-92

WATERSHED/FISHERIES
DNR 8/4/92
Field Review: 7/8/92

SOILS/GEOLOGY
Field Review: DSW & RRL 6/4 92

WILDLIFE/SUBSISTENCE
Field Review: VLT, DEE 7/14/92

VISUAL/RECREATION
Field Review: 6/6/92 7/29/92

PERCEPTIVE PLOTS
Field Review: 7/17/92

ARCHAEOLOGICAL/CULTURAL
Field Review: 11.12.11

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 21-A
VCU: 280
Alternative(s): C E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 142-143

Legend

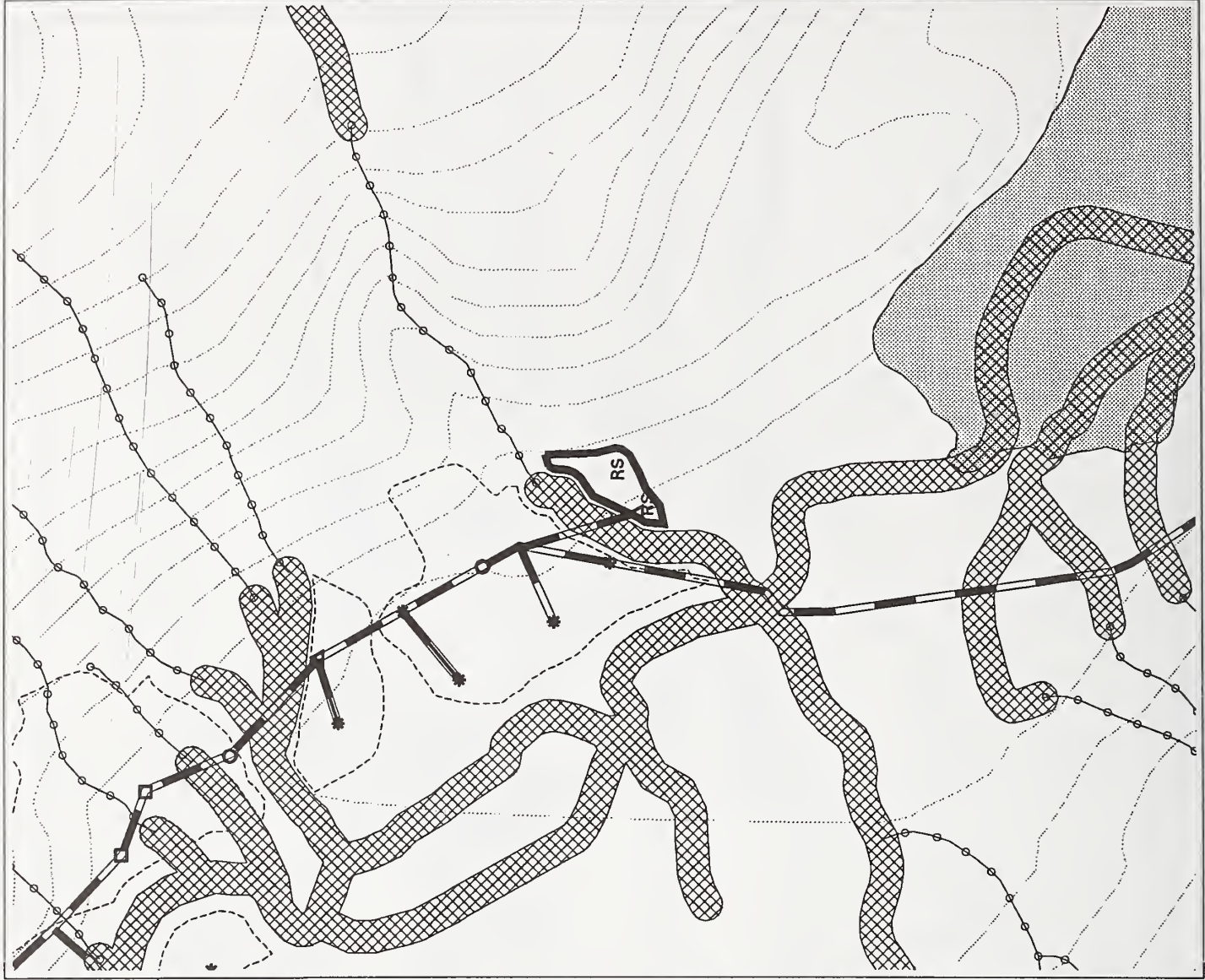
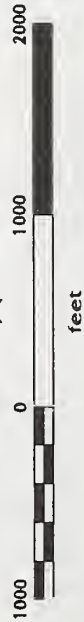
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 21 ACRES: 4

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING SITE PREP OF SITKA SPRUCE MAY BE NECESSARY FOR ADEQUATE REGEN. IN THIS UNIT. A PRE-COMMERCIAL THINNING AT 15-20 YRS IS RECOMMENDED. THE PREDOMINANT PLANT ASSOC. IS WH/BS/5F WHICH IS HIGHLY PRODUCTIVE. THE WHOLE UNIT IS FLAT. A NORTHERN GOSHAWK WAS SIGHTED BUT NO NEST WAS LOCATED. IF POSSIBLE, LEAVE 2 SNAGS PER ACRE FOR DIVERSITY.

Tim Type	X 45	TOTIANG
Acres		
MBF/Species		
WH		
BS		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Prevalent Plant Assoc.	120	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	SIGHTED	
Wind Hazard (H,M,L)	M	
Damage (Insect, disease, animal, etc.)	Some cutting & misdeeds	

A SMALL PORTION OF THIS UNIT IS OPEN SLOPING GROUND WHICH WILL BE CHAINSE VANDERED. THE FLAT PORTION WILL BE SHAVED & GRADED YARDING ALONG STREAM SHOULD NOT BE A SIGNIFICANT ISSUE.

Log away from v-notch channels and consider fallen on partial suspension. Avoid debris from entering channels if it clogs them.

Maintain 100' buffer on Class I streams in unit.

AVOID SLOPES OVER 65%. AVOID WINDFIRM STANDS. AVOID CUTTING FAULTURES. AVOID THE UPPER EQUARTER OF THE UNIT DUE TO FREQUENT DISSECTIONS. USE PARTIAL LOG SUSPENSION ON THE HILLSIDE.

A northern goshawk was observed in the unit on 6/27/92. Harvesting the unit will impact high quality habitat for other, marten, and brown bear. No concern for deer.

When any resources are identified.

No significant cultural resources identified.

Stand Exam: T. POSINA, S. ALLEN 6/27/92

Stand Exam Type: PLOTS

Silviculturalist Review: S. Smith 7/25/92

LOGGING/TRANSPORTATION

Landing: 2

Profiles: 6-15-92

Field Review: VAN 8/4/92

WATERSHED/FISHERIES

Field Review: DMB/DSW 7/8/92

SOILS/GEOLOGY

Field Review: DSW & PRL 6/4/92

WILDLIFE/SUBSISTENCE

Field Review: VLT, DEE 7/14/92

VISUAL/RECREATION

Field Review: 66/6F 7-29-92

PERPECTIVE PLOTS:

Field Review: 7/17/92 M. KELLIS

ARCHAEOLOGICAL/CULTURAL

Field Review: 7/17/92 M. KELLIS




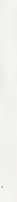






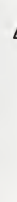
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 22
VCU: 280
Alternative(s): C D E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 141-142

Legend

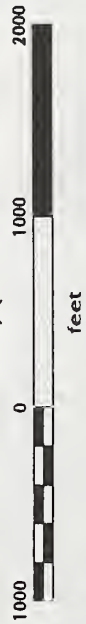
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 22 ACRES: 544

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend clear-cut system. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to maintain species composition. A per may be necessary in 25-20yrs to enhance growth. Some form of brush control may be necessary in areas where suspended logging is not feasible (Flat unit). Unit is predominately a WH/BB Plant Assoc. Unit is moderately productive.

VERY FLAT GRAVELLY GROUND STREAMS TEN TO FIFTEEN FEET DEEP DURING HIGH RAIN FALLS, BUT SIGNIFICANT STREAM DIVERSION UNIT YARDING AREAS THIS CREEK IS NOT NECESSARY.

Log away from Unit. Log skid trails. Prevent debris from entering stream. If it does rework it. Maintaining 100' buffer on class I streams.

No soils concerns noted.

Bear dens found. Logging entire unit will impact high quality habitat for brown bear & river otter. Harvesting western edge will impact high quality matrix habitat. No concerns for deer.

No significant cultural resources identified.

Tim Type	X44	S45	TOT/AVG
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/Ac			
Plant Assoc.	110		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None observed		
Wind Hazard (H,M,L)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 3
 Profiles: ✓ 6-23-92
 WATERSHED/FISHERIES
 DMS 7/8/92
 Field Review:
 DMS 8/4/92

SOILS/GEOLOGY

Field Review:
 OSW & RLL 6/4 92
 WILDLIFE/SUBSISTENCE
 Field Review:
 VLA, DEE 7/14/92

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/14 7-29-92

ARCHEOLOGICAL/CULTURAL

Field Review: 7-12-92



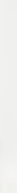
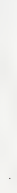
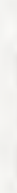



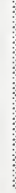


Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 22-A
VCU: 280
Alternative(s): C D E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 141-142

Legend

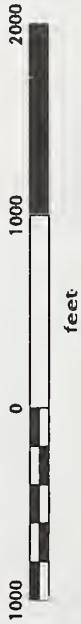
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA:		VCU: 280 UNIT: 22 ACRES: 27	
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)			
TIMBER/SILVICULTURE Stand Exam: 6/27/92 M. White/K. Saiz Stand Exam Type: Variable Plot; Fixed Plots Silvicultural Review: S. Smith 7/25/92		X44 S45 MBF/Species WH 88 YC MH Other TOTAL MBF/AC Plant Assoc. Site Index Regen Method Gross Growth N. Goshawk Wind Hazard (H, M, L) Damage (Insect, disease, animal, etc.)	TOT/AVG 110 None observed
LOGGING/TRANSPORTATION Logging: 3 Profile: 1/4 6-13-92 WATERSHED/FISHERIES DWS 7/8/92 DOW 8/4/92			
SOILS/GEOLOGY Field Review: OSW & RLL 6/4 92 WILDLIFE/SUBSISTENCE Field Review: VLA, DEE 7/14/92			
VISUAL/RECREATION Perspective Plate: Field Review: 6/14 7-29-92			
ARCHEOLOGICAL/CULTURAL Field Review: 7-12-92			
Recommend clear-cut system. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to maintain species composition. A PCT may be necessary in 25-30 yrs to enhance growth. Some form of brush control may be necessary in areas where suspended logging is not feasible (Flat unit). Unit is predominately a WH/BB Plant Assoc. Unit is moderately productive.		VERY FLAT GRAVELLY GROUND STREAMS TEN TO FIFTEEN FEET EXCEPT DURING HIGH RAIN FALLS. THE SIGNIFICANT STREAM DIVIDES UNIT YARDING ACROSS THIS CREEK IS NOT NECESSARY.	
No soils concerns noted.		Log away from V-match channels & benches. Prevent debris from entering channels. F.I.T. does rework it. Maintain 100' buffer on class I streams.	
Bear dens found. Logging entire unit will impact high quality habitat for brown bear & river otter. Harvesting western edge will impact high quality marten habitat. No concerns for deer.		No significant cultural resources identified.	



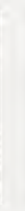



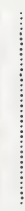




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 23
VCU: 280
Alternative(s): C E F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 141-142

Legend

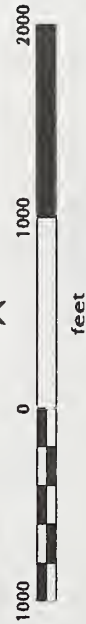
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: IISHK	LUD: VCU: UNIT: 23 ACRES: 12																																																																																										
RESOURCE (Name/Date)	MANAGEMENT AREA:																																																																																										
TIMBER/SILVICULTURE	<table border="1"> <thead> <tr> <th>Tim Type</th> <th>A44</th> <th>545</th> <th>X45</th> <th>TOT/AVG</th> </tr> </thead> <tbody> <tr> <td>Acres</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>98</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/AG</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prevalent</td> <td>210</td> <td>110</td> <td>210</td> <td></td> </tr> <tr> <td>Plant Assoc.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Site Index</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Regen Method</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td>NONE</td> <td>SIGHTED</td> <td></td> <td></td> </tr> <tr> <td>Wind Hazard (H.M.I.)</td> <td>X</td> <td>M</td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc)</td> <td>SOME</td> <td>MISTLETOE + CEDAR</td> <td></td> <td></td> </tr> </tbody> </table>	Tim Type	A44	545	X45	TOT/AVG	Acres					MBF/Species					WH					98					YC					MH					Other					TOTAL					MBF/AG					Prevalent	210	110	210		Plant Assoc.					Site Index					Regen Method					Gross Growth					N. Goshawk	NONE	SIGHTED			Wind Hazard (H.M.I.)	X	M			Damage (Insect, disease, animal, etc)	SOME	MISTLETOE + CEDAR		
Tim Type	A44	545	X45	TOT/AVG																																																																																							
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Damage (Insect, disease, animal, etc)	SOME	MISTLETOE + CEDAR																																																																																									
Stand Exam: T. RUSINA, S. ALLEN 6/27/92																																																																																											
Stand Exam Type: Plots																																																																																											
Silviculturalist Review: S. Smith 7/25/92																																																																																											
LOGGING/TRANSPORTATION	<p>AREA OF THIS UNIT HAS BEEN NEARLY DUE TO DAMAGES OVER 65% OF THE CROWN AREAS TO AN UPPER STAND. MOST OF THE FLATS CHAIN SEVERE LOGGED. LANDINGS ARE WELL POSITIONED TO MINIMIZE SLOPES. SNAGS ARE SAFELY HARVESTED FOR LOGGING CREWS.</p> <p>Log away from V-notch channels, consider fall in patch suspension. prevent debris from entering channels and if it does remove it. Maintain 100' buffer on class I streams in unit. Recommend 50' buffer on Class III streams if situation a concern, BUT ONLY IF WINDFIRM</p>																																																																																										
Landing: 2																																																																																											
Profiles: 23-1-50																																																																																											
Field Review: J.L. 6-15-92																																																																																											
WATERSHED/FISHERIES																																																																																											
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WILDLIFE/SUBSISTENCE																																																																																											
Field Review: LLA, DEE 7/14/92																																																																																											
VISUAL/RECREATION																																																																																											
Perspective Plots: VAO: _____ VAC: _____ Visibility: _____ ROC: _____ Recreation Site: _____ Trail: _____																																																																																											
Field Review: 6/18 7-29-92																																																																																											
ARCHAEOLOGICAL/CULTURAL																																																																																											
Field Review: M. Kelly 7-16-92																																																																																											
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)	<p>RECOMMENDED WITHIN SYSTEM IS CLEARCUT. NATURAL REGEN. OF HEMLOCK SHOULD BE ADEQUATE. CONSIDER PLANTING UNIT WITH YELLOW CEDAR TO MAINTAIN CURRENT SPECIES COMPOSITION. ALSO CONSIDER PLANTING S. SPRUCE AROUND MAIN CREEK TO MAINTAIN IT'S CURRENT SP. COMPOSITION. A PRE-COMMERCIAL THINNING AT 15-20 YRS IS RECOMMENDED. WH-YC/SS IS THE DOMINANT PLANT ASSOCIATION AND IS MODERATELY PRODUCTIVE. TWO MAIN V-NOTCHES RUN THROUGH THE UNIT AND SHOULD BE AVOIDED WHEN FELLING TREES.</p>																																																																																										
LOGGING/TRANSPORTATION	<p>PROTECT V-NOTCHES, SLIDES, AND CUTS TO WINDFIRM STANDS. AVOID THE CLOSELY SPACED DISSECTIONS IN THE UPPER ELEVATION AT THE UNIT. POSSIBLY AVOID THE N CORNER DUE TO STEEP SLOPES. BEWARE OF THE TOE & LOWER SLOPE IN THE MIDDLE THIRD OF THE UNIT DUE TO POSSIBLE ON-STREAM LOGS AND UNSTABLE GRASS. FIELD REVIEW THIS AREA AFTER LAYOUT. USE PARTIAL LOG SUSPENSION HARDING ON THE HILLSIDE.</p>																																																																																										
LOGGING/TRANSPORTATION	<p>LOGGING SOUTHERN HALF OF UNIT WILL IMPACT HIGH QUALITY HABITAT FOR BROWN BEAR, OTTERS, AND MARTEN. LOGGING PARTS OF NORTH HALF OF UNIT WILL IMPACT MODERATE QUALITY DEER WINTER RANGE.</p>																																																																																										
ARCHAEOLOGICAL/CULTURAL	<p>No significant cultural resources identified.</p>																																																																																										

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 25
VCU: 280
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 20-21

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- Δ ○ Landing
- Shoreline and Lakes
- ▨ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 25 ACRES: 13

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND PARTIAL-CUT DUE TO VISIBILITY FROM MAKING HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE. Clearcutting would be acceptable on this Unit.

Tim Type	X44	TOT/AVG
Acres		
MBF/Species		
WH		
98		
YC		
MH		
Other		
TOTAL		
UBF/AC		
Prevalent Plant Assoc.	210	
Site Index		
Hagen Method		
Gross Growth		
N. Goshawk	NONE OBSERVED	
Wind Hazard (H.M.U.M)		
Damage (Insect, disease, animal, etc)	SEVERE SCRAPING	

Log away from V-notch drainages. ~~and not~~ Consider helicopter removal. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats and riparian wetlands. No fisheries concern

AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLUMPS, CUTTES, AND THE SHOULDERS OF OVER-STEEPENED SLOPES. AVOID THE MULTIPLE DISSECTIONS AND THE STEEP N FACING SLOPES IN THE N CORNER OF THE UNIT. USE PACTIAL LOG SUSPENSION. No concerns for marten, otter, brown bear, or deer.

WOODY OPEN WOODS. Highly visible. RECOMMEND GROUP SELECTION OR SHUTTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND / MIDDLEGROUND

Outside designated high-sensitivity Area - no survey required

TIMBER/SILVICULTURE

Stand Exam: K. SEITZ
7/13/92 M. COX M. WHITE
Stand Exam Type: VARIABLE PLOT; Fixed Plot
Silvicultural Review: S Smith
7/25/92

LOGGING/TRANSPORTATION

Landing:
Profiles:
Field Review:
VCS 7-26-92
Field Review:
000 8/4/92

WATERSHED/FISHERIES

NO CONCERNS

SOILS/GEOLOGY

Field Review:
DSW 7/25 92

WILDLIFE/SUBSISTENCE

Field Review:
VLA 7/20/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 6/18 7-24/92

ARCHEOLOGICAL/CULTURAL

Field Review: N/A










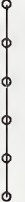
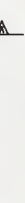
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 25
VCU: 280
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 20-21

Legend

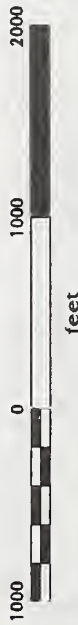
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 25 ACRES: 257

RESOURCE CONCERNS (INCLUDING MGT OBJECTIVES & MITIGATION)

RECOMMEND PARTIAL-CUT DUE TO VISIBILITY FROM MAKING HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE. Clearcutting would be acceptable on this Unit.

Tim Type	X44	TOI/AVG
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Prevalent Plant Assoc.	210	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	None observed	
Wind Hazard (H,M,L) M		
Damage (Insect, disease, animal, etc.)	LEDAL SCRIPYALV	

LOGGING/TRANSPORTATION

Landing:
Profile:
Field Review:
DWS 7/25/92

WATERSHED/FISHERIES

Field Review:
DWS 8/4/92

SOILS/GEOLOGY

Field Review:
DWS 7/25/92

WILDLIFE/SUBSISTENCE

Field Review:
VLA 7/20/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 6/14 7-29-92

ARCHAEOLOGICAL CULTURAL

Field Review: N/A

Log away from V-notch drainages, and not within 100 ft of them. Consider helicopter removal. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats and riparian wetlands. No fisheries concern

AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLUMPS, CHUTES, AND THE SHOULDERS OF OVER-STEEPED SLOPES. AVOID THE MULTIPLE DISSECTIONS AND THE STEEP N FACING SLOPES IN THE W CORNER OF THE UNIT. USE PARTIAL LOG SUSPENSION. No concerns for marten, otter, brown bear, or deer.

WOODS NOT MEET POS. HIGHLY VISIBILE. RECOMMEND GROUP SELECTION OR SHEETWOOD CUT TO REDUCE CONTRAST IN FOREGROUND/MIDDLEGROUND

Outside designated high-sensitivity Area - no survey required

Harvest Unit Design Card



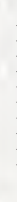
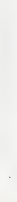
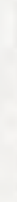






Ushk Bay EIS

Harvest Unit: 25
 VCU: 280
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 20-21

Legend

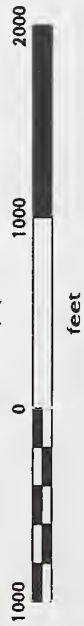
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



USHK MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X44	TOTI/AVG
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/Ag	210	
Prevalent Plant Assoc.		
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	NONE OBSERVED	
Wind Hazard (H, M, L, H)		
Damage (Insect, disease, animal, etc.)	CEDEAR SPRING	

RECOMMEND PARTIAL-CUT DUE TO VISIBILITY FROM MARINE HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE. Clearcutting would be acceptable on this Unit.

LOGGING/TRANSPORTATION

Landing: _____
 Profiles: _____
 Field Review: _____

WATERSHED/FISHERIES

VLS 7/26/92
 Field Review: 000 8/4/92

SOILS/GEOLOGY

Field Review: _____

WILDLIFE/SUBSISTENCE

Field Review: DSD 7/25/92

VLA 7/20/92

VISUAL/RECREATION

Field Review: _____

Field Review: VLA 7/20/92

PERCEPTIVE PLOTS

Field Review: 66/8 7/29/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Log away from V-notch drainages. Consider helicopter removal. Protect debris from falling. Avoid if it does, remove it. Minimize disturbance to muskrats and riparian wetlands. No fisheries concern.

AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLUMPS, CUTUPS, AND THE SHOULDERS OF OVER-STEPPED SLOPES. AVOID THE MULTIPLE DISSECTIONS AND THE STEEP N FACING SLOPES IN THE N CORNER OF THE UNIT. USE PARTIAL LOG SUSPENSION. No concerns for marten, otter, brown bear, or deer.

WOOD NOT MEET FOR. HEAVY VEHICLE. RECOMMEND GROUP SELECTION OR SHELTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND/MIDBACKGROUND

Outside designated high-sensitivity area - no survey required



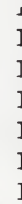
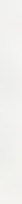


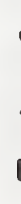
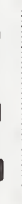


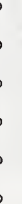
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 25-A
VCU: 280
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 20-21

Legend

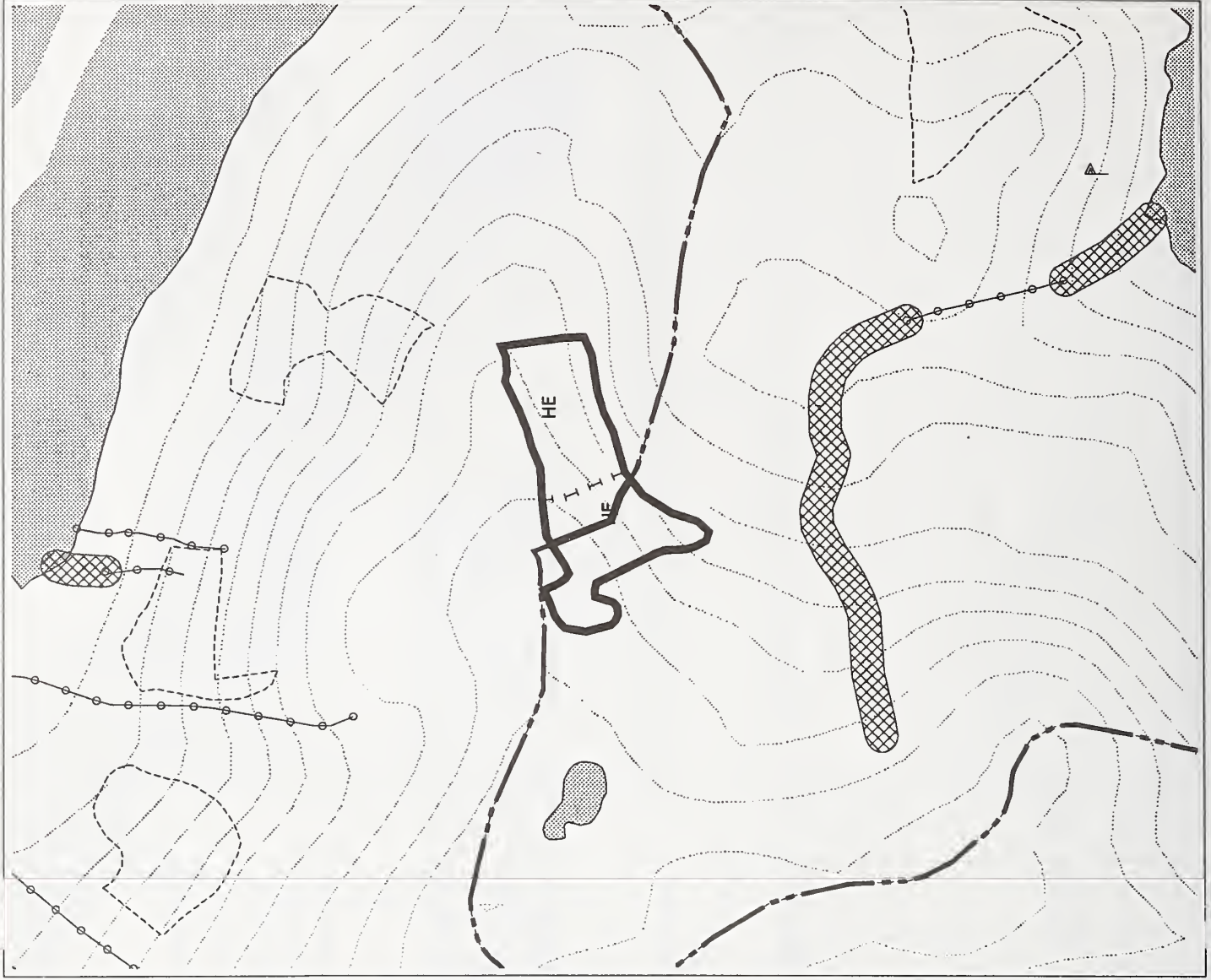
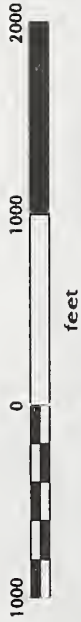
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT:		USHK MANAGEMENT AREA:		LUD:	VCU: 280	UNIT: 25	ACRES: 23
RESOURCE (Name/Date)		TIMBER/SILVICULTURE		RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)			
Blind Exam:	Blind Exam Type:	Time Type	Acres	TOTI/AVG			
K. SEITZ 7/3/92 McCox M. WHITE	FIXED PLOTS	WH	244		RECOMMEND PARTIAL-CUT DUE TO VISIBILITY FROM MARINE HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE. Clearcutting would be acceptable on this Unit.		
8 Smith 7/25/92	VARIAABLE PLOTS; Fixed Plots Silviculturalist Review:	SB					
		YC					
		MH					
		Other					
		TOTAL					
		MBF/AC					
		Plant Assoc.	210				
		Site Index					
		Regen Method					
		Gross Growth					
		N. Goshawk	NONE OBSERVED				
		Wind Hazard (H/M/L/M)					
		Damage (Insect, disease, animal, etc.)	LEAVE SCRAPY				
LOGGING/TRANSPORTATION							
Landing:							
Profiles:							
WATERSHED/FISHERIES					Log away from V-notch drainages. Consider waterway removal. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats and riparian wetlands. No fisheries concern		
Field Review:							
VLS	7-7-92						
Field Review:							
DDJ	8/4/92						
SOILS/GEOLOGY					AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SUMPS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SUMPS, CUTS, AND THE SHOULDERS OF OVER-STEEPENED SLOPES, AVOID THE MULTIPLE DISSECTIONS, AND THE STEEP N FACING SLOPES IN THE N CORNER OF THE UNIT. USE PARTIAL LOG SUSPENSION. No concerns for marten, otter, brown bear, or deer.		
Field Review:							
DSW	7/25 92						
WILDLIFE/SUBSISTENCE					WOULD NOT MIST FOS. HIGHLY VISIBILE. RECOMMEND GROUP SELECTION OR SHELFWOOD CUT TO REDUCE CONTRAST IN FOREGROUND/MIDDLEGROUND		
Field Review:							
VLA	7/20/92						
VISUAL/RECREATION					Outside designated high-sensitivity area - no survey required		
Field Review:							
VLA	7/20/92						
ARCHAEOLOGICAL/CULTURAL							
Field Review:							
N/A							

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 25-B
VCU: 280
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 20-21

Legend

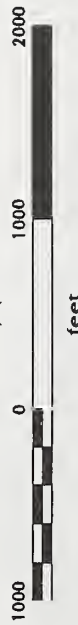
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- △ ○ Landing
- Shoreline and Lakes
- ▨ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 25 ACRES: 14

RESOURCE CONCERNS (INCLUDING MGT OBJECTIVES & MITIGATION)

RECOMMEND PARTIAL-CUT DUE TO VISIBILITY FROM MAKING HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE. Clearcutting would be acceptable on this Unit.

Tim Type	X44	TOT/AVG
Acres		
MBF/Species		
WH		
89		
YC		
MH		
Other		
TOTAL		
MBF/AC	210	
Prevalent Plant Assoc.		
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	None observed	
Wind Hazard (H.M.L.)	M	
Damage (Insect, disease, animal, etc.)	Ledge Stripping	

Log away from V-notch drainages. Consider helicopter removal. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats and riparian wetlands. No fisheries concern

AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE TOES OF SLUMPS, CUTS, AND THE SHOULDERS OF OVER-STEEPED SLOPES. AVOID THE MULTIPLE DISSECTIONS AND THE STEEP N FACING SLOPES IN THE W CORNER OF THE UNIT. USE PARALLEL LOG SUSPENSION. No concerns for marten, otter, brown bear, or deer.

LOGGING/TRANSPORTATION
Landing:
Profiles:
Field Review:
VCS 7-26-92
DOW 8/4/92

WATERSHED/FISHERIES
VCS 7-26-92
DOW 8/4/92

SOILS/GEOLOGY
Field Review:
DSW 7/25/92

WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/20/92

VISUAL/RECREATION
Perspective Photo:
Field Review: GCL/K 7-24-92

VDO:
VAC:
Visibility:
FOC:
Recreation Site:
Trail:

ARCHEOLOGICAL/CULTURAL
Field Review: N/A

WOOD NOT MEET FOR. HIGHLY VISIBLE.
RECOMMEND GROUP SELECTION OR SHELDONWOOD CUT TO REDUCE CONTRAST IN FOREGROUND/MIDDLE GROUND
Outside designated high-sensitivity area - no survey required

RECREATION
Low
FISHING
SALMON



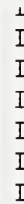
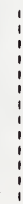






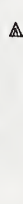
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 25-C
VCU: 280
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 20-21

Legend

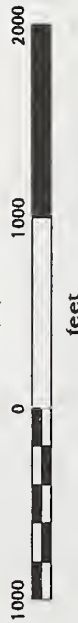
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND PARTIAL-CUT DUE TO VISIBILITY FROM MAKING HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WH/YC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE. Clearcutting would be acceptable on this Unit.

LOGGING/TRANSPORTATION

Tim Type	Acres	X44	TOTI/AVO
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Plant Assoc.		210	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk		NONE OBSERVED	
Wind Hazard (H.M.I.)		M	
Damage (Insect, disease, animal, etc.)		LEDAL SKRPHAW	

WATERSHED/FISHERIES

Landing: Profiles: Field Review: VLS 7-26-92 DSW 8/4/92

SOILS/GEOLOGY

Field Review: DSW 7/25/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Perspective Plots: Field Review: 6/14 7-24-92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

LOGGING/TRANSPORTATION: Log away from V-notch drainages, ~~and not~~ consider helicopter removal. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats and riparian wetlands. No fisheries concern

SOILS/GEOLOGY: AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLUMPS, CLIFFS, AND THE SHOULDERS OF OVER-STEEPED SLOPES. AVOID THE MULTIPLE DISSECTIONS AND THE STEEP N FACING SLOPES IN THE W CORNER OF THE UNIT. USE PARTIAL LOG SUSPENSION. No concerns for marten, otter, brown bear, or deer.

WILDLIFE/SUBSISTENCE: WOULD NOT MEET FOR. HIGHLY VISIBILE. RECOMMEND GROUP SELECTION OR SHELTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND/MIDPLEGROUND

VISUAL/RECREATION: Outside designated high-sensitivity area - no survey required






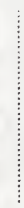



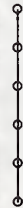
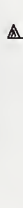
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 26
VCU: 279
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 21-22

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

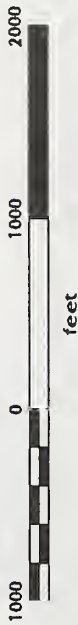
Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93

N

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING METHOD IS CLEAR-CUT. NATURAL REGENERATION OF WESTERN HEMLOCK SHOULD BE SUFFICIENT. PLANTING SITE FREE OF SITKA SARCE AND YELLOW CEDAR IS RECOMMENDED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAGS PER ACRE FOR AVERSITY. THE PREVALENT PLANT ASSOCIATIONS W-H-YC/88-KM WHICH IS MODERATELY PRODUCTIVE. THERE WERE PORTIONS OF THE UNIT WHICH WERE MC/80 WHICH IS NOT PRODUCTIVE AND SHOULD NOT BE LOGGED. SCOPS THROUGHOUT THE UNIT WERE MODERATE WITH NONE SEEN EXCEEDING 75%. MINOR CEDAR STRIPPING WAS NOTED THROUGHOUT THE UNIT.

UNIT BOUNDARY CHANGES: SUGGEST NOT CUTTING THE THIN STRIP WHICH CONNECTS THE MAIN AREAS. CEDAR BELLING HAS ADVANCED IN THIS AREA AND LESS PRODUCTIVE PLANT ASSOCIATIONS ARE PREVALENT.

WAS NOT LAYED OUT. CAN NOT BE REINFORCED WITH CONVENTIONAL SYSTEMS.

Tm Type	X44	X45	H44	TOTAL
Acres				
MBF/Species				
WH				
88				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	230	230	230	230
Ble Index				
Hagen Method				
Gross Growth				
N. Goshawk	NOPE	SCATTERED		
Wind Hazard (H.M.U.)	H			
Damage (flood, disease, animal, etc.)	CEDAR STRIPPING			

Log away from vertical grainings and ~~other~~ ^{other} areas. Consider helicopter removal. Prevent debris from entering drainage line if it can. Remove stumps/dispersing to mussels and riparian habitats. Monitor a minimum 100' buffer from any FLE streams at gully and central portions of unit from top of break in slope. Burrows should be wind firm.

No historic concern

No concerns for marten, otter, brown bear. protect bald eagle nesting habitat by establishing helicopter logging flight corridors > 1/4 mile from active nests, and by maintaining unharvested timber within 660 feet to protect eagle perching habitat. Logging most of unit will impact moderate & high quality deer winter range.

May be ~~impacted~~ ^{impacted} by ~~logging~~ ^{logging} from PERIL STRAIT & ALASKA MORMONE HIGHWAY ROUTE RECOMMEND GROUP SELECTION OR SHELTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND / MIDDLEGROUND

LOGGING/TRANSPORTATION

Landing:
Profiles:
Field Review:

WATERSHED/FISHERIES

DLS 7-25-92
Field Review:
DOW 8/4/92

SOILS/GEOLOGY

Field Review:
DSW 7/25 92

WILDLIFE/SUBSISTENCE

Field Review:
VLA 7/20/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 66/CF 7-29-92

VCO:
VAC:
Visibility:
FOC:
Recreation Site:
Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Outside Sensitive Area - No Survey Necessary

Field Review: N/A

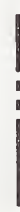

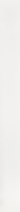
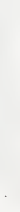


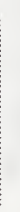




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 26
VCU: 279
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 21-22

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK		MANAGEMENT AREA:				VCU: 279	UNIT: 26	ACRES: 55							
RESOURCE (Name/Date)		Tim Type	X44	X45	H44	TOTAL	RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF WESTERN HEMLOCK SHOULD BE SUFFICIENT. PLANNEDLY SITE PREP OF SITKA SPRUCE AND YELLOW CEDAR IS RECOMMENDED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAGS PER ACRE FOR AVERSITY. THE PREVALENT PLANT ASSOCIATION WAS WH-YC/BS-RM WHICH IS MODERATELY PRODUCTIVE. THERE WERE PORTIONS OF THE UNIT WHICH WERE MC/50 WHICH IS NOT PRODUCTIVE AND SHOULD NOT BE LOGGED. SCORES THROUGHOUT THE UNIT WERE MODERATE WITH NONE SEEN EXCEEDING 75%. MINOR CEDAR STRIPPING WAS NOTED THROUGHOUT THE UNIT.								
TIMBERS/SILVICULTURE Stand Exam: T. PUSANK, S. ALLEN 7/13/92 Stand Exam Type: PLOTS Silvicultural Review: S. Smith 7/25/92		Acres						RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF WESTERN HEMLOCK SHOULD BE SUFFICIENT. PLANNEDLY SITE PREP OF SITKA SPRUCE AND YELLOW CEDAR IS RECOMMENDED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAGS PER ACRE FOR AVERSITY. THE PREVALENT PLANT ASSOCIATION WAS WH-YC/BS-RM WHICH IS MODERATELY PRODUCTIVE. THERE WERE PORTIONS OF THE UNIT WHICH WERE MC/50 WHICH IS NOT PRODUCTIVE AND SHOULD NOT BE LOGGED. SCORES THROUGHOUT THE UNIT WERE MODERATE WITH NONE SEEN EXCEEDING 75%. MINOR CEDAR STRIPPING WAS NOTED THROUGHOUT THE UNIT. UNIT BOUNDARY CHANGES: SUGGEST NOT CUTTING THE THIN STRIP WHICH CONNECTS THE MAIN AREAS. CEDAR DECLINE HAS ADVANCED IN THIS AREA AND LESS PRODUCTIVE PLANT ASSOCIATIONS ARE PREVALENT. WAS NOT LOGGED OUT (CAN NOT BE REFINED BY CONVENTIONAL SYSTEMS).							
LOGGING/TRANSPORTATION Landing: Profiles: WATERSHED/FISHERIES DLS 7-25-92 Field Review: DOW 8/14/92		MBF/Species					Log away from V-notch drainages and in ^{down} them. Consider helicopter removal project down from existing drainages and if it any, remove it. Minimize disturbance to muskrats and riparian wetlands. Monitor to a minimum 100' buffer from class III streams at gully and central portions of unit from top of break in slope. Buffer should be wide firm. No fisheries concern								
SOILS/GEOLOGY Field Review: DSW 7/25 92 WILDLIFE/SUBSISTENCE Field Review: VLA 7/20/92		Other							Avoid slopes over 70%. Avoid V-notches and slumps to windfirm stands. Avoid cutting above the heads and below the toes of the slumps, slides and shoulders of over-steepened slopes, possibly avoid the steep N end and the central east knob on the S portion of the unit. Use partial log suspension yarding No concerns for marten, otter, brown bear. Protect bald eagle nesting habitat by establishing helicopter logging flight corridors > 1/4 mile from active nests and by maintaining unharvested timber within 660 feet to protect for eagle perching habitat. Logging most of unit will impact moderate to high quality deer winter range. Any more in ^{from} the ^{PERKIL SITE} FROM PERKIL SITE; ALASKA CR SHELTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND / MIDDLEGROUND						
VISUAL/RECREATION Perspective Plots: Field Review: 66 / 44 7-29-92 ARCHEOLOGICAL/CULTURAL Field Review: N/A		Prevalent Plant Assoc.	230	230	230					Outside Sensitive Area - No Survey Necessary					
		Site Index													
		Regen Method													
		Gross Growth													
		N. Goshawk													
		Wind Hazard (H,M,L)													
		Damage (Insect, disease, animal, etc.)													



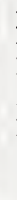
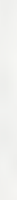
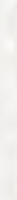






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 26
VCU: 279
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 21-22

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED WITING METHOD IS CLEARCUT. NATURAL REGENERATION OF WESTERN HEMLOCK SHOULD BE SUFFICIENT. PLANNING SITE PREP OF SITKA SPRUCE AND YELLOW CEDAR IS RECOMMENDED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SWAGS PER ACRE FOR AVERSITY. THE PREVALENT PLANT ASSOCIATIONS WERE YC/BB-RM WHICH IS MODERATELY PRODUCTIVE. THERE WERE PORTIONS OF THE UNIT WHICH WERE MC/BB WHICH IS NOT PRODUCTIVE AND SHOULD NOT BE LOGGED. SCOPES THROUGHOUT THE UNIT WERE MODERATE WITH MORE SEEN EXCEEDING 75%. MINOR CEDAR STRIPPING WAS NOTED THROUGHOUT THE UNIT.

UNIT BOUNDARY CHANGES: SUGGEST NOT CUTTING THE THIN STRIP WHICH CONNECTS THE MAIN AREAS. CEDAR DECLINE HAS ADVANCED IN THIS AREA AND LESS PRODUCTIVE PLANT ASSOCIATIONS ARE PREVALENT.

WAS NOT LAYED OUT. CAN NOT BE REACHED UNTIL CONVENTIONAL SYSTEMS.

Log away from V-notch drainages and ^{from} ^{them}. Consider helicopter removal. Prevent debris from entering drainages. Use if it does, please it minimize disturbance to muskrats and riparian wetlands. Monitor a minimum 100' buffer from class III streams at source and central portions of unit from top of break in slope. Features should be wind firm.

No historic concern

Tim Type	X 44	X 45	H 44	TOTAL
Acres				
MBF/Species				
WH				
BB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Plant Assoc.	230	230	230	230
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	NOPE	SCOTTED		
Wind Hazard (H.M.I.)	H			
Damage (insect, disease, animal, etc.)				CEDAR STEAMING

LOGGING/TRANSPORTATION

Landing:
Profiles:

WATERSHED/FISHERIES

DLV 7-20-92
Field Review: DOW 8/14/92

SOILS/GEOLOGY

Field Review: DSW 7/25 92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Perspective Photo:
Field Review: 66/67 7-29-92

ARCHEOLOGICAL/CULTURAL

Field Review: N/A

RECOMMENDED WITING METHOD IS CLEARCUT. NATURAL REGENERATION OF WESTERN HEMLOCK SHOULD BE SUFFICIENT. PLANNING SITE PREP OF SITKA SPRUCE AND YELLOW CEDAR IS RECOMMENDED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SWAGS PER ACRE FOR AVERSITY. THE PREVALENT PLANT ASSOCIATIONS WERE YC/BB-RM WHICH IS MODERATELY PRODUCTIVE. THERE WERE PORTIONS OF THE UNIT WHICH WERE MC/BB WHICH IS NOT PRODUCTIVE AND SHOULD NOT BE LOGGED. SCOPES THROUGHOUT THE UNIT WERE MODERATE WITH MORE SEEN EXCEEDING 75%. MINOR CEDAR STRIPPING WAS NOTED THROUGHOUT THE UNIT.

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No historic concern

Avoid slopes over 75%. Avoid cutting above the heads and below the toes of the slumps, slides, and shoulders of over-steepened slopes, possibly avoid the steep N end and the central east knob on the S portion of the unit. Use partial log suspension yarding

No concerns for marten, otter, brown bear.

Protect bald eagle nesting habitat by establishing helicopter logging flight corridors > 1/4 mile from active nests, and by maintaining unharvested timber within 660 feet to protect eagle perching habitat.

Logging most of unit will impact moderate to high quality deer winter range.

Any possible impacts from PERIL STRIP? ALASKA

MONITOR HIGHWAY ROUTE RECOMMEND GROUP SELECTION

CR SHELTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND / MIDDLEGROUND

Outside Sensitive Area - No Survey Necessary



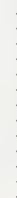
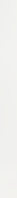
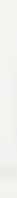



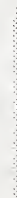


Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 26-A
VCU: 280
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 21-22

Legend

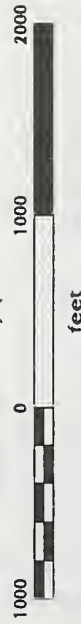
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF WESTERN HEMLOCK SHOULD BE SUFFICIENT. PLANTING SITE AREA OF SITKA SPRUCE AND YELLOW CEDAR IS RECOMMENDED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAGS PER ACRE FOR AVERSITY. THE PREVALENT PLANT ASSOCIATIONS W/4-12/88-AM WHICH IS MODERATELY PRODUCTIVE. THERE WERE PORTIONS OF THE UNIT WHICH WERE M/C/80 WHICH IS NOT PRODUCTIVE AND SHOULD NOT BE LOGGED. SLOPES THROUGHOUT THE UNIT WERE MODERATE WITH NONE SEEN EXCEEDING 75%. MINOR CEDAR STRIPPING WAS NOTED THROUGHOUT THE UNIT.
 UNIT BOUNDARY CHANGES: SUGGEST NOT CUTTING THE THIN STRIP WHICH CONNECTS THE MAIN AREAS. CEDAR DECLINE HAS ADVANCED IN THIS AREA AND LESS PRODUCTIVE PLANT ASSOCIATIONS ARE PREVALENT.
 WAS NOT LAYED OUT. CANNOT BE RECLAIMED WITH CONVENTIONAL SYSTEMS.
 Log away from V-notch drainages and stream. Consider heliport to disperse. Prevent debris from entering drainages and if it does remove it manually. Maintain a minimum 100' buffer from any stream. Avoid stream at south and central portions of unit from top of break in slope. Buffer stream 1/2 mile from stream.
 No fisherries concern.

Tim Type	X 44	X 45	H 44	TOIANG
Acres				
MBF/Species				
WH				
88				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent				
Plant Assoc.	230	230	230	230
BRE Index				
Prep Method				
Gross Growth				
N. Goshawk	NONE	SCATTERED		
Wind Hazard (H,M,L)	H			
Damage (Insect, disease, animal, etc.)				CEDAR STRIPPING

LOGGING/TRANSPORTATION
 Lending:
 Profiles:
 Field Review:
WATERSHED/FISHERIES
 DLS 7-20-92
 Field Review:
 DON 8/4/92
SOILS/GEOLOGY
 Field Review:
 DSW 7/25 92
WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/20/92
VISUAL/RECREATION
 VOO:
 VAC:
 Visibility:
 ROC:
 Recreation Site:
 Trail:
 Perspective Plots:
 Field Review: 66/67 7-29-92
ARCHEOLOGICAL/CULTURAL
 Field Review: N/A

Stand Exam: T. PUSINK, S. ALLEN 7/13/92
 Stand Exam Type: PLOTS
 Silviculturalist Review: S. Smith 7/25/92
 Avoid slopes over 70%. Avoid V-notches and slumps to windfall stands. Avoid cutting above the heads and below the toes of the slumps, slides, and shoulders of over-steepened slopes, possibly avoid the steep N end and the central east knob on the S portion of the unit. Use partial log suspension yarding for marten, other, brown bear.
 Protect bald eagle nesting habitat by establishing helicopter logging flight corridors 1/4 mile from active nests and by maintaining unharvested timber within 660 feet to protect eagle perching habitat.
 Logging most of unit will impact moderate to high quality deer winter range.
 May meet for. Logging to be done from PERIL STRAIT & ALDERA
 MORMON HIGHWAY ROUTE RECOMMENDED GROUP SELECTION
 CR SHELTERWOOD CUT TO REDUCE CONTRAST IN FOREGROUND / MIDDLE-GROUND
 Outside Sensitive Area - No Survey Necessary











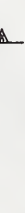
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 27
 VCU: 279
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 12

Legend

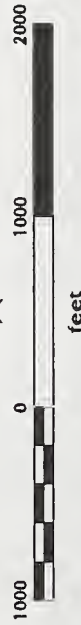
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested cutting method is clear-cut. Natural regeneration of hemlock is sufficient, however to maintain current species composition of yellow cedar planting is necessary. Also, if spruce stands are cut, planting is recommended (in flats along creek). A thinning at 15-20 years is recommended. Maintain 2 snags/acre for diversity if possible. Predominant plant association is WH-YC/BB, a moderately productive site. MC/BB/SC is found as well, generally by meadows, and is considered an unproductive site - generally not logged.

Tim Type	X44	TOTIAYO
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL MBF/AC	210	
Prevalent Plant Assoc.		
SRE Index		
Regen Method		
Gross Growth		
N. Goshawk	None seen	
Wind Hazard (H,M,L)	M	
Damage (Insect, disease, animal, etc.)		

Complex gullyline anchors required - see field notes. Suited to 1-1/2" to 1"er. Unit boundaries changed to meet operational needs, as marked overleaf. String extensions beyond unit boundaries. Sidelocks between Seed FallHolds.

Class I stream northern area of unit. Maintain 100 ft buffer two class III streams (east & west boundary) maintain 50 ft buffer minimize disturbance musky. ~~Opt. If waterfalls present debris from entering log away from waterfall drainage and if it does remove it. Consider full log suspension. Minimize disturbance to musky and riparian wetlands. Buffer on Class I/III streams should be wood firm.~~

PROTECT V-NOTCHES AND SLIDE AREAS TO WINDFIRM HEADS AND BELOW THE TOES OF FAILURES. THE UNIT SHOULD BE SPLIT IN TWO HALVES TO AVOID THE DISSECTIONS ON THE E & ON ABOVE THE VALLEY BOTTOM.

AVOID SLOPES OVER 70%. AVOID STANDS. AVOID CUTTING ABOVE THE SHOULD BE SPLIT IN TWO HALVES TO AVOID THE DISSECTIONS ON THE E & ON ABOVE THE VALLEY BOTTOM.

WOULD NOT MEET FOS. MAY BE USABLE FROM POISON COVE IN MIDDLEGROUND DISTANCE ZONE.

Outside designated high-sensitivity area - no survey required

USHK MANAGEMENT AREA:

RESOURCE (Name/Date)

TIMBER/SILVICULTURE
Stand Exam: 7/19/92
T. Pusina & S. Allen
Stand Exam Type: plots
Silviculturalist Review: & Smyth
7/25/92

LOGGING/TRANSPORTATION
Landing: 27-1, 27-2
Profile: 27-2-380
Field Review: *JK* 2.10.92

WATERSHED/FISHERIES
6/26/92 *JK*
Field Review: 7-17-92 PLS

SOILS/GEOLOGY
Field Review: PLS & OSW 7/17-92
WILDLIFE/SUBSISTENCE
Field Review: 7/30/92 VLA
VISUAL/RECREATION
Perspective Photo:
Field Review: 6/18/92 7:05-92
ARCHAEOLOGICAL/CULTURAL
Field Review: N/A



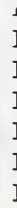
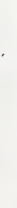

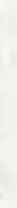
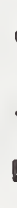
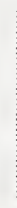


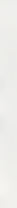
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 28
 VCU: 280
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 109-110

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. PREDOMINANTLY A WY/C/BG PLANT ASSOC. ALSO MC/LB AND MC/BB/SC ARE FREQUENT. SITE PRODUCTIVITY IS MODERATE. HELICOPTER LOGGING MAY BE NECESSARY DUE TO MANY SHALLOW, BOGGY RAVINES.

Tim Type	A44	TOT/AVG
Acres	39	
MBF/Species		
WH		
88		
YC		
MH		
Other		
TOTAL	210	
Prevalent Plant Assoc.		
Site Index		
Repen Method		
Gross Growth		
N. Goshawk	NONE	OBSERVED
Wind Hazard (H,M,L)	L	
Damage (Insect, disease, animal, etc.)	SOME FLUTING & DEAD TOPS	

Skidline portion has anchors for 1-1/2" tower only. Helicopter portion where no lift exists for skyline, to 24-1. Directionally fall away from V-notches. Split yarding away from V-notches generally not feasible. Skid retention is satisfactory.

Class 1/1" along western boundary, Class 11/11 in eastern area of unit. Maintain 100 ft. buffer for class 11/11 streams; 50 ft. buffer or up to slope break on all streams. Split yarding recommended for all V-notches. ~~After Log away from V-notch channels and consider fall on partial suspensions. Keep at bay from entering channels and if it does get in, remove it.~~

FIRM ON

AVOID SLOPES OVER 60% DUE TO FREQUENT DISSECTIONS AND FAILURES. AVOID AND PROTECT V-NOTCHES, SLUMPS, AND CUTS TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF UNSTABLE GROUND. AVOID CUTTING ABOVE THE SHOULDERS OF THE RAVINES ON THE E & W BOUNDARIES. USE PARTIAL LOG SUSPENSION YARDING AT THE LEAST ON THE HILLSIDE.

No concerns for brown bears, marten, river otter, or deer.

WOULD NOT MEET FOS. MAY BE VISIBLE FROM AIRCRAFT IN MIDDLEGROUND DISTANCE ZONES.

Outside Sensitive Area - No Survey Necessary

RESOURCE (Name/Date)	MANAGEMENT AREA	LUD	VCU	UNIT	ACRES
TIMBER/SILVICULTURE					
Stand Exam: M. COX 7/1/92 K. SEITZ M. WHITE Stand Exam Type: VARIABLE PLOT; Fixed Plots Silviculturalist Review: A. Smith 7/25/92					
LOGGING/TRANSPORTATION					
Landing: 28-1, 24-1 Profile: 25-1-3 Field Review: 7/17/92 WATERSHED/FISHERIES 7/4/92 AWT Field Review: JMB/MSW 7/6/92					
SOILS/GEOLOGY					
Field Review: DLS & DSU 7/17-92					
WILDLIFE/SUBSISTENCE					
Field Review: VLA 8/20/92					
VISUAL/RECREATION					
VAC: Painted Ref. MODIFICATION LOW/N/E/P. MS FAM. 1					
Perspective Plots: Recreation Site:					
Field Review: 6/1/92 7-21-92					
ARCHAEOLOGICAL/CULTURAL					
Field Review: N/A					



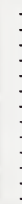
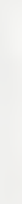

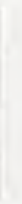




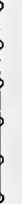
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 29
VCU: 280
Alternative(s): B

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 109-110

Legend

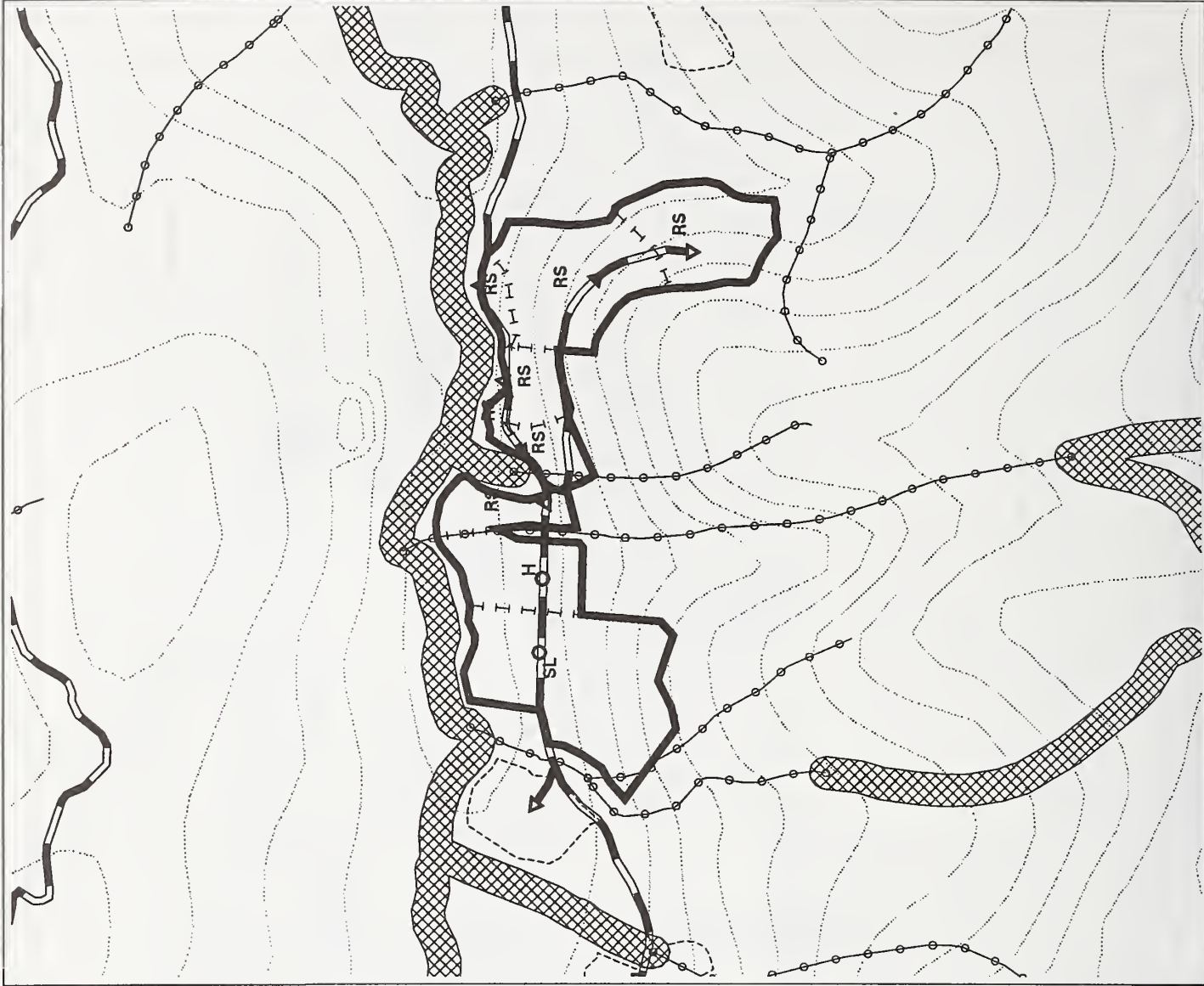
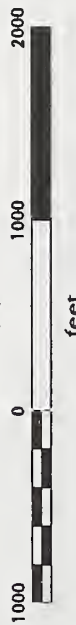
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	H44	Y45	TOT/AVG
Acres	35	45	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AG			
Prevalent	110		
Plant Assoc.	Mh 210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None observed		
Wind Hazard (H,M,L) M			
Damage (Insect, disease, animal, etc)			

Recommend a clear-cut system. Natural regeneration of Hemlock should prove adequate. YC may need to be planted to maintain species composition. Prevalent plant Assoc is WH-YC/BB on upper slopes and WH/BB on lower slopes. Stand productivity is moderate. A PCT may be necessary at 15-20 yrs to enhance growth.

Snag retention is safety issue. Upper part of unit omitted due to lack of deflection. Split yarding at biggest canopy in center.

Log away from V-notch channels, consider fall on partial suspension. V-notch is out of channels, and if it does get in, remove it. Class is stream along northern boundary. Class in along East & West. Maintain 100 ft buffer on class.

& PROTECT V-NOTCHES, SLIDES, AND CUTS TO ABOVE THE HEADS OR BELOW THE TOES OF FAILURES. OF THE RAVINES ON THE E & W BOUNDARIES OF THE YARDING ON THE HILLSIDE.

Harvesting north half of unit would result in loss of high quality habitat for brown bear, marten, other. No concern for deer.

WOULD NOT MEET POS. MAY BE VISIBLE FROM AIRPORT IN MIDDLEGROUND DISTANCE ZONES

Outside high-sensitivity area - no survey required

LOGGING/TRANSPORTATION

Landing: 29-1, 29-2
 Profiles: 29-1-208
 Field Review: 9/26/92

WATERSHED/FISHERIES

DWS/DSW 7/6/92
 Field Review: 7/4/92

SOILS/GEOLOGY

Field Review: PLS & DSW 7/17/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Perspective Plots: 66/14 7-29-92
 Field Review: 66/14 7-29-92

ARCHAEOLOGICAL/CULTURAL

Field Review: 11/7

AVOID SLOPES OVER 70%, AVOID WIND FIRM STANDS. AVOID CUTTING AROUND SHOULDERS OF THE SHOULDER OF THE UNIT. USE PARTIAL LOG SUSPENSION.

VCO: MODIFIC. / P.P.
 VAC: INC.
 Visibility: MG
 ROC: P.P.M. /
 Recreation Site:
 Trail:

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 29
VCU: 280
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 109-110

Legend

- VCU Boundary
- ==== Harvest Unit Boundary
- - - - Setting Boundary
- - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend a clear-cut system. Natural regeneration of Hemlock should prove adequate. VC may need to be planted to maintain species composition. .Prevalent plant Assoc is WH-YC/BB on upper slopes and WH/BB on lower slopes. Stand productivity is moderate. A PCI may be necessary at 25-20 yrs to enhance growth.

Snag retention is safety issue. Upper part of unit omitted due to lack of deflection. Split yarding at biggest conifer in center.

Log away from V-notches, slides, and chutes to avoid slopes over 70%. Avoid cutting wind firm stands. Avoid cutting above the heads or below the toes of failures. Avoid disturbing the shoulders of the ravines on the E & W boundaries of the unit. Use partial log suspense on yarding on the hillside. Harvesting north half of unit would result in loss of high quality habitat for brown bear, marten, other. No concern for deer.

WOULD NOT MEET FOS. MAY BE VISIBLE FROM AIRCRAFT IN MIDDLEGROUND DISTANCE ZONES

Outside high-sensitivity area - no survey required

Tim Type	H44	V45	TOT/AVO
Acres	35	45	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent	110		
Plant Assoc.	WH 210		
Site Index			
Repeat Method			
Gross Growth			
N. Goshawk	none observed		
Wind Hazard (H,M,L) M			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 29-1, 29-2
Profile: 29-1-208
Field Review: 7/17/92
WATERSHED/FISHERIES
DWS/DW 7/6/92
Field Review: 7/4/92

SOILS/GEOLOGY

Field Review: PLS & DSW 7/17/92
WILDLIFE/SUBSISTENCE
Field Review: VLA 7/20/92

TIMBER/SILVICULTURE
Stand Exam: 7/7/92
MWH/K. Seitz / m. Cox
Stand Exam Type: Variable plot; Fixed Plots
Silvicultural Review: A. Smith 7/20/92

LOGGING/TRANSPORTATION

VISUAL/RECREATION
VQA:
VAC:
Visibility:
ROC:
Recreation Site:
Trail:

PARAPERSPECTIVE PLOTS:
Field Review: 6/18 7-22-92

ARCHAEOLOGICAL/CULTURAL
Field Review: 1/7

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 29
VCU: 280
Alternative(s): F

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 109-110

Legend

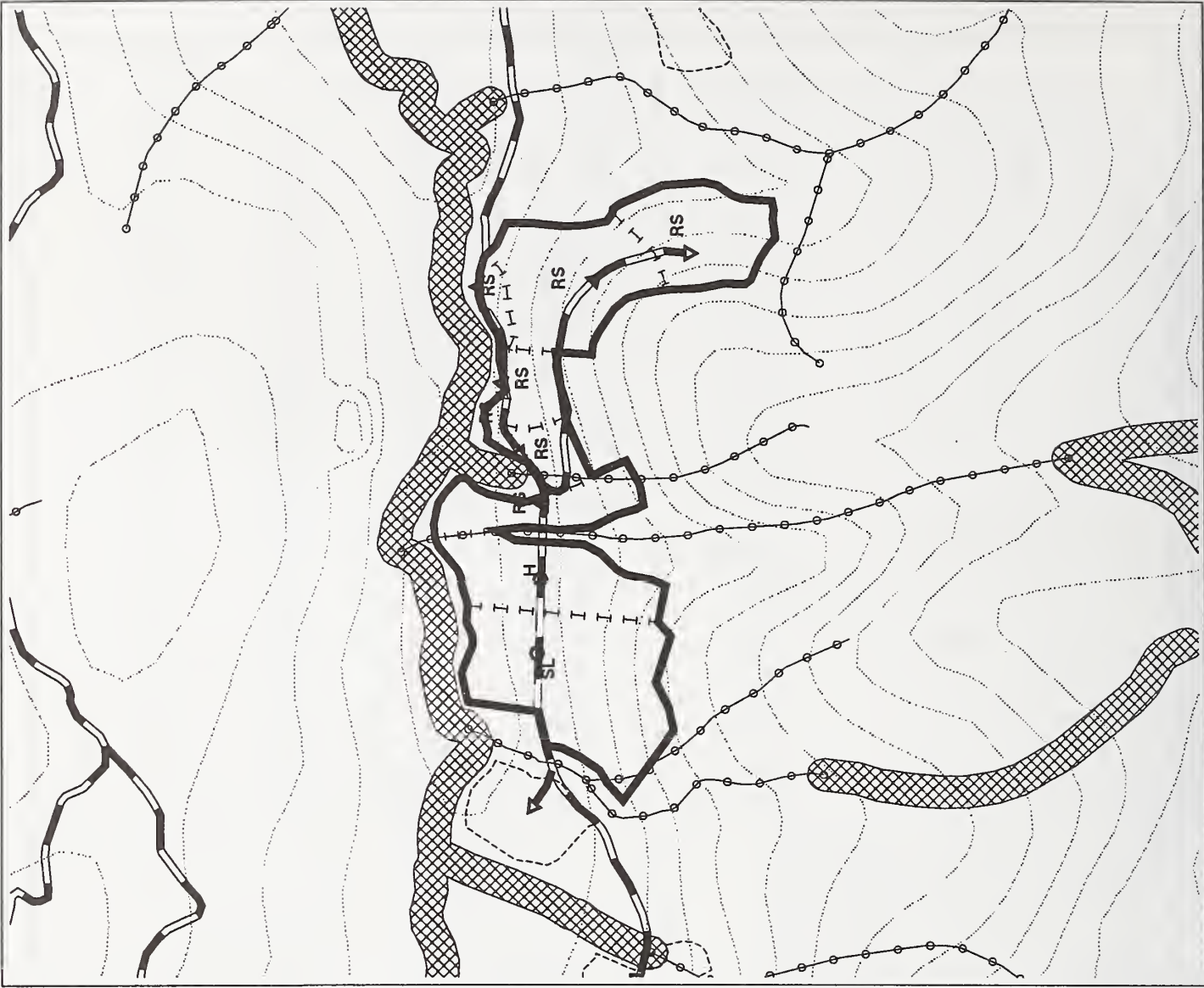
- VCU Boundary
- Harvest Unit Boundary
- Setting Boundary
- Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- Landing
- Shoreline and Lakes
- Class I and II Stream Buffers
- Class III Stream
- Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	H44	X45	TOTAL
Acres	35	45	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/Ag			
Prevalent	110		
Plant Assoc.	MH, ZLO		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None Observed		
Wind Hazard (H, M, L) M			
Damage (Insect, disease, animal, etc.)			

Recommend a clearcut system. Natural regeneration of Hemlock should prove adequate. VC may need to be planted to maintain species composition. Prevalent Plant Assoc is WH-YC/BB on upper slopes and WH/BB on lower slopes. Stand productivity is moderate. A PCI may be necessary at 25-20 yrs to enhance growth.

Snag retention or safety issues. Upper part of unit outlined due to lack of deflection. Split yarding at biggest canopy in center.

Log away from Under-leaves, consider fall on partial suspension. Log piles are outside of leaves and F East & West. Maintain 100ft buffer on class 1.

& PROTECT V-NOTCHES, SLIDES, AND CUTS TO ABOVE THE HEADS OR BELOW THE TOES OF FALLS. OF THE RAVINES ON THE E & W BOUNDARIES OF THE UNIT. USE PARTIAL LOG SUSPENSION YARDING ON THE HILLSIDE.

Harvesting north half of unit would result in loss of high quality habitat for brown bear, marten, other. No concern for deer.

WOULD NOT MEET POS. MAY BE VISIBLE FROM AIRPORT IN MIDDLEGROUND DISTANCE ZONES

Outside high-sensitivity area - no survey required

LOGGING/TRANSPORTATION

Landing: 29-1, 29-2
Profile: 29-1-205B

WATERSHED/FISHERIES

Field Review: 7/17/92
DWS/BW 7/6/92

SOILS/GEOLOGY

Field Review: PLS & DSW 7/17/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

VAC: MODIFIC. / P.P.
VAC: INF.
Viability: MGT
ROC: PHIM. 1
Recreation Site:
Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: 11/7

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 29-A
VCU: 280
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 109-110

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

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Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Resource	Concerns (Including Mgt. Objectives & Mitigation)
Timber/Silviculture	<p>Stand Exam: 7/7/92 M. White / K. Swift / M. Cox</p> <p>Stand Exam Type: Variable plot; Fixed Plots</p> <p>Silvicultural Review: D. Smith 7/30/92</p>
Logging/Transportation	<p>Landing: 29-1, 29-2 Profile: 29-1-208</p> <p>Field Review: 8/21/92</p> <p>Watershed/Fisheries</p> <p>DWS/DSW 7/6/92</p> <p>Field Review: 7/4/92 CLK</p>
Soils/Geology	<p>Field Review: PLS & DSW 7/17/92</p>
Wildlife/Subsistence	<p>Field Review: VLA 7/20/92</p>
Visual/Recreation	<p>Perspective Plots: Field Review: 6/14 7-20-92</p>
Archaeological/Cultural	<p>Field Review: 1/17</p>

Tim Type	H44	V45	TOT/AVG
Acres	35	45	
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent	110		
Plant Assoc.	MH, Z10		
Reopen Method			
Gross Growth			
N. Goshawk	none observed		
Wind Hazard (H, M, L) M			
Damage (Insect, disease, animal, etc.)			

Recommend a clear-cut system. Natural regeneration of Hemlock should prove adequate. VC may need to be planted to maintain species composition. Plant Assoc is WH-YC/BB on upper slopes and WH/BB on lower slopes. Stand productivity is moderate. A PCT may be necessary at 15-20 yrs to enhance growth.

Sing retention or safety issues. Upper part of unit omitted due to lack of defensible split yarding at biggest conifer in center.

Log away from V-notches, slides, and ditches to protect V-notches, slides, and ditches to above the heads or below the toes of failures. Avoid slopes over 70%, avoid wind firm stands. Avoid cutting avoid disturbing the shoulders of unit. Use partial log suspens

Harvesting north half of unit would result in loss of high quality habitat for brown bear, marten, other. No concern for deer.

Would not meet FOS. May be visible from aircraft in middle ground distance zones

Outside high-sensitivity area - no survey required

VAO:	MODIFIC. / P.P.
VAC:	INF.
Viability:	MG
ROC:	PRIM. 1
Recreation Site:	
Trail:	




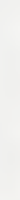







Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 30
VCU: 279
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 13-14

Legend

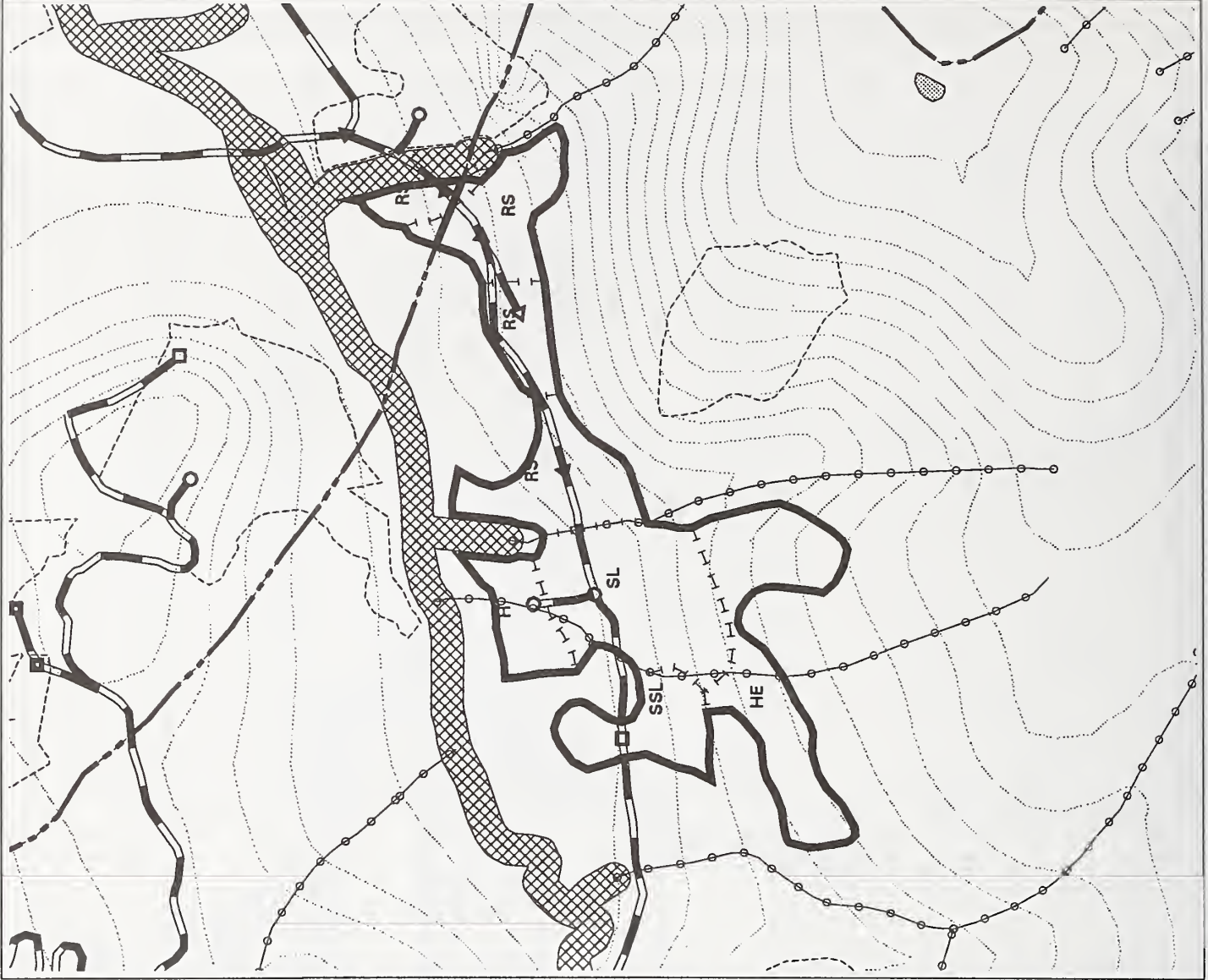
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: UNIT: 30 ACRES: 87

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend Clear-cut System. Natural Regeneration of Hemlock Should be adequate. Planting of Yellow Cedar may be necessary to maintain species composition. A precommercial thinning at 15 to 20 yrs age to enhance growth may be necessary. Predominately a VH/VL/BB Plant Association, Site is moderately productive.

snag retention is a safety issue. Directionally fall away from class I & II buffers. Class III buffer is not practical.

Two class VII streams, North East, one class VIII in east. Also note sloughs in north (Class I). Maintain 100 ft buffer on class VIII streams. Sloughs, ~~and away from V notches. Keep debris out of V notches & channels. Recommended not logging in slough areas. Riparian integrity in class I stream; sloughs & stream edge from V-notch MS & remove debris if it gets in.~~

PROTECT V-NOTCHES, SLIDES, AND CUTS TO WINDFIRM ACROSS THE SERIES OF DEEP DISSECTIONS NEAR THE SE INSIDE CORNER OF THE UNIT. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF FAILURES. USE PARTIAL LOG SUSPENSION YARDING ON THE HILLSIDE.

Harvesting No portion of unit would result in loss of high quality habitat for brown bear, river otter, and moderate quality habitat for deer.

WOULD NOT MEET POS - MAY BE VISIBLE FROM POISON COVE. (OTHER PORTION)

Outside high-sensitivity Area - no cultural resources survey required

Tim Type	4-4-4	5-4-6	TOT/AVG
Acres	83	5	
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/AG			
Prevalent Plant Assoc.	ZID		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None	Observed	
Wind Hazard (H, M, L, M)			
Damage (insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 30-12345
Profile: 30-2-250
Field Review: 7/1/92

WATERSHED/FISHERIES

7/1/92 est
Field Review: DMB 7/6/92

SOILS/GEOLOGY

Field Review: DSW 7/24 92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Perspective Plots: POTENTIAL / PP LOW / SM. INTERM. SECTION
Viability: MIDDLE FOUND
ROC: PRIMITIVE I
Recreation Site: PR
Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A












Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 30-A
VCU: 279
Alternative(s): B C D E F

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 13-14

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT:	USHK	MANAGEMENT AREA:	LUD:	VCU:	UNIT:	ACRES:
RESOURCE (Name/Date) TIMBER/SILVICULTURE Stand Exam: K. Seitz, M. White 7/10/92 Stand Exam Type: Plots silviculturalist Review: J. Smith 7/25/92	Tim Type Acres MBF/Species WH BS YC MH Other TOTAL MBF/AC Prevalent Plant Assoc. Site Index Regen Method Gross Growth N. Goshawk Wind Hazard (H,M,L) M Damage (Insect, disease, animal, etc.)	4-4-4 83 5-4-6 5	RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION) Recommend Clear-cut System. Natural Regeneration of Hemlock should be adequate. Planting of Yellow Cedar may be necessary to maintain species composition. A precommercial thinning at 15 to 20 yrs age to enhance growth may be necessary. Predominately a WH/VC/BB Plant Association, Site is moderately productive.	UNIT: 30 A ACRES: 22	Recommend Clear-cut System. Natural Regeneration of Hemlock should be adequate. Planting of Yellow Cedar may be necessary to maintain species composition. A precommercial thinning at 15 to 20 yrs age to enhance growth may be necessary. Predominately a WH/VC/BB Plant Association, Site is moderately productive.	Recommend Clear-cut System. Natural Regeneration of Hemlock should be adequate. Planting of Yellow Cedar may be necessary to maintain species composition. A precommercial thinning at 15 to 20 yrs age to enhance growth may be necessary. Predominately a WH/VC/BB Plant Association, Site is moderately productive.
LOGGING/TRANSPORTATION Landing: 30-1, 2, 3, 4, 5 Profiles: 30-2, 250 Field Review: SEER 7/1/92 WATERSHED/FISHERIES 7/4/92 etak Field Review: DMB 7/6/92	Avoid slopes over 65%. Avoid # STANDS. AVOID CUTTING AND YARDING SE INSIDE CORNER OF THE UNIT, AND CUTTING ABOVE THE HEADS AND SUSPENSION YARDING ON THE HILLSIDE.	PROTECT V-NOTCHES, SLIDES, AND CUTS TO WINDFIRM	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Two class I/II streams, north east, one class III in east. Also note slough sets in north (Class I), maintain 100 ft buffer on class I & II streams. Sloughs, and yard away from V-notches. Keep debris out of V-notches channels. Recommend not logging in slough area. Maintain riparian integrity in class I stream & slough. Log away from V-notches & narrow debris drifts etc.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.
SOILS/GEOLOGY Field Review: OSW 7/24 92 WILDLIFE/SUBSISTENCE Field Review: VLA 7/20/92	AVOID SLOPES OVER 65%. AVOID # STANDS. AVOID CUTTING AND YARDING SE INSIDE CORNER OF THE UNIT, AND CUTTING ABOVE THE HEADS AND SUSPENSION YARDING ON THE HILLSIDE.	PROTECT V-NOTCHES, SLIDES, AND CUTS TO WINDFIRM	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Two class I/II streams, north east, one class III in east. Also note slough sets in north (Class I), maintain 100 ft buffer on class I & II streams. Sloughs, and yard away from V-notches. Keep debris out of V-notches channels. Recommend not logging in slough area. Maintain riparian integrity in class I stream & slough. Log away from V-notches & narrow debris drifts etc.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.
VISUAL/RECREATION Perspective Plots: Field Review: etak 7/20/92	VAC: PENTATION / PP LOW / SM. INTERM. SECTION MIDDLE GROUND TIMMATIVE I \$*	VAC: PENTATION / PP LOW / SM. INTERM. SECTION MIDDLE GROUND TIMMATIVE I \$*	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Two class I/II streams, north east, one class III in east. Also note slough sets in north (Class I), maintain 100 ft buffer on class I & II streams. Sloughs, and yard away from V-notches. Keep debris out of V-notches channels. Recommend not logging in slough area. Maintain riparian integrity in class I stream & slough. Log away from V-notches & narrow debris drifts etc.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.
ARCHAEOLOGICAL/CULTURAL Field Review: N/A	OUTSIDE HIGH-SENSITIVITY AREA - NO CULTURAL RESOURCES SURVEY REQUIRED	OUTSIDE HIGH-SENSITIVITY AREA - NO CULTURAL RESOURCES SURVEY REQUIRED	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Two class I/II streams, north east, one class III in east. Also note slough sets in north (Class I), maintain 100 ft buffer on class I & II streams. Sloughs, and yard away from V-notches. Keep debris out of V-notches channels. Recommend not logging in slough area. Maintain riparian integrity in class I stream & slough. Log away from V-notches & narrow debris drifts etc.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.	Slough retention is a safety issue. Directionally fall away from Class I & II buffers. Class III buffer is not practical.

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 30-A
 VCU: 279
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 13-14

Legend

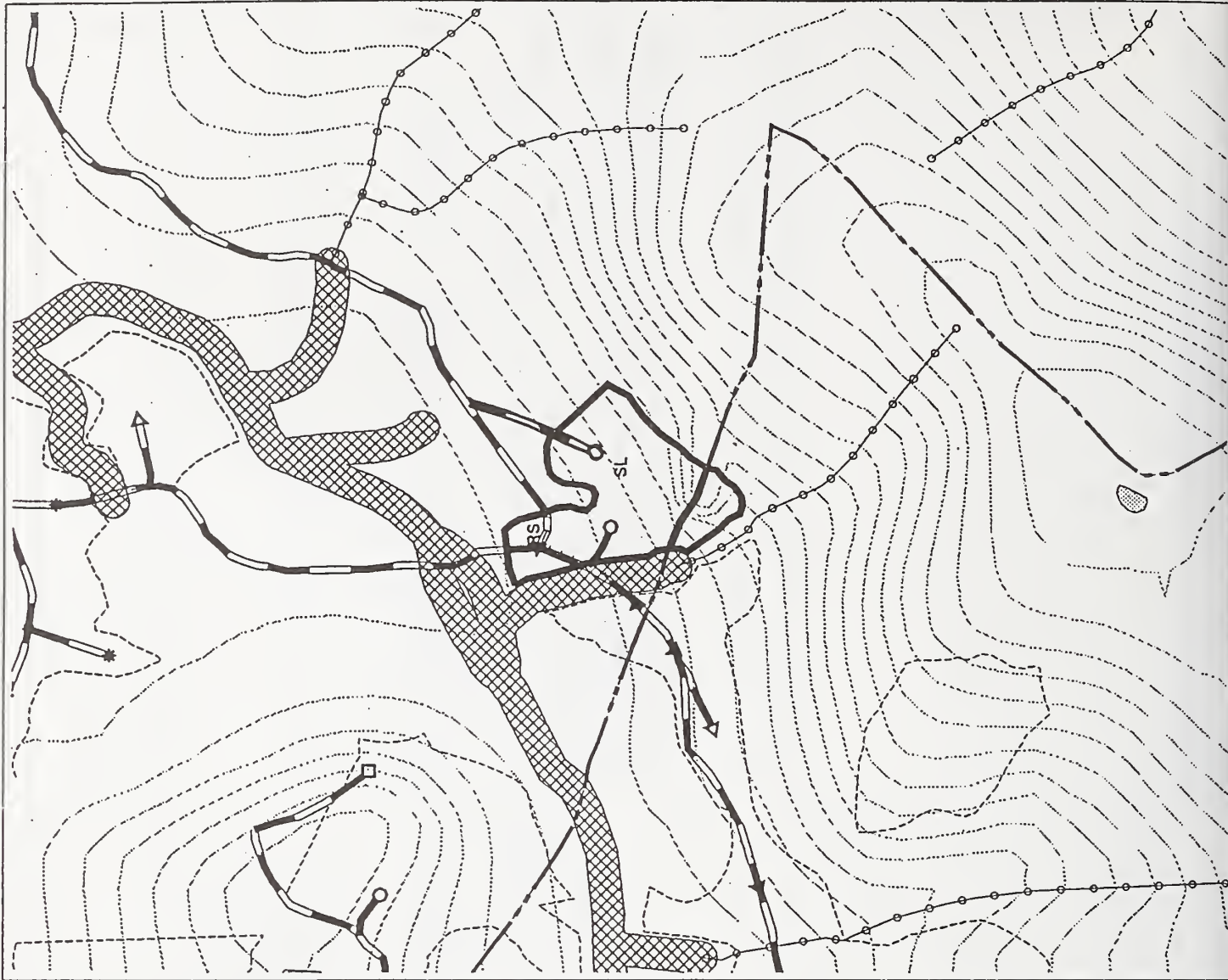
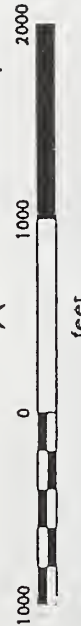
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE (Name/Date)	Tim Type	X-4-4	S-4-6	TOT/AVG
TIMBER/SILVICULTURE	Acres	83	5	
	MBF/Species			
	WH			
	BB			
	YC			
	MH			
	Other			
	TOTAL			
	TBF/AC			
	Prevent			
	Plant Assoc.	210		
	Site Index			
	Repen Method			
	Gross Growth			
	N. Goshawk	None	Observed	
	Wind Hazard (H,M,L)	M		
	Damage (Insect, disease, animal, etc)			

LOGGING/TRANSPORTATION	
Landing: 30-1,2,3,4,5	
Profiles: 30-2-250	
Field Review: Sept 7/1/92	
WATERSHED/FISHERIES	
7/1/92 212k	
Field Review:	
DMS 7/6/92	
SOILS/GEOLOGY	
Field Review:	
DSW 7/24 92	
WILDLIFE/SUBSISTENCE	
Field Review:	
VLA 7/20/92	
VISUAL/RECREATION	
VQO:	RETENTION / PP
VAC:	LOW / SW. INTERM. SEASON
Visibility:	MIDDLE FOUND
ROC:	MINIMIVE I
Recreation Site:	BT
Trail:	
Field Review: 6/18 7/24/92	
ARCHAEOLOGICAL/CULTURAL	
Field Review: N/A	

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend Clear-cut System. Natural Regeneration of Hemlock should be adequate. Planting of Yellow Cedar may be necessary to maintain species composition. A precommercial thinning at 15 to 20 yrs age to enhance growth may be necessary.

Predominately a WH/VC/BB Plant Association, Site is moderately productive.

snag retention is a safety issue. Directionally fall away from class I & II buffers. Class III buffer is not practical.

Two class I & II streams, north east, one class III in east. Also note slough area in north (class I). Maintain 100 ft buffer on class I & II streams, sloughs, ~~and away from V notches.~~ Keep debris out of V notches. Streams recommended not logging in slough area. Riparian integrity in class I streams & sloughs. Logging away from V-notches & remove debris if it gets in.

AVOID SLOPES OVER 65%. AVOID & PROTECT V-NOTCHES, SLIDES, AND CHUTES TO WINDFIRM STANDS. AVOID CUTTING AND JACKING ACROSS THE SERIES OF DEEP DISSECTIONS NEAR THE SE INSIDE CORNER OF THE UNIT, AND ACROSS THE SW CORNER OF THE UNIT. AVOID CUTTING ABOVE THE HONDS AND BELOW THE TOES OF FAILURES. USE PARTIAL LOG SUSPENSION YARDING ON THE HILLSIDE.

Harvesting Nonportion of unit would result in loss of high quality habitat for brown bear, river otter, and moderate quality habitat for deer.

WOULD NOT MEET POS. - MAY BE VISIBLE FROM POISON COVE. (OTHER PORTION)

Outside high-sensitivity Area - no cultural resources survey required

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 31
 VCU: 279
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 11-12

Legend

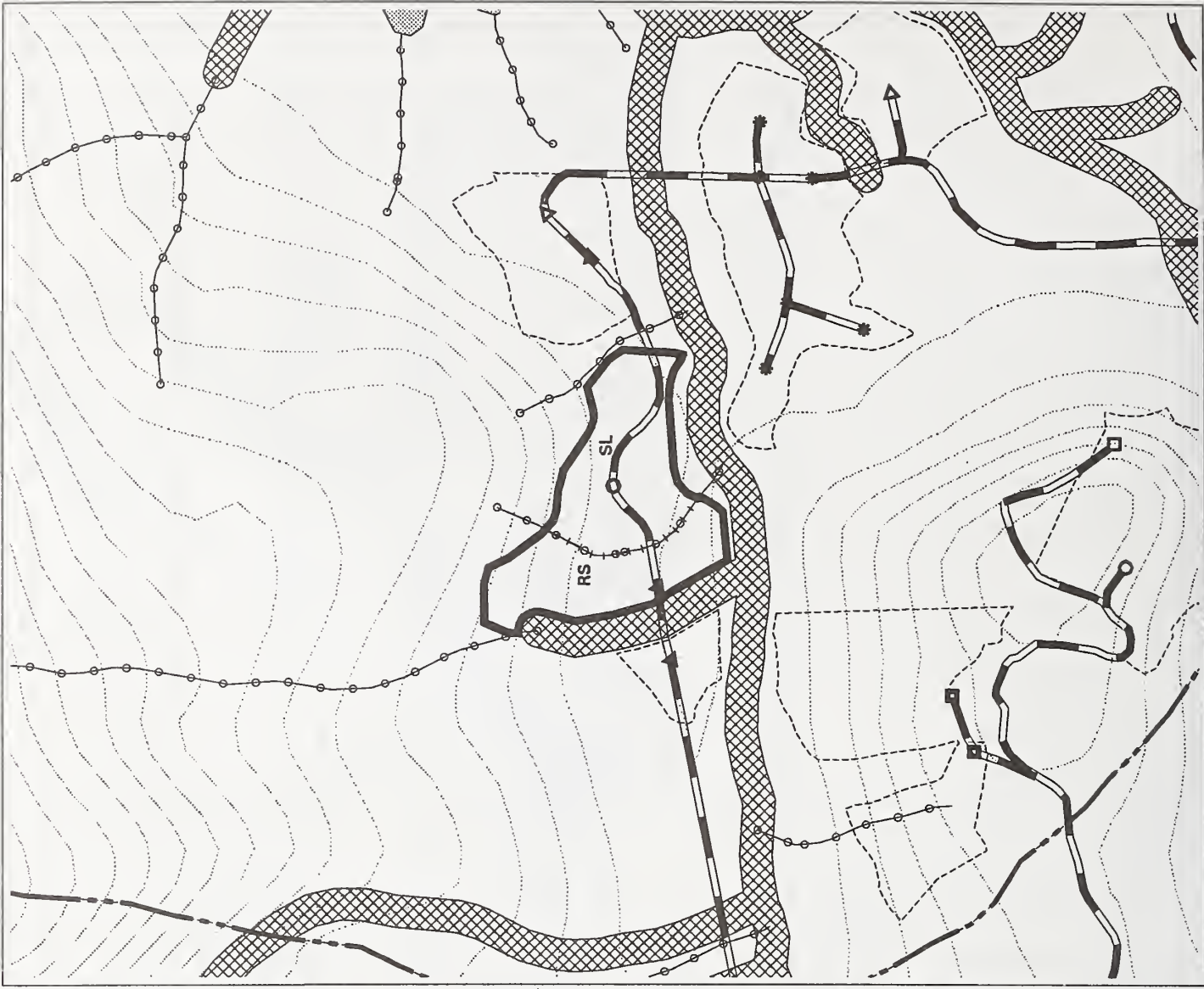
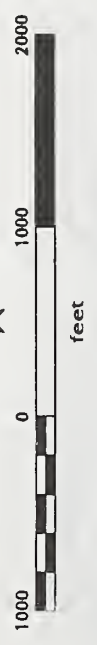
- VCU Boundary
- ==== Harvest Unit Boundary
- - - - Setting Boundary
- - - - Adjacent Unit
- ==== Proposed Road
- Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOWS BE SUFFICIENT. PLANTING OF SITKA SPRUCE & K. CEDAR FOR RESEED. MAY BE NECESSARY TO MAINTAIN CURRENT SPECIES COMPOSITION. IF POSSIBLE, LEAVE TWO SNAGS/ACRE FOR DIVERSITY. A PRE-COMMERCIAL THINNING AT 15-20 YES. IS RECOMMENDED TO ENHANCE PRODUCTIVE GROWTH. LOWER PORTION OF UNIT IS FAIRLY PRODUCTIVE ALTHOUGH THERE ARE AREAS OF WH-YEL/SS WHICH IS MODERATELY PRODUCTIVE.

UNIT BOUNDARY CHANGES: UPPER PORTION OF UNIT IS VERY STEEP (SLOPES 80 TO +) WITH V-NOTCHES. THIS MAY REQUIRE UPPER BOUNDARY TO BE LOWERED. Additional ~1200. added in SW corner of unit.

Upper boundary altered where terrain slopes exceeded 65%. No difficulties anticipated for logging this unit.

Two class 1 stream (South, south west). Maintain 100 ft buffer. There class 1 streams class 1 west center. Maintain 50 ft or up to slope break buffer, if recommend split-yearding. Log only from upper drainage. Consider full logging operations minimize disturbance to riparian methods. prevent debris from entering drainage and it does improve it. Butlers on class 1 streams should be a minimum of 100 feet and be wind firm.

AVOID SLOPES OVER 65%. AVOID CUTTING BELOW THE TOES OF UNSTABLE GRASS. USE PARTIAL LOG SUSPENSION YARDING ON THE SLOPES ABOVE THE VALLEY BOTTOM.

Logging composition of unit would result in loss of high quality habitat for brown bears, river otter. Logging northern half of unit will impact moderate quality deer winter range.

WOULD NOT MEET POS. VISIBLE FROM POISON COVE.

No significant cultural resources

Tim Type	S44	X 44	TOT/AVG
Acres			
MBF/Species			
WH			
89			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent Plant Assoc.	330	210	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	POPE	STARTED	
Wind Hazard (H, M, L) M			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
→ 3123-334
Landing: 31-1-31-2, 31-3
Profiles: 31-1-358, 31-3-50
Field Review: 02.7-14-92

WATERSHED/FISHERIES
6/20/92
Field Review: 7-11-92

SOILS/GEOLOGY
Field Review: DSW & PLS 7/17/92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/20/92

VISUAL/RECREATION
VQC: PARTIAL RETENTION
VAC: LDN
Visibility: M/S
ROC: SKRM
Recreation Site:
Trail:

PERCEPTIVE PLOTS
Field Review: 6/18 7-24-92

ARCHAEOLOGICAL/CULTURAL
Field Review: M. Kelly 7-15-92

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 31
 VCU: 279
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 11-12

Legend

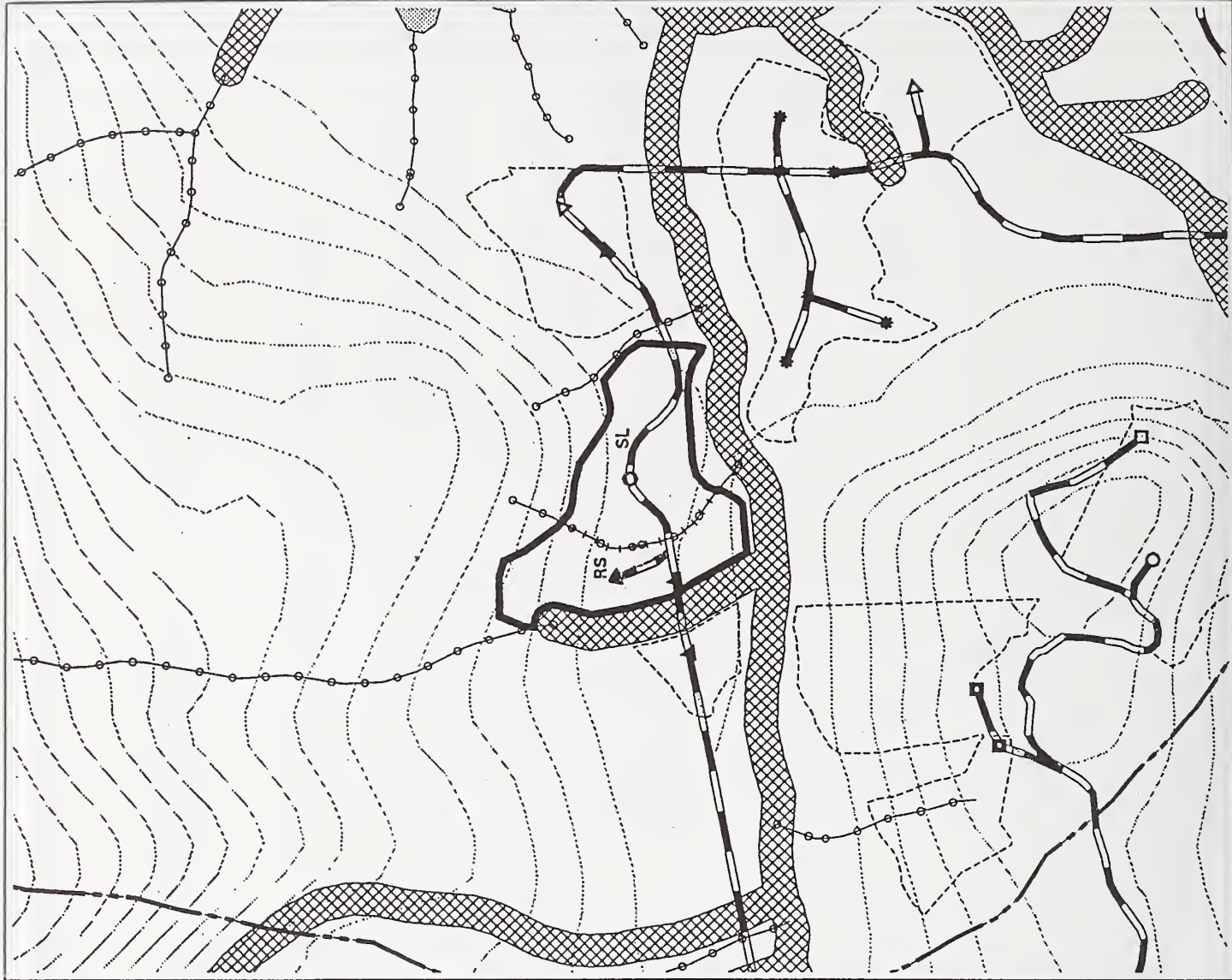
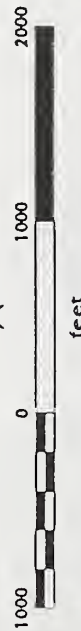
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE (Name/Date)	MANAGEMENT AREA:	TOT/AVG	RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)
TIMBER/SILVICULTURE Stand Exam: T. Pusnik, S. Allen 7/11/92 Stand Exam Type: PLOTS Silviculturalist Review: S. Smith 7/25/92	544 X 44 Acres MBF/Species WH 88 YC MH Other TOTAL MBF/AC 330 210 Plant Assoc. Site Index Regan Method Gross Growth N. Goshawk POPLE SIGHTED Wind Hazard (H, M, L) M Damage (Insect, disease, animal, etc.)	RECOMMENDED CUTTING METHOD IS CLEAR-CUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. PLANTING OF SITKA SPRUCE + K. CEDAR FOR RESEED. MAY BE NECESSARY TO MAINTAIN CURRENT SPECIES COMPOSITION. IF POSSIBLE, LEAVE TWO SNAGS/ACRE FOR AVERSITY. A PRE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED TO ENHANCE/INCREASE GROWTH. LOWER PORTION OF UNIT IS FAIRLY PRODUCTIVE ALTHOUGH THERE ARE AREAS OF WH-YE/SS WHICH IS MODERATELY PRODUCTIVE. UNIT BOUNDARY CHANGES: UPPER PORTION OF UNIT IS VERY STEEP (SLOPES 80 TO 90) WITH V-NOTCHES. THIS MAY REQUIRE UPPER BOUNDARY TO BE LOWERED. Additional ~ 1200.0 ac. added in SW corner of Unit.	
LOGGING/TRANSPORTATION → 3/1/3-334 Landings: 51-1/31-2, 31-3 Profiles: 31-1-35a, 31-3-50 Field Review: O. N. 7-14-92		Upper boundary altered where terrain slopes exceeded 65%. No difficulties anticipated for logging this unit.	
WATERSHED/FISHERIES 6/20/92 Field Review: PLS 7-11-92		Two class 1 stream (south & west center). Maintain 100 ft buffer. These class 1 streams class 1 (west center). Maintain 50 ft or up to slope break buffer if windfall. Recommend split-yarding. Log away from riparian drainage. Consider full log suspension minimize disturbance of muskrats and riparian wetlands. Prevent debris from entering drainages and if it does remove it. Buffer on Class 1 streams should be a minimum of 100 feet and be wind free.	
SOILS/GEOLOGY Field Review: DSW & PLS 7/17/92		AVOID SLOPES OVER 65%. AVOID CUTTING BELOW THE TOES OF UNSTABLE LOG STANES. AVOID CUTTING ON THE SLOPES ABOVE THE VALLEY BOTTOM.	
WILDLIFE/SUBSISTENCE Field Review: VLA 7/20/92		Logging suspension of unit would result in loss of high quality habitat for brown bears, river otter. Logging northern half of unit will impact moderate quality deer winter range.	
VISUAL/RECREATION Perspective Plots: Field Review: 6/14/92 7-28-92	PARTIAL RETENTION LOW MGT SKRM	WOULD NOT MEET POS. VISIBLE FROM POISON COVE.	
ARCHEOLOGICAL/CULTURAL Field Review: M. Kelly 7-15-92		No significant cultural resources	



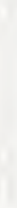
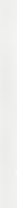
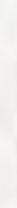






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 31-A
 VCU: 279
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 11-12

Legend

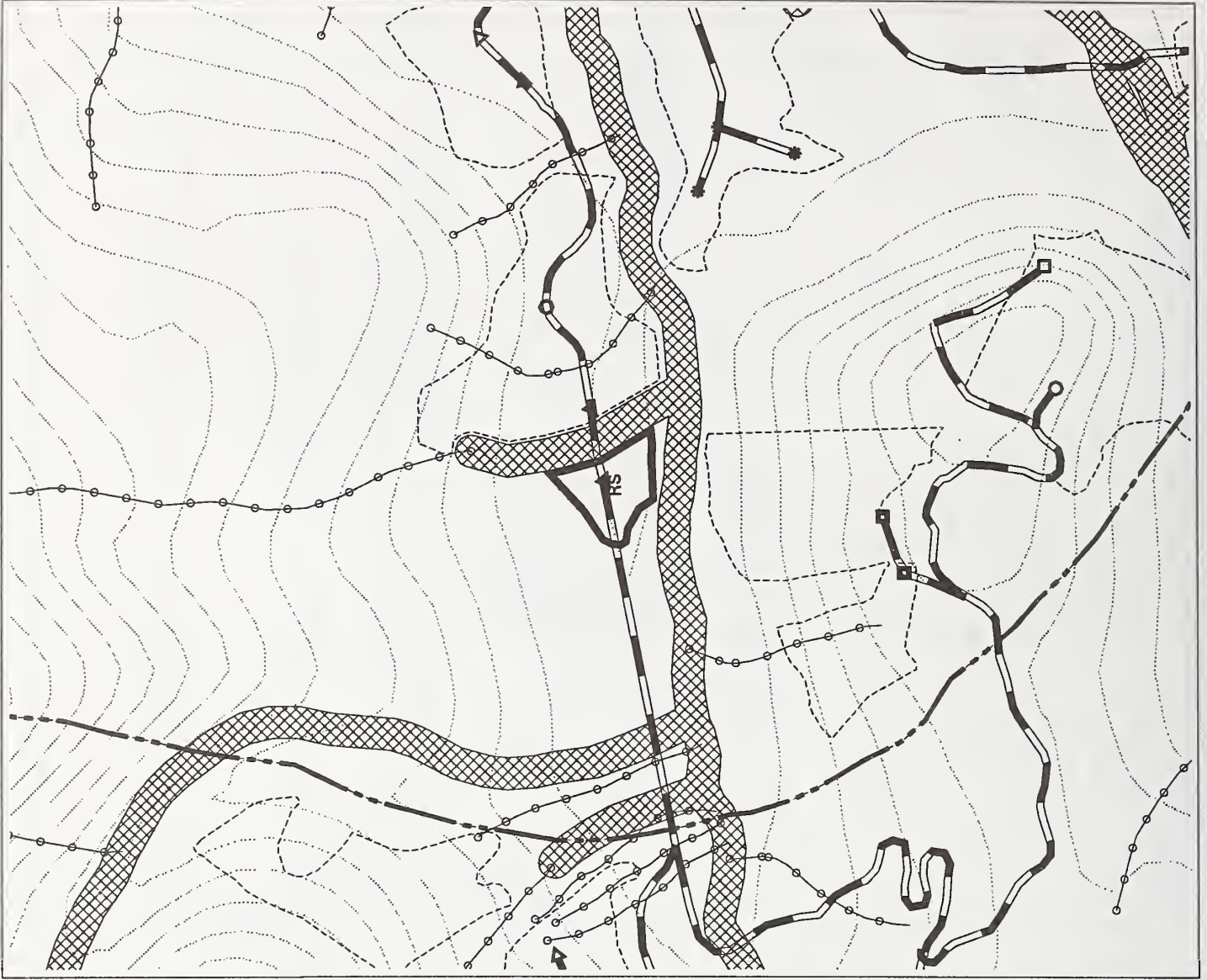
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)

Tim Type	544	X	44	TOTAL
Acres				
MBF/Species				
WH				
SS				
YC				
MH				
Other				
TOTAL				
MBF/AC	330		210	
Plant Assoc.				
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	POPE		STARTED	
Wind Hazard (H,M,L) M				
Damage (Insect, disease, animal, etc.)				

RECOMMENDED CUTTING METHOD IS CONCENT. NATURAL REGENERATION OF HEMLOCK SHOWS OF SUFFICIENT PLANTING OF SITKA SPRUCE + K. CEDAR FOR REBET. MAY BE NECESSARY TO MAINTAIN CURRENT SPECIES COMPOSITION. IF POSSIBLE, LEAVE TWO SNAGS/ACRE FOR AVERSITY. A PRE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED TO ENHANCE/NURTURE GROWTH. LOWER PORTION OF UNIT IS FAIRLY PRODUCTIVE ALTHOUGH THERE ARE AREAS OF RED ALDER. THE PREVALENT PLANT ASSOCIATION IS WH-YC/SS WHICH IS MODERATELY PRODUCTIVE.

UNIT BOUNDARY CHANGES: UPPER PORTION OF UNIT IS VERY STEEP (SLOPES 80%+) WITH V-NOTCHES. THIS MAY REQUIRE UPPER BOUNDARY TO BE LOWERED. Additional ~1200. adj. in SW corner of unit.

Upper boundary altered where terrain slopes exceed 65%. No difficulties anticipated for logging this unit.

Two class 1 streams (South, South West), maintain 100 ft. buffer. There class 1 streams (East, West Central). Maintain 50 ft. or up to slope break buffer, if wind-fri. Recommend split grading. Log away from vertical drainage. Consider fall line in previous minimize disturbance of muskeg and riparian wetlands. prevent debris from entering drainages and it does, remove it. Buffer on Class 1 streams should be a minimum of 100 feet and be wind free.

AVOID SLOPES OVER 65%. AVOID & PROTECT V-NOTCHES & SLUMPS TO WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF UNSTABLE GRASS. USE PARTIAL LOG SUSPENSION JARDING ON THE SLOPES ABOVE THE VALLEY BOTTOM.

Logging some portion of unit would result in loss of high quality habitat for brown bears, river otter. Logging northern half of unit will impact moderate quality deer winter range.

WOULD NOT MEET POS. VISIBLE FROM POISON COVE.

No significant cultural resources

LOGGING/TRANSPORTATION
→ 3173-334
Landing: 31-131-2, 31-3
Profiles: 31-1-35B, 31-3-50
Field Review: 07/7-14-92

WATERSHED/FISHERIES
6/20/92
Field Review: DLS 7-11-92

SOILS/GEOLOGY
Field Review: DSW & DLS 7/17-92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/20/92

VISUAL/RECREATION
VAC: PARTIAL RETENTION
LOW
Visibility: M/G
ROC: SPMM
Recreation Site:
Trail:

ARCHAEOLOGICAL/CULTURAL
Field Review: M. Kelly 7-15-92

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 32-A
VCU: 279
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 13-14

Legend

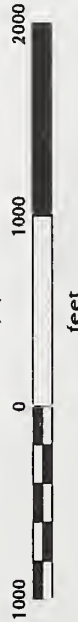
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- Proposed Road
- ... Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend a clear-cut system. Natural regeneration of hemlock should be adequate. Planting of VC may be necessary to maintain species composition. A PCT in ~ 15-20 yrs may be necessary to enhance growth.
 Predominantly a WB/BB type with variations. Site productivity is moderately high.
 Note: Some very boggy areas in unit. Prefer no cutting.

Tim Type	X44	X45	TOT/AVG
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Plant Assoc.			
Site Index	110		
Pregen Method			
Gross Growth			
N. Goshawk	None		
Wind Hazard (H.M.I.)	L		
Damage (Insect, disease, animal, etc.)			

Fish creeks in northern portion of unit. May require directional felling and lateral yarding.

Log away from V-notch channels. Consider full or partial suspension. Keep debris out of channel if it does than remove it. Two class 1/III streams (north & central) one class 1/III stream, southwest, maintain 100 ft buffer for class 1/II; 50 ft buffer for class 1/III in stream. Recommend directional logging & split yarding. DO NOT WINDFIRM UP

Log away from V-notch channels. Consider full or partial suspension. Keep debris out of channel if it does than remove it. Two class 1/III streams (north & central) one class 1/III stream, southwest, maintain 100 ft buffer for class 1/II; 50 ft buffer for class 1/III in stream. Recommend directional logging & split yarding. DO NOT WINDFIRM UP

AVOID SLOPES OVER 65%. AVOID & PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF THE FAILURES, IN PARTICULAR BELOW THE STEEP NW FACING SLOPE ALONG THE SE BOUNDARY. USE PARTIAL LOG SUSPENSION ON THE HILLSIDE.

Harvesting entire unit will result in loss of high quality habitat for brown bear, marten, otter. Harvesting SW tip of unit will impact high quality deer winter range.

WOULD NOT MEET POS. PROBABLY NOT VISIBLE FROM POISON CREEK.

No significant cultural resources identified.

NO SIGNIFICANT CULTURAL RESOURCES IDENTIFIED.

LOGGING/TRANSPORTATION

Landing: 32-1, 32-2
 Profiles: 3/2
 Field Review: 7-13-92

WATERSHED/FISHERIES

pas/dsw 7/6/92
 Field Review: 7/4/92

SOILS/GEOLOGY

Field Review: OSW 7/24/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Parospective Plots: 6/14 7-24-92
 Field Review: 7-24-92

ARCHAEOLOGICAL/CULTURAL

Field Review: 7/15/92
 M. Kelly

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 33
 VCU: 279
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 11-12

Legend

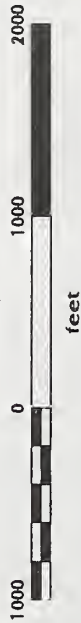
- VCU Boundary
- Harvest Unit Boundary
- Setting Boundary
- Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- Landing
- Shoreline and Lakes
- Class I and II Stream Buffers
- Class III Stream
- Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend Clear Cut System. Natural Regeneration is Hemlock Should be adequate. Planting of Yellow Cedar may be necessary to maintain species composition. A PCT at age 15 to 20 yrs to enhance growth may be necessary. Predominately a VH/BS Plant Association. Site is moderately productive.

Shady retention to a safety issue. Directionally falling from Class I, II streams. Split yarding at interior first stream.

These class I streams plus backwater sloughs (2 areas) maintain 100 ft buffer or sufficient wind firm for streams & slough areas. Recommend not logging in slough areas if possible. Recommend directional felling & yarding away from stream & slough areas. Maintain riparian integrity. Minimize disturbance in slough area. No hydrology concerns other than maintaining 100' buffers in sloughs and riparian areas.

No concerns noted

Harvesting entire unit will result in loss of high quality habitat for brown bear, other, moose. No concern for deer.

WOUND NOT MBEF POS.

No significant cultural resources identified

Tree Type	445	444	444	444	TOT/AVG
Acres					
MBF/Species					
WH					
BB					
YC					
MH					
Other					
TOTAL					
MBF/AC					
Prevalent Plant Assoc.	112				
Site Index					
Region Method					
Gross Growth					
N. Goshawk	None	Observed			
Wind Hazard (H, M, L)					
Damage (Insect, disease, animal, etc.)					

LOGGING/TRANSPORTATION

Landing: 33-1, -2, -3, -4
 Profiles:
 Field Review: 7/14/92

WATERSHED/FISHERIES

7/1/92 - 9/1/92
 Field Review:
 DMB 7/6/92

SOILS/GEOLOGY

Field Review:
 OSW 7/23/92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/20/92

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/1/92 7-15-92

ARCHAEOLOGICAL/CULTURAL

Field Review: M. Kelly
 7-15-92

VCO:	PK
VAC:	Low
Visibility:	MB
ROC:	SPNM
Recreation Site:	
Trell:	

Harvest Unit Design Card



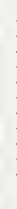
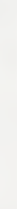







Ushk Bay EIS

Harvest Unit: 34
 VCU: 280
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 111-112

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMENDED CUTTING SYSTEM IS SELECT. NATURAL REGENERATION OF WEST TERNLOCK SHOULD BE SUFFICIENT PLANTING OF Y. SEEDS MAY BE NECESSARY (FOR REGEN.) TO MAINTAIN CURRENT STRUCTURE. LEAVE TWO STRIPS/AC. FOR DIVERSITY IF POSSIBLE. THE PRESENT PLANT ASSOC IS WH-YC/B5 WHICH IS MODERATELY PRAO-UCTIVE.
 UNIT BOUNDARY CHANGES: THE UPPER PORTION OF THE UNIT IS VERY STEEP WITH SLOPES EXCEEDING 80% AND MAY REQUIRE A LOWER UNIT BOUNDARY.
 Unit truncated because of soil's concerns. - see over.

Tim Type	X 45	UCF	TOTAL
Acres			
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
Prevailent Plant Assoc.	Z10	Z10	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	SIGHTED	
Wind Hazard (H,M,L)		H	
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
 Landing:
 Profiles:
 Field Review: *Bill 8.6.92*
WATERSHED/FISHERIES
 Field Review: *5/26/92 AK*
 PLS/RK 7-11-92

SOILS/GEOLOGY
 Field Review:
 Avoid slopes over 70%. Avoid the extreme NW steep slopes. Avoid cutting below the NE and SW. Possibly avoid the small W arm of the unit. Use partial log suspension yarding.
 PR / MODIFIC.
 VAC: LOW
 Visibility: MS
 ROC: TRM. 1
 Recreation Site:
 Trail:
 VAO:
 VAC:
 Visibility:
 ROC:
 Recreation Site:
 Trail:

VISUAL/RECREATION
 Perspective Photo:
 Field Review: *1-10-92 JG*

ARCHEOLOGICAL/CULTURAL
 Field Review: *N/A*

Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 35
 VCU: 280
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 111

Legend

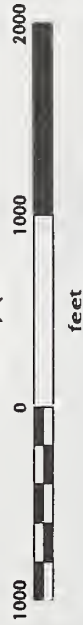
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- ▲ ○ Landing
- Shoreline and Lakes
- ▨ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method recommended is clear-cut. Natural regeneration of hemlock should be adequate. Upland spruce stand occurs as well as yellow cedar in areas - planting may be necessary to maintain current species composition. Thinning at 15-20 years recommended.

Prevalent plant association is WH/BB, a moderately productive site; also WH/BB/SF (very productive site), WH-YC/BB and SS/DC. Steep, rock-faced drainages characterize the upper (N) portion of unit also brush fields. Slopes are 85% in upper portion of unit with pitches of 100%. Large boulders were common and a rock slide observed.

POSSIBLE UNIT BOUNDARY CHANGES -- consult geologist.

Tim Type	X44	TOT/AVG
Acres		
MBF/Species		
WH		
SS		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Prevalent Plant Assoc.	110	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	none seen	
Wind Hazard (H,M,L) M		
Damage (Insect, disease, animal, etc.)		HEMLOCK FLUTTING

No logging difficulties. Unit boundary altered where terrain slopes exceed 65%

ONE CLASS I STREAM along southern boundary. Maintain 100ft buffer. Many class III streams in unit. Split yard if practical. Directionally log away from class I streams. Log away from stream drainage. Consider full log suspension, minimize disturbance to muskrats and riparian wetlands. Protect debris from updrift erosion, and if it may remove it. Buffering a class I stream should be a minimum of 100 feet and wind firm.

PROTECT V-NOTCHES, SLIDES, AND CRATES TO WINDFIRM TOES OF FEATURES. AVOID THE PAIR OF CRATES NEAR THE PENSION YARDING ABOVE THE VALLEY BOTTOM.

AVOID SLOPE OVER 65%. AVOID & STANDS. AVOID CUTTING BELOW THE W BORDER. USE PARTIAL LOG SUS

Logging Southern portion of unit will result in loss of high quality habitat for brown bear, river otter. Logging western half of unit will result in loss of moderate quality deer winter range.

MAY BE VISIBLE FROM POISON CAVE. WOULD NOT MEET POS.

Outside Sensitive Area - No Survey Necessary

VAO: PF / MODIFICATION
 VAC: INF / LOW.
 Visibility: MG
 ROC: PPM. I
 Recreation Site:
 Trail:

TIMBER/SILVICULTURE

Stand Exem: 7/8/92
 S. Allen / T. Pusina
 Stand Exem Type:
 Plots
 Silviculture/Regl. Review:
 S. Smith
 7/25/92

LOGGING/TRANSPORTATION

TP 35-2-311
 Landing: 35-1-35-2, 35-3
 Profiles: 35-1-35-2, 35-2-304
 Field Review: D X 7-14-92

WATERSHED/FISHERIES

6/26/92
 Field Review:
 PLS 7-11-92

SOILS/GEOLOGY

PLS & GRL 7/10 92
 Field Review:
 DSW 7/24 92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/20/92

VISUAL/RECREATION

Field Review:
 VLA 7/20/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 36
 VCU: 280
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 110-111

Legend

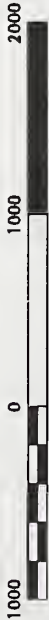
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

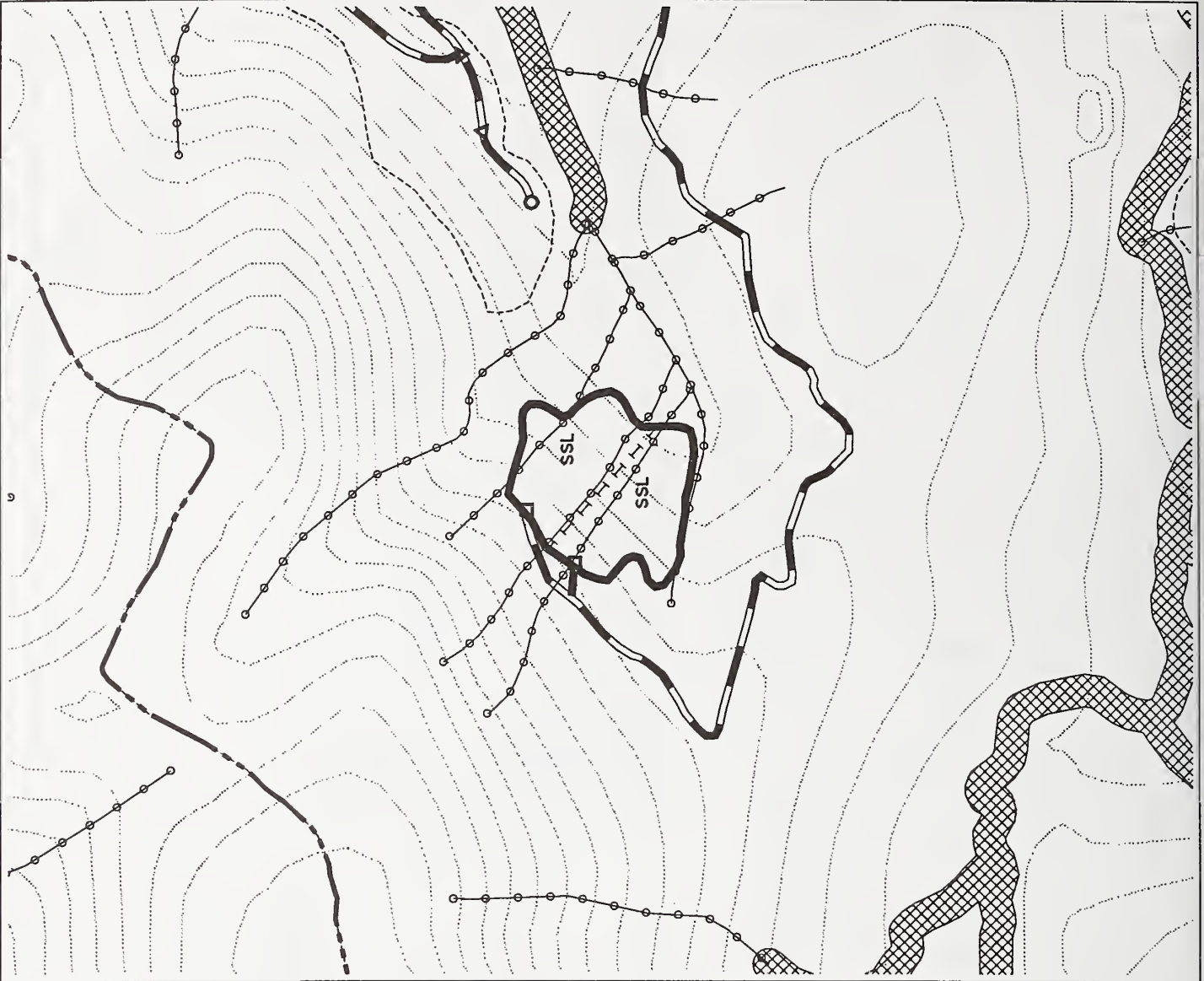
- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



feet



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggest clear-cut. Natural regeneration of hemlock should be adequate. Planting of cedar (Alaska Yellow) and Sitka spruce may be necessary to maintain current species composition. Recommend a pre-commercial thin at 15-20 years.
 Prevalent plant association is MC/BB for H45. Considered an unproductive site. In X44, WH-YC/BB is predominant, a moderately productive site.
UNIT BOUNDARY CHANGES: The top portion of the unit is characterized by steep slopes, brush fields and drainages. Consult geologist regarding boundary changes.

Tim Type	H45	X44	TOTAL
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	410	210	
Site Index			
Repen Method			
Gross Growth			
N. Goshawk	none seen		
Wind Hazard (H,M,L) M			
Damage (Insect, disease, animal, etc.)			

Live skyline for portion of Unit below main road. (36-1, 36-2). Extensions required. Running skyline remaining portion of unit. Upper unit boundary altered where terrain slopes towards east.
 Many V notches in central & eastern area of unit. Recommend directing logging away from V notches. Log away from V-notch drainages. ~~with~~ full log suspension. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats and riparian wetlands.

AVOID ALL BUT THE SW 1/4 AND SE 1/4 OF THE UNIT. AVOID SLOPES OVER 65%. AVOID CROSSING THE DISSECTION IN THE EXTREME SW CORNER. AVOID LOGGING BETWEEN THE V-NOTCHES ALONG THE SW BOUNDARY OF THE UNIT. AVOID & PROTECT THE V-NOTCHES, SLIDES AND CHUTES TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HANDS & BEAD THE TOES OF THE FAILURES. USE PARTIAL LOG SUSPENSION YARDING.

NO CONCERNS FOR BROWN BEAR, MARTEN, OTTER. Harvesting SW tip and eastern end of unit will impact high & moderate quality deer winter range.
 WOULD NOT MEET POS. MAY BE VISIBLE.

VQA:	DEFERRED / PARTIAL REF.
VAC:	INTERM.
Visibility:	MIG
ROC:	PRIM. I.
Recreation Site:	
Trail:	

Outside Sensitive Area - No Survey Necessary

Stand Exam:	7/7/92
Stand Exam Type:	S. Allen / T. Pusina
Biocultural Review:	D. Smith
Field Review:	7/25/92

LOGGING/TRANSPORTATION

Landing: 36-1, 36-2, 36-3
 Profiles: 36-1-150, 36-2-164
 Field Review: D. Smith 7-14-92

WATERSHED/FISHERIES

6/26/92 PLS
 Field Review: PLS 7-11-92

SOILS/GEOLOGY

Field Review: PLS & OSW 7/12/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Field Review: 6/11/92 7-20-92

PERCEPTIVE PLOTS

Field Review: 6/11/92 7-20-92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 37
VCU: 281
Alternative(s): B F

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 134

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

RS Running Skyline
SL Slackline
SSL Small Slackline
H Highlead
HE Helicopter
SV Shovel
GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK : MANAGEMENT AREA: LUD: VCU: 28) UNIT: 37 ACRES: 44	
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)	
Recommended cutting system to clear-cut. Natural regeneration of hemlock should be adequate. Planting of Sitka spruce and yellow cedar is recommended if current species composition is desired. Spruce occurs in stands on the flats by the main creek, and yellow cedar is throughout X45. A pro-commercial thin, in 15-20 yrs. is suggested.	
flat and predominantly WH/BB/SF, a very productive site. X44 is WC/BB, considered unproductive and WH-YC/BB, moderately productive. V notches run throughout, and small mushegs are within unit. Drainage intersects the stand, delineating the stand types.	
Sug retention is safety issue. NE boundary changed to conform to logical yarding boundaries. Directionally fall away from streams.	
Log away from V-notch channels & consider fall on partial suspension. Keep floor 15' out of channels and remove it if it does go in. Minimize disturbance in musheg and riparian wetlands. Maintain 100' buffer on class I stream forming western boundary of unit. Recommend 50' buffer on class III stream if siltation poses problems, but not if you affirm	
PROTECT V-NOTCHES, SLIDES, AND CHUTES TO AVOID SLOPES OVER 70%. AVOID WINDFIRM STANDS. AVOID CUTTING BELOW THE TOE OF FAILURES, USE PARTIAL LOG SUSPENSION ON THE SLOPES ABOVE THE VALLEY BOTTOM.	
Logging W half of unit will result in loss of high quality habitat for brown bear, river otter, marten. No concern for deer.	
Would not meet ROS. would not be visible from USHK Bay.	
No significant third resource found.	

Tim Type	X45	X44	TOT/AVG
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	120	410	
Site Index			
Region Method			
Gross Growth			
N. Goshawk	None seen		
Wind Hazard (H,M,L)		M	
Damage (mead, disease, animal, etc.) CEDAR STRIPPING			

LOGGING/TRANSPORTATION
Landing: 37-1, 2, 3, 4, 8, 9
Profiles: See 6.15.92
WATERSHED/FISHERIES
DWS/Dsw 7/8/92
Field Review:
DDN 8/3/92
SOILS/GEOLOGY
Field Review:
OSW & RLL 6/2 92
WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/20/92
VISUAL/RECREATION
Field Review:
6/16 7/21/92
Perspective Photo:
Field Review:
6/16 7/21/92
ARCHAEOLOGICAL/CULTURAL
W. Z. Kosty
Field Review: 7-19-92

VGO:	MODERN - MAX. MOD.
VAC:	INTERM.
Viability:	UNSEEN
ROC:	PRIMITIVE I
Recreation Site:	
Trail:	

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 37
 VCU: 281
 Alternative(s): C E

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 134

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X45	X44	TOTAL
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent Plant Assoc.	120	410	
Site Index			
Repen Method			
Gross Growth			
N. Goshawk			
Wind Hazard (H.M.I.)			
Damage (Insect, disease, animal, etc.) CEDAR STRIPPING			

Recommended cutting system is clear-cut. Natural regeneration of hemlock should be adequate. Planting of Sitka spruce and yellow cedar is recommended if current species composition is desired. Spruce stands in the flats by the main creek, and yellow cedar is throughout X45. A pre-commercial thin in 15-20 yrs. is suggested. X45 is flat and predominantly WH/BB/SF, a very productive site. X44 is WC/BB, considered unproductive and WH-YC/BB, moderately productive. V notches run throughout, and small washes are within unit. A drainage bisects the stand, delineating the stand types.

Sky retention is safety issue. NE boundary changed to conform to logical grading boundaries. Directionally fall away from streams.

Log away from V-notch channels & consider fall on partial suspension. Keep for 15' out of channels and remove it if it does go in. Minimize disturbance in muskeg and riparian wetlands. Maintain 100' buffer on class I stream forming western boundary of unit. Recommend soil buffer on class III stream if siltation poses problem, but only if WOODFIRM

PROTECT V-NOTCHES, SLIDES, AND CUTS TO AVOID SLOPES OVER 70%. AVOID WINDFIRM STANDS. AVOID CUTTING BELOW THE VALLEY BOTTOM. SUSPENSION ON THE SLOPES ABOVE

Logging W half of unit will result in loss of high quality habitat for brown bear, river otter, marten. No concern for deer.

Would not meet ROS. Would not be visible from USHK Bay.

No significant bird resource found.

RERESOURCE (Name/Date)

TIMBER/SILVICULTURE

Stand Exam: D. Maxey / S. Allen
 Stand Exam Type: plots
 Silvicultural Review: A. Smith
 7/25/92

LOGGING/TRANSPORTATION

Landing: 37-1-3, 37-4, -8, -9
 Profiles: R211 6.15.92

WATERSHED/FISHERIES

DMS/DSW 7/8/92
 Field Review: DPN 8/3/92

SOILS/GEOLOGY

Field Review: OSW & RLL 6/2/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Field Review: PERSPECTIVE PLOTS: VISIBILITY: UNSEEN
 RECREATION SITE: TRAIL: PRIMITIVE 1

ARCHAEOLOGICAL/CULTURAL

Field Review: W. Z. Kocky 7-19-92

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 37
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 134

Legend

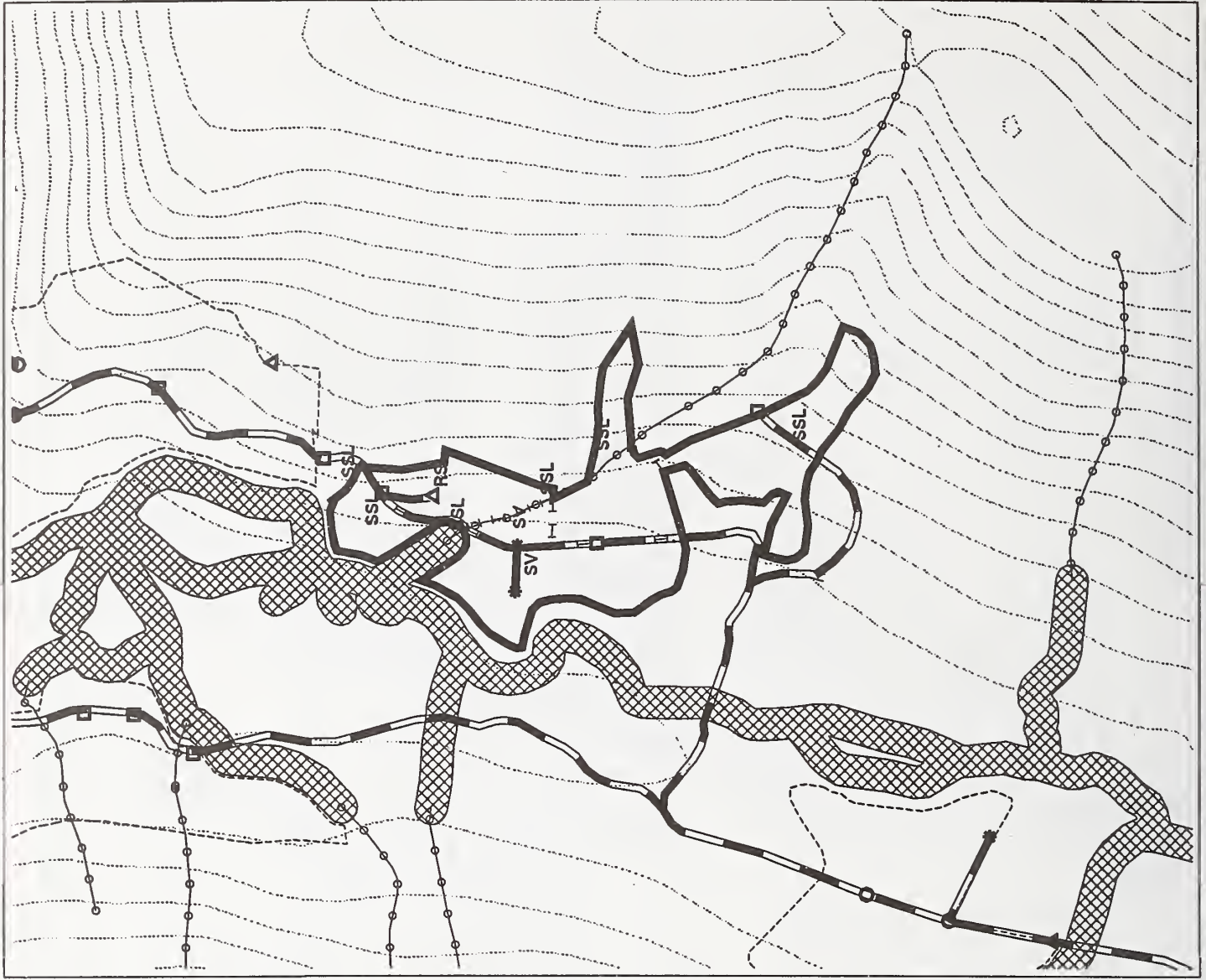
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 Recommended cutting system is clear-cut. Natural regeneration of hemlock should be adequate. Planting of Sitka spruce and yellow cedar in recommended of current species composition is desired. Spruce stands in the flats by the main creek, and yellow cedar is through out X45. A pre-commercial thin in 15-20 yrs. is suggested. X45 is flat and predominantly WH/BB/SF, a very productive site. X44 is WC/BB considered unproductive and WH-YC/BB, no skeletal products, i.e. V notches run throughout, and small meshings are within unit. Advantages bisects the stand, delineating the stand types.

Spruce retention is safety issue. NE boundary changed to conform to logical yarding boundaries. Directionally fallaway from streams.

Log away from V-notch channels & cascade, fall on patrol suspension. Keep about 15' or less of channels and remove it if it does go in. Minimize disturbance in watershed and riparian wetlands. Maintain 100' buffer on class I stream forming western boundary of unit. Recommend 50' buffer on class III stream if siltation poses problems, BURNOUT IF POSSIBLE

PROTECT V-NOTCHES, SLIDES, AND CHUTES TO AVOID THE TOE OF FAILURES, USE PARTIAL LOG THE VALLEY BOTTOM.

Logging W half of unit will result in loss of high quality habitat for brown bear, river otter, marten. No concern for deer.

Would not meet ROS. would not be visible from USHK TRAIL.

No significant to stand resource found.

Tim Type	X45	X44	TOTAL
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent Plant Assoc.	120	410	
Site Index			
Repen Method			
Gross Growth			
N. Goshawk	None seen		
Wind Hazard (H,M,L)			M
Damage (Insect, disease, animal, etc.) CEDAR STRIPPING			

LOGGING/TRANSPORTATION
 Landing: 37-1, 2, 3, 4, 5, 6, 7, 8, 9
 Profile: R 6.15.92
 Field Review: R 6.15.92
WATERSHED/FISHERIES
 DNS/dsw 7/8/92
 Field Review:
 DDN 8/13/92

SOILS/GEOLOGY
 Field Review:
 OSW & RLL 6/2/92
WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/20/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/6/92 7/24/92

ARCHAEOLOGICAL/CULTURAL
 W. Zwolsky
 Field Review: 7-19-92

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 37
 VCU: 281
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 134

Legend

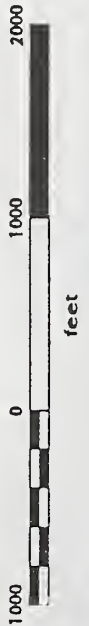
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK MANAGEMENT AREA: X45 X44 UNIT: 37 ACRES: 87

RESOURCE (Name/Date)	MANAGEMENT AREA	VCU: 2.8	UNIT: 37	ACRES: 87
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)				
<p>TIMBER/SILVICULTURE</p> <p>Stand Exam: D. Maxey / S. Allen Stand Exam Type: plots Silvicultural Review: A Smith 7/25/92</p>	<p>Tim Type: X45 X44</p> <p>Acres: []</p> <p>MBF/Species: []</p> <p>WH: []</p> <p>88: []</p> <p>YC: []</p> <p>MH: []</p> <p>Other: []</p> <p>TOTAL: []</p> <p>UBF/AC: []</p> <p>Prevent Plant Assoc.: []</p> <p>Site Index: 120 410</p> <p>Regen Method: []</p> <p>Gross Growth: []</p> <p>N. Goshawk: []</p> <p>Wind Hazard (H.M.I.): [] M</p> <p>Damage (Insect, disease, animal, etc.): CEDAR STRIPPING</p>	<p>Recommended cutting system is clear-cut. Natural regeneration of hemlock should be adequate. Planting of Sitka spruce and yellow cedar is recommended if current species composition is desired. Spruce occurs in stands in the flats by the main creek, and yellow cedar is through out X45. A pre-commercial thin in 15-20 yrs. is suggested.</p> <p>flat and predominantly WH/DB/SF, a very productive site. X44 is WC/BB considered unproductive and WH-YC/BB, moderately productive. V notches run throughout, and small bushes are within unit. A drainage bisects the stand, delineating the stand types.</p> <p>Say retention is a safety issue. NE boundary changed to conform to logical yarding boundaries. Directionally fall away from streams.</p>	<p>Log away from notch channels & consider fall on partial suspension. Keep 15' out of channels and remove it if it does go in. Minimize disturbance in muskeg and riparian wetlands. Maintain 100' buffer on class III stream if siltation poses problem, SURVIVAL OF WOODS</p>	<p>Log away from notch channels & consider fall on partial suspension. Keep 15' out of channels and remove it if it does go in. Minimize disturbance in muskeg and riparian wetlands. Maintain 100' buffer on class III stream if siltation poses problem, SURVIVAL OF WOODS</p>
<p>LOGGING/TRANSPORTATION</p> <p>Landing: 37-1, -2, -3, -4, -8, -9 Profiles: [] Field Review: []</p>				
<p>WATERSHED/FISHERIES</p> <p>DMS/DSW 7/8/92 Field Review: [] DON 8/13/92</p>				
<p>SOILS/GEOLOGY</p> <p>Field Review: []</p>				
<p>WILDLIFE/SUBSISTENCE</p> <p>Field Review: []</p>				
<p>VISUAL/RECREATION</p> <p>Field Review: []</p>				
<p>ARCHAEOLOGICAL/CULTURAL</p> <p>Field Review: []</p>				
<p>LOGGING/TRANSPORTATION</p> <p>Landing: 37-1, -2, -3, -4, -8, -9 Profiles: [] Field Review: []</p>				
<p>WATERSHED/FISHERIES</p> <p>DMS/DSW 7/8/92 Field Review: [] DON 8/13/92</p>				
<p>SOILS/GEOLOGY</p> <p>Field Review: []</p>				
<p>WILDLIFE/SUBSISTENCE</p> <p>Field Review: []</p>				
<p>VISUAL/RECREATION</p> <p>Field Review: []</p>				
<p>ARCHAEOLOGICAL/CULTURAL</p> <p>Field Review: []</p>				

Harvest Unit Design Card










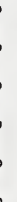
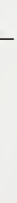
Ushk Bay EIS

Harvest Unit: 37-A
 VCU: 281
 Alternative(s): B F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 134

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.8 UNIT: 37-A ACRES: 25

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommended cutting system is clear-cut. Natural regeneration of hemlock should be adequate. Planting of Sitka spruce and yellow cedar is recommended if current species composition is desired. Spruce stands in the flats by the main creek, and yellow cedar is through out X45. A pre-commercial thin in 15-20 yrs. is suggested. X45 is flatland predominantly WH/BB/SF, a very productive site. X44 is WC/BB considered unproductive and WH-YC/BB, moderately productive. V-notches run throughout, and small washes are within unit. Drainage bisects the stand, delineating the stand types.

Stay retention is safety issue. NE boundary changed to conform to logical yarding boundaries. Directionally fall away from streams.

Log away from v-notches & consider fall on partial suspension. Keep logs out of channels and remove it if it does go in. Minimize disturbance in washes and riparian wetlands. Maintain 100' buffer on class I stream forming western boundary of unit. Recreational soil buffer on class III stream if siltation poses problem, SURVIVE IF POSSIBLE.

PROTECT V-NOTCHES, SLIDES, AND CUTS TO AVOID SLOPES OVER 70%. AVOID WINDFORM STANDS. AVOID CUTTING AREAS WITH SUSPENSION ON THE SLOPES ABOVE THE VALLEY BOTTOM.

Logging W half of unit will result in loss of high quality habitat for brown bear, river otter, marten. No concern for deer.

Would not meet ROS. Would not be visible from USHK Bay.

No significant Cultural Resources found.

Tim Type	X4-5	X4-4	TOT/AVG
Acres			
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	120	410	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk			
Wind Hazard (H,M,L) : M			
Damages (insect, disease, animal, etc.) CEDAR STRIPPING			

LOGGING/TRANSPORTATION

Landing: 37-1, 2, 3, 4, 8, 9
Profiles: R21 6.15.92

WATERSHED/FISHERIES

DWS/BSW 7/8/92
DON 8/3/92

SOILS/GEOLOGY

Field Review: OSW & RUL 6/2/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/20/92

VISUAL/RECREATION

Field Review: Perspective Photo: Recreation Site: Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: W. Zerkow 7-19-92






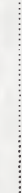




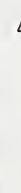
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 39
VCU: 281
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 112-113

Legend

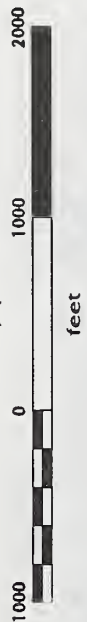
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT:	USHK	MANAGEMENT AREA:	LUD:	VCU: 2.81	UNIT: 39	ACRES: 7.8																																																													
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)																																																																			
TIMBER/SILVICULTURE	<p>Stand Exam: T. RUSINA, S. ALLEN 7/15/92</p> <p>Stand Exam Type: Plots</p> <p>Silviculturalist Review: S Smith 7/25/92</p>	<table border="1"> <tr><td>Tim Type</td><td>X 44</td><td>X 45</td><td>TOTAL</td></tr> <tr><td>Acres</td><td></td><td></td><td></td></tr> <tr><td>MBF/Species</td><td></td><td></td><td></td></tr> <tr><td>WH</td><td></td><td></td><td></td></tr> <tr><td>BB</td><td></td><td></td><td></td></tr> <tr><td>YC</td><td></td><td></td><td></td></tr> <tr><td>MH</td><td></td><td></td><td></td></tr> <tr><td>Other</td><td></td><td></td><td></td></tr> <tr><td>TOTAL MBF/AC</td><td></td><td></td><td></td></tr> <tr><td>Prevalent Plant Assoc.</td><td>410</td><td>370</td><td></td></tr> <tr><td>Site Index</td><td></td><td></td><td></td></tr> <tr><td>Regen Method</td><td>None</td><td>seed</td><td></td></tr> <tr><td>Gross Growth</td><td></td><td></td><td></td></tr> <tr><td>N. Goshawk</td><td></td><td></td><td></td></tr> <tr><td>Wind Hazard (H, M, L)</td><td></td><td></td><td></td></tr> <tr><td>Damage (Insect, disease, animal, etc.)</td><td></td><td></td><td></td></tr> </table>	Tim Type	X 44	X 45	TOTAL	Acres				MBF/Species				WH				BB				YC				MH				Other				TOTAL MBF/AC				Prevalent Plant Assoc.	410	370		Site Index				Regen Method	None	seed		Gross Growth				N. Goshawk				Wind Hazard (H, M, L)				Damage (Insect, disease, animal, etc.)				<p>RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCKS SHOULD BE SUFFICIENT. PLANTING OF SITKA SPRUCE + YELLOW PINE IS RECOMMENDED FOR SITE REGENERATION IN ORDER TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS ADVISED AT 15-20 YEARS TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO STANDS PER AREA FOR DIVERSITY. THE PREVALENT PLANT ASSOCIATIONS ARE RANDB FROM MIXED CONIFERS WHICH IS LOW IN PRODUCTIVITY TO SS/BS/SC WHICH IS MODERATE TO HIGHLY PRODUCTIVE. THE NORTH-EASTERN PORTION OF UNIT BECOMES VERY STEEP WITH SLOPES REACHING 80-90%. THIS MAY REQUIRE UPPER BOARDING TO BE CONSIDERED SLIGHTLY.</p>
Tim Type	X 44	X 45	TOTAL																																																																
Acres																																																																			
MBF/Species																																																																			
WH																																																																			
BB																																																																			
YC																																																																			
MH																																																																			
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N. Goshawk																																																																			
Wind Hazard (H, M, L)																																																																			
Damage (Insect, disease, animal, etc.)																																																																			
LOGGING/TRANSPORTATION	<p>Landing: 39-237-3,374</p> <p>Profiles: 39-237-3,374</p> <p>Field Review: D. K. 7-16-92</p>		<p>No yarding difficulties anticipated. Unit boundary is entered where terrain slopes exceed 65%</p>																																																																
WATERSHED/FISHERIES	<p>DD-28/3/92</p> <p>Field Review:</p> <p>DMS/DSW 7/5/92</p>		<p>100' buffer for class II stream forming western boundary of unit 400 yd away from V-notch channels, considering fall in postfall suspension, and stream debris that enters channels.</p>																																																																
SOILS/GEOLOGY	<p>Field Review:</p> <p>OSW & RRL 6/3/92</p>		<p>AVOID SLOPES OVER 70%. AVOID CUTTING BELOW THE TOES OF FAULTS AND CHUTES. USE PRACTICAL LOG SUSPENSION ON THE SLOPES ABOVE THE VALLEY BOTTOM.</p>																																																																
WILDLIFE/SUBSISTENCE	<p>Field Review:</p> <p>VLA 7/21/92</p>		<p>Harvesting northern portion of unit will result in loss of high quality habitat for moose, other, brown bear, and moderate quality deer winter range.</p>																																																																
VISUAL/RECREATION	<p>Perspective Plots:</p> <p>Field Review: G. R. 7/21/92</p>	<p>VCO: PR</p> <p>VAC: LOW</p> <p>Viability: MG</p> <p>ROC: PERMISSIVE</p> <p>Recreation Site:</p> <p>Trail:</p>	<p>WOULD NOT MEET POS. MAY BE VISIBLE FROM USHK BAY</p>																																																																
ARCHAEOLOGICAL/CULTURAL	<p>Field Review: N/A</p>		<p>Outside designated high-sensitivity area - no survey required</p>																																																																

Harvest Unit Design Card











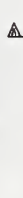
Ushk Bay EIS

Harvest Unit: 40
 VCU: 281
 Alternative(s): B D

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 114-115

Legend

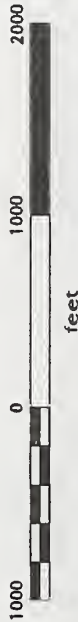
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.81 UNIT: 40 ACRES: 31

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. WH/YC/BS IS THE PREDOMINANT PLANT ASSOC. SITE PRODUCTIVITY IS MODERATE. UNIT CHANGE FROM ORIGINAL DRAFT IS NOTED ON MAP. POSSIBLE LOSS OF ACRES ON SOUTHWEST END OF UNIT DUE TO STEEP DRAINAGE. CLEAR CUT WOULD CAUSE HEAVY EROSION AND DRAINAGE CUT IN LARGE QUANTITY INTO MAJOR STREAM BELOW.

Temporary spur w. 20% grade accesses 40-1 to yard portion above 75161 road. 1-3/4" tower suited, except for landing on switchback in south where 1-8" tower proposed. Jumps at top of unit will result in fire hole. Suitable between ground anchors. Run extension beyond unit 6.

Minimize disturbance to plant that's around spring discharge at base (w. end) of unit. N.W. corner of unit at spring begins Class I stream, 100'± buffer recommended. Western border near class I stream, leave 100' buffer.

EXCEPT FOR THE EXTREME NE AND NW CORNERS OF THE UNIT, AVOID THE UNIT DUE TO STEEP SLOPES, SLIDE CHUTES, AND FREQUENT DISSECTIONS, AVOID SLOPES OVER 65%. AVOID AND PROTECT V-NOTCHES, LANDSLIDES, AND AREAS TO WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF FAILURES. USE PARTIAL LOG SUSPENSION ON THE SLOPES ABOVE THE VALLEY BOTTOM. Logging SW tip of unit will result in loss of high quality habitat for marten, otter, brown bear, and moderate quality deer winter range.

WOULD NOT MEET FORS IN PRIMITIVE / AREA. WOULD BE VISIBLE FROM USHK BAY. WOULD NOT MEET VDO.

Outside designated high-sensitivity area - no survey required

Tim Type	X44	X45	TOT/AVG
Acres	55	5	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL MBF/AC			
Prevalent Plant Assoc.	210		
Site Index			
Region Method			
Gross Growth			
N. Goshawk	NONE	OBSERVED	
Wind Hazard (H,M,L) H			
Damage (Insect, disease, animal, etc.)			

DAMAGE (Insect, disease, animal, etc.) CEDAR STAMINUS

LOGGING/TRANSPORTATION

Landing: 40-1, 40-2
Profiles: *SPR 7.10.92*

WATERSHED/FISHERIES

DWS/DW 7-5-92
Field Review: 00N 8/5/92

SOILS/GEOLOGY

PLS & RLL 7/7 92
Field Review: DSJ 7/23 92

WILDLIFE/SUBSISTENCE

Field Review: 7/21/92 VLA

VISUAL/RECREATION

Perspective Plots: VAC: LOW
Viability: ME
ROC: PFM 1 / SPM
Recreation Site: PF
Trail: PF

PERSPECTIVE PLOTS

Field Review: 6/14 7/24/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Harvest Unit Design Card


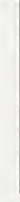

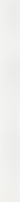







Ushk Bay EIS

Harvest Unit: 40
 VCU: 281
 Alternative(s): C E F

Photo Information

Year: 1986
 Flight Line: 25
 Photo Number: 114-115

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: VCU: 281 UNIT: 40 ACRES: 32

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. WH/YC/BS IS THE PREDOMINANT PLANT ASSOC. SITE PRODUCTIVITY IS MODERATE. UNIT CHANGE FROM ORIGINAL DRAFT IS NOTED ON MAP. POSSIBLE LOSS OF ACREAGE ON SOUTH END OF UNIT DUE TO STEEP DRAINAGE. CLEAR CUT WOULD CAUSE HEAVY EROSION AND DRIPPING SILT IN LARGE QUANTITY INTO MAJOR STREAM BELOW.

Temporary spur w. 20% grade crosses 40-1 to yard portion above 75161 road. 1-3/4" tower suitable, except for landing on southwest side in south where 1-1/2" tower prepared. Stumps at top of unit will result in field by etc. Suitable between good timber. Run interceptors beyond unit base (N. end) of unit.

Minimum distance between a clear-cut's adjacent spring discharges at N.W. corner of unit at spring begins Class I stream. 100' buffer recommended. Western border near class I stream, leave 100' buffer.

EXCEPT FOR THE EXTREME NE AND STEEP SLOPES, SLIDE CHUTES, AND PROTECT V-NOTCHES, LANDSLIDES, AND TOES OF FAULTS. USE PARTIAL LOG

Logging SW tip of unit will result in loss of high quality habitat for marten, otter, brown bear, and moderate quality deer winter range.

WOULD NOT MEET FOX IN PERMISSIVE AREA. WOULD BE VISIBLE FROM USHK BAY. WOULD NOT MEET YAO.

Outside designated high-sensitivity area - no survey required

Tim Type	X44	X45	TOTIAYO
Acres	55	5	
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	NONE	OBSERVED	
Wind Hazard (H,M,L) M			
Damage (Insect, disease, animal, etc)			CENTAC STAMPING

LOGGING/TRANSPORTATION

Landing: 40-1, 40-2
Profiles:
Field Review: 7.10.92
WATERSHED/FISHERIES
DWS/Dsw 2-5-92
Field Review:
DON 8/5/92

SOILS/GEOLOGY

PLS & PRL 7/7 92
Field Review:
DSW 7/23 92

WILDLIFE/SUBSISTENCE

Field Review:
7/21/92 VLA

VISUAL/RECREATION

Field Review: 6/16 7-20-92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

YAO: PP
VAC: LON
Viability: ME
ROC: PPM 1 / SPM
Recreation Site:
Trail:











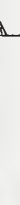
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 41
VCU: 281
Alternative(s): C D E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 9-10

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE (Name/Date)	Tim Type	X44	TOTI/AVG	RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
TIMBER/SILVICULTURE Stand Exam: 7/28/92 S. Allen & T. Postine Stand Exam Type: Plots Silvicultural Review:	Acres MBF/Species WH 88 YC MH Other TOTAL MBF/As Prevalent Plant Assoc. Site Index Regen Method Gross Growth N. Goshawk Wind Hazard (H,M,L) M Damage (Insect, disease, animal, etc.)			Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar is probably necessary to maintain desired species composition. Pre-commercial thin in 15-20 years to enhance growth. Predominant plant association is WH-9C/18B, a moderately productive site. Muskeg seems as the northern boundary. A large patch of cedar decline is on the north (central) boundary. Deep, steep-sided creeks run to the north and west of the unit. UNIT BOUNDARY CHANGES: The northern half of the unit is too steep and cannot be logged (about 2/3 of the acreage). Unit boundary modified as shown on map. 2 landings suitable only for 3/4" running skyline because of small anchor unless rockbolts/cableway used. Tight landings, unless artificial anchors used to permit placement of yarder in muskeg. There is 1 class II stream near northern boundary of unit. Maintain no. 41 buffer zone near stream. Do not ground yard at stream, use full suspension yalder log wren from v-notch drainage and at stream. Consider full suspension yaldering. Prevent debris from entering bulges, if it does, remove it. Minimize disturbance to muskeg and riparian wetlands.
LOGGING/TRANSPORTATION Landing: 41-1, -2, -3 Profiles: Plot 8.2.92 WATERSHED/FISHERIES 6/27/92 ASK Field Review: PLS 7-18-92				Unit boundary modified as shown on map. 2 landings suitable only for 3/4" running skyline because of small anchor unless rockbolts/cableway used. Tight landings, unless artificial anchors used to permit placement of yarder in muskeg. There is 1 class II stream near northern boundary of unit. Maintain no. 41 buffer zone near stream. Do not ground yard at stream, use full suspension yalder log wren from v-notch drainage and at stream. Consider full suspension yaldering. Prevent debris from entering bulges, if it does, remove it. Minimize disturbance to muskeg and riparian wetlands.
SOILS/GEOLOGY Field Review: OSW & PLS 7/15/92				No concerns for marten, otter, brown bear, or deer.
WILDLIFE/SUBSISTENCE Field Review: VLA 7/21/92				WOULD NOT MEET FS INV POS. MAY BE PARTLY VIABLE FROM ALASKA MARINE TRIP.
VISUAL/RECREATION Perspective Plots: Field Review: 66/67 7/18/92	VOO: VAC: Viability: ROC: Recreation Site: Trail:			PARTIAL RETENTION LOW M P.M. 1
ARCHAEOLOGICAL CULTURAL Field Review: N/A				Outside designated high-sensitivity area - no cultural resources surveys required

Harvest Unit Design Card




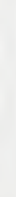


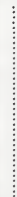

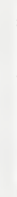


Ushk Bay EIS

Harvest Unit: 43
 VCU: 281
 Alternative(s): C D E

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 8-9

Legend

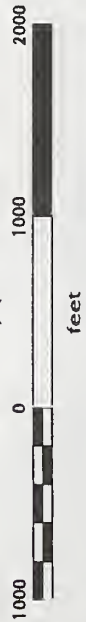
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND partial cut. to keep with visual guidelines.
 Natural Regeneration of Hemlock should be adequate. Planting of YC may be necessary to maintain species composition. A pct may be necessary in ≈ 15-20 yrs to enhance growth.
 Predominantly a WH-YC/BB.
 Plant Assoc. site productivity is moderate.
 Silviculturally, Clearcutting is best system for Unit.

Tim Type	X45	TOTAL
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL MBF/AC		
Previant Plant Assoc.	210	
Site Index		
Repen Method		
Gross Growth		
N. Goshawk	None observed	
Wind Hazard (H,M,L) L		
Damage (Insect, disease, animal, etc.)		

Unit hunkated because much of it is steep and unstable otherwise. Very confined landings suited only to swing yarder operation, preferably grapple. 4-3-2 is accessed by 20% spur. Partial cut feasible only for very low retained stocking.
 have away from vertical drainage, do not enter them. Consider full log suspension in upper slopes of unit and partial log suspension in lower slopes. Prevent debris from entering channel and if it does, remove it.
 No Fisheries concern

AVOID SLOPES OVER 75%. USE PARTIAL LOG SUSPENSION YARDING ON THE STEEPER SLOPES.
 Harvesting entire unit will result in loss of high quality habitat for marten. Consider maintaining an unharvested buffer of 660 feet around eagle nest #86 to protect perching habitat. Logging middle of unit will impact moderate quality deer winter range.
 VISIBLE FROM USHK BAY. † AMHT.
 WOULD NOT MEET FOS!
 Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card

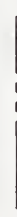


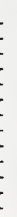


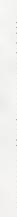

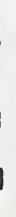


Ushk Bay EIS

Harvest Unit: 45
 VCU: 281
 Alternative(s): C E

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 57-58

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN CARD

USHK: _____ VCU: 281 MGT: 45 DATES: 7-7

MANAGEMENT AREA:

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Regeneration of hemlock should be adequate, but planting of Sitka spruce and yellow cedar is recommended to maintain current species composition. Pre-commercial thin in 15-20 years to enhance growth.

WH-VI/BB; a moderately productive site; and MH/BB/HH which is low in productivity and typically not logged. Steep pitches (>90%) occur throughout midportion of unit. A wide deep V-notch bisects the unit. Numerous smaller V-notches run along the E boundary and should be avoided. UNIT BOUNDARY CHANGES: A portion of unit 60 (West of gully) was added but due to low productivity should be deleted. Also, SE area marked has slopes >95% and should be avoided.

THESE TOWER LADDER TISSUE YARDING ACTIVITIES ACCESS THE LOWER SLOPES OF THIS UNIT. PARTIAL SUSPENSION HAS BEEN PLANNED. NOTE: LOGS SHOULD BE VARDED BEFORE CONSTRUCTING THE REMAINING ROAD. SWAPS ARE A SAFETY HAZARD FOR LOGGING CAMPS. HELICOPTER PORTION HAS BEEN DELAYED DUE TO SUB ECONOMICS.

No Fisheries concerns.
No hydrology concern.

Avoid slopes over 65%. Avoid the SE/ERN HALF OF THE UNIT DUE TO STEEP SLOPES AND MULTIPLE FAWERS. AVOID AND PROTECT V-NOTCHES, LANDSLIDES, AND CHUTES TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF FAILURES, PARTICULARLY AT THE TOE OF THE NW FACING SLOPE. USE PARTIAL LOG SUSPENSION YARDING.

Harvesting eastern portion of unit will impact high quality habitat for marten. No concerns for deer, brown bear, river otter.

Would not meet ROS. VISIONE FROM USHK RBY. | MAY BE VISIONE FROM AMH.

Outside Sensitive Area - No Survey Necessary

Time Type	X45	X44	TOT/AVO
Acres			
M/BF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
M/BF/AC			
Prevalent Plant Assoc.	510	210	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	WXX	SEAN	
Wind Hazard (H,M,L) M			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 4
Profiles: NA
Field Review: 11/8/92

WATERSHED/FISHERIES

TV 8/2/92 DOW 8/3/92
Field Review:
DWS 8/17/92

SOILS/GEOLOGY

OSW & RLL 5/29/92
Field Review:
PLS & OSW 7/15/92

WILDLIFE/SUBSISTENCE

Field Review:
VLA 7/23/92

VISUAL/RECREATION

VOC:
VAC:
Viability:
ROC:
Recreation Site:
Trail:

PARTIAL REF.
LOW
MID. GROUND
PRIMITIVE I

ARCHAEOLOGICAL/CULTURAL

Field Review: 6/18 7-24-92
Field Review: N/A



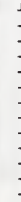
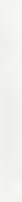


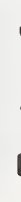



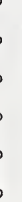
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 48
VCU: 279
Alternative(s): D E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 56-57

Legend

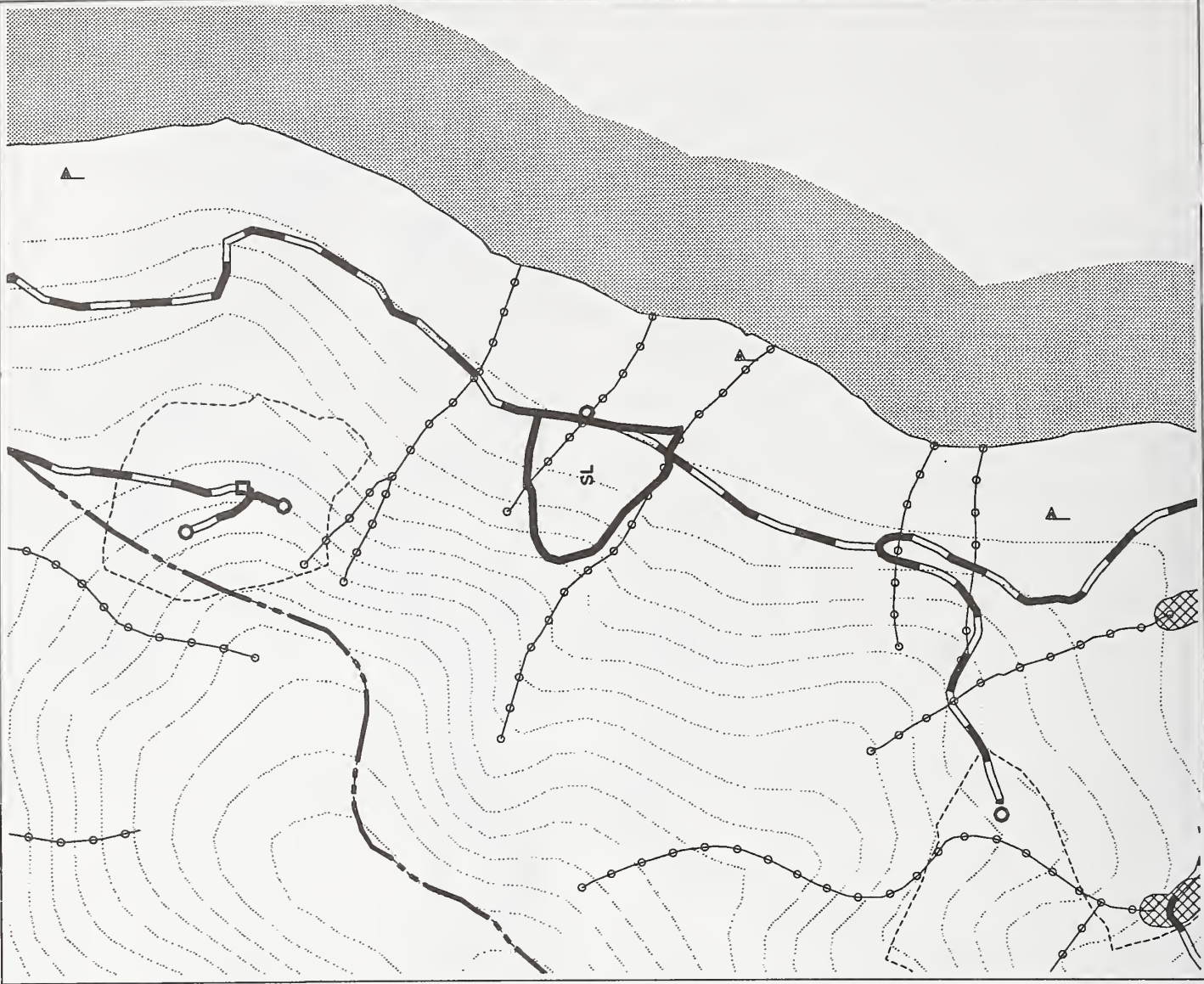
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: VCU: 274 UNIT: 48 ACRES: 13
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend partial cut system to meet visual guideline. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to obtain species composition. A PCT at 15-20yrs may be necessary to enhance growth. Predominantly a WH-YC-BB. Site productivity is moderate. Silviculturally, Clearcutting is best system for Unit.

-unit could be expanded NE to obtain more volume if necessary

RECOMMENDING CLEAR CUTTING TO AVOID UNHEALTHY CROCOD BY WITHSTANDING PARTIAL SUSPENSION IS DANGEROUS. SUGARS ARE A SAFETY HAZARD FOR LOGGING OPERATIONS, NOTE THE NIND HAS FELLED THE SINGLE TREE.

There is 4 class III stream in southern area of unit. No fishery concerns. ~~and~~ Consider full log suspension. Prevent debris from entering drainages and if it does, remove it.

AND PROTECT V-NOTCHES TO WINDFIRM STANDS, USE PARTIAL LOG SUSPENSION VALIDITY.

Logging along stream and along northern edge of unit will result in loss of high quality marten habitat. Consider maintaining 600 foot wide buffer of unharvested timber around eagle nest tree to protect perching habitat. Logging SE tip of unit will impact moderate quality deer winter range.

WONS NOT MEET PROS CLASSIFICATION. WOULD BE PROMPTLY VISIBLE FROM DMIT. RECOMMEND CRAP SELECTION OR SHELTERED CUT TO REDUCE CONTRAST

Outside Sensitive Area - No Survey Necessary

Tim Type	X44	TOTAL
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/Ac		
Prevalent Plant Assoc.	210	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	None observed	
Wind Hazard (H, M, L)	M	
Damage (Insect, disease, animal, etc.)	LOGS STAMPING	

AVOID SCORES OVER 75%. AVOID USE PARTIAL LOG SUSPENSION VALIDITY.

AVOID SCORES OVER 75%. AVOID USE PARTIAL LOG SUSPENSION VALIDITY.

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AVOID SCORES OVER 75%. AVOID USE PARTIAL LOG SUSPENSION VALIDITY.

Stand Exam: 6/29/92
M. White / K. Seitz / M. Cox
Stand Exam Type: Variable Plot - Fixed Plots
Silvicultural Review: A. Smith
7/26/92

LOGGING/TRANSPORTATION
Landing: VA
Profile: VA 8-5-92
Field Review: 6/27/92 etak 002
8/13/92
RS 7-19-92

WATERSHED/FISHERIES
6/27/92 etak 002
8/13/92
RS 7-19-92

SOILS/GEOLOGY
Field Review: OSW & RLL 5/29 92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/23/92

VISUAL/RECREATION
Field Review: 6/14 7-29-92

Field Review: N/A

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

VAO:
VAC:
Viability:
FOG:
Recreation Site:
Trail:



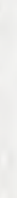
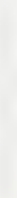
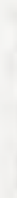






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 49
VCU: 279
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 56-57

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK MANAGEMENT AREA: VCU: 274 UNIT: 49 ACRES: 21

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend partial cut to meet visual guidelines.
 Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to maintain species composition. A PET may be necessary in a 15-20 yrs to enhance growth. Predominantly a WH-YC/BB Plant Assoc. Stand productivity is moderate. Silviculturally, Clearcutting is best system for Unit.
 Stand could possibly be expanded in an westward direction to obtain more volume.

WAD UP HOLE TO LA... WITH PLANTING SUSPENSION...
 VARIOUS UNIT 61 AT S... TIME FOR...
 YACIDING 49, 50, 51, 52, 53, 54, 55 AT... TIME TO A...
 LOSS...
 PART. ADDED SECTION HAS BEEN INCLUDED

Log away from V-notch drainages... consider full log suspension, prevent debris from entering ditches and if it does, remove it. Minimize disturbance of muskeg and riparian wetlands. Class III stream draining muskeg. No Fisheries concern.

PROTECT V-NOTCHES AND SUMPS TO WINDFIRM STANDS. AROUND THE HEADS OF FALURES. USE PRACTICAL LOGS THE STABILITY OF THE RUN CORNER OF THE UNIT.

No concerns for marten, otter, brown bear, or deer.

VISIBLE FROM AMD. WOULD NOT MEET FUS.
 Outside Sensitive Area - No Survey Necessary

Tim Type	H44	TOT/AVG
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Prevent		
Plant Assoc.	210	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	non observed	
Wind Hazard (H.M.L)		
Damage (Insect, disease, animal, etc.)		

AVOID SLOPES OVER 65%. AVOID & AVOID CUTTING BELOW THE TOES AND SUSPENSION YARDING, FIELD REVIEW

VCO: _____
 VAC: _____
 Visibility: _____
 ROC: _____
 Recreation Site: _____
 Trail: _____

ARCHAEOLOGICAL CULTURAL
 Field Review: N/A

Stand Exam: 6/30/91
 M. White, K. Scitz / m. Cox
 Stand Exam Type:
 Variable Plot; Fixed Plots
 Silviculturalist Review:
 A. J. Smith
 7/26/92

LOGGING/TRANSPORTATION
 Landing: /
 Profiles:
 Field Review: 7-28-92

WATERSHED/FISHERIES
 PLS 7-14-92
 Field Review:
 TV 8/2/92
 DON 8/2/92

SOILS/GEOLOGY
 Field Review:
 OSW & RDL 5/29 92



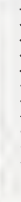
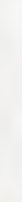


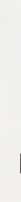




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 50
VCU: 279
Alternatives: C

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 56-57

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 274 UNIT: 50 ACRES: 816
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION):

Tim Type	X46	X45	TOT/AVG
Acres	6	5	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/Ac			
Prevalent Plant Assoc.	210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	NOV. OBSERVED		
Wind Hazard (H,M,L)	H		
Damage (Insect/Disease, Animal, etc.)	cedar decline (solvent)		

RECOMMEND PARTIAL CUT, KEEPING VISUAL GUIDELINES IN MIND, DUE TO VISIBILITY FROM MARINE HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. SITE PRODUCTIVITY IS MODERATE PREDOMINANTLY WH/YC/BB PLANT ASSOC. SITE PRODUCTIVITY IS MODERATE POSSIBLE UNIT ADDITION: ADDITION OF 2/16 ACRES TO NORTH AND WEST SIDE OF UNIT, TO OBTAIN MORE VOLUME IF NEEDED.
 Silviculturally, Clearcutting is best system for Unit.

STORMWINDY CONDITIONS HAVE BEEN MADE TO UNIT LINES TO ALLOW FERTILIZER VARIATION. UNIT SIZE HAS BEEN INCREASED. A PORTION OF THE "ME" UNIT TO L.W. HAS BEEN ADDED. RECOMMEND VARIATION OF 40% TO 50% IN SPRING TO 60% IN WINTER LWS TO 100% IN WINTER. SUBS ARE BEING FEED LOGGING CRUS.

Entire western edge of enlarged C.U., bordered by class III. Recommend maintaining a 50 ft buffer for logging (class III) considerations if suitable concern. Log away from class III stream and remove debris that falls into channel.

A PROTECT SLUMPS TO WINDERM STANDS. AVOID CUTTING BELOW THE TOES OF ARWEN THE HEADS OF THE FAILURES. USE PARTIAL LOG SUSPENSION YARDING.

Harvesting small portion of unit along creek will impact high quality marten habitat. Harvesting entire unit will impact moderate and high quality deer winter range.

WOULD NOT MEET T&S CROSS. MAY BE PARTIALLY VISIBLE FROM UNIT.

Outside Sensitive Area - No Survey Necessary

Stand Exam: 6/30/92 K. SENTE M. WHITE M. COX
 Stand Exam Type: VARIABLE PLOT; Fixed Plots
 Silvicultural Review: S. Smith 7/26/92

LOGGING/TRANSPORTATION
 Landing: 1
 Profiles: 0
 Field Review: 7/26/92

WATERSHED/FISHERIES
 DWS 8/17/92

SOILS/GEOLOGY
 Field Review: OSW & RRL 5/29/92

WILDLIFE/SUBSISTENCE
 Field Review:

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/16 7/26/92

ARCHEOLOGICAL/CULTURAL
 Field Review: N/A










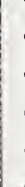
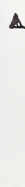
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: Group II
VCU: 281
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 56 57 58

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: IV/II VCU: 279/281 UNIT: Group II ACRES: 263
 RESOURCE CONCERNS (INCLUDING MGT OBJECTIVES & MITIGATION)

Suggested silvicultural system is group selection because of visual concerns. Groups to be approximately 2 acres in size and should occupy no more than 20 percent of total unit area. Concentrate groups in areas that provide some shelter from the wind. The unit should be helicopter logged.

Tim Type	X44	X45	H44	TOTI/AO
Acres				
MBF/Species				
WH				
BS				
YC				
MH				
Other				
TOTAL				
MBF/Ac				
Prevalent				
Plant Assoc.	210	510	420	
Site Index				
Prepn Method				
Gross Growth				
N. Goshawk				None Seen
Wind Hazard (H,M,L)				M to H
Damage (Insect, disease, animal, etc.)				Some dead mistletoe

HELICOPTER YARD TO LANDINGS IN UNIT 50 AND AT SOUTHERN END OF GROUP II.
 E 7/29/92

Space lowest groups so they do not touch on cross stream channels (Classes I, II, or III)
 GSR 7/29/92

Avoid and protect high mass movement hazard areas to windfirm.
 JPL 7/30/92

Avoid repeated helio flights within 1/4 mile of action. Bald eagle nests. Maintain 1/4 mile distance between helicopter flight paths and heliports and action nests. W 7/30/92

WOULD NOT MEET POS. WOULD BE VISIBLE FROM AMH. GROUP SELECTION WOULD REDUCE CONTRAST IN MIDDLE GROUND VIEWS.

Outside High Openativity Area; No Cultural Resources Survey Required.
 S. Flint 7/19/92

LOGGING/TRANSPORTATION

Landing:
 Profiles:
 Field Review:

WATERSHED/FISHERIES

Field Review:

SOILS/GEOLOGY

Field Review:

Field Review:

Field Review:

Field Review:

Field Review:

Field Review:

Field Review:



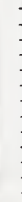
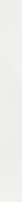

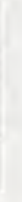




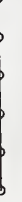
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 50
VCU: 279
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 56-57

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND PARTIAL CUT, KEEPING VISUAL GUIDELINES IN MIND, DUE TO VISIBILITY FROM MARINE HIGHWAY. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. SITE PRODUCTIVITY IS MODERATE. PREDOMINANTLY W4Y/88 PLANT ASSOC. POSSIBLE UNIT ADDITION: ADDITION OF 2-16 ACRES TO NORTH AND WEST SIDE OF UNIT, TO OBTAIN MORE VOLUME IF NEEDED. Silviculturally, Clearcutting is best system for Unit.

Tim Type	X46	X45	TOT/AVG
Acres	6	5	
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None? OBSERVED		
Wind Hazard (H.M.I.)			
Damage (Insect/Disease, Animal, etc.)			

STATIONARILY CHANGING HAVE BEEN MADE TO UNIT LINES TO ALLOW FOR EFFICIENT YARDING. UNIT SIZE HAS BEEN INCREASED. A PORTION OF THE "HEAVY TAIL" HAS BEEN ADDED. RECOMMEND YARDING TO 50 FT B/W. 160 FT STAKE TO BE SET AT 100 FT INTERVALS. SUPPLY AREAS SHOULD BE LOGGED CAREFULLY. Entire western edge of enlarged C.U.D. bordered by class III. Recommend maintaining a 50 ft buffer for downstream (class III) considerations if situation a concern. Log away from class III stream and remove debris that falls into channel.

AVOID SLURPS OVER 70%. AVOID CUTTING BELOW THE TOES OF ABOVE LOG SUSPENSION YARDING'S.

Harvesting small portion of unit along creek will impact high quality marten habitat. Harvesting entire unit will impact moderate and high quality deer winter range.

WOULD NOT MEET FOS CROSS. MAY BE PARTIALLY VISIBLE FROM AMH.

Outside Sensitive Area - No Survey Necessary

Stand Exam: 6/30/92 K. SEITZ M. WHITE M. COX Stand Exam Type: VARIABLE PLOT; Fixed Plots Silviculturalist Review: S Smith 7/26/92	LOGGING/TRANSPORTATION Landing: 1 Profiles: 6 Field Review: 7-26-92	WATERSHED/FISHERIES Field Review: DON 8/3/92	SOILS/GEOLOGY Field Review: DMS 8/17/92	VISUAL/RECREATION Field Review: 66/1/7 7/26/92	ARCHAEOLOGICAL/CULTURAL Field Review: N/A
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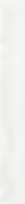
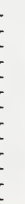




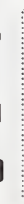


Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 52
VCU: 280
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 14-15

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHR MANAGEMENT AREA: VCU: 200 UNIT: 52-B ACRES: 20
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RESOURCE (Name/Date)	Tim Type	X44	X45	TOT/AVG
TIMBER/SILVICULTURE	Acres			
Stand Exam: 7/10/92	MBF/Species			
M. White	WH			
Stand Exam Type:	88			
Variable Plot: Fixed Plots	YC			
Silviculturalist Review:	MH			
S Smith	Other			
7/26/92	TOTAL			
	MBF/AC			
	Prevalent Plant Assoc.		ND	
	Site Index			
	Regen Method			
	Gross Growth			
	N. Goatsuck			
	Wind Hazard (H,M,L)			
	Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
 Lending:
 Profiles: D. P. 7-13-92
WATERSHED/FISHERIES
 DWS/Dsw 7/6/92
 Field Review: 7/4/92 JPK

SOILS/GEOLOGY
 Field Review: DSW 7/24 92
WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/21/92

VISUAL/RECREATION
 VQA:
 VAC: PE / MODIFICATION
 Visibility: LOW
 ROC: MIDDLEG.
 Recreation Site: PRM. 1
 Trell:

ARCHAEOLOGICAL/CULTURAL
 Field Review: 7/20/92
 NA

Recommend clear-cut system. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary. A PCT cut 7-15-20 yrs may be necessary to enhance growth.
 Predominantly a WH/DB plant Assoc.
 Site productivity is moderate.

Logway from V-watch channels (consider fall or partial suspension. Keep debris out of channels and if it gets in, remove it. This unit is east of class 11/11 stream. Maintain 50 ft or up to slope breaks buffer YCed swai from stream; directional fall. SOFT BUFFER OVER YC WINDFIRM. TP

AVOID SLOPES OVER 65%. AVOID THE HOTLY DISSECTED AND LANESID W'ERN 1/5 TO 1/2 OF THE UNIT. AVOID & PROTECT WHATCHES, SLOPES, AND CHUTES TO WINDFIRM STANDS. AVOID THE CHUTES ALONG THE SW BOUNDARY OF THE UNIT. AVOID CUTTING ALONG THE HEADS AND BELOW THE TOES OF THE FATHERS. USE PARTIAL LOG SUSPENSION YARDING.
 No concern for brown bear, marten, etc. Logging west edge of unit will impact moderate quality deer winter range.

WOULD NOT MEET POS.

outside high sensitivity zone - ND
 survey unnecessary.
 7-27-92 Zusk

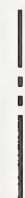

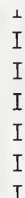







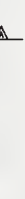
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 55
VCU: 281
Alternative(s): C D E

Photo Information

Year: 1986
Flight Line: 26-27
Photo Number: 8-59

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK LUD: VCU: 20 UNIT: 55 ACRES: 22

MANAGEMENT AREA:

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend partial cut system to meet Visual guidelines. Natural regeneration of hemlock should be adequate. Planting of YC may be necessary to maintain species composition. A PCT in 15-20 yrs may be necessary to enhance growth. Predominantly a WH-YC/BB Plant. Assoc. site productivity is moderate. Silviculturally, Clearcutting is best system for Unit - area added on west portion of unit.

Only a very low retained stocking is feasible for a partial cut. (say 5 trees/acre). Snag retention is hazardous to logger safety. Suited to 1-30 ft. trees.

Log away from V-notches. Consider full log suspension. Prevent debris from entering drains and if it does remove it. Minimize disturbance of muskrats and riparian vegetation. No Fisheries concern

AND PROTECT V-NOTCHES AND THE SMALL SLOPE AND NOT CUT BELOW THE TOES OF THE FATHOMS. USE THE STEEPER SLOPES.

Harvesting unit will result in loss of high quality habitat for marten and moderate quality deer winter range.

WOULD NOT MEET FOS. MAY BE VISIBLE FROM USHK BOY-

Outside Sensitive Area - No Survey Necessary

Tim Type	Acres	MBF/Species	WH	BB	YC	MH	Other	TOTAL	TOT/AVG
MBF/Ac									
Plant Assoc.									
Site Index								210	
Regen Method									
Gross Growth									
N. Goshawk									
Wind Hazard (H,M,L) H on lower portion - low ridge									
Damage (Insect, disease, animal, etc.)									

None observed

AVOID SLOPES OVER 75%. AVOID AREAS TO WINDFIRM STANDS. DO PRACTICAL LOG SUSPENSION YARDING ON

PR
Low
Me
MINIMIZE

VOC:
VAC:
Visibility:
ROC:
Recreation Site:
Trail:

Stand Exam: 6/28/92
M. White/K. Sutz
Stand Exam Type:
Variable Plot; Fixed Plots
Silviculturalist Review:
S. Smith
7/26/92

LOGGING/TRANSPORTATION
Landing: 55-1
Profiles: 55-1-285
Field Review: 8/22 6/5/92
WATERSHED/FISHERIES
PLS 7-18-92
Field Review:
TU 8/7/92
ODW 8/25/92

SOILS/GEOLOGY
Field Review:
DSW & RLL 5/30/92
WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/20/92

VISUAL/RECREATION
Perspective Plots:
Field Review: 6/18 7/24/92

ARCHAEOLOGICAL CULTURAL
Field Review: N/A

Harvest Unit Design Card




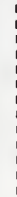






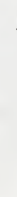
Ushk Bay EIS

Harvest Unit: 58
 VCU: 281
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 57-58

Legend

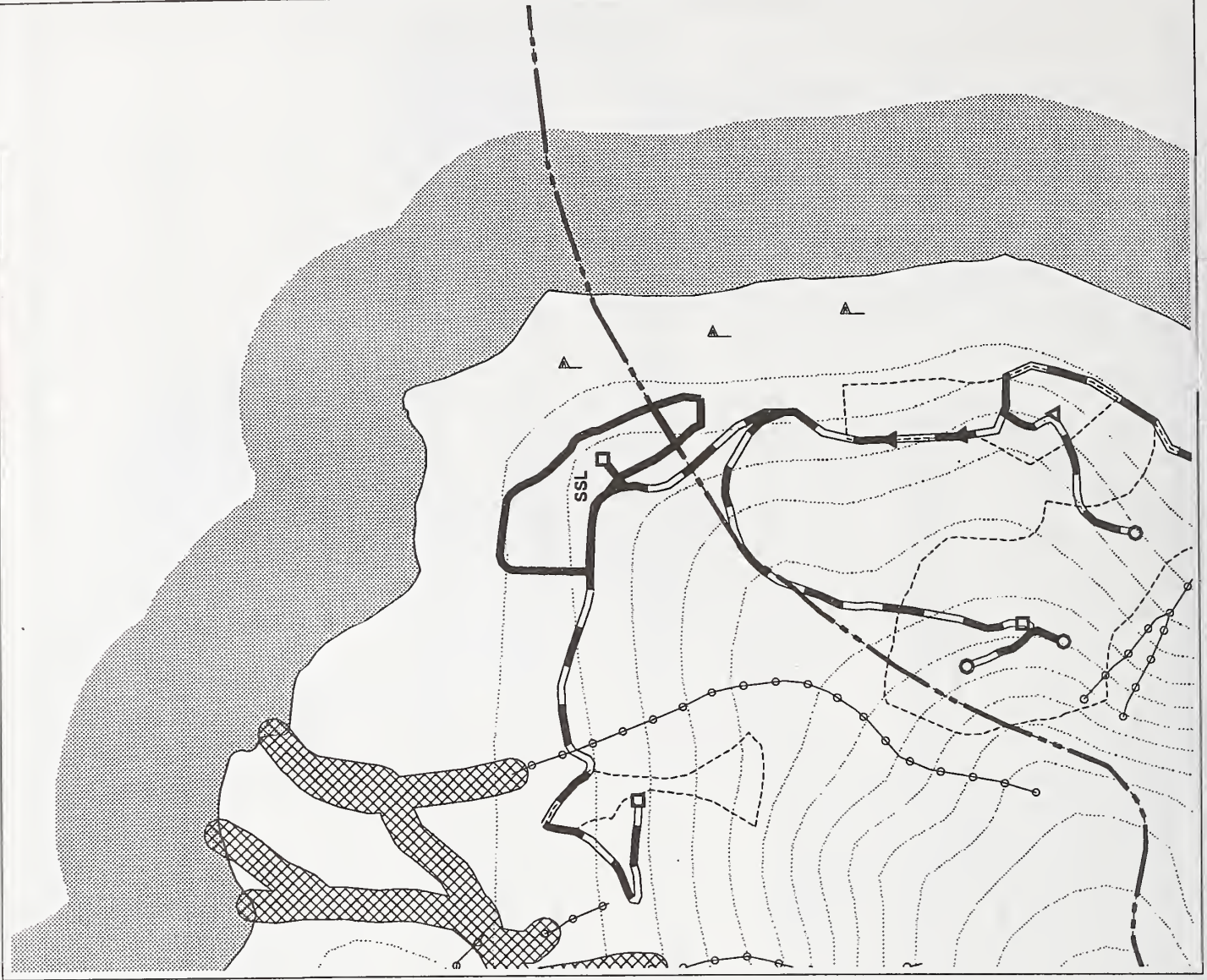
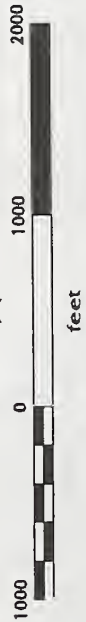
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.81 UNIT: 58 ACRES 12

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)		MANAGEMENT AREA:		TOTALS	
Tim Type	Acres	H	X	Y	44
MBF/Species					
WH					
SS					
YC					
MH					
Other					
TOTAL					
MBF/Ac					
Prevalent Plant Assoc.	420	210			
Site Index					
Regen Method					
Gross Growth					
N. Goshawk	None	Seen			
Wind Hazard (H, M, L, M)					
Damage (Insect, disease, animal, etc.)	Some	Misc			

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. ADVISE PLANTING OF YELLOW CEDAR FOR REGEN. IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YRS. WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SPACES PER ACRE FOR DIVERSITY. THE PREVALENT PLANT ASSOCIATION IS WH-YC/SS WITH A MODERATELY PRODUCTIVE. SLOPE IS MODERATE THROUGHOUT THE UNIT AND THERE ARE NO STEEP V-PATCHES IN THE UNIT.
UNIT BOUNDARY CHANGES: SOUTHERN ARM OF UNIT MAY BE EXTENDED WESTWARD THUS INCREASING UNIT AREA.
L01-58 IS DESIGNATED FOR A 1/2" MACHINE. THE REMAINING LARVICIDES WILL BE HARVESTED BY SWAMPING YARDING. PARTIAL SUSPENSION IS PLANNED. SWAPS AND A SAFETY HAZARD FOR LOGGERS' GRAVITY. 4-25-84 ARE SWAMP YARDING OPERATIONS. LOGS WILL REQUIRE LOGGED TRUCKS. MULTIPLE STUMP ANCHORS ARE RECOMMENDED.
Log away from V-notch drainages. Consider full log suspension prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskrats. No Fisheries concern
Harvesting northern tip of unit will result in loss of high quality and moderate quality bear habitat, and loss of estuary fringe habitats. Maintain 330 foot unharvested buffer around eagle nest trees #7-60. Consider maintaining 660 foot buffer around eagle nest trees #88, 7, 60, 61 to protect perching habitat.
UNDO NOT MEET POS. VISIBILITY FROM AMH. RECOMMEND GROUP SELECTION OR ENHANCED CUT TO REDUCE MIDDLEGROUND VISIBILITY
Avoid slopes over 75%. Avoid & protect small swamps to windfirm stands. Use partial log suspension yarding.
Harvesting northern tip of unit will result in loss of high quality and moderate quality bear habitat, and loss of estuary fringe habitats. Maintain 330 foot unharvested buffer around eagle nest trees #7-60. Consider maintaining 660 foot buffer around eagle nest trees #88, 7, 60, 61 to protect perching habitat.
UNDO NOT MEET POS. VISIBILITY FROM AMH. RECOMMEND GROUP SELECTION OR ENHANCED CUT TO REDUCE MIDDLEGROUND VISIBILITY
Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card



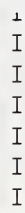







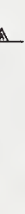
Ushk Bay EIS

Harvest Unit: 59
 VCU: 279
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 57-58

Legend

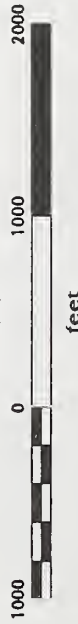
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNII DESIGN GAHD

LUD: VCU: 274 UNIT: 59 ACRES: 14

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. ADVISE PLANTING OF SITKA SPRUCE AND YELLOW CEDAR FOR SITE PREP/REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE LEAVE AT LEAST TWO SNAGS PER ACRE FOR DIVERSITY THE PREVALENT PLANT ASSOCIATIONS ARE WH-YC/SS WHICH IS MODERATELY PRODUCTIVE AND MC/SS + MC/SS/SC WHICH ARE UNPRODUCTIVE. EASTERN PORTION OF UNIT CONTAINS BETTER TIMBER (LB. HEMLOCKS WITH CLEAR UNDERSTORY). WESTERN PORTION IS CLOSER TO A MUSKIE AND HAS SMALLER TREES, BOGS, AND CEDAR STRIPING IS EVIDENT.

PARTIAL SUSPENSION IS FEARED. THE WEST SIDE HAS BEEN EXTENDED TO THE RAMP. TWO SWAMPY SANDER LANDINGS ARE PLANNED. GUNNING WILL REQUIRE MULTIPLE STUNNERS. SWAGS AREA ARE AROUND FIRE LOGGING CREWS.

Log away from V-notch drainages, ~~and not~~ - Consider full log suspension. Prevent debris from entering drainages and if it does, remove it. Minimize disturbance to muskies and riparian wetlands. No fisheries concern.

AVOID SLOPES OVER 75%. AVOID & WINDFIRM STANDS. USE PARTIAL LOG SUSPENSION PAVEDIANS.

No concerns for marten, otter, brown bear. Consider maintaining 600 foot unharvested buffer around eagle nest & 89 to protect perching habitat. Harvesting southern end of unit will impact moderate quality deer winter range.

WOULD NOT MEET POS. WOULD LIKELY BE VISIBLE FROM AMH. RECOMMEND GROUP SELECTION OR SHIFTERWARD CUT TO REDUCE CONTRAST TO MIDDLEGROUND VIEWS

Outside Sensitive Area - No Survey Necessary

PROJECT: USHK

RESOURCE (Name/Date)

Tim Type	X 44	TOTIANG
Acres		
MBF/Species		
WH		
SS		
YC		
MH		
Other		
TOTAL		
MBF/AG		
Prevalent Plant Assoc.	210,410	
Site Index		
Reign Method		
Gross Growth		
N. Goshawk	NONE	SEEN
Wind Hazard (H,M,L)	H	
Damage (Insect, disease, animal, etc.)		

LOGGING/TRANSPORTATION

Landing: 2
Profiles: N/A
Field Review: V. P. 6-92

WATERSHED/FISHERIES
PLS 7-14-92
Field Review: TV 8/2/92
ODW 8/2/92

SOILS/GEOLOGY
Field Review: OSW & RRL 5/29 92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/21/92

VISUAL/RECREATION
VQO: IF
VAC: LOW
Visibility: MG
ROC: GPM
Recreation Site: _____
Trail: _____

PERSPACTIVE PLOTS:
Field Review: G-IF 7-29-92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A




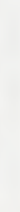
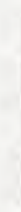

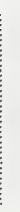




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 60
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 57-58

Legend

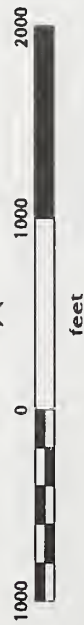
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK LUD: VCU: 279 UNIT: 60 ACRES 35

RESOURCE (Name/Date) **MANAGEMENT AREA:**

TIMBER/SILVICULTURE

Stand Exam: 6/29/92
S. Allen & T. Pusina
Stand Exam Type: plots
Silviculturist Review: S. Smith
7/28/92

Tim Type	A44	X44	TOT/A40
Acres			
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC	510	410	
Prevalent Plant Assoc.		210	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None	None	
Wind Hazard (H,M,L,H)			
Damage (insect, disease, animal, etc.)			

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce will be necessary to maintain current species composition. Pre-commercial thin in 15-20 yrs. to enhance growth. ^{predominant}

Plant associations are WH-Vc/Bb, MC/Bb, and MH/Bb, which are moderate to low in productivity. UNIT BOUNDARY CHANGE: The area west of the gully (NW nob) was added to unit 45. The western-most portion is the mixed conifer and mountain hemlock types, low in productivity, and should not be logged. This is a high elevation site next to muskeg.

SHADE CANOPIES ARE REMOVED FOR THIS UNIT. THIS UNIT HAS BEEN DESIGNATED AS A HIGH PRIORITY FOR LOGGING. EXTENSIVE LOGGING IS REQUIRED. RECOMMEND LOGGING 1 YEAR - 2 YEARS FOR THE REMAINING SPACES. FURTHER SCHEDULING IS REQUIRED. SLUMPS ARE A HAZARD FOR LOGGING CREWS.

There is 1 class in stream on SW boundary of unit. Maintain soft buffer or up to slope break. Split used if practical. ~~As for buffer only if windfirm log away from V-notch drainage.~~ Consider helicopter removal. Prevent debris from entering stream. If it does, remove it. Minimize disturbance to muskeg and riparian wetlands.

Avoid slopes over 65%. Avoid crossing the V-notch frame to get to the NW corner of the unit. Avoid & protect V-notches and slumps to windfirm stands. Avoid cutting above the heads of suspension yarding.

Harvesting western tip of unit will result in loss of high quality habitat for moose. Harvesting SE tip of unit will impact moderate quality deer winter range.

Would not meet 70%. Would be visible from AMH. Recommend group selection or shelterwood cut to reduce contrast to middle ground views.

Outside Sensitive Area - No Survey Necessary

LOGGING/TRANSPORTATION

Landing: 3
Profiles: N-
Field Review: 11/8-6-92

WATERSHED/FISHERIES

6/27/92 AS
Field Review:
PLS 7-14-92

SOILS/GEOLOGY

Field Review:

WILDLIFE/SUBSISTENCE

Field Review:
VLA 7/21/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 6/1/92 7/28/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

VOC: PARTIAL REF
VAC: LOW
Visibility: MGT.
ROC: SPNM - PRIM. I
Recreation Site:
Trail:

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 67
 VCU: 281
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 7-8

Legend

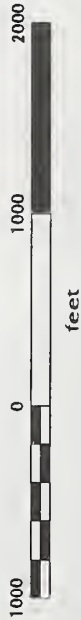
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▬ Shoreline and Lakes
- ▨ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: VCU: 281 UNIT: 67 ACRES 14

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend clear-cut system. Natural regeneration of hemlock should be adequate. Planting of Yc may be necessary to maintain species composition. A PCR at a 15-20 yrs may be necessary to enhance growth.
 Predominantly a wtt-yc/pb, however lower portion of stand contains SC. Site productivity is moderate to low-moderate on lower grounds.

Suited to 1-1/8" towers only. 50' radius curve limits access to 67-2. For 67-1, tailhold across creek. Unit boundary changed as shown to avoid yarding across creek.

Log away from V-notch tree trunks. Do not cut within 10m. Consider full log slash pile. Prevent debris from entering drainage and if it does se-
 1. Minimize disturbance to muskrats and riparian vegetation.
 2. Maintain min 100 ft buffer for sufficient windfall class 1 stream in southern basin. Maintain min 100 ft buffer for sufficient windfall class 1 stream in southern basin. Maintain min 100 ft buffer for sufficient windfall class 1 stream in southern basin. Maintain min 100 ft buffer for sufficient windfall class 1 stream in southern basin.
 3. Minimize disturbance to riparian habitat class in stream on eastern boundary.
 4. Maintain 50 ft buffer on sufficient windfall class in stream on eastern boundary.
 5. Minimize disturbance to riparian habitat class in stream on eastern boundary.
 6. Maintain 50 ft buffer on sufficient windfall class in stream on eastern boundary.

AVOID SCORES OVER 75%. USE PRACTICAL LOG SUSPENSION ON THE HILLSIDES.

Logging southern portion of unit will result in loss of high quality marten habitat. Logging northern half of unit will impact moderate quality deer habitat.

WOULD NOT MEET FOS. MAY BE PARTIALLY VISIBLE.
 No significant cultural resources identified

TimType	X4S	X44	TOT/AVG
Acres			
MBF/Species			
WH			
99			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk		None observed	
Wind Hazard (H, M, L) - mod on lower ground.			
Damage (Insect, disease, animal, etc) 5/6/92			

LOGGING/TRANSPORTATION
 Landing: 67-1, 67-2
 Profiles:
 Field Review: *[Signature]* 7.8.92

WATERSHED/FISHERIES
 PLS 7-15-92
 Field Review: *[Signature]*
 6/21/92

SOILS/GEOLOGY
 Field Review:
 OSW 7/23 92

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/21/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 9. 400ft/14.
 7-20-92

ARCHAEOLOGICAL/CULTURAL
 Field Review: 7/2/92
 M. Kelly

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 68
VCU: 281
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 7-8

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.81 UNIT: 68 ACRES: 18

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate but planting of yellow cedar may be necessary to maintain current species composition. A pre-commercial thin at 15-20 years is recommended. The pre-dominant plant association is WH-VL/BB, a moderately productive site. Steep pitches occur (100%) within unit. An old blowdown site exists. A deep V notch serves as west boundary and creek as North boundary. Another V notch bisects the eastern portion of the unit, which could make logging difficult in this area.

Eastern part deleted in view of potential slope instability. (See over) snag retention is safety issue. Multiple stump anchors required for thresholds. Continuous landing in eastern portion of unit as modified (but suited to grapple yard).

Log away from V-notch by 100 feet. Consider tall log suspension. Prevent debris from entering channel and if it does, remove it. Minimize disturbance to moose and caribou wetland. Class 1 stream in northern area of unit. Maintain min. 100 ft buffer or sufficient windfall class in stream north of west. Minimize disturbance to riparian area. Recommend directional logging away from stream. Minimize disturbance to riparian area.

AND PROTECT V-NOTCHES, SLIDES, AND CUTS TO BELOW THE TOES OF FAILURES. USE PARTIAL

No concerns for brown bear, marten, otter, or deer.

WOULD NOT MEET POS. UPPER PORTION WOULD BE VISIBLE FROM USUK BOY.

Outside Sensitive Area - Survey Not Necessary

Tim Type	X44	TOTAL
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/AC	210	
Prevalent Plant Assoc.		
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	None	Observed
Wind Hazard (H,M,L,H)		
Damage (insect, disease, animal, etc.)		CEPAC SPRING

LOGGING/TRANSPORTATION

Landing: 68-1, -2
 Profiles:
 Field Review:
 WATERSHED/FISHERIES
 VLS 7-18-92
 Field Review:
 2/21/92

SOILS/GEOLOGY
 Field Review:
 DSW 7/23 92

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/21/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/16 7.28.92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A

Blond Exam: T. PUSKAS, S. ALLEN 4/27/92
 Blond Exam Type: PLOTs
 Silviculturalist Review: D Smith 7/26/92

LOGGING/TRANSPORTATION
 Landing: 68-1, -2
 Profiles:
 Field Review:
 WATERSHED/FISHERIES
 VLS 7-18-92
 Field Review:
 2/21/92

SOILS/GEOLOGY
 Field Review:
 DSW 7/23 92

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/21/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/16 7.28.92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A




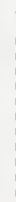





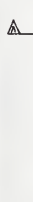

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 68
VCU: 281
Alternative(s): B F

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 7-8

Legend

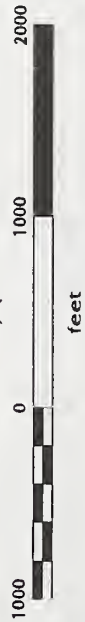
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.81 UNIT: 68 ACRES: 39

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate but planting of yellow cedar may be necessary to maintain current species composition. A pre-commercial thin at 15-20 years is recommended. The pre-dominant plant association is WH-VL/BB, a moderately productive site. Steep pitches occur (100%) within unit. An old blowdown site exists. A deep V notch serves as west boundary and creek as North boundary. Another V notch bisects the eastern portion of the unit, which could make logging difficult in this area.

Eastern part deleted in view of potential slope instability. (See over) Shag retention is safety issue. Multiple stump anchors required for thresholds. Continuous landing in eastern portion of unit as modified (best suited to grapple yard)

Log away from V notch being processed. Consider full log suspension. Prevent debris from entering animal and if it does, re-move it. Minimize disturbance to minkes and riparian wetlands. Class I stream in northern area of unit. Maintain min. 100 ft buffer or sufficient windfirm class in stream north of V notch. Maintain min. 50 ft buffer or sufficient windfirm. Recommend directional logging away from streams. Minimize disturbance to riparian area.

AND PROTECT V-NOTCHES, SLIDES, AND CHUTES TO BELOW THE TOES OF FAILURES. USE PACTUAL

No concerns for ~~the~~ brown bear, marten, otter, or deer.

UNDOUB NOT MEET POS. UPPER PORTION UNDOUB BE VISIBLE FROM USHK BOX.

Outside Sensitive Area - Survey Not Necessary

Tim Type	X44	TOTIANG
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Previent Plant Assoc.	210	
Site Index		
Region Method		
Gross Growth		
N. Goshawk	None	Observed
Wind Hazard (H,M,L) H		
Damage (Insect, disease, animal, etc.)		CEPAC SPRING

LOGGING/TRANSPORTATION

Landing: 68-1, -2
Profiles:

WATERSHED/FISHERIES
PLS 7-18-92
Field Review: 6/21/92

SOILS/GEOLOGY
Field Review: DSW 7/23 92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/21/92

VISUAL/RECREATION
Field Review: Perspective Plots: 6/16 7-25-92

Stand Exam: T. Pusnik, S. Kuler 4/21/92
Stand Exam Type: PLOTS
Silviculturalist Review: S Smith 7/26/92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A











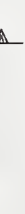
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 68
VCU: 281
Alternative(s): D E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 7-8

Legend

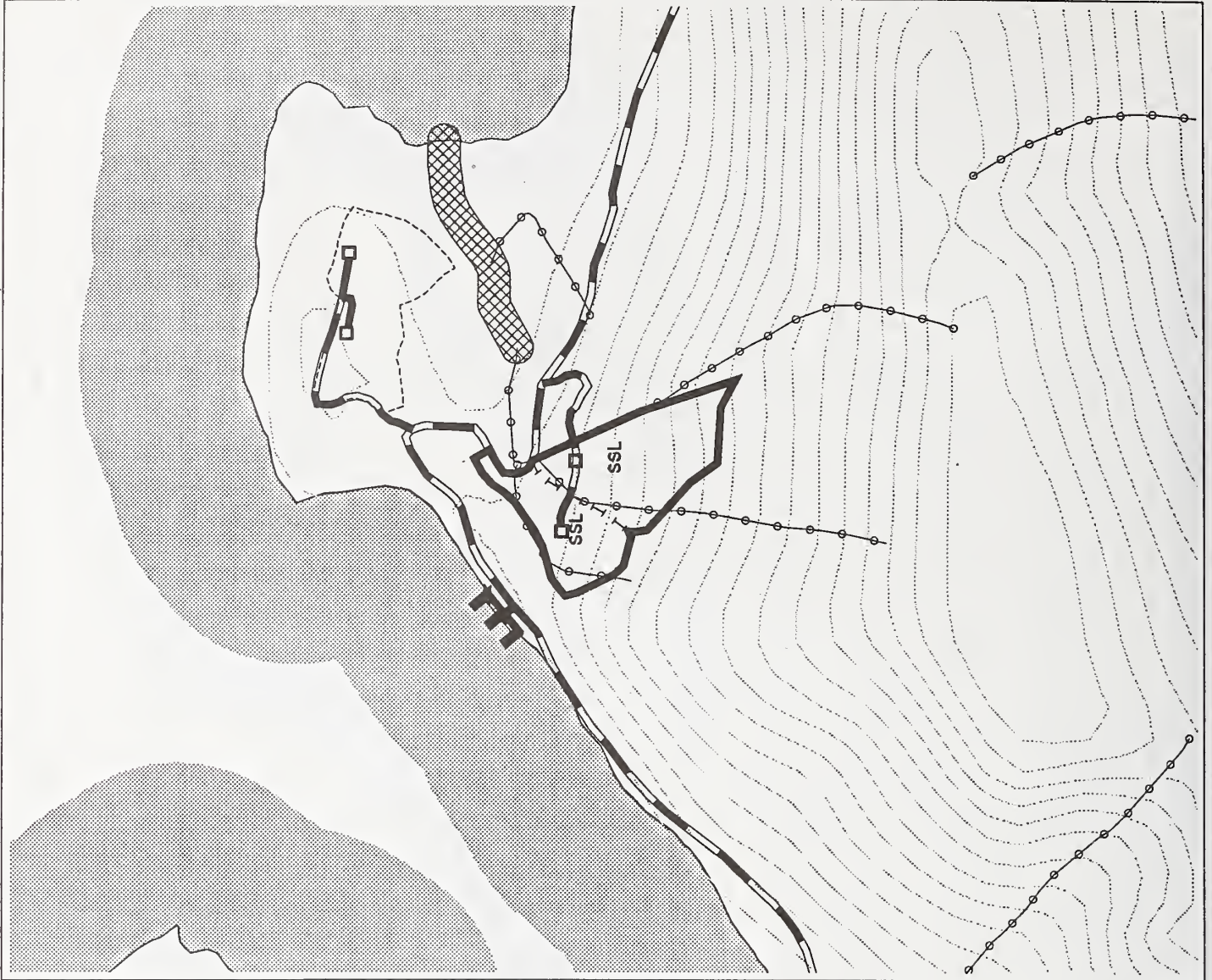
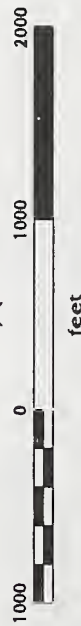
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN GAHD

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.81 UNIT: 68 ACRES: 18

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate but planting of yellow cedar may be necessary to maintain current species composition. A pre-commercial thin at 15-20 years is recommended. The pre-dominant plant association is WH-Ve/BB, a moderately productive site. Steep pitches occur (100%) within unit. An old blowdown site exists. A deep V notch serves as west boundary and creek as North boundary. Another V notch bisects the eastern portion of the unit, which could make logging difficult in this area.

Eastern part deleted in view of potential slope instability. (See prev) snag retention is safety issue. Multiple stump anchors required for thresholds. Continuous landing in eastern portion of unit as mod/feet (best suited to grapple yarder)

Log away from V-notch by 100 ft. Consider tall log's suspension. Prevent debris from entering animal den if it does re-move it. Minimize disturbance to marten and marten wetland class 1 stream in northern area of unit. Maintain min. 100 ft buffer or sufficient windfirm class in stream north of west. Maintain min. 50 ft buffer or sufficient windfirm class in stream north of west. Minimize disturbance to riparian area.

AND PROTECT V-NOTCHES & SLIDES, AND CHUTES TO BELOW THE TOES OF FAILURES. USE PRACTICAL

No concerns for brown bear, marten, otter, or deer.

INDUOUS NOT MEET POS. UPPER PORTION UNBOUND BE VISIBLE FROM USUAK BOY.

Outside Sensitive Area - Survey Not Necessary

Tim Type	X44	TOTAL
Acres		
MBF/Spec/Class		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/AC	210	
Prevalent Plant Assoc.		
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	None	Observed
Wind Hazard (H,M,L,H)		
Damage (insect, disease, animal, etc.)		CEPHE SENSITIVE

LOGGING/TRANSPORTATION

Landing: 68-1, -2
Profiles:
Field Review:

WATERSHED/FISHERIES
PLS 7-8-92
Field Review: 6/21/92
SOILS/GEOLOGY

Field Review: DSW 7/23 92
WILDLIFE/SUBSISTENCE

Field Review: VLA 7/21/92
VISUAL/RECREATION

Perspective Plots:
Field Review: 6/16 7-28-92
ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Harvest Unit Design Card










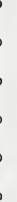
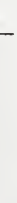
Ushk Bay EIS

Harvest Unit: 70
 VCU: 281
 Alternative(s): C E

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 135-136

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN UNIT

PROJECT: USHK MANAGEMENT AREA: VCU: 281 UNIT: 70 ACRES: 34

RESOURCE (Name/Date)	MANAGEMENT AREA	RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)																																																																				
TIMBER/SILVICULTURE Stand Exam: 7/16/92 M. White / K. Sietz / M. Cox Stand Exam Type: Variable Plot; Fixed Plots Silviculturalist Review: J. Smith 7/26/92	<table border="1"> <thead> <tr> <th>Tim Type</th> <th>X44</th> <th>X45</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>Acres</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/AC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prevailant Plant Assoc.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Site Index</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Regen Method</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Wind Hazard (H, M, L)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc.)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Tim Type	X44	X45	TOTAL	Acres				MBF/Species				WH				SS				YC				MH				Other				TOTAL				MBF/AC				Prevailant Plant Assoc.				Site Index				Regen Method				Gross Growth				N. Goshawk				Wind Hazard (H, M, L)				Damage (Insect, disease, animal, etc.)				Recommend clear-cut system. Natural regeneration of hemlock should be adequate. Planting of YC & spruce may be necessary to maintain species composition. Predominantly a white/yellow plant. Assoc. Unit productivity is MODERATELY PRODUCTIVE. Note: Various V-notches in unit. Most are minor. snag retention is a safety issue. No yarding difficulties anticipated. Helicopter slopes beyond reach of yarder. Steep downhill yarding into landings 1 & 3. 100' buffer for class II stream forming, southeastern boundary of unit. Log away from V-notch channels & consider filler or partial suspension. If debris enters channel remove it.
Tim Type	X44	X45	TOTAL																																																																			
Acres																																																																						
MBF/Species																																																																						
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Wind Hazard (H, M, L)																																																																						
Damage (Insect, disease, animal, etc.)																																																																						
LOGGING/TRANSPORTATION Landing: 70-1, 2, 3, 50-1 Profiles: 70-3-370 Field Review: D.W. 7.13.92																																																																						
WATERSHED/FISHERIES DDW 8/3/92 Field Review: DMB/DSW 7/5/92																																																																						
SOILS/GEOLOGY Field Review: PLS & RRL 7/7/92																																																																						
WILDLIFE/SUBSISTENCE Field Review: VLA 7/21/92																																																																						
VISUAL/RECREATION Perspective Plots: Field Review: G/LF 7.28.92																																																																						
ARCHAEOLOGICAL/CULTURAL Field Review: N/A																																																																						

AVOID THE MAT DUE TO FREQUENT DISSECTIONS AND UNSTABLE GROUND.

 Logging SE half of unit will result in loss of high quality marten habitat. Logging eastern portion of unit will impact moderate quality deer winter range.

 WOULD NOT MEET POS.

 Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card




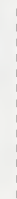



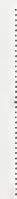


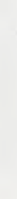
Ushk Bay EIS

Harvest Unit: 72
 VCU: 281
 Alternative(s): B F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 134-135

Legend

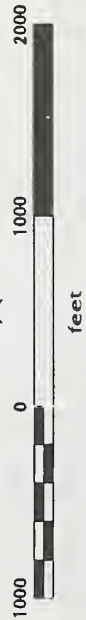
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK RESOURCE (Name/Date) UNIT: 72 ACRES: 62
 MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)

TIMBER/SILVICULTURE
 Stand Exam: S. Allen & P. Maxey
 Stand Exam Type: plots
 Silviculturalist Review: S. Allen
 7/28/92

Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is necessary to modify their current species composition (note: it may exist if unit planting not necessary). Pre-commercial thinning 15-20 years to enhance growth.
 Predominant plant associations are WH/BB/SF, which is a highly productive site, and MH/BB (and variations), which is moderate to low in productivity. Deep V-notches are common in the north and east sections of unit.
 UNIT BOUNDARY CHANGES: Consider dropping east boundary to avoid steep slopes, V-notches and unstable areas.

LOGGING/TRANSPORTATION
 Landing: 72-1, -2, 8, -9, 2-3
 Profiles: 7-5, 7, 72-8, 10, 3
 Field Review: 8/3/92

WATERSHED/FISHERIES
 DWS/DW 7/8/92
 Field Review: 8/3/92

SOILS/GEOLOGY
 Field Review: DSW & RRL 6/2 92

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/21/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/16 7-28-92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A

Some logging must occur over V-notch channels. snag retention is a site issue. South-center portion of unit deleted due to soil stability concerns, per geologist recommendation. Also SE portion deleted for same reason. Directionally fall ward away from buffer in W log away from V-notch channels and consider fall on parcel suspension. Keep debris out of channels and remove it if it gets in. maintain 100' buffer on western class I stream forming west edge of unit.

Avoid the eastern half of the unit. Avoid slopes over 65%. Avoid & protect V-notches, landslides, and chutes to wind firm stands. Avoid cutting above the heads and below the toes of failures. Use partial log suspension above the valley bottom.

Logging western portion of unit will result in loss of high quality habitat for otter, marten, brown bear. Logging central part of unit will impact moderate quality deer winter range.

Would not meet FOS. Would not be visible -

Outside high-sensitivity zone - no survey required

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 72
 VCU: 281
 Alternative(s): C E

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 134-135

Legend

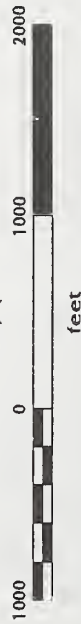
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK	MANAGEMENT AREA:	LUD: VCU: 281 UNIT: 72 ACRES: 49
RESOURCE (Name/Date)	RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)	
TIMBER/SILVICULTURE		
Stand Exam: S. Allen 1 P. Maxey plots	Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is necessary to maintain current species composition (note: it may only be unit planting not necessary) for commercial thinning in 15-20 years to enhance growth.	
Stand Exam Type: Silvicultural Review: DJ Smith 7/28/92	Predominant plant associations are WH/BB/SF, which is a highly productive site, and MH/BB (and variations), which is moderate to low in productivity. Deep V-notches are common in the north and east sections of unit. UNIT BOUNDARY CHANGES: Consider dropping east boundary to avoid steep slopes, V-notches and unstable areas.	
LOGGING/TRANSPORTATION	Some logging must occur over V-notch channels. snag retention is safety issue. South-center portion of unit deleted due to soil stability concerns, per geologists recommendation. Also SE portion deleted for same reason. Intentionally fall yard away from buffer in NW.	
WATERSHED/FISHERIES	Log away from V-notch channels and consider fall on packed suspension. Keep debris out of channels and remove it if it clogs gully. maintain 100' buffer on western class I stream forming west edge of unit.	
DWA/DSW 7/8/92 Field Review: DDW 8/3/92		
SOILS/GEOLOGY	Avoid the eastern half of the unit. Avoid slopes over 65%. Avoid & protect V-notches, landslides, and chutes to wind firm stands. Avoid cutting above the heads and below the tops of failures, use partial log suspension above the valley bottom.	
Field Review: VLA 7/21/92	Logging western portion of unit will result in loss of high quality habitat for otter, marten, brown bear. Logging central part of unit will impact moderate quality deer winter range.	
VISUAL/RECREATION	Would not meet pos. Would not be visible -	
Perspective Plots: Field Review: 6/16 7-20-92		
ARCHAEOLOGICAL/CULTURAL	Outside high-sensitivity zone - no survey required	
Field Review: N/A		

TimType	X44	X45	TOT/AVG
Acres			
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/Ac	120	120	
Prevalent Plant Assoc.	510	510	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none		
Wind Hazard (H,M,L,H)			
Damage (Insect, disease, animal, etc.)			

VAC: IP/MBX, MOD/MBD
 VAC: INTERM.
 Viability: M4
 ROQS: PRIMITIVE I
 Recreation Site:
 Trail:




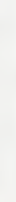


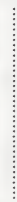

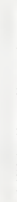


Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 72
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 134-135

Legend

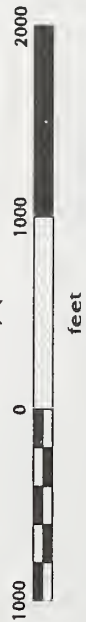
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X44	X45	TOT/AVG
Acres			
MBF/Species			
WH			
98			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Percent	120	120	
Plant Assoc.	510	510	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	sketch	
Wind Hazard (H,M,L,H)			
Damage (insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
 Landing: 72-1, 27-8, 9, 2-3
 Profiles: 72-5, 72-8, 10, 11
 Field Review: 7/10/92

WATERSHED/FISHERIES
 DMB/BSW 7/8/92
 Field Review: 8/13/92

SOILS/GEOLOGY
 Field Review: OSW & RRL 6/2/92

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/21/92

VISUAL/RECREATION
 VAO: P.P. MBX. MOD. MBD
 VAC: INTERM.
 Visibility: M4
 ROQS: PRIMITIVE I
 Recreation Site:
 Trail:

ARCHAEOLOGICAL/CULTURAL
 Field Review: 66/16 7-28-92
 Field Review: N/A

Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is necessary to modify current species composition (note: its majority of unit planting not necessary). Pro-commercial thin in 15-20 years to enhance growth.
 Predominant plant associations are WH/BB/SF, which is a highly productive site, and MH/BB (and variations), which is moderate to low in productivity. Deep V-notches are common in the north and east sections of unit.
 UNIT BOUNDARY CHANGES: Consider dropping east boundary to avoid steep slopes, V-notches and unstable areas.

Some logging must occur over V-notch channels. Shag retention is safety issue. South-center portion of unit deleted due to soil stability concerns, per geologists recommendation. Also SE portion deleted for same reason. Intentionally fill road away from buffer in W. Log away from V-notch channels and carry it to edge of unit. Keep debris out of channels and remove it at edge of unit. Maintain 100' buffer on western class I stream forming west edge of unit.

AVOID THE EVEN HALF OF THE UNIT. AVOID SLOPES OVER 65%. AVOID & PROTECT V-NOTCHES, LANDSLIDES, AND CHUTES TO WIND FIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOPS OF BALANCE, USE PARTIAL LOG SUSPENSION ABOVE THE VALLEY BOTTOM.

Logging western portion of unit will result in loss of high quality habitat for other, marten, brown bear. Logging central part of unit will impact moderate quality deer winter range.

WOULD NOT MEET POS. WOULD NOT BE VISIBILE -
 Outside high-sensitivity zone - no survey required

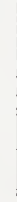
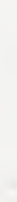
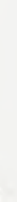



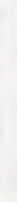
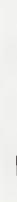



Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 72
VCU: 281
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 134-135

Legend

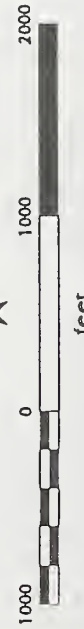
-  VCU Boundary
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-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

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- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK	MANAGEMENT AREA:	LUD: VCU: 2.8.1	UNIT: 72	ACRES: 49																																																																			
RESOURCE (Name/Date) TIMBER/SILVICULTURE Stand Exam: S. Allen 7.10.92 Stand Exam Type: plots Silviculturalist Review: DJ Smith 7/28/92	<table border="1"> <thead> <tr> <th>Tim Type</th> <th>X44</th> <th>X45</th> <th>TOT/AVG</th> </tr> </thead> <tbody> <tr> <td>Acres</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/Species</td> <td></td> <td></td> <td></td> </tr> <tr> <td>WH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>YC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MBF/ac</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prevalent Plant Assoc.</td> <td>120</td> <td>120</td> <td></td> </tr> <tr> <td>Site Index</td> <td>510</td> <td>510</td> <td></td> </tr> <tr> <td>Regen Method</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Growth</td> <td></td> <td></td> <td></td> </tr> <tr> <td>N. Goshawk</td> <td></td> <td>more dense</td> <td></td> </tr> <tr> <td>Wind Hazard (H,M,L,H)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Damage (Insect, disease, animal, etc.)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Tim Type	X44	X45	TOT/AVG	Acres				MBF/Species				WH				SB				YC				MH				Other				TOTAL				MBF/ac				Prevalent Plant Assoc.	120	120		Site Index	510	510		Regen Method				Gross Growth				N. Goshawk		more dense		Wind Hazard (H,M,L,H)				Damage (Insect, disease, animal, etc.)				RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION) Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar and Sitka spruce is necessary to maintain current species composition (note: et majority of unit planting not necessary). Pre-commercial thin in 15-20 years to enhance growth. Predominant plant associations are WH/BB/SF, which is a highly productive site, and MH/BB (and variations), which is moderate to low in productivity. Deep V-notches are common in the north and east sections of unit. UNIT BOUNDARY CHANGES: Character dropping east boundary to avoid steep slopes, V-notches and unstable areas.	Some logging must occur over V-notch channels. Snag retention is safety issue. South-center portion of unit deleted due to soil stability concerns, per geologists recommendation. Also SE portion deleted for same reason. Directionally fall toward area from buffer in W. Log occur from V-notch channels and consider fall on packed suspension. Keep debris out of channels and remove it w/ it gets going. maintain 100' buffer on western class I stream forming west edge of unit.
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LOGGING/TRANSPORTATION Landings: 72-1, -2, 7-8, -9, 2-3 Profiles: 72-5, 71, 72-8, 1-5, 7 Field Review: 7/10/92																																																																							
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SOILS/GEOLOGY Field Review: DSW & RRL 6/2 92																																																																							
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Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 74
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 135-136

Legend

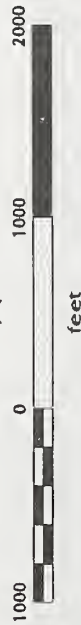
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.8.1 UNIT: 74 ACRES 57

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A. WH/BB/SF PLANT ASSOC. SITE IS MOST PRODUCTIVE WITHIN HEMLOCK SERIES.

UNIT CHECKLINE HAS BEEN SPECIFIED TO HAVE CONCERNS, MAJORLY ARE THIS UNIT CAN BE LOGGED WITH SINGLE SYSTEM. LANDINGS ARE AVAILABLE FOR CASCADIAN TYPES. LOG LANDING WITH SHELTER WILL VARIOUSLY BE HANDLED WITH 1/4 M ACRES. OBTAINING PARTIAL SUSPENSION, PARTIAL SUSPENSION PLANNED FOR THE TOWHILL CABLE LANDING.

Log away from V-notches channels consider full or partial suspension. Keep clear of channels & if it does go in, remove it. Minimum 20' disturbance to v-notch. Maintain 100' buffer on class II stream or western boundary and on class II stream in northernmost corner of unit.

AVOID SLOPES OVER 55%. AVOID AND PROTECT V-NOTCHES AND SLIDES TO WINDFIRM STANDS AVOID CUTTING BELOW THE TIES OF FAILURES. USE PARTIAL LOG SUSPENSION LOGGING ABOVE THE VALLEY BOTTOM.

Logging western portion of site will result in loss of high quality habitat for marten, otter, and brown bear. Logging NW corner of unit will impact moderate quality deer winter range.

NOVIO NOT MEET POS.
Outside designated high-sensitivity zone - no survey required

Tim Type	X 4 S	X 4 4	TOTAL
Acres	15	75	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/Ac			
Prevalent Plant Assoc.	120		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	NONE OBSERVED		
Wind Hazard (H, M, L)			
Damage (Insect, disease, animal, etc.) CEDAR DECLINE			

LOGGING/TRANSPORTATION

Landing: 4
Profile: 44
Field Review: 4/6-3-92

WATERSHED/FISHERIES
DWS 4/24 7/8/92
Field Review:
DOW 8/5/92

SOILS/GEOLOGY
DOW 4/24 5/31 92
Field Review:
DOW 4/24 7/12 92

WILDLIFE/SUBSISTENCE
Field Review:
VLA 7/21/92

Stand Exam: 6/1/92 K. SEITZ D. BARNETT
Stand Exam Type: VARIABLE PLOT, Fixed Plots
Silvicultural Review: S. Smith 7/26/91

VISUAL/RECREATION
Field Review:
VLA 7/21/92

PERCEPTIVE PLOTS:
Field Review: 6/1/92 7-22-92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

Field Review: N/A

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 74-A
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 135-136

Legend

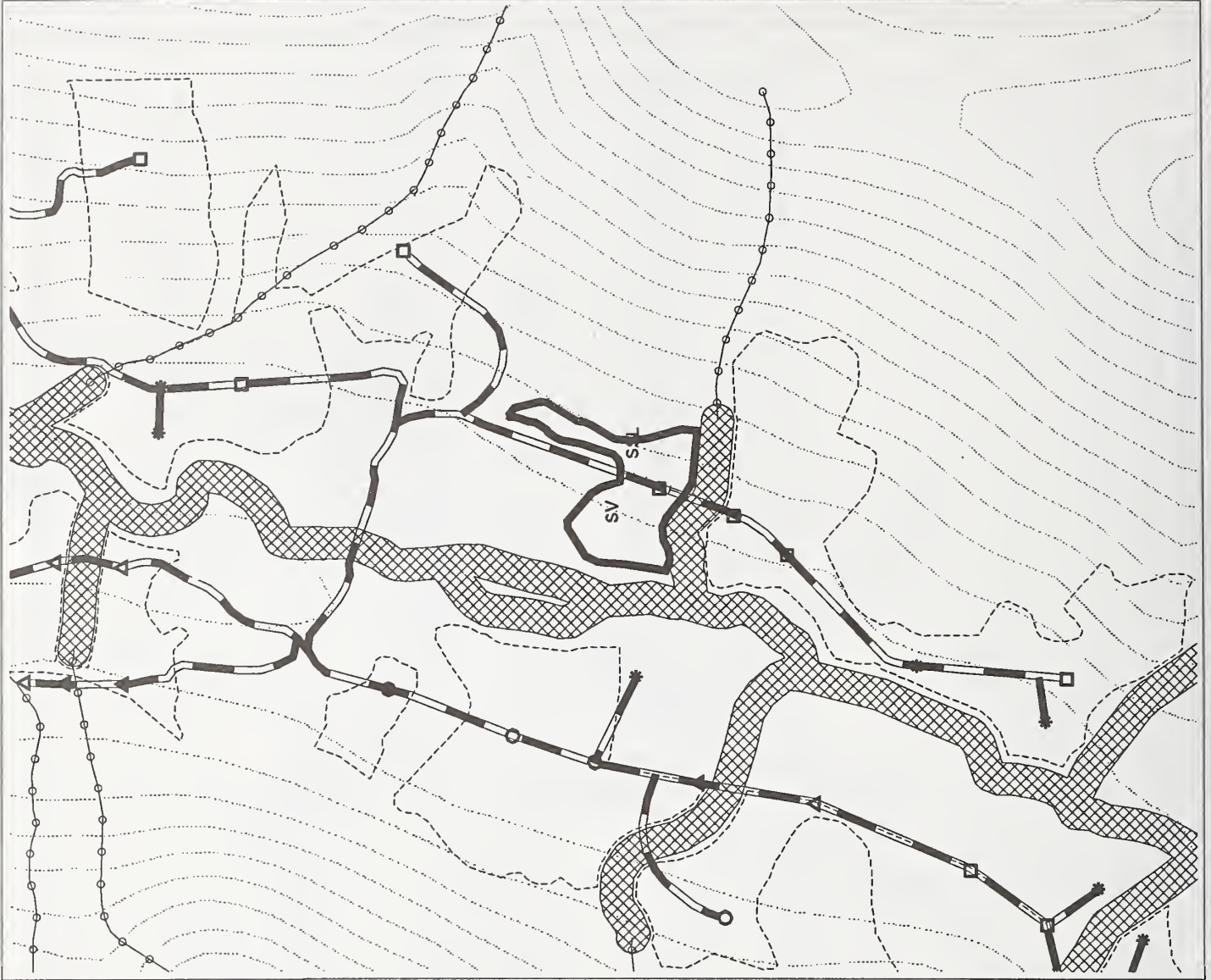
- VCU Boundary
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Reviewed by: /s/ E. Johnson
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RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY.
 PREDOMINANTLY A. WH/BB/SF PLANT ASSOC. SITE IS MOST PRODUCTIVE WITHIN HEMLOCK SERIES.

UNIT BACK LINE ARE BEING LOGGED TO GET SOIL CONCENTRATIONS, MAJORLY OF THIS UNIT CAN BE LOGGED WITHIN SILVOCUT SYSTEM. LOGGING ARE AVAILABLE FOR CASCADIAN. 7000 LANDING WITH BANKS WILL YIELD US AND BE HARVESTED WITH 1/8 METER. OBTAINING PARTIAL SUSPENSION, SILVOCUT ARE A SAFETY HAZARD FOR LOGGING OPERATIONS. LOGGING ARE PLANNED FOR THE DOWNHILL CREEK LANDING.

Log away from V-notches channels consider full or partial suspension. V-notches is out of channels & if it does go in, remove it. Minimum 20' disturbance to v-notch. Maintain 100' buffer on class II stream on western boundary and on class II stream in northernmost corner of unit.

AND PROTECT V-NOTCHES AND SLIDES TO WINDFIRM STANDS. AVOID CUTTING BELOW THE VALLEY BOTTOM. LOGGING ABOVE THE VALLEY BOTTOM.

Logging western portion of site will result in loss of high quality habitat for marten, otter, and brown bear. Logging NW corner of unit will impact moderate quality deer winter range.

(WIND NOT MEET FOR)

Outside designated high-sensitivity zone - no survey required

Tim Type	X 4 S	X 4 Y	TOTI/AVO
Acres	15	75	
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	120		
Site Index			
Page Method			
Gross Growth			
N. Goshawk	NONE OBSERVED		
Wind Hazard (H.M.I.)			
Damage (Insect, disease, animal, etc)			

CEDEK DECLINE

LOGGING/TRANSPORTATION

Landing: 4
 Profiles: 44
 Field Review: 4/6-3-92

WATERSHED/FISHERIES

DWS DSW 7/8/92
 Field Review:
 DON 8/5/92

SOILS/GEOLOGY

OSW & RL 5/31 92
 Field Review:
 OSW & PLS 7/12 92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/21/92

VISUAL/RECREATION

VGO: MOD. / MAX MOD.
 VAC: ~~LOW~~ INT.
 Visibility: UNSEEN
 ROC: FRM.
 Recreation Site:
 Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A






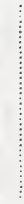




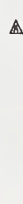
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 75
 VCU: 281
 Alternative(s): B F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 14-15

Legend

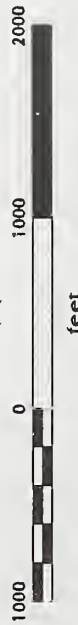
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- SL Slackline
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- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: IISHK MANAGEMENT AREA: LUD: VCU: 2.81 UNIT: 75 ACRES: 56

RESOURCE (Name/Date)	MANAGEMENT AREA:	RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCKS SHOULD BE SUFFICIENT. ADVISE PLANTING OF YELLOW CEDAR AND SITKA SPRUCE FOR SITE PREP./REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO STAGS PER ACRE FOR DIVERSITY. IN THE EASTERN PORTION OF THE UNIT NEAR THE MAIN CREEK, THE PREVALENT PLANT ASSOC. IS SS/BS WHICH IS MODERATELY PRODUCTIVE. THE PLANT ASSOC. NEAR THE MAIN CREEK, THE PREVALENT PLANT ASSOC. IS YL/BS WHICH IS ALSO MODERATELY PRODUCTIVE. AREAS OF THE UNIT ARE BOGGY AND CONTAIN STUMPED TREES. MAINTAIN AT LEAST 100' BUFFER STRIP NEXT TO CREEK.	TOTAL	
Stand Exam: M. White, T. Pusine 6/3/92 Stand Exam Type: Plots Silvicultural Review: J. Smith 7/28/92	Tim Type	X 44	X 45	
	Acres			
	MBF/Species			
	WH			
	SS			
	YC			
	MH			
	Other			
	TOTAL			
	MBF/AC	210	130	
Prevalent Plant Assoc.				
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	NOV	SEEN		
Wind Hazard (H,M,L,H)				
Damage (Insect, disease, animal, etc.)				
LOGGING/TRANSPORTATION				
Landing: 2				
Profiles: NW				
Field Review: 4/1 5-3-92				
WATERSHED/FISHERIES				
DWS/Dsw 7/5/92				
Field Review: TV 9/1/92				
DDN 8/3/92				
SOILS/GEOLOGY				
Field Review: DSW 7/22 92				
WILDLIFE/SUBSISTENCE				
Field Review: VLA 7/21/92				
VISUAL/RECREATION				
VOO: PR				
VAC: C MG				
Visibility: LOW				
ROC: PRIMITIVE I				
Recreation Site:				
Trail:				
Perspective Plots:				
Field Review: 6/18 7-25-92				
ARCHEOLOGICAL CULTURAL				
Field Review: 5-17-92				

DIFFERS ON EAST SIDE OF UNIT HAVE REDUCED SITE UNIT SIZE. SLOPES CAUSE LOWER DRAIN LINES. THE LANDING WILL BE USED TO SPREAD THE UNIT. SLOPES ARE A SAFETY HAZARD. ...

Minimize disturbance in working & riparian wetlands.
 Maintain 100 ft buffer along Class I streams in eastern section of unit

Avoid slopes over 70%. AVOID PROTECT V-NOTCHES, LANDSLIDES, AND CHUTES TO WINDFIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOPS OF TREES. USE PRACTICAL LOG SUSPENSION YARDING ABOVE THE VALLEY BOTTOM.

Harvesting eastern portion of unit will result in loss of high quality habitat for marten, other brown bear.
 Harvesting strip thru central portion of unit will impact moderate quality deer winter range.

WOOD NOT MEET POS. NORTHERN END MAY BE POTENTIALLY VIABLE FROM WALK BAY.

No Significant Cultural Resources found.



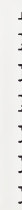
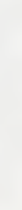

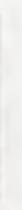

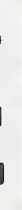


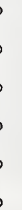
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 75
VCU: 281
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 14-15

Legend

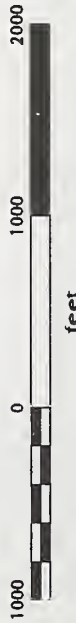
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Logging System

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IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X 44	X 45	TOTAL
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevailant			
Plant Assoc.	210	130	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	NOV	SEEN	
Wind Hazard (H,M,L) H			
Damage (Insect, disease, animal, etc.)			

Stand Exam: M. White, T. Pusina
6/3/92
Stand Exam Type: Plots
Silviculturalist Review: *[Signature]*
7/28/92

LOGGING/TRANSPORTATION
Landing: 2
Profiles: 2
Field Review: 6/5/92

WATERSHED/FISHERIES
DMS/DSDW 7/8/92
Field Review: 7/8/92

SOILS/GEOLOGY
Field Review: DSD 7/22 92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/21/92

VISUAL/RECREATION
Perepective Plots:
Field Review: 6/14 7-25-92

ARCHEOLOGICAL/CULTURAL
Field Review: 7-19-92

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCKS SHOULD BE SUFFICIENT. ADVISE PLANTING OF YELLOW CEDAR AND SITKA SPRUCE FOR SITE PREP./REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAPS PER ACRE FOR DIVERSITY. IN THE EASTERN PORTION OF THE UNIT NEAR THE MAIN CREEK, THE PREVALENT PLANT ASSOC. IS SS/BB WHICH IS MODERATELY PRODUCTIVE. THE PLANT ASSOCIATION FOR THE REST OF THE UNIT IS WH/YC/BB WHICH IS ALSO MODERATELY PRODUCTIVE. PORTIONS OF THE UNIT ARE BOOBY AND CONTAIN STUMPED TREES. MAINTAIN AT LEAST 100' BUFFER STRIP NEXT TO CREEK. SUFFERERS AND EAST SIDE OF UNIT HAVE REDUCED SIZE UNIT STAGES. SUFFERERS BECAUSE LOWER BACAL LINES. THE LAND AREA WILL BE USED TO SPRAY AND THE UNIT. SUFFERERS HAVE A SAFETY HAZARD TO THE SUFFERERS

Minimize disturbance in washing & riparian wetlands. Maintain 100 ft buffer along Class I streams in eastern section of unit. PROTECT V-NOTCHES, LANDSLIDES, AND CHUTES TO AVOID SCALP AND BELOW THE TOPS OF FAILURES. USE PARTIAL LOG SUSPENSION YARDING ABOVE THE VALLEY BOTTOM. Harvesting eastern portion of unit will result in loss of high quality habitat for marten, other brown bear. Harvesting strip thru central portion of unit will impact moderate quality deer winter range. WOULD NOT MEET POS. NORTHERN END MAY BE PARTIALLY VIABLE FROM VALLEY BAY. No significant Co North Processes found.

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 75
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 14-15

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- Proposed Road
- ... Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK UNIT: 281 ACRES: 31
 RESOURCE (Name/Date): VCU: 75
 MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	X 44	X 45	TOTAL
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC	210	130	
Plant Assoc.			
Site Index			
Perpet Method			
Gross Growth			
N. Goshawk	None	Seen	
Wind Hazard (H,M,L,H)			
Damage (Insect, disease, animal, etc.)			

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCKS SHOULD BE SUFFICIENT. ADVISE PLANTING OF YELLOW CEDAR AND SITKA SPRUCE FOR SITE PREP./REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO STARS PER ACRE FOR DIVERSITY. IN THE EASTERN PORTION OF THE UNIT NEAR THE MAIN CREEK, THE PREVALENT PLANT ASSOC. IS SS/BB WHICH IS MODERATELY PRODUCTIVE. THE PREVALENT PLANT ASSOCIATION FOR THE REST OF THE UNIT IS WH-YC/BB WHICH IS ALSO MODERATELY PRODUCTIVE. AREAS OF THE UNIT ARE BOGGY AND CONTAIN STUMPED TREES. MAINTAIN AT LEAST 100' BUFFER STRIP NEXT TO CREEK.

UNIT'S AD EAST SIDE OF UNIT HAVE REDUCED SIZE CRUIT STRENGTH SINCE CAUSE LOWER BROWN LINDERS. THE LANDOWNERS WILL BE USED TO SPL YARDING UNIT. SOURCE WERE A SAFETY HAZARD FOR THE OWNERS.

Minimize disturbance in mosaic & riparian wetlands. Maintain 100 ft buffer along Class I streams in eastern section of unit.

Avoid slopes over 70%. Avoid cutting above the heads and below the toes of failures. Use partial log suspension yarding above the valley bottom.

Harvesting eastern portion of unit will result in loss of high quality habitat for moose, other brown bear. Harvesting strip thru central portion of unit will impact moderate quality deer winter range.

WOULD NOT MEET POS. NORTHERN END MAY BE TEMPORARILY VISIBILE FROM UAK BAY.

No significant Cultural Resources found.

Blond Exam: M. White, T. Pusine 6/3/92
 Stand Exam Type: Plots
 Silvicultural Review: J. Smith 7/28/92

LOGGING/TRANSPORTATION

Landing: 2
 Profile: N/A
 Field Review: 4/8/92

WATERSHED/FISHERIES

DWS/BSW 7/8/92
 Field Review: TV 8/1/92
 DSN 8/3/92

SOILS/GEOLOGY

Field Review: DSU 7/22 92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/21/92

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/18 7/28/92

ARCHAEOLOGICAL/CULTURAL

Field Review: 7-19-92

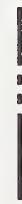

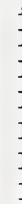
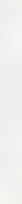






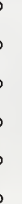
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 77
VCU: 281
Alternative(s): B F

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 11-12

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK UNIT: 77 ACRES: 34
 LUD: VCU: 28

MANAGEMENT AREA:		RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)				
<p>RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY.</p> <p>PREDOMINANTLY WH/YC/BB PLANT ASSOC., WITH SEVERAL OTHER TYPES OF ASSOCIATIONS PRESENT.</p> <p>SITES ARE MODERATE TO HIGH PRODUCTION.</p>	Tm Type	X44	X45	X46	TOT/AVG	
Acres	25	27	18			
MBF/Species						
WH						
BB						
YC						
MH						
Other						
TOTAL						
MBF/AC	210					
Plant Assoc.						
Site Index						
Regen Method						
Gross Growth						
N. Goshawk	NONE OBSERVED					
Wind Hazard (H,M,L) H						
Damage (Insect, disease, animal, etc.)						
LOGGING/TRANSPORTATION	UNIT LINE WAS CHANGED TO ACCOMMODATE EFFICIENT YARDING FOR UNIT 15. STEEP SLOPES & LEVY VALMME AROUND THE WEST BOUNDARY. EAST SIDE OF UNIT CAN BE SHUTTLE LOADED.					
Landing: 3	Log away from V-water channels & place debris from entering channels & clear debris. Minimize disturbance in overhead canopy & riparian wetlands. Maintain 100' buffer for class II stream for mfg. eastern boundary and clear it forming part of western boundary. Recommend 50' buffer on class III stream if siltation occurs					
Profiles:	IF BUT ON THE WIND FIRM.					
Field Review: V-G	OF THE UNIT. AVOID SLOPES OVER 70%. AVOID A PROTECT CHUTES TO WINDFIRM STANDS. AVOID CUTTING THE TOES SOUTH OF THE LEAD EDGE ABOVE THE RAUINE ON THE PRETRAL LOG SUSPENSION ABOVE THE VALLEY BOTTOM.					
Field Review: DMS/DSW 7/8/92	Harvesting eastern portion of unit will result in loss of high quality habitat for marten, otter, brown bear. Harvesting most of unit will impact moderate quality deer winter range.					
Field Review: DDN 8/3/92	WOULD NOT MEET POS.					
SOILS/GEOLOGY	AVOID THE HIGH W'ERN QUARTER V-NOTCHES, LANDSLIDES, AND SLIDE BELOW THE FAULTLINE. AVOID CUTTING SOUTH BOUNDARY OF THE UNIT. USE					
Field Review: OSW & RFL 6/2 92	MODIF. INC. UNSEEN PRIMITIVE I					
WILDLIFE/SUBSISTENCE	VAC: VOO: VISIBILITY: ROC: RECREATION SITE: TRAIL:					
Field Review: VLA 7/20/92	RECREATION SITE: 66/14 7-28-92					
VISUAL/RECREATION	ARCHAEOLOGICAL CULTURAL					
Field Review: VLA 7/20/92	Field Review: N/A					
Perspective Photo:	Field Review: N/A					
Field Review: 66/14 7-28-92	Field Review: N/A					
ARCHAEOLOGICAL CULTURAL	Field Review: N/A					
Field Review: N/A	Field Review: N/A					




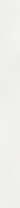







Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 77
VCU: 281
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 11-12

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK UNIT: 77 ACRES: 54

RESOURCE (Name/Date) MANAGEMENT AREA: LUD: VCU: 28) UNIT: 77 ACRES: 54

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY.

PRE DOMINANTLY WH/YC/BB PLANT ASSOC., WITH SEVERAL OTHER TYPES OF ASSOCIATIONS PRESENT.

SITES ARE MODERATE TO HIGH PRODUCTION.

Tim Type	X44	X45	X46	TOT/AVG
Acres	25	27	18	
MBF/Species				
WH				
YC				
MH				
Other				
TOTAL				
MBF/Ac				
Previant Plant Assoc.	210			
SRE Index				
Regen Method				
Gross Growth				
N. Goshawk	None OBSERVED			
Wind Hazard (H, M, U, H)				
Damage (Insect, disease, animal, etc.)				

LOGGING/TRANSPORTATION

Landing: 3

Profiles: 1-8

WATERSHED/FISHERIES

DWS/DSW 7/8/92

Field Review:

DDN 8/3/92

SOILS/GEOLOGY

Field Review:

OSW & RCL 6/2 92

WILDLIFE/SUBSISTENCE

Field Review:

VLA 7/20/92

VISUAL/RECREATION

Field Review:

VLA 7/20/92

Perspective Plots:

Field Review: 6/14 7-28 92

ARCHEOLOGICAL/CULTURAL

Field Review: N/A

UNIT LINE WAS CHANGED TO ACCOMMODATE EFFICIENT YARDING FOR UNITS. STEEP SLOPES & LEVEE VALLEYS AROUND THE WEST BOUNDARY EAST SIDE OF UNIT CAN BE SENSITIVE TO LOGGING.

Log away from V-notch channels & prevent debris from entering channels & other debris. Minimize disturbance in riparian wetlands. Maintain 100' buffer for class II stream for mfg eastern boundary and class II forming part of western boundary. Recommend 50' buffer on class III stream if siltation occurs AT THE UNIT. AVOID SLOPES OVER 70%. AVOID A PROTECT CHUTES TO WINDFIRM STANDS. AVOID CUTTING THE TOES SOUTH OF THE LOW RIDGE ABOVE THE RAINE ON THE PREVIOUS LOG SUSPENSION ABOVE THE VALLEY BOTTOM.

Avoid the high water quarter V-notches, landslides, and slide below the failure's. Avoid cutting south boundary of the unit. Use

Harvesting eastern portion of unit will result in loss of high quality habitat for marten, otter, brown bear. Harvesting most of unit will impact moderate quality deer winter range.

Would not meet pos.

Outside Sensitive Area - No Survey Necessary

VAC: _____

MODIF: _____

INF: _____

UNSEEN: _____

PRIMITIVE I: _____

Trail: _____

Recreation Site: _____

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 77
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 11-12

Legend

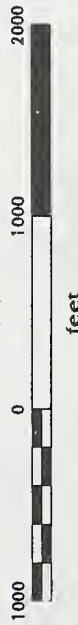
- VCU Boundary
- ==== Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ==== Proposed Road
- Contour Interval (100 feet)
- ▲ ○ Landing
- ==== Shoreline and Lakes
- ==== Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2.8) UNIT: 77 ACRES: 18

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY.

PREDOMINANTLY WH/YC/BB PLANT ASSOC. WITH SEVERAL OTHER TYPES OF ASSOCIATIONS PRESENT.

SITES ARE MODERATE TO HIGH PRODUCTION.

UNIT LINES WERE CHANGED TO ACCOMMODATE EFFICIENT YARDING FOR UNITS. STEEP SLOPES & LOW VOLUME ABOVE THE WEST BOUNDARY EAST SIDE OF UNIT CAN BE SPURVIEL LOADED.

Log away from V-water channels & place debris from entering channels. Clear debris. Minimize disturbance in overland wetlog. Riparian wetlands. Maintain 100' buffer for class II stream for mfg. eastern boundary and class II forming part of northern boundary. Recommend 10' buffer on class III stream if siltation occurs.

AVOID THE HIGH W'ERN QUARTER V-NOTCHES, LANDSLIDES, AND SLIDE BELOW THE FAILURE. AVOID CUTTING SOUTH BOUNDARY OF THE UNIT. USE PRETRIAL LOG SUSPENSION ABOVE THE VALLEY BOTTOM.

Harvesting eastern portion of unit will result in loss of high quality habitat for marten, otter, brown bear. Harvesting most of unit will impact moderate quality deer winter range.

WOOD NOT MEET POS.

Outside Sensitive Area - No Survey Necessary

Tim Type	X 44	X 45	X 46	TOT/AVG
Acres	2.5	2.7	1.8	
MBF/Species				
WH				
88				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Plant Assoc.	2.10			
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	None Observed			
Wind Hazard (H, M, L, H)				
Damage (Insect, disease, animal, etc.)				

LOGGING/TRANSPORTATION

Landing: 3
Profiles:

WATERSHED/FISHERIES

DMS/DSW 7/8/92
Field Review:

SOILS/GEOLOGY

Field Review:

WILDLIFE/SUBSISTENCE

Field Review:
VLA 7/20/92

VISUAL/RECREATION

Field Review:
66/14 7-28 92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

VOO: MODIF.
VAC: INT.
Wildlilly: UNSEEN
ROC: PRIMITIVE I
Recreation Site:
Trail:

IF IT IS NOT A FIRM.

Harvest Unit Design Card






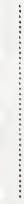




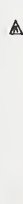
Ushk Bay EIS

Harvest Unit: 77
 VCU: 281
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 11-12

Legend

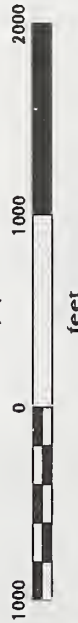
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK		LUD: VCU: 281		UNIT: 77		ACRES: 57	
MANAGEMENT AREA:							
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)							
RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANNING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY.							
PREDOMINANTLY WH/YC/BB PLANT ASSOC. WITH SEVERAL OTHER TYPES OF ASSOCIATIONS PRESENT. SITES ARE MODERATE TO HIGH PRODUCTION.							
UNIT LINK WAS CHANGED TO ACCOMMODATE EFFICIENT YIELDING FOR UNITS. STEEP SLOPES & LEVY VOLUME ABOVE THE WEST-BRANDY EAST SIDE OF UNIT CAN BE SQUEELED OUT.							
Log away from V-notch channels & power lines from entering channels & clear them out. Minimize disturbance in overland stream riparian wetlands. Maintain 100' buffer for class II stream for mfg. eastern boundary and class II forming part of northern boundary. Recommend 10' buffer on class III stream if siltation occurs at the unit. AVOID SLOPES OVER 70%. AVOID & PROTECT CUTS TO WINDFIRM STANDS. AVOID CUTTING THE TOWERS SOUTH OF THE LOW RIDGE ABOVE THE RAVIDE ON THE PRETRIAL LOG SUSPENSION ABOVE THE VALLEY BOTTOMS. Harvesting eastern portion of unit will result in loss of high quality habitat for marten, otter, brown bear. Harvesting most of unit will impact moderate quality deer winter range.							
WOULD NOT MEET POS.							
Outside Sensitive Area - No Survey Necessary							
LOGGING/TRANSPORTATION							
Landing: 3							
Profile: 1/4							
WATERSHED/FISHERIES							
DWB/DSW 7/8/92							
Field Review:							
DDN 8/3/92							
SOILS/GEOLOGY							
Field Review:							
OSW & RFL 6/2 92							
WILDLIFE/SUBSISTENCE							
Field Review:							
VLA 7/20/92							
VISUAL/RECREATION							
Field Review:							
VLA 7/20/92							
VISUAL/RECREATION							
VAC: MODIF. INC.							
Viability: UNSEEN							
ROC: PRIMITIVE I							
Recreation Site: _____							
Trail: _____							
ARCHEOLOGICAL/CULTURAL							
Field Review: N/A							

1 BUT 0
1 1/2 W/10
FIRM.

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 78-A
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 22
 Photo Number: 163-164

Legend

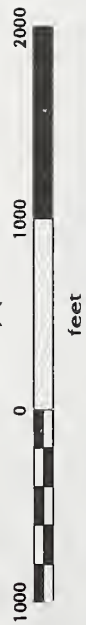
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK LUD: VCU: 281 UNIT: 78-A ACRES: 11

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

TIMBER/SILVICULTURE
 Stand Exam: 6/2/82 K. SEITZ S. ALLEN
 Stand Exam Type: VARIABLE PLOTS; Fixed Plots
 Silviculturalist Review: A J Smith
 7/28/92

Suggested cutting method is clear-cut. Natural regeneration of Shemlock should be adequate, however planting of Sitka spruce would be necessary in this unit to maintain species composition. Pre-commercial thin in 15-20 yrs. For growth enhancement.
 Predominant plant associations are SS types (SS/AA, SS/DE, SS/BB/DC) which are moderate to highly productive, and WH/BB which is moderately productive.
 Numerous tributaries to main creek meander through area, which could result in volume loss due to 100 ft buffer. Much of the unit is boggy, numerous snags present and downed trees - good habitat for or wildlife.

Tim Type	S4S	x 45	TOT/AVG
Acres	45	30	
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC	353	330	
Prevalent Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk			possible sighting
Wind-Hazard (H.M.L)			M
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
 Landing: 78-1-2, -3, -4, -9
 Profiles:
 Field Review: 9/5/92 - 9/24/92
WATERSHED/FISHERIES
 PUS/BSW 7-20-92
 Field Review:
 10/20 8/2/92

Directionally fall/yard away from stream buffers. Retention of Combining South portion with Unit T. Snag retention is a safety issue.
 Log away from V-notch drainages and consider full suspension, prevent debris from entering drainages and if it does remove it. Minimize disturbance to muskrats. Buffers from streams should be 100 feet and wide firm. maintain 100' buffer on Class I stream to south, very braided. Recommend 50' buffer on Class III stream where siltation of stream is a concern, but over 1/2 WATERSHED.

SOILS/GEOLOGY
 Field Review:
 DSW & R-L 5/30/92
WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/23/92

Avoid and protect the V-notches and southern third of the unit south use prenal log suspension on this and use partial log suspension on the slopes along the valley bottom. Harvesting entire unit will result in loss of high quality habitat for brown bear, other, marten. No concern for deer.

VISUAL/RECREATION
 Field Review:
 Perspective Plots:
 Field Review: 6/14 7/28/92

WOULD NOT MEET POS.

ARCHEOLOGICAL/CULTURAL
 Field Review: N/A

Outside Sensitive Area - No Survey Necessary




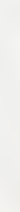


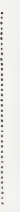




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 78-B
VCU: 281
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

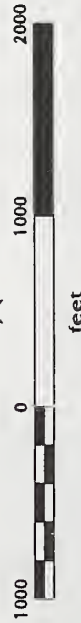
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK		MANAGEMENT AREA:		VCU: 281		UNIT: 78-B		ACRES: 2-		
RESOURCE (Name/Date)		RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)								
TIMBER/SILVICULTURE Stand Exam: 6/2/82 K. SEITZ S. ALLEN Stand Exam Type: VARIABLE PLOT; Fixed Plots Silviculturalist Review: AS Smith 7/28/92		Tim Type	S45	X 45	TOT/AVG					
		Acres	45	30						
		MBF/Species								
		WH								
		BS								
		YC								
		MH								
		Other								
		TOTAL								
		MBF/AC	353	330						
		Plant Assoc.								
		Site Index								
		Regen Method								
		Gross Growth								
		N. Goshawk	possible sighting							
		Wind Hazard (H/M/L)	M							
		Damage (Insect, disease, animal, etc.)								
LOGGING/TRANSPORTATION										
Landing: 78-1-2, 3, 4, 5, 6, 7, 8, 9										
Profile:										
Field Review: 8/2/82, 7/29/82										
WATERSHED/FISHERIES										
PUS/DW 7-20-92										
Field Review:										
DOW 8/2/92										
SOILS/GEOLOGY										
Field Review:		AVOID AND PROTECT THE V-NOTCHES SOUTH A THIRD OF THE UNIT SOUTH USE PARTIAL LOG SUSPENSION ON THIS AND USE PARTIAL LOG SUSPENSION								
DSW & RLL 5/30/92										
WILDLIFE/SUBSISTENCE										
Field Review:		SLIDE CHUTES TO WINDFIRM STANDS. ON THE WEST PORTION OF THE UNIT, AVOID SLOPES OVER 55% AND ON THE SLOPES ALONG THE VALLEY BOTTOM. Harvesting entire unit will result in loss of high quality habitat for brown bear, other, marten. No concern for deer.								
VLA 7/23/92										
VISUAL/RECREATION		WOULD NOT MEET FOS.								
Field Review:		VCO: MOD. VAC: INT. Visibility: UNSEEN ROC: PERMITIVE I. Recreation Site: _____ Trail: _____								
Perspective Plots:										
Field Review: 6/14 7/28/92										
ARCHAEOLOGICAL/CULTURAL		Outside Sensitive Area - No Survey Necessary								
Field Review: N/A										

Harvest Unit Design Card




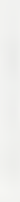


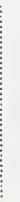




Ushk Bay EIS

Harvest Unit: 78-C
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 22
 Photo Number: 163-164

Legend

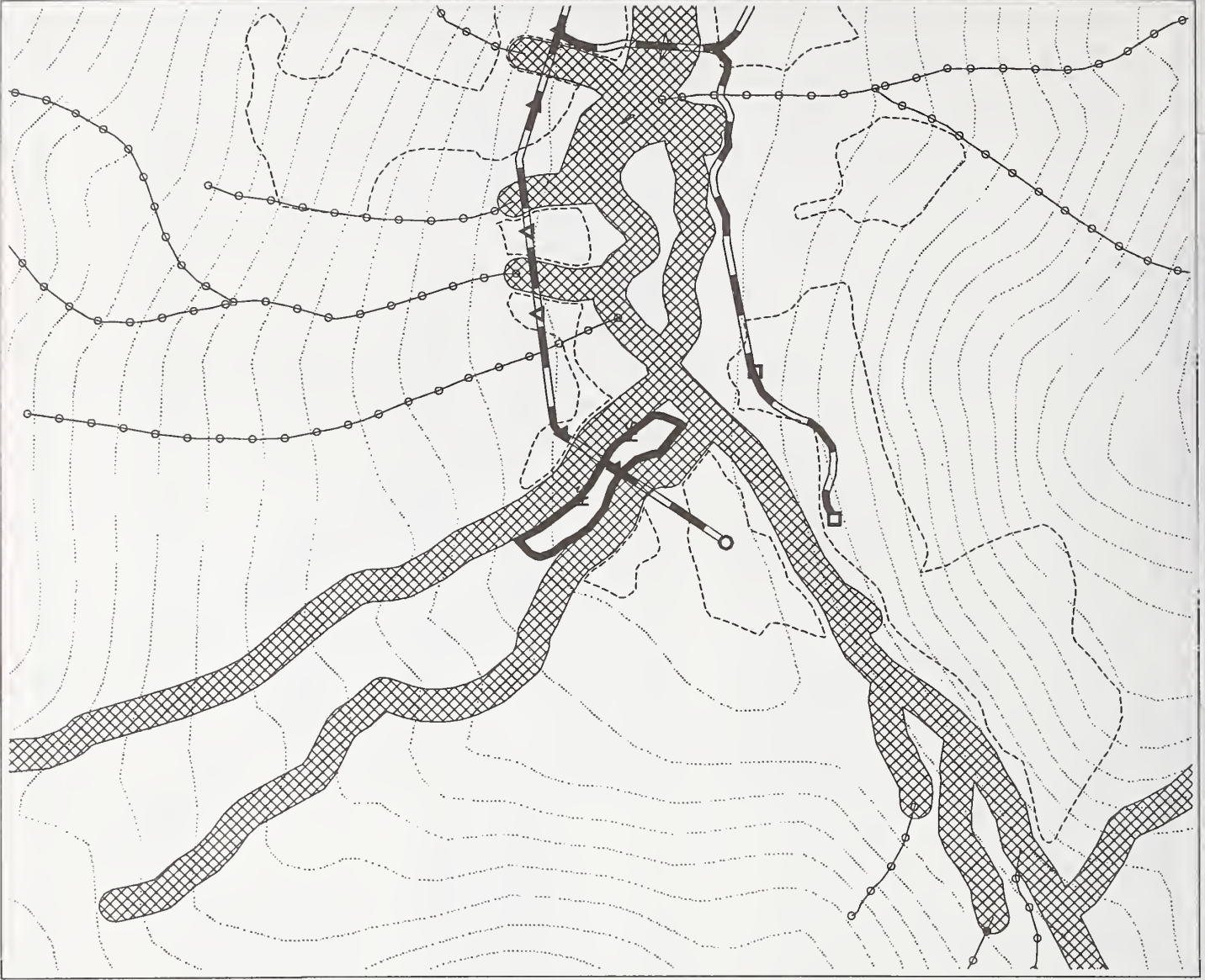
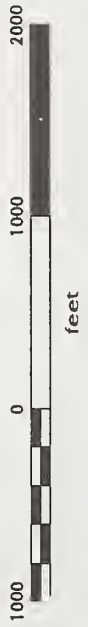
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



TimType	S4S	X 4S	TOT/AVG
Acres	45	30	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL	353	330	
MBF/AC			
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk			possible sighting
Wind Hazard (H,M,L)			
Damage (insect, disease, animal, etc)			

LOGGING/TRANSPORTATION
 Landing: 78-1-2, -3, -4, -7
 Profiles:
 Field Review: 8/29/92
 WATERSHED/FISHERIES
 PWS/D50 7-20-92
 Field Review:
 VDA 8/2/92
 SOILS/GEOLOGY
 Field Review:
 DSW & RRL 6/20/92
 WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/23/92
 VISUAL/RECREATION
 VAO:
 VAC:
 Visibility:
 ROG:
 Recreation Site:
 Trail:
 Perspective Plots:
 Field Review: 6/14 7 20 92
 ARCHEOLOGICAL
 CULTURAL
 Field Review: N/A

MANAGEMENT AREA:
 RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, however planting of Sitka spruce would be necessary in this unit to maintain species composition pre-commercial thin in 15-20 yrs. for growth enhancement.
 Predominant plant associations are SS types. (SS/RA, SS/DE, SS/BB/PC) which are moderate to highly productive, and WH/BB which is moderately productive.
 Numerous tributaries to main creek meander through area, which could result in volume loss due to 100 ft buffer. Much of the unit is boggy, numerous snags present and downed trees - good habitat for Directionally fall yard away from stream buffers. Recommended combining south portion with Unit T. Snag retention is a safety issue.
 Log away from V-notch drains and consider full suspension prevent debris from entering drains and if it does remove it. Minimize disturbance to muskrats. Buffers from streams should be 100 feet and wind firm. Maintain 100' buffer on class I stream to south, very braided. Recommend 50' buffer on class II stream where siltation of stream is a concern, BUT ONLY WINDFIRM.
 AVOID AND PROTECT THE V-NOTCHES SOUTHERN THIRD OF THE UNIT SOUTH USE PARTIAL LOG SUSPENSION ON THIS AND USE PARTIAL LOG SUSPENSION ON THE SLOPES ALONG THE VALLEY BOTTOM.
 Harvesting entire unit will result in loss of high quality habitat for brown bear, other, marten. No concern for deer.
 WOULD NOT MEET POS.
 Outside Sensitive Area - No Survey Necessary






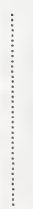





Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 78-D
VCU: 281
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

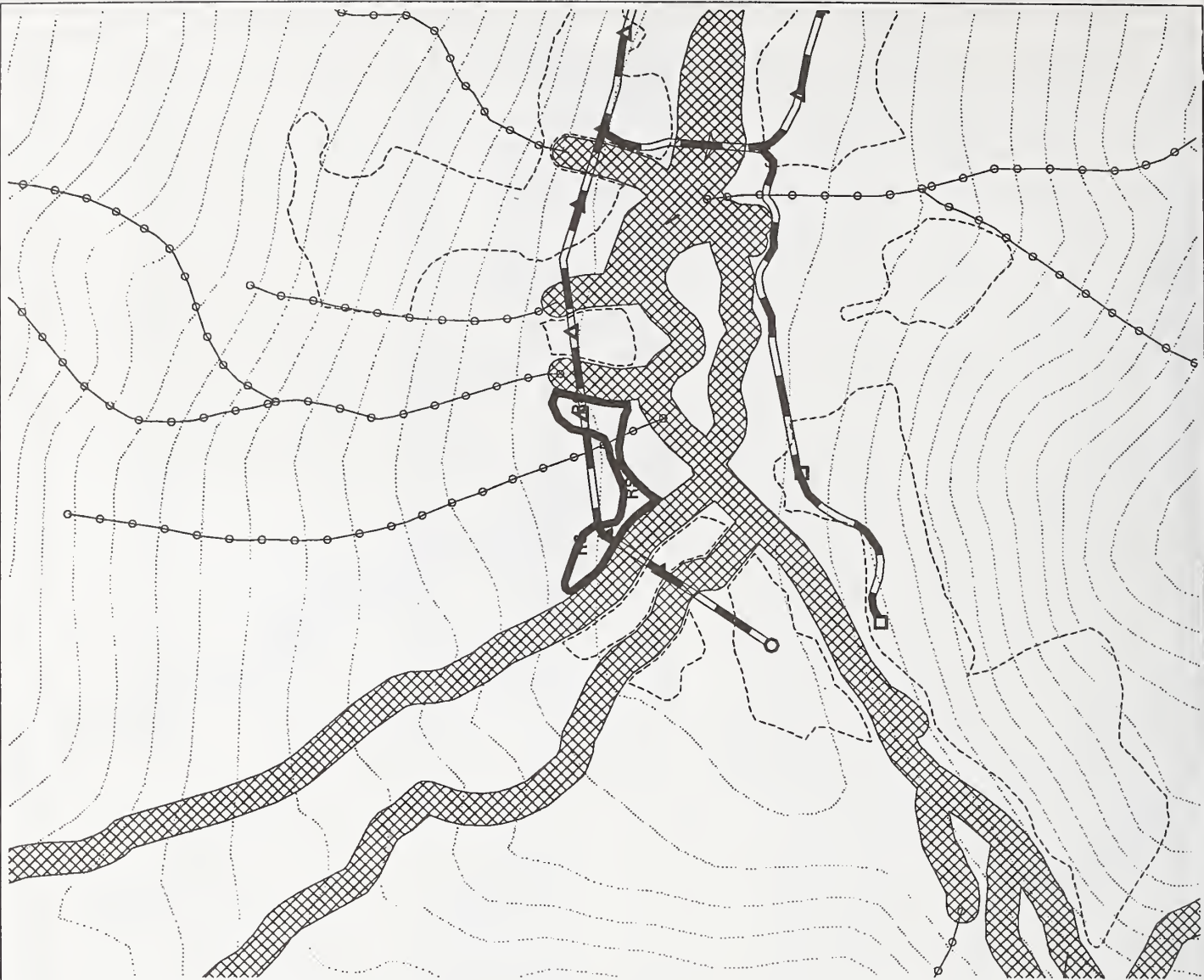
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, however planting of Sitka spruce would be necessary in this unit to maintain species composition. Pre-commercial thin in 15-20 yrs. for growth enhancement.
 Predominant plant associations are SS types. (SS/AA, SS/DE, SS/BB/PC) which are moderate to highly productive, and WH/BB which is moderately productive.
 Numerous tributaries to main creek meander through area, which could result in volume loss due to 100 ft. buffer. Much of the unit is boggy, numerous snags present and downed trees - good habitat for wildlife.

Directionally fall/yard away from stream buffers. Recommend combining south portion with Unit 7. Snag retention is a safety issue.

Log away from v-notch areas and consider full suspension. Protect debris from entering drainages and if it does remove it. Minimize disturbance to muskrats. Buffering drain streams should be 100 feet and wind firm. Maintain 100' buffer on Class I stream to south, very braided. Recommend 50' buffer on Class III stream where siltation of stream is a concern, BUT ONLY W/DEBRIS.
 AVOID AND PROTECT THE V-NOTCHES ON THE SOUTHERN THIRD OF THE UNIT SOUTH USE PARTIAL LOG SUSPENSION ON THIS PARTIAL LOG SUSPENSION

Harvesting entire unit will result in loss of high quality habitat for brown bear, other, marten. No concern for deer.

WOULD NOT MEET FOS.
 Outside Sensitive Area - No Survey Necessary

Tim Type	S4S	x 45	TOT/AVG
Acres	45	30	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC	353	330	
Prevalent Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk			
Wind Hazard (H,M,L)			
Damages (Insect, disease, animal, etc.)			

POSSIBLE SIGHTING

AVOID AND PROTECT THE V-NOTCHES ON THE SOUTHERN THIRD OF THE UNIT SOUTH USE PARTIAL LOG SUSPENSION ON THIS PARTIAL LOG SUSPENSION

VAC: MOD.
 VISIBILITY: INT.
 REC: UNSEEN
 RECREATION SITE: PRIMITIVE I.
 TRAIL:

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 281 UNIT: 78-D ACRES: 5

RESOURCE (Name/Date)
 TIMBER/SILVICULTURE
 Stand Exam: 4/2/82 K. SEITE S. ALLEN
 Stand Exam Type: VARIABLE PLOT, Fixed Plots
 Silviculturalist Review: S J Smith
 7/28/92

LOGGING/TRANSPORTATION
 Lending: 78-1-2, -3, -4, -7
 Profiles:
 Field Review: 4/5/82, 7/24/82
 WATERSHED/FISHERIES:
 PLS/DSSW 7-20-92
 Field Review:
 W.D. 8/2/92

SOILS/GEOLOGY
 Field Review:
 DSW & RRL 6/30/92
 WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/23/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/14 7/28/92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A











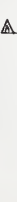
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 78-E
VCU: 281
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

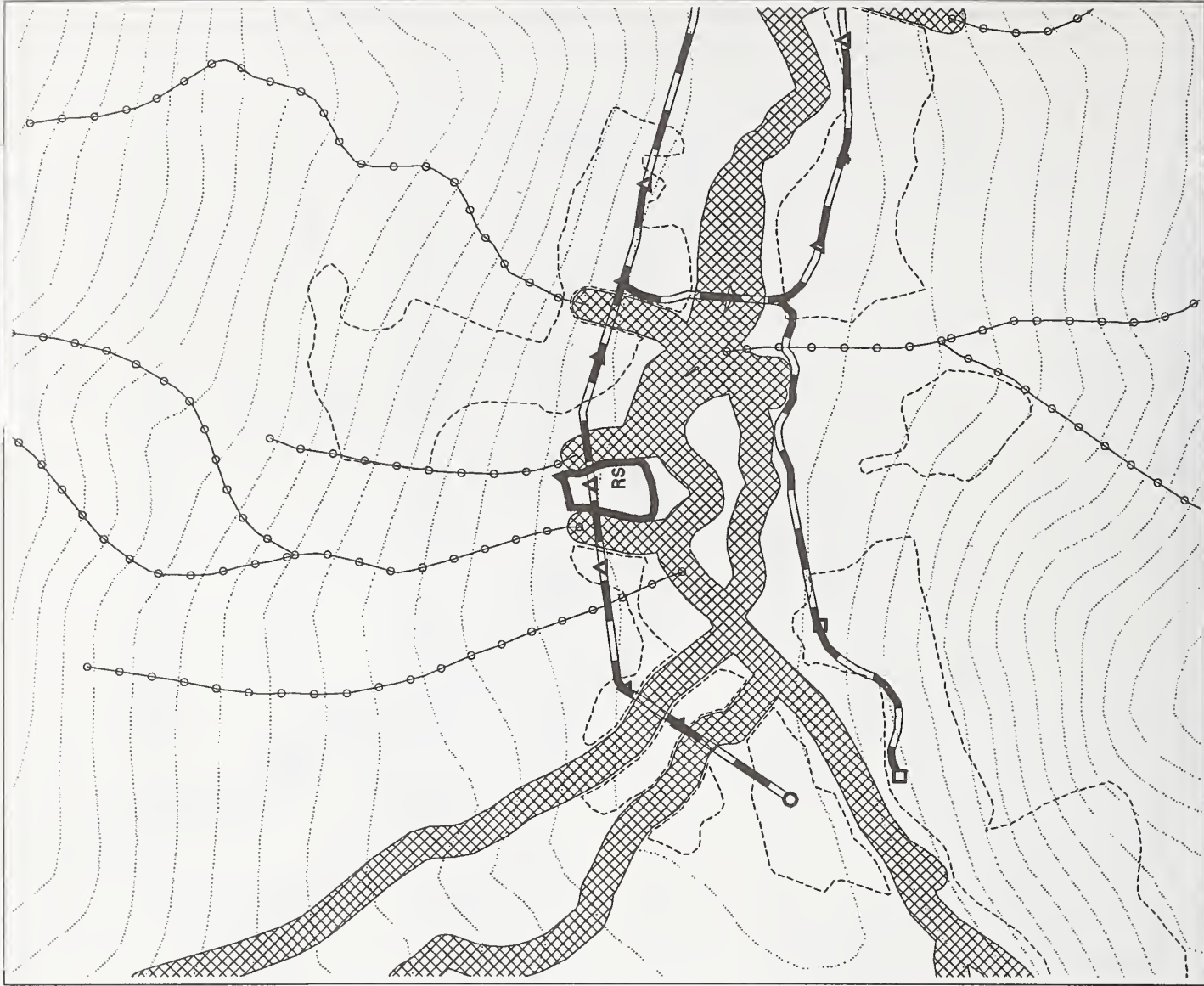
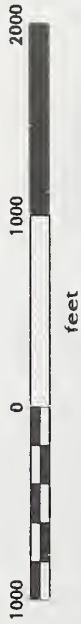
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 281 UNIT: 78-E ACRES: 3

RESOURCE (Name/Date) RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	S4S	X 4S	TOTIAW
Acres	45	30	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Plant Assoc.	353	330	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	POSSIBLE SIGHTING		
Wind Hazard (H,M,L)	M		
Damage (need, disease, animal, etc.)			

Suggested cutting method is clear-cut. Natural regeneration of hemlock should be adequate, however planting of Sitka spruce would be necessary in this unit to maintain species composition pre-commercial thin in 15-20 yrs. for growth enhancement.
 Predominant plant associations are SS types. (SS/RA, SS/DE, SS/BB/DC) which are moderate to highly productive, and WH/BB which is moderately productive.
 Numerous tributaries to main creek meander through area, which could result in volume loss due to 100 ft. buffer. Much of the unit is boggy; numerous snags present and downed trees - good habitat for wildlife.

Directionally fall yard away from stream buffer. Recommend combining south portion with Unit 7. Snag retention is a safety issue.

Long way from V-notch drainages and will not fall suspension, prevent debris from entering drainages and if it does remove it. Minimize disturbance to muskrats. Buffer from streams should be 100 feet and wind firm. Maintain 100' buffer from class I stream to south, very braided. Recommend 50' buffer on class III stream where siltation of stream is a concern. BUT EXISTING WINDFIRM.

SLIDE CHUTES TO WINDFIRM STANDS, ON THE WEST SIDE OF THE UNIT, AVOID SLOPES OVER 75% AND PORTION OF THE UNIT. OTHERWISE, AVOID SLOPES OVER 75% ON THE SLOPES ALONG THE VALLEY BOTTOM.

Harvesting entire unit will result in loss of high quality habitat for brown bear, other, marten. No concern for deer.

WOULD NOT MEET FOS.

Outside Sensitive Area - No Survey Necessary

LOGGING/TRANSPORTATION

Landing: 78-1-2, -3, -4, -9
 Profile:

WATERSHED/FISHERIES

Field Review: 7-20-92
 Field Review: 8/2/92

SOILS/GEOLOGY

Field Review: DSJ & RRL 6/30/92 AND USE PARTIAL LOG SUSPENSION IN THIS AREA

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/23/92

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/14 7/28/92

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

VAC:	MOD.
VAC:	INT.
Viability:	UNSEEN
ROC:	PRIMITIVE I.
Recreation Site:	
Trell:	

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 79
VCU: 281
Alternative(s): B C E F

Photo Information
Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

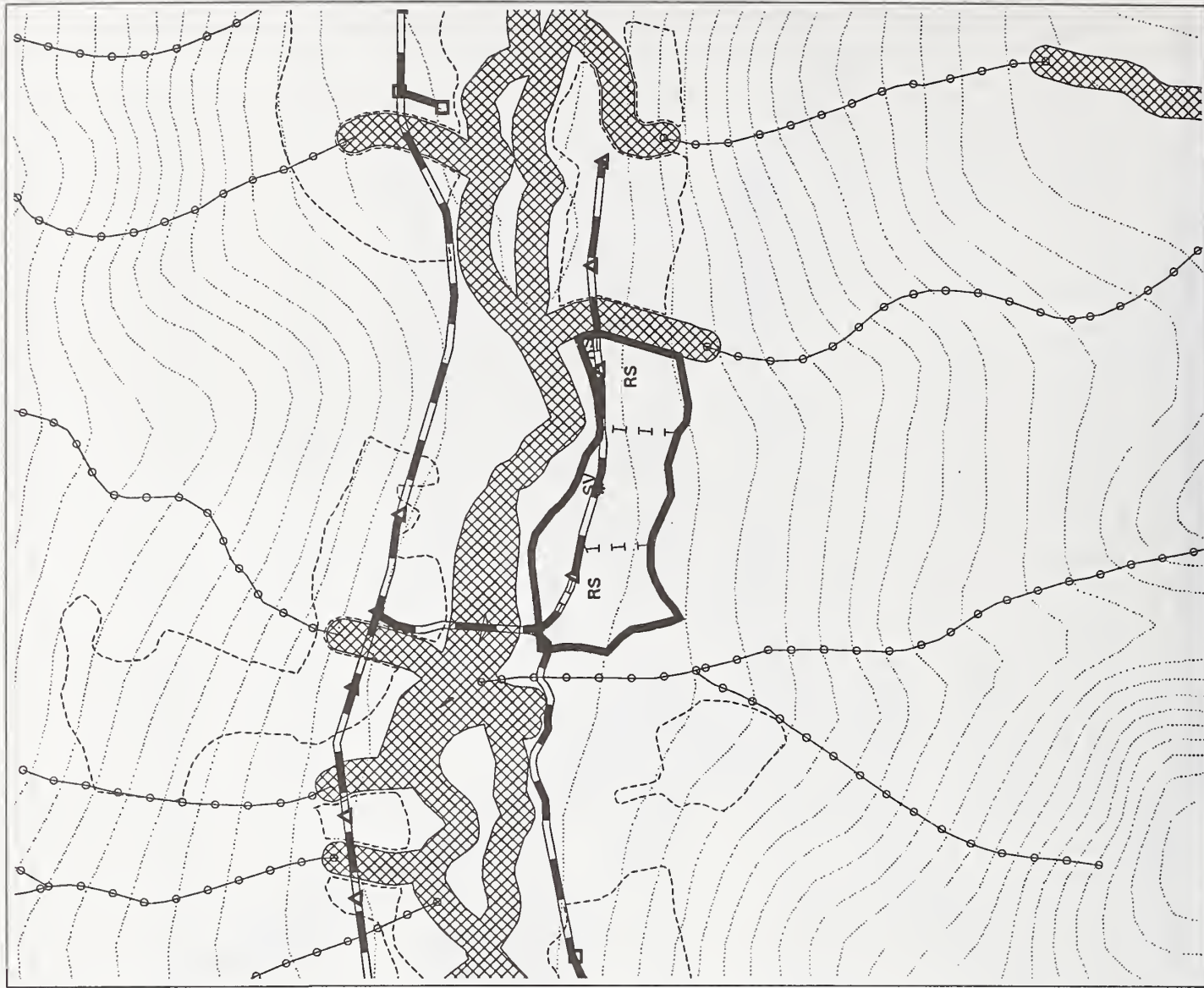
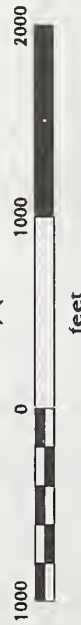
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- Δ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK LUD: VCU: 281 UNIT: 79 ACRES: 27

MANAGEMENT AREA:

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. ADVISE PLANTING OF SITKA SPRUCE AND YELLOW CEDAR FOR SITE REEP./REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO STOPS PER ACRE FOR DIVERSITY. THE PREVALENT RANG ASSOCIATION IS WA/BS WHICH IS MODERATELY PRODUCTIVE. THERE IS ALSO A STRONG SS/DC COMPONENT WHICH IS HIGHLY PRODUCTIVE. PORTIONS OF THE UNIT ARE QUITE BOGGY. SLIDES AND SHALLOW SOILS ARE PRESENT IN THE UNIT. MAINTAIN 100' CEZER BUFFER.

Tim Type	X44	X45	TOTI/AVG
Acres			
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent	210	110	
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	NONE SEEN		
Wind Hazard (H,M,L) M			
Damage (Insect, disease, animal, etc.) STEM DECAY (minor)			

LOGGING/TRANSPORTATION
 a running skyline system will be used with partial log suspension above valley bottom. Split yarding of V-notches where practical. No logging problems anticipated.

Landing: 79-0-15
 Profiles: 79-0-15
 Field Review: 7-6-92
 DDW 4/24/92

SOILS/GEOLOGY
 Avoid slopes over 70%. Avoid cutting windfirm stands. Avoid cutting V-notches & slides to protect V-notches & slides chutes to windfirm stands. Avoid cutting V-notches & slides to protect V-notches & slides chutes to windfirm stands. Use partial log suspension yarding above the valley bottom.

Field Review: 6/1/92
 DSW & PRL 6/1/92

WILDLIFE/SUBSISTENCE
 Harvesting NE strip of unit will result in loss of high quality habitat for martens, brown bear, and moderate to high quality habitat for deer winter range.

Field Review: 7/23/92
 VLA 7/23/92

VISUAL/RECREATION
 URBAN NOT MEET POS.

Field Review: 7-29-92
 6/1/92 7-29-92

ARCHAEOLOGICAL/CULTURAL
 No. Significant to Howard Resources found

Field Review: 7-18-92
 W. J. Koski 7-18-92




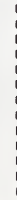






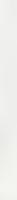
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 79-A
VCU: 281
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

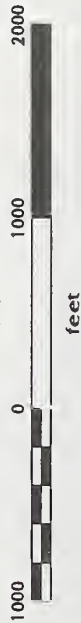
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 281 UNIT: 79-A ACRES: 17

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. ADVISE PLANTING OF SITKA SPRUCE AND YELLOW CEDAR FOR SITE PREP./REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PEE-COM-MERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SNAGS PER ACRE FOR DIVERSITY. THE PREVALENT RANG ASSOCIATION IS WH/BB WHICH IS MODERATELY PEO-DUCTIVE. THERE IS ALSO A STRONG SS/DC COMPONENT WHICH IS HIGHLY PRODUCTIVE. PORTIONS OF THE UNIT ARE QUITE BOGGY. SLIDES AND SHALLOW SOILS ARE PRESENT IN THE UNIT. MAINTAIN 100' CREEK BUFFER. a running regime suggestion will be used with partial log suspensions above valley bottoms. Split yarding of V-notches where practical. No logging problems anticipated.

Long study from V-notch drainages and considerable supressible on slopes. Part of study from entering drainages and if it does remove it. Minimize disturbance to muskrats. Buffers from streams should be 100 feet and wind firm. Maintain 100' buffer on class I streams. ~~Recomm~~ 50' buffer on class II streams where silviculture a concern BUT ONLY IF WINDFIRM AT

AVOID SLOPES OVER 70%. AVOID WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF LANDSLIDES & CHUTES. USE PARTIAL LOG SUSPENSION YARDING ABOVE THE VALLEY BOTTOM.

Harvesting NE strip of unit will result in loss of high quality habitat for martens, otter, brown bear, and moderate to high quality habitat for deer winter range.

WOULD NOT MEET FOS.

No significant toward resource in this

MANAGEMENT AREA:

Tim Type	X44	X45	TOTAL
Acres			
MBF/Species			
WH			
99			
YC			
MH			
Other			
TOTAL			
MBF/Ag			
Prevalent Plant Assoc.	210	110	
Site Index			
Reopen Method			
Gross Growth			
N. Goshawk			
Wind Hazard (H,M,L,M)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 79-0-45
 Profiles: 79-0-45
 Field Review: P. & D. 7-6-92

WATERSHED/FISHERIES

Field Review: DDW 6/2/92

SOILS/GEOLOGY

Field Review: OSW & RLL 6/1/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/23/92

VISUAL/RECREATION

Field Review: 6/10 7-29-92

ARCHAEOLOGICAL/CULTURAL

Field Review: W. & D. 7-18-92











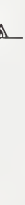
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 79-B
VCU: 281
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 22
Photo Number: 163-164

Legend

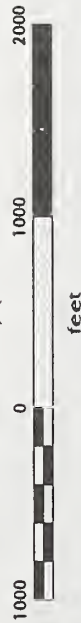
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: VCU: 281 UNIT: 79 ACRES: 4

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. ADVISE PLANTING OF SITKA SPRUCE AND YELLOW CEDAR FOR SITE REPR./REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PLE-COM-MERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO STRIPS PER ACRE FOR DIVERSITY. THE PREVALENT RAIN ASSOCIATION IS WH/B3 WHICH IS MODERATELY PRO-DUCTIVE. THERE IS ALSO A STRONG SS/DC COMPONENT WHICH IS HIGHLY PRODUCTIVE. PORTIONS OF THE UNIT ARE QUITE BOGGY. SLIDES AND STALLON SOILS ARE PRESENT IN THE UNIT. MAINTAIN 100' CREEK BUFFER.

TimType	X44	X45	TOTAL
Acres			
MBF/Species			
WH			
89			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	210	110	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None	Seen	
Wind Hazard (H.M.I.)			
Damage (Insect, disease, animal, etc.)			
STEM DECAY (Ingr)			

a running regime suggestion will be used with partial log suspension above valley bottom. Split yarding of V-notches where practical. No logging problems anticipated.

Log cutting from V-notch drains and consider to suspend on slopes. Part of debris from existing drains and if it does, remove it. Minimize disturbance to muskrats. Buffers from streams should be 100 feet and wind firm. Maintain 100' buffer on class I streams. ~~Recommend 50' buffer on class II streams where situation a concern BUT ONLY IF WINDFIRM~~

AVOID SLOPES OVER 70%. AVOID WINDFIRM STANDS. AVOID CUTTING BELOW THE TOES OF LANDSLIDES & CHUTES. USE PARTIAL LOG SUSPENSION YARDING ABOVE THE VALLEY BOTTOM.

Harvesting NE strip of unit will result in loss of high quality habitat for martens, brown bear, and moderate to high quality habitat for deer winter range.

WOODS NOT MEET FOS.

No significant road hazard resources found

LOGGING/TRANSPORTATION

Landing: 7-1-92
Profiles: 7-1-92-45
Field Review: P-2/DRI/DSW 7-6-92

WATERSHED/FISHERIES

Field Review: DOW 6/2/92

SOILS/GEOLOGY

Field Review: DSW & RLL 6/1/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/23/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 6/18/92 7-29-92

ARCHAEOLOGICAL/CULTURAL

Field Review: W. Zukosky 7-18-92

QAQ: Mon.
VAC: INTER.
Visibility: GREEN
ROC: PRIMITIVE I
Recreation Site:
Trail:

Harvest Unit Design Card







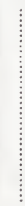




Ushk Bay EIS

Harvest Unit: 81
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 14-15

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: VCU: 2.8 UNIT: 81 ACRES: 7

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. A WH/YC/BS IS THE PREDOMINANT PLANT ASSOC., WITH SOME SS AT LOWER ELEVATIONS. SITE IS MODERATELY PRODUCTIVE.

Tim Type	X-45	TOT/AVG
Acres		
MBF/Species		
WH		
BS		
YC		
MH		
Other		
TOTAL		
MBF/Ac		
Prevalent Plant Assoc.	2.10	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	NONE OBSERVED	
Wind Hazard (H,M,L) M		
Damage (Insect, disease, animal, etc.)		

Except for a small area in the west end the flat ground is lost to riparian habitat. Much of the hillside is 65%+ and/or unstable, and is deleted from the unit. In the east there is a small strip of ground under 65% that is not economical to clear. V-notch bridges do consider full log suspension. Present debris from entering drains and if it does, remove it. Buffers from streams should be 100 feet and wider than. Maintain 100' buffer from class I streams

AVOID SLOPES > 65%. AVOID & PROTECT V-NOTCHES, SLIDES, AND CUTS. AVOID CUTTING BELOW THE TOES OF FAULTS. ON THE E BOUNDARY OF THE UNIT WHERE V-NOTCHED. USE PARTIAL LOG SUSPENSION. AVOID CUTTING WHERE V-NOTCHED. USE PARTIAL LOG SUSPENSION. Harvesting unit will impact high quality habitat for marten. Harvesting NW & northern portions of unit will impact high quality habitat for brown bear and other. No concerns for deer

WOULD NOT MEET POS. FAUNALLY VISIBLE FROM USHK BAY.

No Significant Cultural Resources Found.

VOC:	Low
VAC:	Low
Visibility:	Med
ROC:	PERMISSIVE I
Recreation Site:	
Trail:	

Stand Exam:	6/19/92 K. SEITZ, SAULEN
Stand Exam Type:	VARIABLE PLOTS, Fixed Plots
Silviculturalist Review:	S. Smith

LOGGING/TRANSPORTATION

Landing: 81-1, 12-3
Profile:
Field Review: DW/JD/DH

WATERSHED/FISHERIES

DWB/BSW 7-5-92
Field Review: DDW 8/2/92

SOILS/GEOLOGY

Field Review:

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/23/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 8/6/92 720.72

ARCHAEOLOGICAL/CULTURAL

Field Review: W. Zukowsky 7-18-92

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 82
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 16-17

Legend

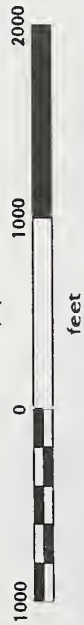
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK UNIT: 82 ACRES: 33
 MANAGEMENT AREA: VCU: 2.8

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING SYSTEM IS CLEARCUT. NATURAL REGENERATION OF HEMLOCKS SHOULD BE SUFFICIENT. ADVISE PLANTING OF YELLOW CEDAR FOR REGENERATION IF CURRENT SPECIES COMPOSITION IS TO BE MAINTAINED. A PRE-COMMERCIAL THINNING AT 15-20 YEARS WILL ENHANCE GROWTH.

THE PREVALENT PLANT ASSOC. IS WH-YC/BS WHICH IS MODERATELY PRODUCTIVE. SEVERE CEDAR DECLINE IS PRESENT THROUGHOUT THE SOUTHERN HALF OF THE UNIT. THESE AREAS ARE VERY BOGGY AND GUSHY. THE ONLY FEASIBLE AREA TO BE LOGGED IN THE WESTERN PORTION OF THE UNIT IS NEAR THE CREEK, BUT MAINTAIN 100' BUFFER STRIP.

Tim Type	X44	TOTAL
Acres		
MBF/Species		
WH		
BS		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Plant Assoc.	210	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	NONE SEEN	
Wind Hazard (H.M.I.)	M	
Damage (Insect, disease, animal, etc.)	CEDAR DECLINE	

LOGGING/TRANSPORTATION

Landing: 82-2, 82-3, 13-5
 Profiles: 82-2-260, 82-3-265
 Field Review: 8/22 7/7/92

WATERSHED/FISHERIES

Field Review: 7-9-92
 002

Helicopter ground could instead be accessed by 25% grade. Shrubbing trucks but this option was rejected. snag retention is a safety issue. Full suspension not feasible.

Log away from V-notch drains. Prevent debris from entering drains and if it does, remove it. Minimize disturbance to muskrats. Consider full log suspension. No fisheries concern.

SOILS/GEOLOGY

PLS & RPL 7/9 92
 Field Review:

DSW 7/21 92

Avoid slopes over 55% due to frequent dissections, existing failures, and possibly V-notches and landslide chutes & traces to above the head and below the toes of the failures. Use partial log suspension yarding.

No concerns for marten, otter, brown bear. SW portion of unit is moderate quality deer winter range.

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/21/92

WOULD NOT MEET POS. MAY BE PARTIALLY VISIBLE.

VISUAL/RECREATION

Field Review: 8/6/92 7/26/92

VCO: _____
 VAC: _____
 Visibility: _____
 ROC: _____
 Recreation Site: _____
 Trail: _____

PR
 LOW
 MG
 PRIMITIVE I

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Outside Sensitive Area - No Survey Necessary

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 86
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 128-129

Legend

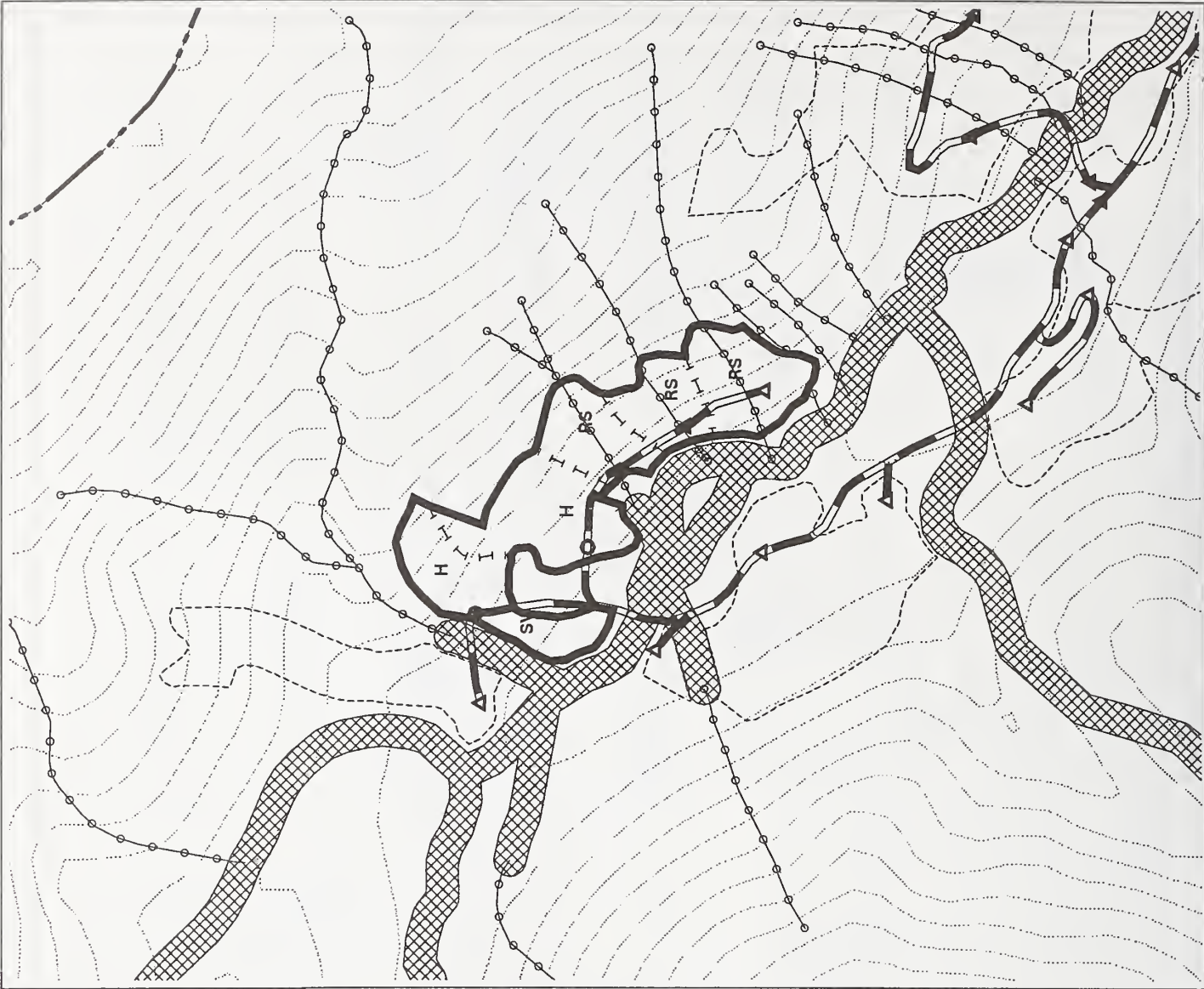
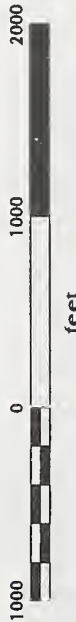
- VCU Boundary
- Harvest Unit Boundary
- Setting Boundary
- Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- Landing
- Shoreline and Lakes
- Class I and II Stream Buffers
- Class III Stream
- Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: JISHK MANAGEMENT AREA: LUD: VCU: 281 UNIT: 86 ACRES: 43

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION) RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. PLANTING OF YELLOW CEDAR AND SITKA SPRUCE FOR REGENERATION/ SITE PREP. IS ADVISED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING AT 15-20 YES. IS RECOMMENDED TO ENHANCE GROWTH. LEAVE TWO STRIPS/AC. FOR DIVERSITY IF POSSIBLE. LOWER PORTION OF UNIT NERE CREEK HAS SPACE PLANT ASSOCIATIONS AND IS HIGHLY PRODUCTIVE. PREDOMINANT PLANT ASSOCIATIONS ARE WH-YC/BB/SC, WH/BB (and variations thereof), and SS, which are moderate to highly productive. There are patches of poorly drained talus (logs/mushy) where cedar declines in prevalence. Very steep pitches (>100%), numerous minor draws and creeks, and unstable soils (slides) were observed. A deep V-notch bisects the unit and should be avoided.

TimType	Y44	Y45	TOTAL
Acres			
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC	220	110	
Prevalent Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	2022	SIGHTED	
Wind Hazard (H.M.L)		M	
Damage (Insect, disease, animal, etc.)			

Full suspension generally not practical. Fall/avoid away from stream buffer. Exclude unstable portion in western portion - active slides near creek. snag retention is safety issue.

Log away from V-notch channels and consider thin or no thin suspension prevent debris from entering drainages and if it does remove it. Minimize disturbance to muskrats and riparian wetlands. Maintain 100' buffer on class I stream forming south boundary and on class II stream tributary.

Harvesting eastern portion of unit will result in loss of high quality habitat for moose, and moderate to high quality deer winter range.

WOULD NOT MEET POS. WOULD LIKELY NOT BE DEFECTIVE UNLESS ADJACENT UNIT CUT (S)

Outside high-sensitivity zone - no cultural resources survey required

STAND EXAM: T. ASHWA, S. ALLEN 4/24/92
STAND EXAM TYPE: PLOTS
SILVICULTURE REVIEW: S. SMITH 7/26/92

LOGGING/TRANSPORTATION
Landing: 86-15-5-3-3-5
Profiles:
Field Review: 8.5.92

WATERSHED/FISHERIES
GW 4/27/92
Field Review:
8.5 7/23/92

SOILS/GEOLOGY
Field Review:
OSD & RCL 6/1/92

WILDLIFE/SUBSISTENCE
Field Review:
YLA 7/21/92

VISUAL/RECREATION
Field Review:
VAC:
Viability: PERMITIVE
ROC:
Recreation Site:
Trell:

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

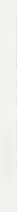


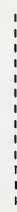






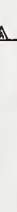
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 86
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 128-129

Legend

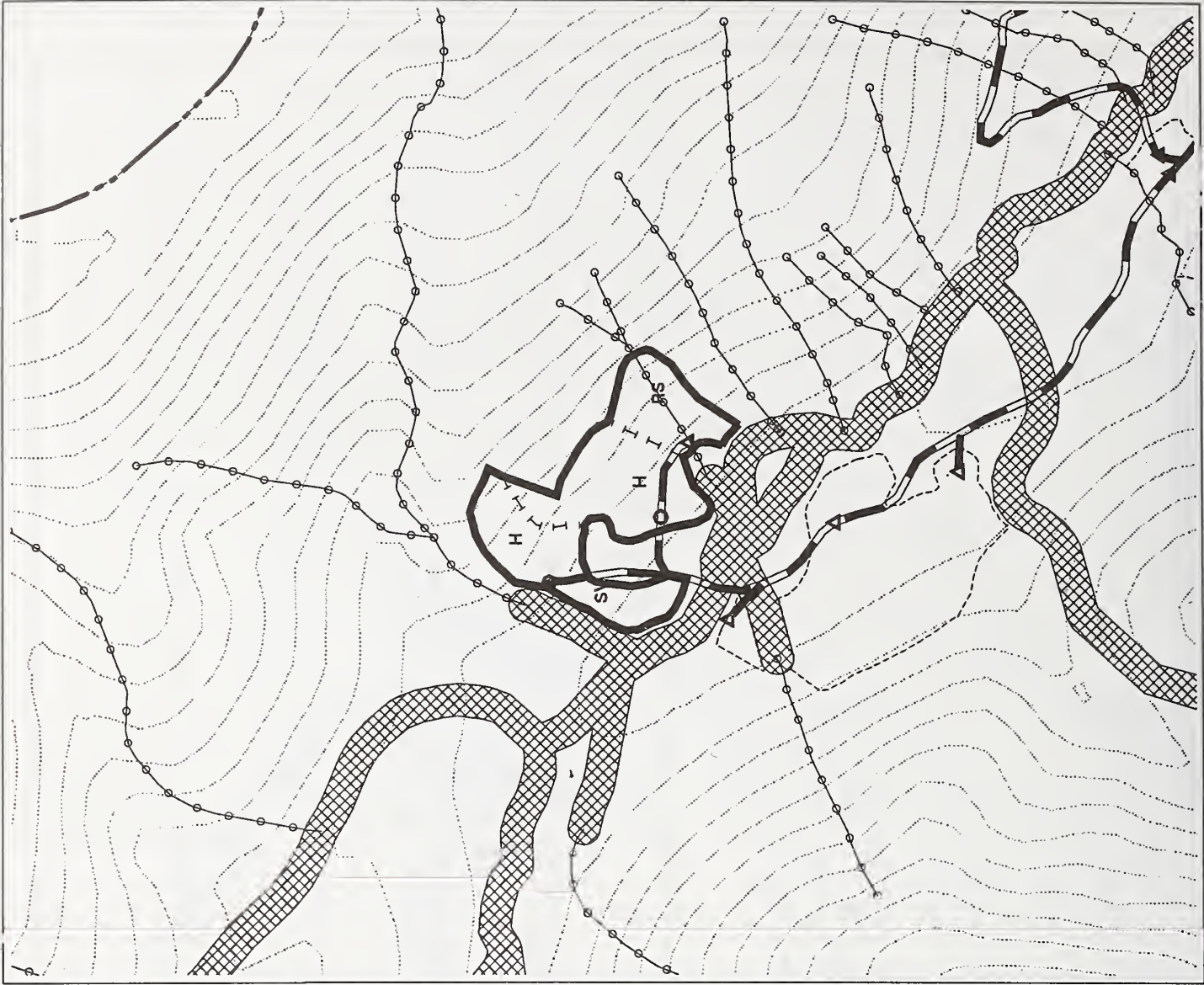
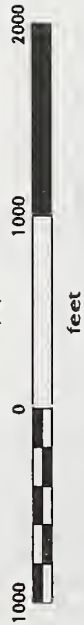
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK LUD: VCU: 281 UNIT: 86 ACRES: 29

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)

Tim Type	X 44	X 45	TOTAL
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/Ac			
Prevalent Plant Assoc.	220	110	
Site Index			
Gross Growth			
N. Goshawk	None	sighted	M
Wind Hazard (H,M,L)			
Damage (Insect, disease, animal, etc.)			

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. PRUNING OF YELLOW CROAK AND SITKA SPACE FOR REGENERATION/ SITE PREP IS ADVISED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED TO ENHANCE GROWTH. LEAVE TWO SNAGS/AC. FOR DIVERSITY IF POSSIBLE. LOWER PORTION OF UPIT NEMO CREEK HAS SPACE PLANT ASSOCIATIONS AND IS HIGHLY PRODUCTIVE. PREDOMINANT PLANT ASSOCIATIONS ARE WH-YC/BB/SC, WH/BB (and variations thereof), and SS, which are moderate to highly productive. There are pockets of poorly drained areas (hoop/mushy) where cedar declines in prevalence. Very steep pitches (> 60%), numerous minor draws and creeks, and unstable soils (slides) will be observed. A deep V-notch bisects the unit and should be avoided.

Full suspension generally not practical. Fall/avoid away from stream buffer. Exclude unstable portion in western portion - active slides near creek. Snag retention is safety issue.

Log skidways from V-notch channels and consider fall or partial suspension. Present debris from existing drainages and if it does remove it. Minimize disturbance to muskrats and riparian wetlands. Maintain 100' buffer on class 1 stream forming south boundary and on class 2 stream tributary.

AVOID V-NOTCHES, LANDSLIDE, AND AVAILABLE CHANGES IN UPLAND & NW/SE CORNERS OF THE OLD UNIT #87 WHICH IS CONTAINED IN THIS UNIT #86. PROVIDE A 100 FT MINIMUM BUFFER FROM THE ADJACENT UNIT #87. USE PARTIAL SUSPENSION. HARVESTING eastern portion of unit will result in loss of high quality habitat for marten and moderate to high quality deer winter range.

WOULD NOT MEET POS. (WOULD LIKELY NOT BE DEFECTIVE UNLESS ADJACENT UNIT CUT (S))

Outside high-sensitivity zone - no cultural resources survey required

PROJECT: USHK MANAGEMENT AREA:

RESOURCE (Name/Date)

Tim Type	X 44	X 45	TOTAL
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/Ac			
Prevalent Plant Assoc.	220	110	
Site Index			
Gross Growth			
N. Goshawk	None	sighted	M
Wind Hazard (H,M,L)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
Landing: 86-15-5-25-43-5
Profiles: 86-8 85-92

WATERSHED/FISHERIES
GW 7/27/92
Field Review: 7/23/92

SOILS/GEOLOGY
Field Review: US-D & RLL 6/1/92

WILDLIFE/SUBSISTENCE
Field Review: YL A 7/21/92

VISUAL/RECREATION
Perspective Plots:
Field Review: CE/IF 7-28-92




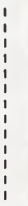

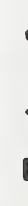



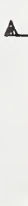

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 86-A
VCU: 281
Alternative(s): B C E F

Photo Information
Year: 1986
Flight Line: 24
Photo Number: 128-129

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK LUD: VCU: 291 UNIT: 86-A ACRES: 27

MANAGEMENT AREA:		X 44		X 45		TOTAL	
Tim Type	Acres						
MBF/Species							
WH							
BB							
YC							
MH							
Other							
TOTAL							
MBF/Ag							
Prevalent Plant Assoc.		220	110				
Site Index							
Regen Method							
Gross Growth							
N. Goshawk							
Wind Hazard (H,M,L)							
Damage (Insect, disease, animal, etc.)							

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. PLANTING OF YELLOW CEDAR AND SITKA SPRUCE FOR REGENERATION OF SITE PEER IS ADVISED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING AT 15-20 YRS. IS RECOMMENDED TO ENHANCE GROWTH. LEAVE TWO STRIPS/AC. FOR DIVERSITY IF POSSIBLE. LOWER PORTION OF UNIT NEAR CREEK. HAS SPACE PLANT ASSOCIATIONS AND IS HIGHLY PRODUCTIVE. PREDOMINANT PLANT ASSOCIATIONS ARE WH-YC/BB/SC, WH/BB (and variants no theory), and SS, which are moderate to highly productive. There are patches of poorly drained areas (logs/mushrooms) where cedar decline is prevalent. Very steep pitches (>100%) numerous minor draws and creeks, and unstable banks (slippery) were observed. A deep V-notch bisects the unit and should be avoided.

Full suspension generally not practical. Fall/land away from stream buffer. Exclude unstable portion in western portion - active slides near creek. Snag retention is safety issue.

Log skidding from Y-catch channels and consider fall or partial suspension. Protect debris from entering drainages and if it does remove it. Minimize disturbance to muskrats and riparian wetlands. Maintain 100' buffer on class 1 stream forming south boundary and on class 1 stream tributary.

NOTES: UNNOTED, ENDING OF, AND ADJACENT CHANGES IN VEGETATION & NUMBER CORNERS OF THE OLD UNIT #87 WHICH IS CONTAINED IN THIS UNIT #86, PRODUCE A 100 FT MINIMUM BUFFER FROM THE BOUNDARY. USE THE NEAREST CORNER. USE PARTIAL SUSPENSION. Harvesting eastern portion of unit will result in loss of high quality habitat for martens and moderate to high quality deer winter range.

WOULD NOT MEET POS. WOULD VERY NOT BE DEFECTIVE UNLESS ADJACENT UNIT CUT (S)

Outside high-sensitivity zone - no cultural resources survey required

LOGGING/TRANSPORTATION
 Landing: 86-15-5-5-5-5-5-5
 Profiles:
 Field Review: 8/8 86-92

WATERSHED/FISHERIES
 GW # 27992
 Field Review:
 ALS 7/23/92

SOILS/GEOLOGY
 Field Review:
 USGS & RLL 6/1/92

WILDLIFE/SUBSISTENCE
 Field Review:
 YLA 7/21/92

VISUAL/RECREATION
 Field Review:
 P/P
 Low
 M/L
 PRIMITIVE

PERCEPTIVE PLOTS:
 Field Review: 6/16 7-28-92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A




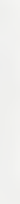







Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 89
VCU: 281
Alternative(s): B F

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-26-5

Legend

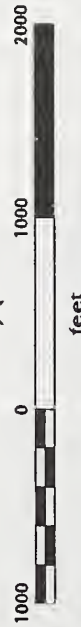
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK

LUD: VCU: 281

UNIT: 89

ACRES 13

MANAGEMENT AREA:

RESOURCE (Name/Date)

TIMBER/SILVICULTURE

Stand Exam:

6/16/92 M. WHITE K. SEITZ

Stand Exam Type:

VARIABLE PLOT; Fixed Plots

Silviculturalist Review:

S. Smith

7/26/92

Tim Type	X44	X45	TOT/AVG
Acres	15	40	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent	210		
Plant Assoc.			
Site Index			
Prepn Method			
Gross Growth			
N. Goshawk	NONE OBSERVED		
Wind Hazard (H, M, L, H)			
Damage (Insect, disease, animal, etc)			

LOGGING/TRANSPORTATION

Landing: 3

Profiles: N4

Field Review: 7-30-92 VV

WATERSHED/FISHERIES

DMS/Dsw 7/3/92

Field Review:

DWN 8/2/92

SOILS/GEOLOGY

Field Review:

Dsw 7/20/92

WILDLIFE/SUBSISTENCE

Field Review:

VLA 7/22/92

VISUAL/RECREATION

VGO:

VAC:

Viability:

ROC:

Recreation Site:

Trail:

Pp

Low

Mg

PMPIVE 1

WOULD NOT MEET POS. VISIBLE FROM USHK BAY.

ARCHAEOLOGICAL
CULTURAL

Field Review:

7-27-92

S. Flint

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY.

PREDOMINANTLY A WH/YC/B3 PLANT ASSOC. WITH SS/DC. FREQUENT. SITE IS MODERATELY PRODUCTIVE.

THREE QUARTERS OF THIS UNIT CAN BE YARDED UP HILL. LANDING 1/2 CAC. PROVIDE FULL SUSPENSION WITH YARDING IN HILL. LANDING STAIRS IS NOT SAFE FOR LOGGING CASES. PARTIAL SUSPENSION IS PLANNED FOR DOWNHILL YARDING

Log away from V-notch drainages, prevent introduction of logging debris into channels and, if debris is more of, consider Filler post of suspension with V-notch. Maintain 100' buffer for class I stream forming south boundary.

AVOID SLOPES > 75%. AVOID & PROTECT V-NOTCHES TO WINDFIRM. AVOID & PROTECT LANDSLIDE & AVALANCHE CHUTES & TRACES TO WINDFIRM. USE PARTIAL LOG SUSPENSION YARDING.

Harvesting unit will result in loss of high quality habitat for marten, and moderate quality habitat for deer, and would result in fragmentation of remaining deer winter range.

WOULD NOT MEET POS. VISIBLE FROM USHK BAY.

Cultural Resources Survey Complete - No Significant archaeological materials Identified






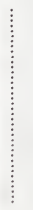




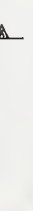
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 89
VCU: 281
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 118-26-5

Legend

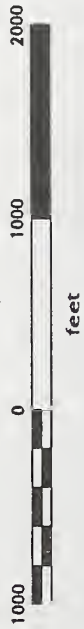
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

RS Running Skyline HE Helicopter
SL Slackline SV Shovel
SSL Small Slackline GR Gravity return
H Highhead

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK	LUD: VCU: 281	UNIT: 89	ACRES: 27
MANAGEMENT AREA:			
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)			
RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WA/YC/GB PLANT ASSOC. WITH SS/DC. FREQUENT. SITE IS MODERATELY PRODUCTIVE.			
THREE QUARTERS OF THIS UNIT CAN BE YARDED UP HILL. LANDINGS 1/2 CAC. PROVIDE FULL SUSPENSION AND YARDING UP HILL, LEAVING SWARS IS NOT SAFE FOR LOGGERS & CHAINS. PARTIAL SUSPENSION IS PLANNED FOR DOWNHILL YARDING.			
Log away from V-voids & drainages, prevent introduction of logging debris into channels, avoid fire, debris removal, consider Full period suspension, 100' V-void. Maintain 100' buffer for class I stream forming south boundary.			
AVOID SLOPES > 75%. AVOID & PROTECT V-VOIDS TO WINDFIRM, AVOID & PROTECT LANDSLIDE & AVALANCHE CHUTES & TRACES TO WINDFIRM. USE PARTIAL LOG SUSPENSION YARDING.			
Harvesting unit will result in loss of high quality habitat for marten, and moderate quality habitat for deer, and would result in fragmentation of remaining deer winter range.			
WOULD NOT MEET POS. VISIBLE FROM USHK BAY.			
Cultural Resources Survey Complete - No Significant archaeological Materials Identified			

Tim Type	X44	X45	TOTI/AG
Acres	15	40	
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Plant Assoc.	210		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None observed		
Wind Hazard (H, M, L, H)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 3
Profile: N4
Field Review: 7-30-92 VLV

WATERSHED/FISHERIES

DMS/Dsw 7/3/92
Field Review: 00N 8/2/92

SOILS/GEOLOGY

Field Review: Dsw 7/20/92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/22/92

VISUAL/RECREATION

Perspective Photo:
Field Review: 6/14 7-28-92

ARCHAEOLOGICAL/CULTURAL

Field Review: 7-27-92
S. Flint

VGO: _____
VAC: _____
Viability: _____
ROC: _____
Recreation Site: _____
Trail: _____

PR
LOW
MGT
PRIMITIVE



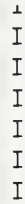








Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 90
 VCU: 281
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 24
 Photo Number: 130-131

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2&1 UNIT: 90 ACRES: 45

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommend Clearcut System. Natural Regeneration of Hemlock should be adequate although planting of Yellow Cedar may be desired to maintain species composition. A precommercial thinning of age 15-20 may be necessary to enhance growth. Predominately a WH/YC/BS Plant Association indicating a moderately productive site.

Guidelines for swing yarder will require tie backs at landing 90-1. Safety requirements dictate the landing 90-1 location outside unit boundary and necessitates the yarding through 400 ft. of non-merchant timber.

Log away from main stream areas. Consider for log suspension pre-vent debris from entering streams and if it does, remove it. Minimum distance of 100 feet from Class I and II streams should be a minimum of 100 feet and windfall timber maintain local buffer for class I stream forming north boundary.

Avoid slopes > 65%, avoid & protect V-notches to windfall. Avoid & protect V-notches & cuttings crosses & traces to windfall. Use portable saw suspension on slopes above the V-notch bottom. Harvesting northern strip of unit will result in loss of high quality habitat for marten. No concerns for bear, other, or deer. Would not meet pos. SE portion may be visible from Ushk Bay.

Outside Sensitive Area - No Survey Necessary

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 2&1 UNIT: 90 ACRES: 45

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	Acres	MBF/Species	WH	BS	YC	MH	Other	TOTAL	MBF/Ac	Plant Assoc.	Site Index	Regen Method	Gross Growth	N. Goshawk	Wind Hazard (H, M, L) H	Damage (Insect, disease, animal, etc.)	MEDIA	TOT/AVG

LOGGING/TRANSPORTATION
Landing: 90-1, 90-2, 90-3, 90-4
Profiles: 90-1-2, 90-1-3
Field Review: D, X 7-13-92

WATERSHED/FISHERIES
PLS/RRL 7-8-92
Field Review: D, X 9/2/92

SOILS/GEOLOGY
PLS/RRL 7/3/92
Field Review: C, X 7/20/92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/22/92

VISUAL/RECREATION
Perspective Plots:
Field Review: E, G, L, F 7/29/92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A

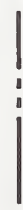


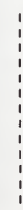

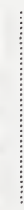




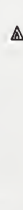
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 90
VCU: 281
Alternative(s): D

Photo Information

Year: 1986
Flight Line: 24
Photo Number: 130-131

Legend

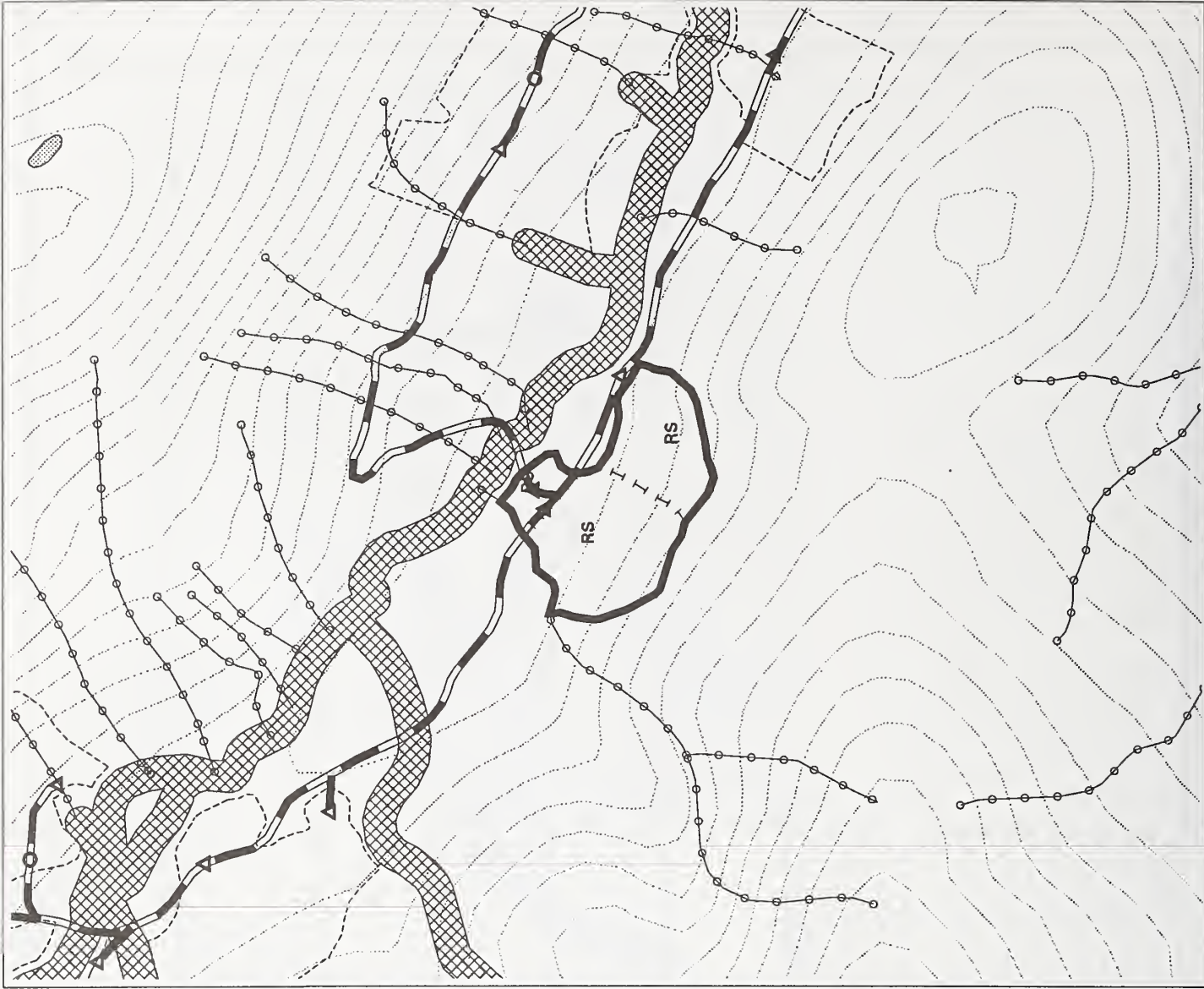
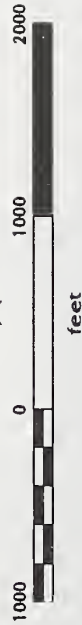
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



MANAGEMENT AREA:		RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)	
<p>Recommend Clearcut System. Natural Regeneration of Hemlock should be adequate although planting of Yellow Cedar may be desired to maintain species composition. A precommercial thinning at age 15-20 may be necessary to enhance growth. Predominately a WH/YC/BB Plant Association indicating a moderately productive site.</p>		<p>Guidelines for swing yarder will require tie backs at landing 90-1. Safety requirements dictate the landing 90-1 location outside unit boundary and necessitated the landing through 400 ft. of non-hatched timber.</p>	
<p>Log away from north drainage area. Consider full log suspension pre-vent debris from entering drains add if it does, remove it. Minimum 100 ft. buffer from Class I and II streams should be a minimum of 100 feet and wide 45m. maintain 100' buffer for class I stream forming North boundary</p>		<p>Log away from north drainage area. Consider full log suspension pre-vent debris from entering drains add if it does, remove it. Minimum 100 ft. buffer from Class I and II streams should be a minimum of 100 feet and wide 45m. maintain 100' buffer for class I stream forming North boundary</p>	
<p>Avoid slopes > 65%. Avoid & protect unnotched ID windows. Avoid & protect unnotched & partial cut circles & traces to windfall use practical ID suspension as slope (above the valley) floors.</p>		<p>Avoid slopes > 65%. Avoid & protect unnotched ID windows. Avoid & protect unnotched & partial cut circles & traces to windfall use practical ID suspension as slope (above the valley) floors.</p>	
<p>Harvesting northern strip of unit will result in loss of high quality habitat for marten. No concerns for bear, otter, or deer.</p>		<p>Harvesting northern strip of unit will result in loss of high quality habitat for marten. No concerns for bear, otter, or deer.</p>	
<p>Would not meet pos. SE portion may be visible from Ushk-Bay.</p>		<p>Would not meet pos. SE portion may be visible from Ushk-Bay.</p>	
<p>Outside Sensitive Area- No Survey Necessary</p>		<p>Outside Sensitive Area- No Survey Necessary</p>	

MANAGEMENT AREA:		RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)	
<p>Tim Type</p> <p>Acres</p> <p>MBF/Species</p> <p>WH</p> <p>BB</p> <p>YC</p> <p>MH</p> <p>Other</p> <p>TOTAL</p> <p>MBF/AC</p> <p>Prevalent Plant Assoc.</p> <p>Site Index</p> <p>Regen Method</p> <p>Gross Growth</p> <p>N. Goshawk</p> <p>Wind Hazard (H,M,L) H</p> <p>Damper (Insect, disease, animal, etc.) MEDIA SINKING</p>	<p>TOT/AVG</p>	<p>LOGGING/TRANSPORTATION</p> <p>Landing: 90-1, 90-2, 90-3, 90-4</p> <p>Profiles: 90-1-2, 90-3, 90-4</p> <p>Field Review: D/S 7-13-92</p> <p>WATERSHED/FISHERIES</p> <p>PLSRRL 7-8-92</p> <p>Field Review: ODW 9/2/92</p> <p>SOILS/GEOLOGY</p> <p>PLSRRL 7/3/92</p> <p>Field Review: ODW 7/20/92</p> <p>WILDLIFE/SUBSISTENCE</p> <p>Field Review: VLA 7/22/92</p> <p>VISUAL/RECREATION</p> <p>Perspective Plots: VAC: PK, LDW, MGT, PERMITIVE</p> <p>Field Review: EL/LK 7/24/92</p> <p>ARCHAEOLOGICAL/CULTURAL</p> <p>Field Review: N/A</p>	



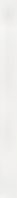
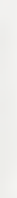
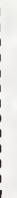





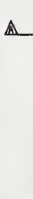
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 93
VCU: 281
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 5-6

Legend

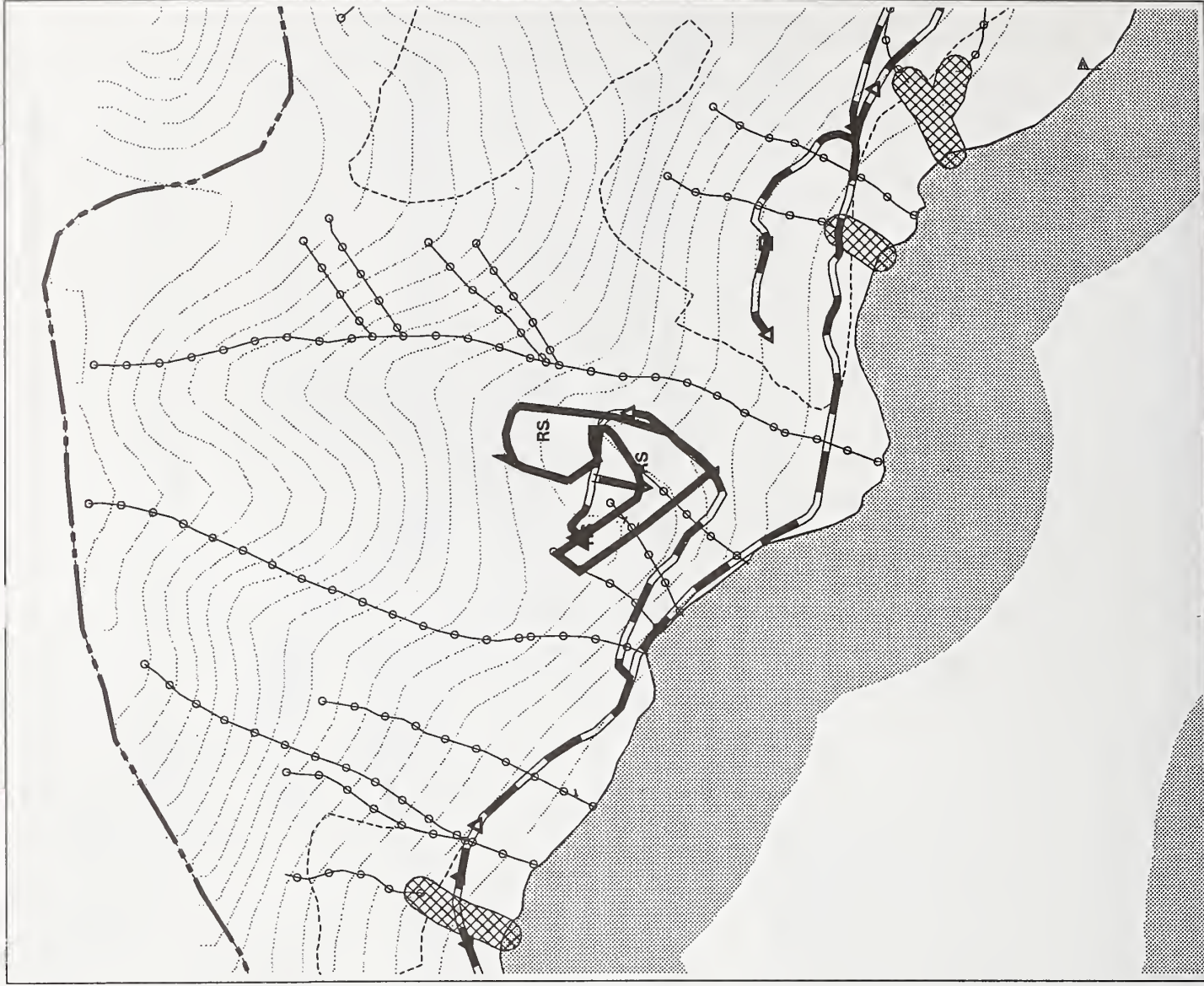
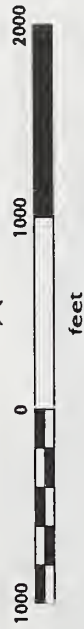
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: Group III
VCU: 281
Alternatives: C

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 61 62

Legend

- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



feet



TIMBER/SILVICULTURE

Stand Exam: 6/18/92
 S. Allen, T. Pusine, M. White, K. Seitz
 Stand Exam Type:
 Plots
 Silviculturist Review:
 S. Smith
 7/26/92

TimType	X44	H44	TOT/AVG
Acres			
MBF/Species			
WH			
89			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevent	120	210	
Plant Assoc.	220		
Site Index			
Reopen Method			
Gross Growth			
N. Goshawk	None	Seed	
Wind Hazard (H,M,L) H			
Damage (Insect, disease, animal, etc.) Cedar Decline			

LOGGING/TRANSPORTATION

Landing:
 Profiles:
 Field Review:

WATERSHED/FISHERIES

Field Review:

SOILS/GEOLOGY

Field Review:

WILDLIFE/SUBSISTENCE

Field Review:

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/18/92

ARCHAEOLOGICAL/CULTURAL

Field Review:

RESOURCE CONCERNS (INCLUDING MGT OBJECTIVES & MITIGATION)

Suggested silvicultural system is group selection because of Visual Concerns. Groups to be approximately 2 acres in size and should occupy no more than 15 percent of total Unit area. Concentrate groups at lower elevations, on ridges, depressions, or other topographic features that provide some shelter from the wind. The Unit should be helicopter logged.

HELICOPTER YARD TO LANDINGS IN UNIT 93

ES 7/29/92

Space between groups so they do not touch on cross stream channels (Classes I, II, or III)

GSR 7/29/92

Avoid and protect high grass movement hazard areas to windfirm.

PR 7/30/92

Maintain 500 foot beach fringe. Portions of unit are high quality deer winter range. Avoid repeated helicopter flights within 1/4 mile of active bald eagle nests. VIA 7/30/92

WOULD HIT MEET POS. WOULD BE VISIBLE FROM ANH. GROUP SELECTION WOULD REDUCE CONTRAST IN MIDDLE-GROUND VIEWS

Outside High Sensitivity Area - No Survey Required for Cultural Resources

S. Smith 7/19/92

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: GROUPIV

VCU: 281

Alternative(s): C




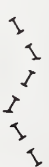





Photo Information

Year 1986

Flight Line 27

Photo Number 61-62

Legend

-  VCU Boundary
 -  Harvest Unit Boundary
 -  Adjacent Unit
 -  Setting Boundary
 -  Proposed Road
 -  Class Three Streams
 -  Saltwater and Lakes
 -  Class One and Two Buffers
 -  Eagle Tree
- ### Logging System
- | | | | |
|-----|-----------------|----|----------------|
| RS | Running Skyline | HE | Helicopter |
| SL | Slackline | SV | Shovel |
| SSL | Small Slackline | GR | Gravity Return |
| H | Highload | | |

IDT Review

Reviewed by:

W/ E. Johnson

Date:

9/29/83



PROJECT: USHK MANAGEMENT AREA: LUD: 281 VCU: 281 UNIT: Group IV ACRES: 2.5

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested silvicultural system is group selection because of Visual Concerns. Groups to be approximately 2 acres in size and should occupy no more than 15 percent of total Unit area. Concentrate groups at lower elevations, on ridges, depressions, or other topographic features that provide some shelter from the wind. The Unit should be helicopter logged.

TimType	Acres	X44	H44	TOT/AVO
MBF/Species				
WH				
BB				
YC				
MH				
Other				
TOTAL				
MBF/Ag				
Prevalent	120		210	
Plant Assoc.	220			
Site Index				
Regen Method				
Gross Growth				
N. Goshawk				
Wind Hazard (H, M, L, H)				
Damage (Insect, disease, animal, etc.)				
Cedar Decline				

LOGGING/TRANSPORTATION

Landing:
Profiles:
Field Review: 7/29/92

WATERSHED/FISHERIES

Field Review: GSR 7/29/92

SOILS/GEOLOGY

Field Review: Avoid and protect high mass movement hazard areas to windfirm. RLL 7/30/92

WILDLIFE/SUBSISTENCE

Field Review: Maintain 500 foot beach fringe. Portions of unit are high quality den winter range. Avoid repeated helicopter flights within 1/4 mile of active bald eagle nests. VU 7/30/92

VISUAL/RECREATION

Perspective Plots:
Field Review: 6/18 7-29-92

VAC: PP
Visibility: LOW
ROGS: MIA
Recreation Site: SPNMP
Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: Outside High Sensitivity Area - No Survey Required for Cultural Resources
S. Shind 7/19/92

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: GROUPV

VCU: 281

Alternative(s): C










Photo Information

Year 1986

Flight Line 27

Photo Number 61-62

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Adjacent Unit
-  Setting Boundary
-  Proposed Road
-  Class Three Streams
-  Saltwater and Lakes
-  Class One and Two Buffers
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity Return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/83



TIMBER/SILVICULTURE
 Stand Exam: 6/18/92
 S. Allen, T. Russing, M. White, K. Sartz
 Stand Exam Type:
 Plots
 Silviculturalist Review:
 S. Smith
 7/26/92

Suggested silvicultural system is group selection because of Visual Concerns. Groups to be approximately 2 acres in size and should occupy no more than 15 percent of total Unit area. Concentrate groups at lower elevations, on ridges, depressions, or other topographic features that provide some shelter from the wind. The Unit should be helicopter logged.

LOGGING/TRANSPORTATION
 HELICOPTER YARD TO LANDINGS IN UNIT 93
 EJ 7/29/92
 Space lowest groups so they do not touch on cross stream channels (Classes I, II, or III)
 GSR 7/29/92

SOILS/GEOLOGY
 Avoid and protect high mass movement hazard areas to windfirm.
 RLL 7/30/92

WILDLIFE/SUBSISTENCE
 Maintain 500 foot beach fringe. Portions of unit are high quality den winter range. Avoid repeated helicopter flights within 1/4 mile of active bald eagle nests. VLA 7/30/92

VISUAL/RECREATION
 Would not meet POS. WOULD BE VISIBLE FROM AMH. GROUP SELECTION WOULD REDUCE CONTRAST IN MIDDLEGROUND VIEWS
 Outside High Sensitivity Area - No Survey Required for cultural Resources
 S. Smith 7/19/92

Tim Type	X44	H44	TOT/AVO
Acres			
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/Ag			
Prevalent Plant Assoc.	120	210	
Site Index	220		
Repen Method			
Gross Growth			
N. Goshawk	None	Seen	
Wind Hazard (H, M, L, H)			
Damage (Insect, disease, animal, etc.)			Cedar Decline

LANDING/PROFILES:
 Field Review:

WATERSHED/FISHERIES
 Field Review:

SOILS/GEOLOGY
 Field Review:

WILDLIFE/SUBSISTENCE
 Field Review:

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/18/92
 VAO: PR
 VAC: LOW
 Visibility: MIA
 ROAD: S/NH/P
 Recreation Site:
 Trail:

ARCHAEOLOGICAL/CULTURAL
 Field Review:

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: GROUPVI

VCU: 281

Alternative(s): C










Photo Information

Year 1986

Flight Line 27

Photo Number 61-62

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Adjacent Unit
-  Setting Boundary
-  Proposed Road
-  Class Three Streams
-  Saltwater and Lakes
-  Class One and Two Buffers
-  Eagle Tree

Logging System

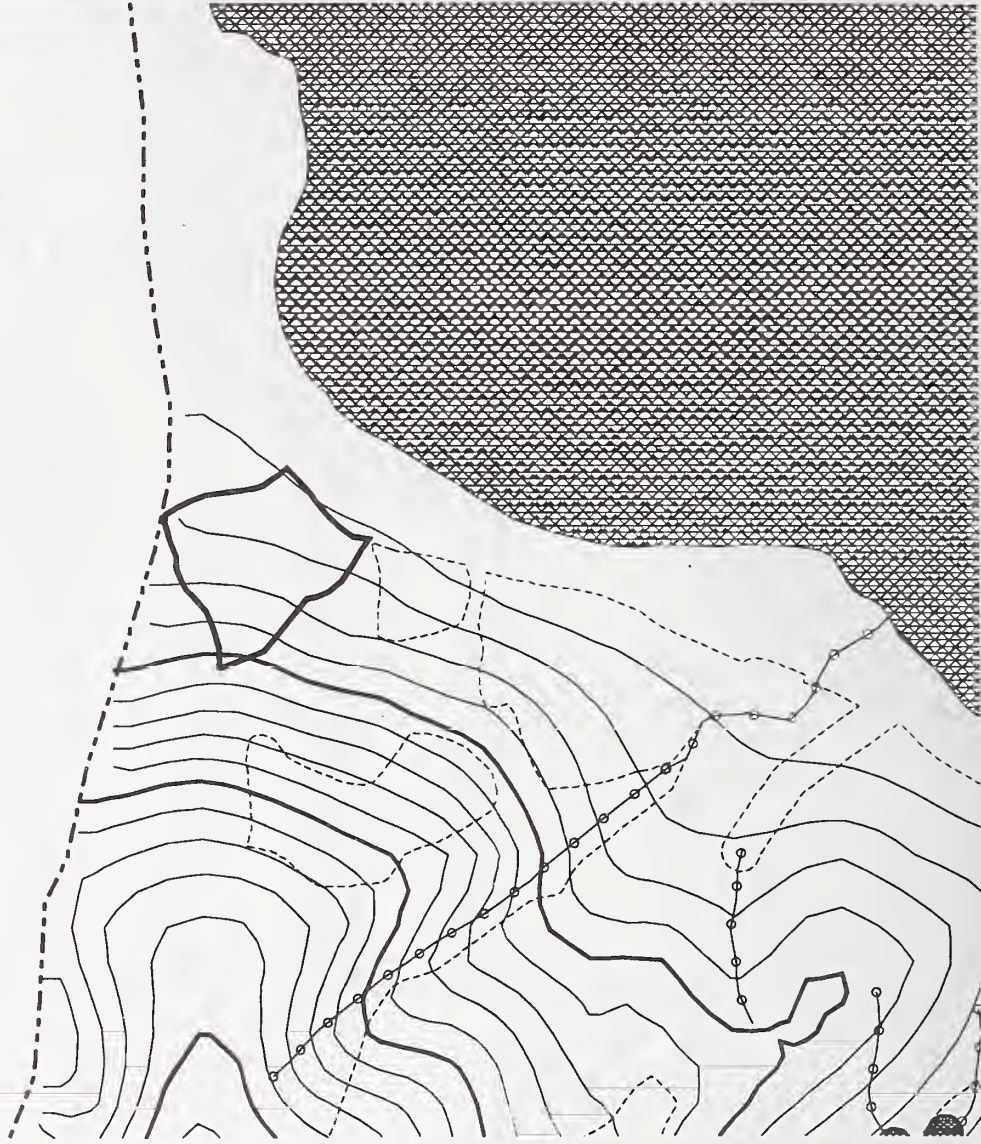
- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity Return

IDT Review

Reviewed by: **/s/ E. Johnson**
Date: **9/29/93**



Feet



PROJECT: USHK MANAGEMENT AREA: LUD: DE VCU: 281 UNIT: Group VI ACRES: 15.8

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested silvicultural system is group selection because of Visual Concerns. Groups to be approximately 2 acres in size and should occupy no more than 15 percent of total Unit area. Concentrate groups at lower elevations, on ridges, depressions, or other topographic features that provide some shelter from the wind. The Unit should be helicopter logged.

HELIOPTER YARD TO LANDINGS IN UNIT 93

Spore lowest groups so they do not touch on cross stream channels (Classes I, II, or III)

Avoid and protect high mass movement hazard areas to windfirm.

Maintain 500 foot beach fringe. Portions of unit are high quality deer winter range. Avoid repeated helicopter flights within 1/4 mile of active bald eagle nests. VU 7/30/92

WOULD NOT MEET ROS. WOULD BE VISIBLE FROM AMH. GROUP SELECTION WOULD REDUCE CONTRAST IN MIDDLEGROUND VIEWS

Outside High Sensitivity Area - No Survey Required for Cultural Resources

Tim Type	X44	H44	TOT/AVG
Acres			
MBF/Species			
WH			
SS			
YG			
MH			
Other			
TOTAL			
MBF/Ag			
Prevent	120	210	
Plant Assoc.	220		
Site Index			
Regen Method			
Grove Growth			
N. Goshawk	None	Seen	
Wind Hazard (H, M, L, H)			
Damage (Insect, disease, animal, etc.)			Color Decline

LOGGING/TRANSPORTATION

Landing:
Profiles:
Field Review:

WATERSHED/FISHERIES

Field Review:

SOILS/GEOLOGY

Field Review:

WILDLIFE/SUBSISTENCE

Field Review:

VISUAL/RECREATION

Perspective Photo:
Field Review: 6/18/92

ARCHAEOLOGICAL/CULTURAL

Field Review:

Stand Exam: 6/18/92
S. Allen, T. Pusine, M. White, K. Seitz
Stand Exam Type:
Plots
Silviculturalist Review:
L Smith
7/26/92

Field Review: 7/29/92

GSR 7/29/92

ALL 7/30/92

PP
LOW
Mq
SMM/P

8. Skind 7/19/92












Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 93
VCU: 281
Alternative(s): E.

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 5-6

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



feet



PROJECT: USHK UNIT: 93 ACRES: 32-
 MANAGEMENT AREA: VCU: 28 LUD: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate but plantings of yellow cedar is necessary to maintain current species composition. Pre-commercial thinning in 15-20 years to enhance growth.

Predominant plant associations is WH-YC (158), a moderately productive site. The upper (N) portion of unit contain mountain hemlock stands (average dbh = 12), which should not be cut. Steep slopes (70-90%) occur in lower portion of unit, and at Northern-most boundary.

UNIT BOUNDARY CHANGES: Lower northern boundary to avoid low productivity MH stands and steep slopes. Also, may have to circumvent lower steep slopes, towards S boundary.

SOUTHERN BOUNDARY HAS BEEN REVERTED TO THE 1975 LINE. UPPER LINE HAS BEEN LOWERED DUE TO SLOPES. LOT IS DESIGNATED FOR LOGGING CHURNS. BOUNDARY AREA IS INDICATED

Log gully from winter drainages and ~~is~~ located halfway up on a upper 2/3 of the unit and will very suspension for a remainder of next 20 years from entering the stream. It does contain a moderate amount of water. S. MHY class in stream, East, West & Southern portion of unit. Maintain north channel integrity. Do not yard in channel.

Tim Type	X45	H44	H45	TOTAL
Acres				
MBF/Species				
WH				
SB				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Prevalent Plant Assoc.	210	210	210	210
Site Index				
Repen Method				
Gross Growth				
N. Goshawk				
Wind Hazard (H,M,L,H)				
Damage (Insect, disease, animal, etc.)				

LOGGING/TRANSPORTATION

Landing: 4
 Profiles: 0
 Field Review: 4/8-2-92

WATERSHED/FISHERIES

PLS 7-18-92
 Field Review: 6/30/92

SOILS/GEOLOGY

PSL & RPL 7/7-92
 Field Review:

OSW 7/20-92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/22/92

AVOID SLOPES > 65%. AVOID & PROTECT V-NOTCHES, LANDSLIDE, AND AVALANCHE CHUTES AND TRAILS. POSSIBLY AVOID THE SUSPECTED LANDSLIDE MATERIAL AT THE TOE OF THE SLOPE ON THE N SIDE OF THE MUSKIE BENCH. AVOID THE STEEP SLOPE ABOVE THE SHOULDER TRACE ALONG THE SW CORNER OF THE UNIT. USE PARTIAL LOG SUSPENSION YARDING.

Harvesting southern ease of unit will result in loss of high quality marten habitat and high quality deer winter range.

VISUAL/RECREATION

Field Review: VLA 7/22/92

PARSPECTIVE PLOTS:

Field Review: 6/16 7/29-92

VQA: PR
 VAC: → MGT
 Visibility: LOW
 ROC: PRM. I / SPM

Recreation Site:
 Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A

Outside Sensitive Area- No Survey Necessary




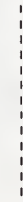






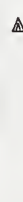
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 94
VCU: 281
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 62

Legend

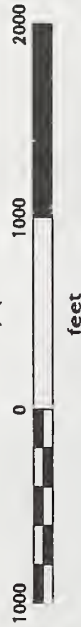
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested cutting system is clear-cut. Natural regeneration of hemlock should be adequate, but planting of yellow cedar is suggested if current species composition is to be maintained. A PCT at 15-20 yrs. is recommended.

Predominant plant association is WH-YC/BB, a moderately productive site quality. This unit has very steep pitches in upper third (>100) rock outcroppings and evidence of past slides/slumps. Also numerous drainage runs throughout separated by narrow ridges. Shells are found throughout. Slide portion has good stands, but access may be difficult.

Tim Type	X45	H44	TOTIWA
Acres			
MBF/Species			
WH			
SS			
YC			
MH			
Other			
TOTAL MBF/AC			
Prevalent Plant Assoc.		210	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	None seen		
Wind Hazard (H,M,L) H			
Damage (Insect, disease, animal, etc.)			

4/3 is down hill yarding. Full suspension is not practical. Unit truncated to reflect slope instability, and to create a less wind-prone boundary below immature timber on ridge. (See over). snag retention is a safety issue.

LOGGING/TRANSPORTATION

Landing: 94-1, -2, -3, -4

Profiles: *8/22 8.6.92*

Way down from V-notch drainages are ~~not~~ ^{not} ~~at~~ ^{at} ~~the~~ ^{the} ~~bottom~~ ^{bottom} ~~of~~ ^{of} ~~the~~ ^{the} ~~unit~~ ^{unit} ~~and~~ ^{and} ~~if~~ ^{if} ~~it~~ ^{it} ~~does~~ ^{does} ~~not~~ ^{not} ~~work~~ ^{work} ~~it~~ ^{it} ~~is~~ ^{is} ~~one~~ ^{one} ~~class~~ ^{class} ~~is~~ ^{is} ~~on~~ ^{on} ~~the~~ ^{the} ~~south~~ ^{south} ~~east~~ ^{east} ~~border~~ ^{border}. Maintain 100 ft buffer min. or sufficient windbreak Class III streams north, west, central part. Maintain 50 ft. buffer min. or sufficient windbreak. Recommend directional logging away from streams & split yarding.

WATERSHED/FISHERIES

PLS 7-15-92

Field Review: *6/30/92*

SOILS/GEOLOGY

Avoid slopes > 55%. Avoid & protect V-notches and slide chutes to wind firm. Possibly avoid the entire unit except for the SW corner due to frequent dissections, convex slopes and suspected poorly drained soils. Use partial log suspension yarding. Field review stability

Field Review: *7/20 92*

WILDLIFE/SUBSISTENCE

Field Review: *VLA 7/22/92*

VISUAL/RECREATION

Harvesting NE portion of unit will result in loss of high quality marten habitat. Harvesting entire unit will impact moderate to high quality deer winter range.

Field Review: *6/16 7-29-92*

ARCHAEOLOGICAL/CULTURAL

Field Review: *N/A*

VQA: *PR*

VAC: *LOW*

Visibility: *M/L*

ROC: *PRIM I / SRM*

Recreation Site: _____

Trail: _____

WOUND NOT MEET POS. VISIBLE FROM VAK-BAY.

Outside high-sensitivity area - no survey required




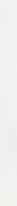
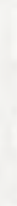






Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 96
VCU: 281
Alternative(s): E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 61-62

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION OF HEMLOCK SHOULD BE ADEQUATE. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15 TO 20 YEARS TO ENHANCE GROWTH MAY BE NECESSARY. PREDOMINANTLY A WA/KC/BB PLANT ASSOC. SITE IS MODERATELY PRODUCTIVE.

Tim Type	X-44	TOTI/AVG
Acres	35	
MBF/species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/ac		
Prevalent Plant Assoc.	210	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	NONE OBSERVED	
Wind Hazard (H.M.I.)	H	
Damages (Insect, disease, animal, etc.)	CEDEAR SKIPPING	

Landing 96-4 encroaches on beach fringe - approx. 1/4 ac. of beach fringe must be cut to permit yarding & mill. Most yarding split at V-notches. Full log suspension impractical. snag retention is a safety issue.

ONE class in stream along southwestern side of unit (windthrow area). Maintain buffer along beach edge. Log away from V-notch drainages. Consider full log suspension. Prevent debris from entering drainages and if it does, remove it.

LOGGING/TRANSPORTATION
Landing: 96-1, -2, -3, -4
Profiles: 202, 84, 92
WATERSHED/FISHERIES
7/2/92 ABK
Field Review: 7-18-92 PLS

AVOID SLOPES > 55%. AVOID V-NOTCH AND SLIDE CUTS TO WINDFIRM STANDS BEWARE OF SMALL LOCAL LANDSLIDES THROUGHOUT THE UNIT. AVOID CUTTING ABOVE THE HEADS OF BELOW THE TRIPS OF THE FAULTS. USE PARTIAL LOG SUSPENSION YARDING.

No concern for marten, other brown bear. Harvesting western half of unit would impact moderate quality deer winter range.

SOILS/GEOLOGY
Field Review: OSW 7/24/92
WILDLIFE/SUBSISTENCE
Field Review: VLA 7/22/92

WOULD NOT NEED FOS GUIDELINES. MAY BE VISITIVE AREA (1.1 MILES) RECOMMEND GROUP SELECTION OR SHELTER-LAND CUT TO REDUCE CONTRAST TO IMMEDIATE BROWNS VIEWS

VQO:	FR
VAC:	LOW
Visibility:	MGT
ROC:	FRM. I / SPM
Recreation Site:	
Trail:	

VISUAL/RECREATION
Perspective Plots:
Field Review: ABK 7-28-92

The high snowfall zone of the unit (the SE corner) was surveyed & NO CULTURAL REMAINS WERE FOUND.

ARCHAEOLOGICAL CULTURAL
Field Review: ZY Kosl 7-26-92



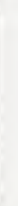
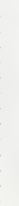
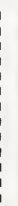





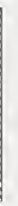
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 98
VCU: 280
Alternatives: D

Photo Information

Year: 1986
Flight Line: 25
Photo Number: 109-110

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 RECOMMEND CLEAR-CUT SYSTEM. NATURAL REGENERATION SHOULD BE ADEQUATE FOR HEMLOCK. PLANTING OF YELLOW CEDAR MAY BE NECESSARY TO MAINTAIN SPECIES COMPOSITION. A PRECOMMERCIAL THINNING TO ENHANCE GROWTH IN 15 TO 20 YEARS MAY BE NECESSARY.
 WH/BB PLANT ASSOC., WITH MC/BB ALSO FREQUENT.
 SITE IS MODERATELY PRODUCTIVE.

Tim Type	X44	X45	TOT/AVG
Acres	48	37	
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.	110		
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	ONE OBSERVED		
Wind Hazard (H,M,L)	M		
Damages (Insect, disease, animal, etc.)			

Directionally fall yard away from stream buffers. Eastern portion to be logged to continuous landing suitable for grapple yard (700 confined for chokers). Yarding can be split-cut since but not all V-notches. snag retention is safety issue. Enlargement in SE corner Log away from V-notch channels. Consider full partial suspension. Keep debris out of channel, and if it does get in, remove it. Two class 1/11 stems (North & West) & one class 11/111 (West). Maintain 100 ft. buffer on class 1/11 stems & 50 ft or up to slope break on class 11. Use of split yarding recommended. - Class III buffers only if windbreak or steep NW facing slope and the slumps at toe of the slope in the SW corner of the unit. Avoid and protect V-notches, slides, and chutes to windfirm stands. Avoid cutting immediately above the two ravines which form the SE corner of the unit. Use partial log suspension on the thudsides.
 Harvesting NW corner of unit will result in loss of high quality habitat for brown bear, otter. Harvesting western half of unit will affect high quality martin habitat. No concern for deer.
 WOULD NOT MEET POS. UNKNOWN VISIBILITY. (AIRCRAFT?)
 Outside Sensitive Area - No Survey Necessary

LOGGING/TRANSPORTATION	Landing: 98-1, -2, -3, -4, -5 Profiles: Field Review: 6/10/92
WATERSHED/FISHERIES	DMB/ISSW 7/6/92 Field Review: 7/4/92
SOILS/GEOLOGY	Field Review: 7/24/92
WILDLIFE/SUBSISTENCE	Field Review: 7/22/92
VISUAL/RECREATION	VCO: VAC: MODIFICATION INTERM. Visibility: MIDDLEGROUND ROC: PRIMITIVE I Recreation Site: Trail:
ARCHEOLOGICAL/CULTURAL	Field Review: N/A

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 101
 VCU: 279
 Alternative(s): B C D E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 13-14

Legend

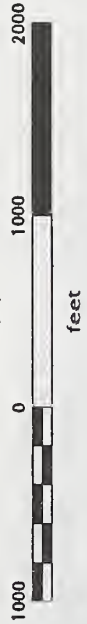
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- Proposed Road
- Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▤ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)		MANAGEMENT AREA:	
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)	RECOMMENDATION	Tim Type	TOI/AVO
<p>Stand Exam: 7/9/92 M. White - M. Cox Stand Exam Type: Variable Plot; Fixed Plots Silviculturalist Review: S Smith 7/28/92</p>	<p>Recommend clear-cut system. Natural regeneration of hemlock should be adequate, planting of VC may be necessary to maintain species composition. A PCT at 15-20 yrs may be necessary to enhance growth. Predominantly a WH/BD Plant Assoc. Unit productivity is moderate.</p>	<p>X45</p> <p>MBF/Species WH SB YC MH Other TOTAL MBF/AC Prevalent Plant Assoc. 110 Site Index Regen Method Gross Growth N. Goshawk Wind Hazard (H,M,L) N→H Damage (Insect, disease, animal, etc.)</p>	
<p>LOGGING/TRANSPORTATION</p> <p>Landing: 101-1 Profiles: 7/27 7.8.92 WATERSHED/FISHERIES 6/26/92 OBT Field Review: 7-17-92 PLS</p>	<p>Directionally fall/yard away from stream buffers. Snag retention is safety issue.</p> <p>ONE CLASS 1 SYSTEM on north boundary. Also note slough area in northern & eastern corner. Recommend min. 100ft buffer & sufficient windfirm ground slough areas. Recommend directional logging away from class 1 & slough areas. Maintain riparian habitat integrity. Prevent debris from entering drainages and if it does, remove it.</p>		
<p>SOILS/GEOLOGY</p> <p>Field Review: OSW 7/23 92 WILDLIFE/SUBSISTENCE Field Review: VLA 7/22/92</p>	<p>No concerns noted.</p> <p>Logging entire unit will result in loss of high quality habitat for marten, brown bear, other. No concern for deer winter range.</p>		
<p>VISUAL/RECREATION</p> <p>Perspective Plate: Field Review: 6/14/92 PLS</p>	<p>WOULD NOT LIKELY BE VISIBLE. WOULD NOT MEET FOR guidelines.</p>	<p>VGO: VAC: Visibility: ROC: Recreation Site: Trail:</p> <p>PF LOW MIG SPNM</p>	
<p>ARCHEOLOGICAL/CULTURAL</p> <p>Field Review: 7-14-92 M. K. 11/3</p>	<p>No significant cultural resources identified - some stumps along creek evidence signs board cuts (early logging)</p>		

Harvest Unit Design Card



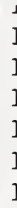
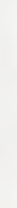






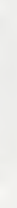
Ushk Bay EIS

Harvest Unit: 102
 VCU: 279
 Alternative(s): B C E F

Photo Information

Year: 1986
 Flight Line: 26
 Photo Number: 12-13

Legend

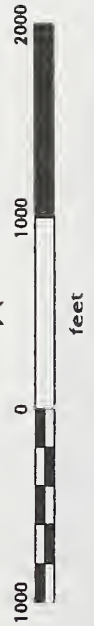
-  VCU Boundary
-  Harvest Unit Boundary
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-  Proposed Road
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-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting system recommended is clear-cut. Hemlock regeneration should be adequate but planting of yellow cedar is suggested if current species composition is to be maintained. A pre-commercial thin at 15-20 years will enhance growth. The pre-dominant plant associations are WH-XE/BB, a moderately productive site and WH/BB-DC, a moderate to high site quality. The eastern half of the unit has steep slopes (over 80%), exposed rocky faces and cliffs, slides, and shallow unstable soils. Steep slopes extend to creek (S boundary). Therefore: UNIT BOUND. CHANGES: 1/3 of the unit should not be logged (as noted) due to steep, unstable condition.

Unit boundaries changed as shown to logical yarding boundaries. Stamps suited to 1/8" tower. Long corner 200' approx.

Class I on southern boundary, class III in west area. Maintain 100 ft by class I stream & 50 ft buffer on class III stream. Recommend split yarding on class I stream. Keep debris out of channel (class I in). CLASS III BOUNDARIES ONLY IF WIND FIRM BE. Minimize disturbance in class III channels & V-notch channels - remove debris that falls in.

PROTECT V-NOTCHES, SLIDES, AND CHUTES TO WINDFIRM TOES OF SLOES AND CHUTES. POSSIBLY AVOID AREAS IN THE SW ARM OF THE UNIT. USE PACTAL

Harvesting southern portion of unit will result in loss of high quality habitat for otter, brown bear. Harvesting entire unit would impact moderate quality deer winter range.

WOULD NOT MEET POS GUIDELINES. UNKNOWN VISIBILITY.

Outside designated high-sensitivity area - no survey required

MANAGEMENT AREA:

TimType	X44	H44	TOTI/AVO
Acres			
MBF/Species			
WH			
BB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent	140	210	
Plant Assoc.			
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	seen	
Wind Hazard (H.M.L.)	M		
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION

Landing: 102-1, 102-2
 Profiles:
 Field Review: *SPZ* 6.29.92

WATERSHED/FISHERIES

7/1/92-*SPZ*
 Field Review:
 DMS 8/17/92

SOILS/GEOLOGY

Field Review:
 DLS & DSW 7/17/92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/22/92

RESOURCE (Name/Date)

TIMBER/SILVICULTURE

Stand Exam:
 S. Allen/T. Pusina 7/12/92
 Stand Exam Type:
 plots
 Silviculturalist Review:
 S. Smith
 7/28/92

LOGGING/TRANSPORTATION

Landing: 102-1, 102-2
 Profiles:
 Field Review: *SPZ* 6.29.92

WATERSHED/FISHERIES

7/1/92-*SPZ*
 Field Review:
 DMS 8/17/92

SOILS/GEOLOGY

Field Review:
 DLS & DSW 7/17/92

WILDLIFE/SUBSISTENCE

Field Review:
 VLA 7/22/92

VISUAL/RECREATION

VISUAL/RECREATION

VOO: PART. RETENTION / MODIFICATION
 VAC: LOW INTERM.
 Visibility: Mfg.
 ROC: Primitive I and SPAM
 Recreation Site:
 Trail:

ARCHAEOLOGICAL/CULTURAL

Field Review: N/A




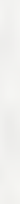


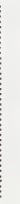




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 103
VCU: 279
Alternative(s): B C E F

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 12

Legend

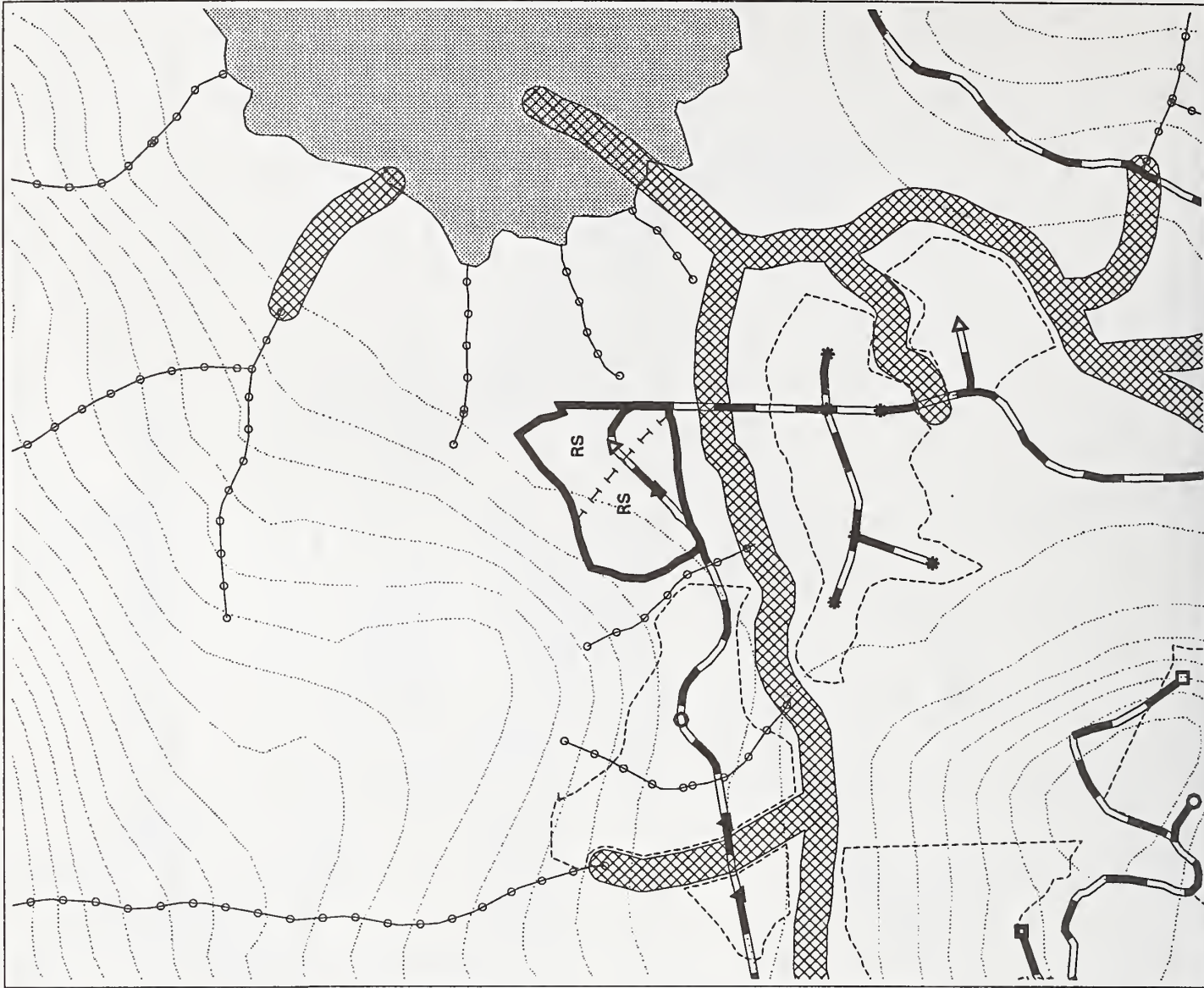
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



TIM Type	X44	S44	TOT/AVG
Acres			
MBF/Species			
WH			
88			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Plant Assoc.	160	352	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk		None seen	
Wind Hazard (H, M, L, V)			
Damage (Insect, disease, animal, etc.)			

LOGGING/TRANSPORTATION
 Lending: 103-1, 103-3
 Profiles: 103-1-272, 103-1-350
 Field Review: S.A. 7-15-92

WATERSHED/FISHERIES
 6/26/92 - *etc*
 Field Review:
 PLS 7-11-92

SOILS/GEOLOGY
 Field Review:
 OSW 7/23/92

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/22/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/16 7 28-92

VQA:
 VAC:
 Visibility:
 ROC:
 Recreation Site:
 Trail:

ARCHAEOLOGICAL/CULTURAL
 Field Review: MJK 7-14-92

Previous entry has occurred. A large older stand extends through the middle of the unit. Dry-hair thickets of spruce and hemlock are common. Fluctuating among remaining hemlocks is common. Majority of unit not recommended for logging. If logged, clear-cut; suggest planting of spruce if desired. SS-RA/DC and WH/DC are the pre-dominant vegetation types, moderate to highly productive site quality.

No problems anticipated for logging

class 1 stream in southern area, 260 Slough area in southern portion of unit. Recommend min. of 100 ft buffer around Slough Channels. class II streams north & west. Maintain 50 ft buffer, if will be opening. Recommend directed logging away from Slough area. Maintain riparian habitat integrity. Minimize disturbance in areas. Prevent debris from entering drainage and if it does, remove it. Stream buffers should be wide.

No concerns noted

NE corner of unit is in estuary fringe habitat. Harvesting unit will impact high quality habitat for brown bears river otter. No concern for deer winter range.

Would not meet ROS guidelines. Located in flat terrain in would likely not be visible from Toison Cove area.

No significant cultural resources identified - some stumps along creek evidence spring board cuts (early logging)

Harvest Unit Design Card



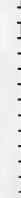
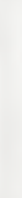


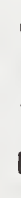



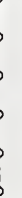
Ushk Bay EIS

Harvest Unit: 104
 VCU: 279
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 56

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommended cutting system is clear-cut. Natural regeneration of hemlock should be sufficient, but planting of yellow cedar is recommended for maintaining current species composition. A pre-commercial thin at 15-20 years may be necessary to enhance growth. Predominant plant association is WH-Vc/B3, which is a moderately productive site. Large V notches run through the unit, and numerous smaller drainages. The upper portion of the unit (N) has slopes of 75% on average. Steep pitches (90%) occur in lower third of unit as well.

Tim Type	X45	TOT/AVG
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/Ac		
Prevalent Plant Assoc.	Z10	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	none seen	
Wind Hazard (H,M,L) H		
Damage (Insect, disease, animal, etc.)	YEDAR STRIPPING	

Log away from V-notch drainages. Consider helicopter removal. Prevent debris from entering drainages and if it does, remove it. No fisheries concern.

AVOID SLOPES OVER 70%. AVOID & PROTECT V-NOTCHES AND SUMPS TO WINDFIRM STANDS. AVOID CROSSING THE V-NOTCHES IN THE SW CORNER AND NEAR THE EAST CENTRAL BOUNDARY. AVOID THE STEEP DISSECTED NE FACING SLOPE NEAR THE NE BOUNDARY. AVOID THE EXTREME NW CORNER. AVOID CUTTING ALONG THE HEADS AND BELOW THE TOES OF THE RAUCOUS. USE PARTIAL LOG SUSPENSION YARDING.

LOGGING/TRANSPORTATION
 Landing: Profiles: 104-1-203, 104-2-304
 Field Review: PLS 7-14-92
 Field Review: DON 8/3/92

Maintain 330 foot buffer from eagle nest #91. Consider maintaining 660 foot wide strip of unharvested timber from eagle nest to protect perching habitat. Southern half of unit is in estuary fringe habitat. Harvesting unit would impact high quality habitat for moose & other and moderate quality habitat for brown bear. Harvesting entire unit and would result in fragmentation of remaining deer range and winter range - winter range - winter range.

WOULD NOT MEET ROS GUIDELINES. VISIBL POISON COWS MAY BE DETECTABLE ALONG WESTERN PORTION FROM AMH.

SOILS/GEOLOGY
 Field Review: DSW 7/23 92
 WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/22/92

PER
 Low
 M
 GPM 2/21/92

VOO:
 VAC:
 Visibility:
 ROC:
 Recreation Site:
 Trail:

PERSPECTIVE PLOTS:
 Field Review: GELF 7-21-92

OUTSIDE HIGH-SENSITIVITY AREA - NO SURVY REQUIRED

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A

Harvest Unit Design Card



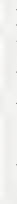
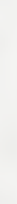
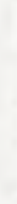






Ushk Bay EIS

Harvest Unit: 105
 VCU: 279
 Alternative(s): E

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 55

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Suggested system is clear-cut. Natural regeneration of hemlock should be adequate. However planting of Sitka spruce and yellow cedar is recommended to maintain current species composition. Spruce is a good component of the stand on upper slopes, while yellow cedar is common on lower slopes. Pre-commercial thin in 15-20 yrs. Main thin 2 swags/acre if possible. Predominant plant association is WH(BA), a moderately productive site, and WH+YC(BB)SC, also moderate, is found in the NE portion. An old blowdown is evident at the ridge (narrow connection between N+S portions), resulting in dense small trees.

Helicopter yard direct to LTF. snag retention is safety issue.

Log away from V-notch drainage. Consider helicopter removal. Pre-veg debris from existing drainages and if it does, remove it. Minimize disturbance to muskrat and riparian wetlands. 3 feet on Class I and II streams should be a minimum of 100' and wind firm. No Fisheries concern.

AVOID SLOPES OVER 65%. AVOID CUTTING ABOVE THE STANDS. AVOID CUTTING ABOVE THE HEADS AND CHUTES. AVOID CUTTING THE STEEP NE FACING SLOPE IN THE MIDDLE OF THE UNIT. AVOID CUTTING IMMEDIATELY ABOVE THE SHOULDER OF THE SLOPES & RAVINE ON THE NW BOUNDARY POSSIBLY AVOID CUTTING THE STRIP BETWEEN THE NOSE OF THE HILL AND RAVINE ON THE SW BOUNDARY. POSSIBLY AVOID HARVESTING NW portion of unit will result in loss of high quality habitat for deer, moderate quality habitat for brown bear, and loss of estuarine habitat. Consider maintaining unharvested buffer 660 feet wide around fringe of unit would impact eagle nest tree #3 to protect perching habitat. Moderate quality winter range.

Would not meet ROS guidelines. Eastern portion may be detectable from AMH. RECOMMEND GROUP SELECTION OR SHELTERWOOD CUT TO REDUCE CONTRAST TO MIDDLEGRAND VIEWS

Outside Sensitive Area - No Survey Necessary

Tim Type	X44	X45	TOT/AVG
Acres			
MBF/Species			
WH			
SB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Plant Assoc.	110	110	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	none	
Wind Hazard (H,M,L,H)			
Damage (insect, disease, animal, etc)			

LOGGING/TRANSPORTATION

Landing: 105-1 105-2
 Profiles:
 Field Review: 8/1/92
 WATERSHED/FISHERIES
 PLS 7-19-92
 Field Review:
 DON 8/5/92

SOILS/GEOLOGY
 Field Review:
 OSW 7/24 92
 WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/22/92

VISUAL/RECREATION
 VAO: PR/MIX MODIF.
 VAC: Low
 Viability: ~~FA~~ FA
 ROC: ~~SPR/SPNM~~
 Recreation Site:
 Trail:

Stand Exam: 7/29/92
 S. Allen + T. Pusina
 Stand Exam Type:
 Walk through
 Silviculturalist Review:
 S J Smith
 7/29/92

ARCHAEOLOGICAL
 CULTURAL
 Field Review: N/A

CUTTING BELOW THE RIDGE ON THE EAST FACING SLOPE NEAR THE EAST BOUNDARY. USE PARTIAL LOG SUSPENSION AT THE LEAST. FIELD REVIEW STABILITY DURING LAYOUT.

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: Group I
VCU: 279
Alternative(s): C

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 54

Legend

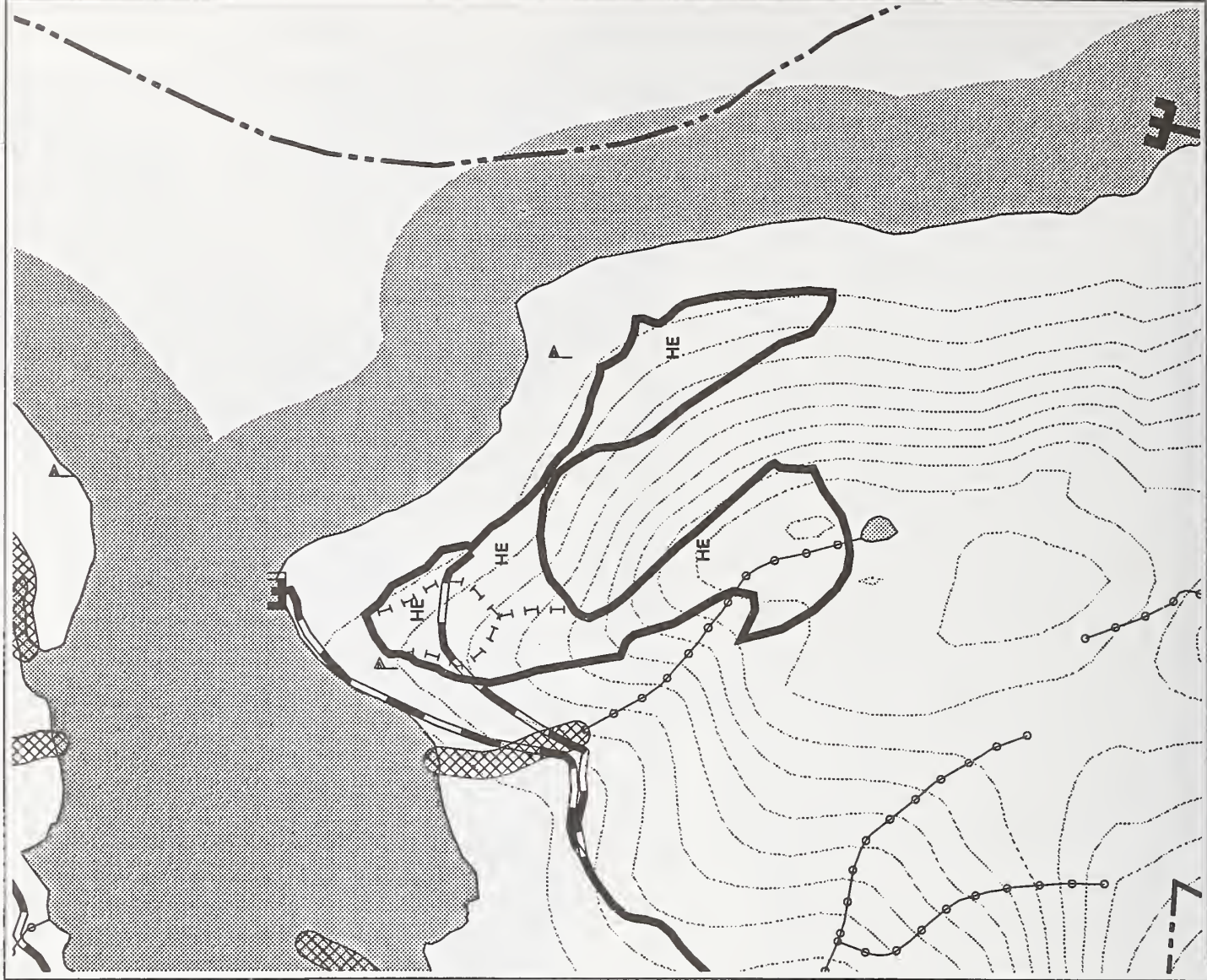
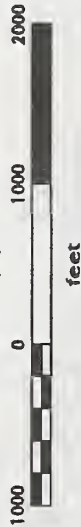
- VCU Boundary
- Harvest Unit Boundary
- - - Setting Boundary
- - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK	LUD: III	VCU: 279	UNIT: Group I	ACRES: 64
MANAGEMENT AREA:				
RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)				
Suggested silvicultural system is group selection because of visual concerns. Groups to be approximately 2 acres in size and should occupy no more than 25 percent of total Unit area. Concentrate groups in areas that provide some shelter from the wind. The Unit should be helicopter logged.				
HELICOPTER YARD TO LANDINGS IN UNIT 105 OR TO POISON COVE LTF				
EJ 7/29/92				
Species lowest groups so they do not touch or cross stream channels (Classes I, II, III)				
GSR 7/29/92				
No soils concerns noted.				
Avoid repeated helicopter flights within 1/4 mile of active bald eagle nests. Maintain heliports and helicopter flight paths at least 1/4 mile from active nests. VLA 7/30/92				
WOULD NOT MEET REQ. WOULD BE VISIBLE FROM AMH. GROUP SELECTION WOULD REDUCE CONTRASTS IN CLOSE MIDDLEGROUND VIEWS				
No Significant Cultural Resources Identified				
J. Shint 7/19/92				

Tim Type	X44	X45	TOT/AVG
Acres			
MBF/Species			
WH			
BS			
YC			
MH			
Other			
TOTAL			
MBF/Ac			
Plant Assoc.	11D	11D	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk	none	Seeds	
Wind Hazard (H, M, U, H)			
Damage (Insect, disease, animal, etc.)			

VCO:	RETENTION
VAC:	LOW
Viability:	MIG
ROP:	SPIN
Recreation Bits:	
Trail:	

TIMBER/SILVICULTURE	Stand Exam: 7/29/92 S. Allen, T. Pusina Stand Exam Type: Plots Silviculturalist Review: J. Smith 7/29/92
LOGGING/TRANSPORTATION	
Landing: Profiles: Field Review:	
WATERSHED/FISHERIES	
Field Review:	
SOILS/GEOLOGY	
Field Review:	
WILDLIFE/SUBSISTENCE	
Field Review:	
VISUAL/RECREATION	
Perspective Plots: Field Review:	66/18 7-28-92
ARCHEOLOGICAL/CULTURAL	
Field Review:	




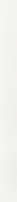
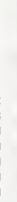

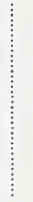



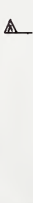
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 110
VCU: 279
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 51-52

Legend

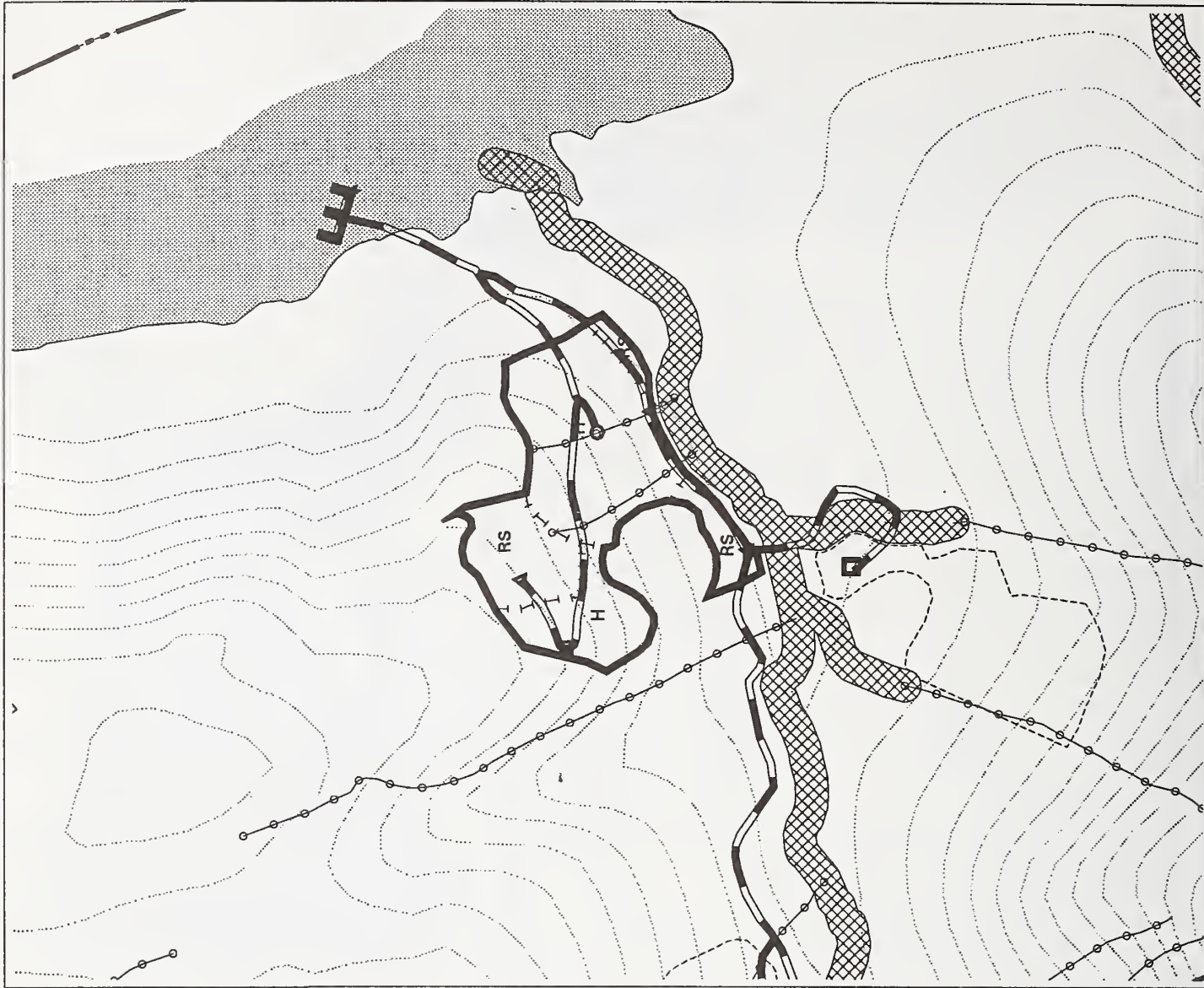
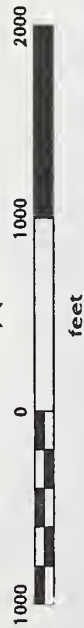
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Cutting method recommended is clear-cut. Natural regeneration of hemlock should be adequate. Planting of Sitka spruce (flats along creek) and yellow cedar is necessary in order to maintain species composition. A DRX-commercial thin in 15-20 yrs. is suggested. Predominant plant associations are WH-YC/BB, a moderately productive site, WH/BB and WH/BB/5C, also moderate in productivity. This unit attempts to skirt the cedar decline, but numerous dying + dead cedar are within the unit especially noticeable in the northern arm and SE portion. The northern half has better quality stands. A deep v-notch buffers the unit.

NOTE: YARD LAYOUT & LOGGING BUILDING LAYOUT PRESENTED IN ATTACHED DRAWINGS. LAYOUTS CONSIST OF SEVERAL SECTIONS OF GENERAL BLOCKS APPROX. 400' x 100' & LOGS PROVIDES EXCELLENT SHELTER FOR YACHTING, 4 LARGE PORTLANDS, A FURTHER 110' x 112' + SCIMIT #113. RECEIVING AND LOADING AREAS ARE BY THE EAST SIDE OF THE UNIT. THIS IS AN OPEN VACUUM CASES CAUSED BY WINDTHERM, PARTIAL SUSPENSION OF LOGS AWAY FROM V-NOTCH DRIVES. CONSIDER MULTIPLE LOGGING, UNLIMITED DISTANCE TO MARKERS AND RIPARIAN VEGETATION. PREVENT LOGS FROM ENTERING DRAINAGES AND IT DOES REMOVE IT.

RECOMMEND 50' BUFFER ON CLASS III STREAM AT SILTATION A CONCERN, AND ONLY IF WINDFIRM.

PROTECT V-NOTCHES AND SLUMPS TO WINDFIRM STANDS. AVOID YARDING ACROSS THE N-S RUNNING DISSECTION ON THE N HALF OF THE UNIT. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLUMPS. USE PARTIAL LOG SUSPENSION AT THE LEAST.

Eastern edge of unit is in estuary fringe habitat. South end of unit is high quality habitat for brown bear & other. Central portion of unit is moderate quality deer winter range.

Would not meet po guidelines. Visible (upper portion) from Alaska Marine Highway. Recommend group selection or shelterwood cut to reduce contrast in foreground.

No significant cultural resources identified.

Tim Type	X45	X24	X44	H44	TOT/AVG
Acres					
MBF/Species					
WH					
SB					
YC					
MH					
Other					
TOTAL					
MBF/AC					
Prevalent Plant Assoc.	130		110	210	
Site Index					
Regen Method					
Gross Growth					
N. Goshawk	more seen				
Wind Hazard (H,M,L,H)					
Damage (Insect, disease, animal, etc.)					CEDAR DECLINE

AVOID SCORES OVER 70%. AVOID & YARDING ACROSS THE N-S RUNNING DISSECTION ON THE N HALF OF THE UNIT. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLUMPS. USE PARTIAL LOG SUSPENSION AT THE LEAST.

VAC: [blank]
 Visibility: [blank]
 ROC: [blank]
 Recreation Site: [blank]
 Trail: [blank]

LOGGING/TRANSPORTATION

Landing: 3
 Profiles: 2
 Field Review: 7-26-92

PROJECT: USHK MANAGEMENT AREA: UNIT: 110 ACRES 43

WATERSHED/FISHERIES

Field Review: 7-19-92
 DQ.V 8/8/92

SOILS/GEOLOGY

Field Review: OSW 7/24 92

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/22/92

PROJECT: USHK MANAGEMENT AREA: UNIT: 110 ACRES 43

VISUAL/RECREATION

Perspective Plots:
 Field Review: 6/14 7 26 92

ARCHAEOLOGICAL/CULTURAL

Field Review: 7/22/92
 11.16.113







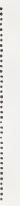




Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 116
VCU: 279
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 51-52

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

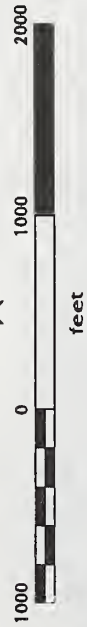
Logging System

RS Running Skyline
SL Slackline
SSL Small Slackline
H Highlead

HE Helicopter
SV Shovel
GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Tim Type	TOTI/AVG
Acres	X44
MBF/Species	
WH	
BB	
YC	
MH	
Other	
TOTAL	
MBF/Ac	
Prevalent Plant Assoc.	210
Site Index	
Regen Method	
Gross Growth	
N. Goehawk	1/25 ALLEN
Wind Hazard (H, M, L) N	
Damage (need, disease, animal, etc)	CEDAR DECLINE

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, but planting of Sitka spruce and yellow cedar is necessary to maintain current species composition. A prod-commercial thin is recommended in 15-20 yrs. This is predominantly plant association is WH-VL/BB, a moderately productive unit as a UNIT BOUND. CHANGES - Drop the upper (southern) boundary to include the MH/Imucky which is low in productivity. Also E boundary should be west of the system of notches which join the large V-notch. Northern most area shows cedar decline.

SLIPS OR SOUTHERN THINDED UNIT ARE EXPRESSIVE. UNIT HAS A HIGH % OF LOW VALUE AREAS. THE UPPER LINE HAS BEEN LOWERED DUE TO RECESS / EPS. PARTIAL SUSPENSION IS PLANNED. LEAVING SLIPS IS A SAFETY HAZARD FOR LOGGING CREWS. SPECIFIC REPAIRS ARE NEEDED. Log away from V-notch drainages. Consider fuel by suspension. Prevent debris from entering drainages and if it does, remove it, minimize disturbance of muskegs and riparian wetlands. maintain 100' buffer on class I and II stream forming east boundary of unit.

AVOID SLOPES OVER 65%. AVOID SATURATED SHALLOW SOILS. AVOID WIND FIRM STANDS. AVOID CUTTING ABOVE THE HEADS AND BELOW THE TOES OF SLIDES AND ABOVE THE SHOULDERS OF E BANDS JUST N OF MIDWAY. AVOID THE DISSECTED W CORNER OF THE UNIT. USE PARTIAL LOG SUSPENSION ON THE HILLSIDE.

NO CONCERN FOR BROWN BEAR, OTTER, MARTEN, OR DEER.

Would not meet pos. guidelines. Western portion may be detectable (ATH 1 miles.) Outside Sensitive Area - No Survey Necessary

PROJECT: IISHK
 RESOURCE (Name/Date)
 TIMBER/SILVICULTURE
 Stand Exam: 7/25/92
 PUSINA/ALLEN
 Stand Exam Type:
 Plots
 Silvicultural Review:
 S. Smith
 7/28/92

LOGGING/TRANSPORTATION
 Landing: 0
 Profiles: 0
 Field Review: 1/2-92

WATERSHED/FISHERIES
 PLS 7-17-92
 Field Review:
 PLS 8/8/92

SOILS/GEOLOGY
 OSW & PLS 7/17/92
 Field Review:

WILDLIFE/SUBSISTENCE
 Field Review:
 VLA 7/22/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/18/92 7/26/92

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A

Harvest Unit Design Card












Ushk Bay EIS

Harvest Unit: 117
 VCU: 279
 Alternative(s): C E

Photo Information

Year: 1986
 Flight Line: 27
 Photo Number: 51-52

Legend

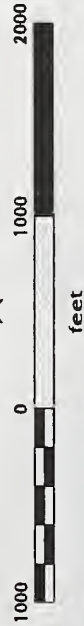
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



PROJECT: IISHK UNIT: 117 ACRES: 10
 LUD: VCU: 279 UNIT: 117

MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)

Cutting method suggested is clear-cut. Natural regeneration of hemlock should be adequate, however, planting of cedar is recommended to maintain current species composition. A pre-commercial thin in 15-20 yrs is recommended. Predominant plant associated is WH-YE/BB/SC, considered low to moderately productive.
 A steep pitch about midway down the east arm (110%) occurs. Cedar decline is moderate to severe in northern part of east arm. Soils are rocky and shallow mid-slope.
 UNIT BOUND. CHANGES: Consider omitting mid portion where slopes are prohibitive.

WEST SIDE OF UNIT HAS UNSTABLE & STEEP SLOPES. UPPER SIDE OF UNIT HAS BEEN LOWERED DUE TO STEEP SLOPES. ABOVE UNIT IS UNIT 115. WILL REMAIN A HIGH OF FULL SUSPENSION. HARVESTING LEAVING SLOPES IS A SAFETY HAZARD FOR LEARNING. HEALTHY LOGS PERTAIN DELETED DUE TO SUBOPTIMALITIES.
 Log away from v-notch designs. Present design has v-notch drains and if it does, remove to minimize disturbance to muskrats and chipmunks with log consider full log suspension. Maintain 200' buffer on class I/II stream at base of slope due to unstable channel and high rate of erosion. Maintain 100' buffer along class I & II streams

Avoid slopes over 65%. AVOID THE SW CORNER OF THE UNIT. AVOID & PROTECT V-NOTCHES, SLUMPS, & CUTS. AVOID CUTTING ABOVE THE HEADS OR BELOW THE TOES OF UNSTABLE GROUND. AVOID CUTTING ABOVE THE SHOULDER OF THE RAVIDE ON THE SE BOUNDARY. AVOID CUTTING BELOW THE TOE OF STEEP N FACING SLOPE. USE PARTIAL LOG SUSPENSION ON THE HILLSIDE.
 Harvesting NE tip of unit will result in loss of high quality habitat for other brown bear. No concerns for marten or deer.

Upper portion may be visible. AMH 1+ mile.
 Would not meet Pos guidelines

Outside Sensitive Area - No Survey Necessary

Tim Type	X44	TOTAL
Acres		
MBF/Species		
WH		
SB		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Prevalent Plant Assoc.	220	
Site Index		
Repen Method		
Gross Growth		
N. Goshawk	None seen	
Wind Hazard (H, M, L, M)		
Damage (Insect, disease, animal, etc.)	CEPHE DECKLINE	

LOGGING/TRANSPORTATION

Landing: 0
 Profiles: BA V 8-2-92
 Field Review: V 8-2-92
 WATERSHED/FISHERIES
 8/5 7-11-92
 Field Review: DON 8/8/92

SOILS/GEOLOGY
 Field Review: DLS & DSJ 7/17/92
 WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/22/92

VISUAL/RECREATION
 Perspective Plots: VAC: LOW
 Visibility: MB
 ROC: POSITM
 Recreation Site: _____
 Trail: _____

Stand Exam: 7/22/92
 Allen/Pusina
 Stand Exam Type: Plots
 Silviculture Review: D Smith
 7/28/92

LOGGING/TRANSPORTATION

SOILS/GEOLOGY
 Field Review: DLS & DSJ 7/17/92
 WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/22/92

VISUAL/RECREATION
 Perspective Plots: VAC: LOW
 Visibility: MB
 ROC: POSITM
 Recreation Site: _____
 Trail: _____

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A



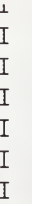








Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 118
VCU: 279
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 27
Photo Number: 51-52

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 279/280 UNIT: 118 ACRES: 34

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RECOMMENDED WTING METHOD IS CLEAR CUT. NATURAL REGEN- ERATION OF HEMLOCK SHOULD BE SUFFICIENT. PLANTING OF SPRUCE AND CEDAR FOR SITE PREPARATION/REGEN- ERATION IS RECOMMENDED TO MAINTAIN WRENT SPECIES COMPOSITION. A PRECOMMERCIAL THINNING AT 15-20 YRS. IS ADVISED TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO STMS PER ACRE FOR DIVERSITY. THE PREVALENT PLANT ASSOCIATION IS WH/SS - DC WHICH IS MODERATELY TO HIGHLY PRODUCTIVE. THE SOUTH EAST PORTION OF THE UNIT HAS PATCHES OF MUSHROOMS/BOLUS WITH POOR QUALITY AND LOW PRODUCTIVITY TIMBER. THESE PATCHES SHOULD NOT BE CUT. A SEVERE SLIDE/BRUSHFIELD AND A SLIGHT BLOWDOWN ARE EVIDENT IN THE NORTHWESTERN SECTION OF THE UNIT.

UNIT BOUNDARY CHANGES: UPPER BOUNDARY LIMITS MAY BE RAISED IF SLOPE PERMITS.

RECOMMEND VARIOUS UNIT WITH STACKING SYSTEM. THE SOUTHERN PORTION NEEDS OPEN AND WILL REQUIRE MECHANICAL SLATE PULLING CHAINING. HOLES WILL NEED TO BE CUT THROUGH THE BUFFER TO YARD THE SOUTH SIDE. THIS APPROACH WILL ELIMINATE A 1800' FENCED A BRIDGE. SPLITTING REMOVED TO BOTH SIDES OF BUFFER. EXPECT TO REMOVE FULL SUSPENSION OF SEVEN STMS 1 MILE SUSPENSION. PARTIAL BURNED BURNED DUE TO SOIL REGENERATION.

Log away from V-notch drainage. Consider full suspension. Prevent debris from entering drainage by if it does, remove it. minimize disturbance to mosses and riparian vegetation. Buffers along class I/II stream at base of slope should be a minimum of 100' and be wide stream. maintain 100' buffer along class I and II streams.

THE SE 'ERN THIRD ON THE STEEP UNY FACING SLOPE, & ON THE UNY QUARTER, AVOID THE TOES OF THE STEEP SLOPES AND SLOES, AVOID & PROTECT V-NOTCHES, SLIDES, AND CHUTES TO WINDFIRM STANDS. USE PARTIAL LOG SUSPENSION YARDING.

Unit is high quality habitat for marten, moderate quality for brown bear, and moderate quality deer winter range.

Would not meet for guidelines. Extreme eastern edge may be detectable. 1+ miles.

Outside Sensitive Area - No Survey Necessary

Tim Type	X44	X45	H44	TOTAL
Acres				
MBF/Species				
WH				
88				
YC				
MH				
Other				
TOTAL				
MBF/AC				
Plant Assoc.	120	140		
Site Index				
Regen Method				
Gross Growth				
N. Goshawk	NONE	SEEN		
Wind Hazard (H,M,L,H)				

Damage (Insect, disease, animal, etc.)

LOGGING/TRANSPORTATION

Landing: 4
Profile: 118-1520/118-2811
Field Review: 8-2-92

WATERSHED/FISHERIES
PLS 7-19-92
Field Review: 8/8/92 OON

SOILS/GEOLOGY
Field Review: PLS & DSW 7/17/92

WILDLIFE/SUBSISTENCE
Field Review: VLA 7/22/92

VISUAL/RECREATION
Perspective Plots:
Field Review: 6/1/92 7/24/92

ARCHAEOLOGICAL/CULTURAL
Field Review: N/A



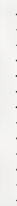
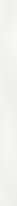






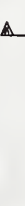
Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 119
VCU: 279
Alternative(s): C E

Photo Information

Year: 1986
Flight Line: 26
Photo Number: 15-16

Legend

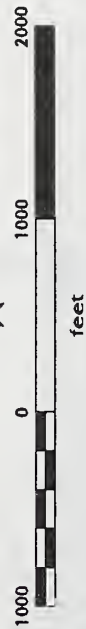
-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



RESOURCE CONCERNS (INCLUDING MGT, OBJECTIVES & MITIGATION)

RECOMMENDED CUTTING METHOD IS CLEARCUT. NATURAL REGENERATION OF HEMLOCK SHOULD BE SUFFICIENT. PLANTING OF SPRUCE AND CEDAR FOR SITE PREP/REGENERATION IS ADVISED TO MAINTAIN CURRENT SPECIES COMPOSITION. A PRE-COMMERCIAL THINNING IS RECOMMENDED AT 15-20 TR TO ENHANCE GROWTH. IF POSSIBLE, LEAVE AT LEAST TWO SPACES PER ACRE FOR DIVERSITY. THE PREVALENT PLANT ASSOCIATION IS MIXED WHITE/BUEBERRY/SCUMCABOGE WHICH IS UNPRODUCTIVE. PORTIONS OF THE UNIT ARE WH/GB WHICH IS MODERATELY PRODUCTIVE. THE SOUTHWESTERN PORTION OF THE UNIT CONTAINS MANY SCOTCH/MSKEL AREA WHERE TIMBER QUALITY IS POOR. THE NORTHWEST PORTION OF UNIT CONTAINS THREE VERY STEEP V-NOTCHED GULLIES AND SHOULD BE AVOIDED.

UNIT BOUNDARY CHANGES: ENTIRE SOUTHWEST IS TOO CLOSE TO OUT CREEK (CREEK MEANDERS THROUGHOUT) AND SHOULD BE CUT OUT OF UNIT.

BEST HALF OF UNIT WILL NOT BE LOGGED DUE TO MULTIPLE V NOTCH CREAKS. SOUTHWEST HALF OF UNIT IS NOT WORTH LOGGING. PARTIAL SUSPENSION CAN BE ACHIEVED, LEAVING SWAINS IS A SAFETY HAZARD FOR LOGGING.

Log away from venatic drainages and ~~contaminated~~ ^{contaminated} ~~contaminated~~ ^{contaminated}. Consider full log suspension minimize disturbance to muskeg and riparian vegetation. Prevent debris from debris chutes and if it can't be removed, trim with a minimum of a 100' buffer on the class I/II stream at side of slope in unit and be wind firm. maintain 100' buffer on class II streams in unit.

Tim Type	X 44	X 45	TOI/AVO
Acres			
MBF/Species			
WH			
GB			
YC			
MH			
Other			
TOTAL			
MBF/AC			
Prevalent Plant Assoc.		420	
Site Index			
Regen Method			
Gross Growth			
N. Goshawk		POPE	SEEN
Wind Hazard (H.M.I.)		H	
Damage (Insect, disease, animal, etc.)			

AVOID SLOPES OVER 65%. AVOID THE STEEP NW FACING SLOPE ON THE N/E SIDE OF THE UNIT. AVOID & PROTECT V-NOTCHES, SLIDES, & CHUTES, AVOID CUTTING BELOW THE TOES OF SWUMPS, CHUTES, AND STEEP HILLSIDES. USE PATENTAL LOG SUSPENSION YARDING ON THE HILLSIDES.

Harvesting eastern tip of unit will result in loss of high quality martens habitat and moderate quality deer winter range.

Would likely not be visible. (Level I) Would not meet Fos guidelines.

Outside high sensitivity area - no survey required

VQA:	MODIFICATION
VAC:	Low-Interm.
Visibility:	MP
ROC:	Primitive I.
Recreation Site:	
Trell:	

ARCHAEOLOGICAL CULTURAL

Field Review: N/A

LOGGING/TRANSPORTATION

Lending: /
Profiles: NC
Field Review: *SA* 7-2-92

WATERSHED/FISHERIES
P/S 7-14-92
Field Review: *DN* 8/8/92

SOILS/GEOLOGY

Field Review: *PLS & OSW* 7/17/92

WILDLIFE/SUBSISTENCE
Field Review: *VLA* 7/22/92

VISUAL/RECREATION

Field Review: *PLS* 7-24-92

PERCEPTIVE PLOTS:
Field Review: *PLS* 7-24-92

Harvest Unit Design Card

Ushk Bay EIS

Harvest Unit: 138
 VCU: 280
 Alternative(s): C E F

Photo Information

Year: 1986
 Flight Line: 23
 Photo Number: 7-8

Legend

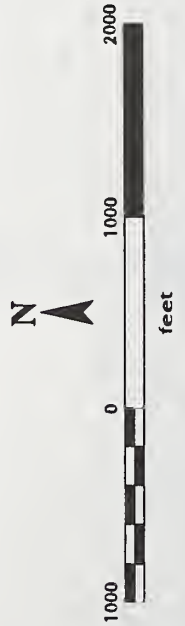
- VCU Boundary
- Harvest Unit Boundary
- - - - - Setting Boundary
- - - - - Adjacent Unit
- ▬ Proposed Road
- ⋯ Contour Interval (100 feet)
- ▲ ○ Landing
- ▨ Shoreline and Lakes
- ▩ Class I and II Stream Buffers
- Class III Stream
- ▲ Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
 Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK MANAGEMENT AREA: LUD: VCU: 280 UNIT: 138 ACRES: 70

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

Recommended Silvicultural System is clearcutting, Natural Regeneration of Hemlock should be adequate. Yellow Cedar ^{and Spruce} should be planted to maintain species composition. The predominant Plant Association is WH/BB/DC.

Tim Type	X44	TOT/AVO
Acres		
MBF/Species		
WH		
BB		
YC		
MH		
Other		
TOTAL		
MBF/AC		
Prevalent Plant Assoc.	140	
Site Index		
Regen Method		
Gross Growth		
N. Goshawk	have observed	
Wind Hazard (H,M,L)	M	
Damage (Insect, disease, animal, etc.)		

Logging system should be a running skyline. No logging problems anticipated. Adequate quantity stumps for both landings. Split yarding of V-notches where practical. Maintain low buffer on class II stream in unit. Reconnect SA' buffer on class III streams if siltation a concern.

LOGGING/TRANSPORTATION

Lending: 138-1, 138-2
 Profiles: 0
 Field Review: J.D. & K.P.

WATERSHED/FISHERIES

DDW 8/8/92
 Field Review:

SOILS/GEOLOGY

Field Review:

WILDLIFE/SUBSISTENCE

Field Review: VLA 7/22/92

VISUAL/RECREATION

Field Review: 66/77 7-21-91

ARCHAEOLOGICAL CULTURAL

Field Review: N/A
 h. Flint

VCO: MODIFICATION
 VAC: INTERM.
 Visibility: UNSEEN
 ROC: PRIMING F.
 Recreation Site:
 Trail:

Field Review: N/A
 h. Flint

Outside Sensitivity Area - No Cultural Survey Necessary

WOULD NOT MEET POS GUIDELINES.

Harvesting unit will result in loss of high quality habitat for river otter and brown bear.



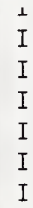






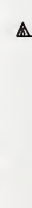

Harvest Unit Design Card Ushk Bay EIS

Harvest Unit: 138-A
VCU: 280
Alternative(s): C E F

Photo Information

Year: 1986
Flight Line: 23
Photo Number: 7-8

Legend

-  VCU Boundary
-  Harvest Unit Boundary
-  Setting Boundary
-  Adjacent Unit
-  Proposed Road
-  Contour Interval (100 feet)
-  Landing
-  Shoreline and Lakes
-  Class I and II Stream Buffers
-  Class III Stream
-  Eagle Tree

Logging System

- RS Running Skyline
- SL Slackline
- SSL Small Slackline
- H Highlead
- HE Helicopter
- SV Shovel
- GR Gravity return

IDT Review

Reviewed by: /s/ E. Johnson
Date: 9/29/93



UNIT DESIGN CARD

PROJECT: USHK LUD: VCU: 280 UNIT: 138-A ACRES: 6
 MANAGEMENT AREA: RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)

RESOURCE CONCERNS (INCLUDING MGT. OBJECTIVES & MITIGATION)
 Recommended Silvicultural System is clearcutting, Natural Regeneration of Hemlock should be adequate. Yellow Cedar ^{and Spruce} should be planted to maintain species composition.
 The predominant Plant Association is WH/BS/DC.

Tim Type	TOT/AVG
Acres	244
MBF/Species	
WH	
BS	
YC	
MH	
Other	
TOTAL	
MBF/AC	
Previent	
Plant Assoc.	140
Site Index	
Regen Method	
Gross Growth	
R. Goshawk	None observed
Wind Hazard (H,M,L)	M
Damage (Insect, disease, animal, etc.)	

LOGGING/TRANSPORTATION
 Logging system should be a running skyline. No logging problems anticipated. Adequate gaging stations for both landings. Split yarding of V-notches where practical.
 Maintain low buffer on class II stream in unit. Reconnect soil buffer on class III streams if siltation a concern.

WATERSHED/FISHERIES
 Landing: 138-1, 138-2
 Profiles: 0
 Field Review: J.D. & K.P.
 Date: 8/8/92
 Field Review:

SOILS/GEOLOGY
 Field Review:

WILDLIFE/SUBSISTENCE
 Field Review: VLA 7/22/92

VISUAL/RECREATION
 Perspective Plots:
 Field Review: 6/17/92 7/21/92
 Field Review: N/A
 h. Flint

ARCHAEOLOGICAL/CULTURAL
 Field Review: N/A
 h. Flint

VCU: 280 UNIT: 138-A ACRES: 6

Recommended Silvicultural System is clearcutting, Natural Regeneration of Hemlock should be adequate. Yellow Cedar ^{and Spruce} should be planted to maintain species composition.
 The predominant Plant Association is WH/BS/DC.

Logging system should be a running skyline. No logging problems anticipated. Adequate gaging stations for both landings. Split yarding of V-notches where practical.
 Maintain low buffer on class II stream in unit. Reconnect soil buffer on class III streams if siltation a concern.

Field Review: J.D. & K.P.
 Date: 8/8/92
 Field Review:

Field Review: VLA 7/22/92

Field Review: 6/17/92 7/21/92
 Field Review: N/A
 h. Flint

Field Review: N/A
 h. Flint

Field Review: N/A
 h. Flint

VCU: 280 UNIT: 138-A ACRES: 6

Recommended Silvicultural System is clearcutting, Natural Regeneration of Hemlock should be adequate. Yellow Cedar ^{and Spruce} should be planted to maintain species composition.
 The predominant Plant Association is WH/BS/DC.

Logging system should be a running skyline. No logging problems anticipated. Adequate gaging stations for both landings. Split yarding of V-notches where practical.
 Maintain low buffer on class II stream in unit. Reconnect soil buffer on class III streams if siltation a concern.

Field Review: J.D. & K.P.
 Date: 8/8/92
 Field Review:

Field Review: VLA 7/22/92

Field Review: 6/17/92 7/21/92
 Field Review: N/A
 h. Flint

Field Review: N/A
 h. Flint

Field Review: N/A
 h. Flint

Appendix D

Fisheries

APPENDIX D

METHODOLOGY AND CRITERIA FOR RELATIVE SENSITIVITY RATINGS

This appendix provides detailed methodology, rationale, and criteria used to develop sensitivity ratings for aquatic resources in relation to important potential impacts expected from road construction and harvesting of timber in the Ushk Bay timber harvest area. Also provided is a summary table (Table 1). The detailed sensitivity ratings are provided in the Environmental Consequences Report for Fisheries and Water Resources (Bjerklie and Reub, 1993).

As explained in the text, these sensitivity ratings are used to compare relative impacts from road construction and harvest units by alternatives and within the context of watershed sensitivity. Based on site specific data (from the GIS data base and site observations) and analysis, impacts are focused on potential changes to erosion, sedimentation and water quality and their subsequent potential effects on aquatic habitat (fisheries) from harvesting and road construction in watersheds within the Ushk Bay sale area.

The intent of the rating method is to provide a consistent and reproducible way to assess the relative potential impacts from each alternative. The ratings are arranged such that the relative comparisons can be used to make management decisions on a VCU and watershed basis, as well as on an individual harvest unit or stream crossing basis.

D.1 OVERALL WATERSHED SENSITIVITY RATING

The objective of the overall watershed sensitivity ratings is to evaluate potential impacts from timber harvest and road construction in the context of existing watershed sensitivity to the potential impacts. With this approach, special watershed concerns and characteristics of individual watersheds can be accounted for in the comparison between alternatives. The road and harvest unit ratings (the other two sensitivity analyses) are oriented to site specific impacts, whereas the watershed sensitivity analysis provides an emphasis on important watershed issues such as existing soil hazard ratings and fisheries values.

The watershed sensitivity is based on indexing the following general factors:

- the likelihood for natural mass wasting using the average soil hazard rating for the watershed,
- the likelihood for transport/deposition of sediment to mainstem streams in tributary channels using the number of Class III tributaries times the length of the tributary channels divided by the watershed area (yielding a channel length and density index per watershed area for comparative purposes),
- the value and amount of fish habitat within the mainstem receiving channels by using the miles of Class I and II channels in the watershed divided by the watershed area (yielding a length of potential habitat per watershed area for comparative purposes).

Stream density, defined as the number of tributaries per watershed area, and average soil hazard rating for the watershed are used as indices to characterize potential transport and generation of sediment. Fishery concerns are then considered in relation to the hydrologic parameters using AHMUs (see the *Glossary* for the definition of AHMU). The indices, data, and index values used in the overall watershed sensitivity rating are as follows:

Index	Data	Index Value
A. Potential for mass movement and slope erosion	average soil hazard rating	rating 1 through 4, with 1 the lowest and 4 the highest*
B. Potential for eroded sediment to impact streams	stream density	values determined by ratio of number of high gradient tributaries to watershed area
C. Potential impact to aquatic habitats	ratio of watershed area to miles of fish bearing Class I and II streams	values determined by ratio

* values between 1 and 4 adopted from Soil Hazard Ratings as presented in the Ushk Bay Soil Effects Report.

The overall watershed sensitivity rating is developed by first normalizing each individual parameter on the mean for that parameter for the project area. Normalizing provides a dimensionless factor representing the percent difference from the mean, allowing for quantitative comparisons between relative parameters. The overall watershed sensitivity rating is then used as input to the overall comparative impact analysis for alternatives, and for assessing quantitative impacts.

D.2 STREAM CROSSING SENSITIVITY RATING

The objective of the stream crossing sensitivity ratings is to evaluate the relative sensitivity and relative potential impacts from the construction and operation of roads at the point of entry to a stream (stream crossings) where impacts to aquatic habitat can occur. The criteria pertain to road stream crossings and associated road segments within harvest units.

The hydrologic criteria for the stream crossing rating is based on the type of stream crossing structure (with bridges assumed to be less likely to cause impact than culverts), the sediment transport conditions at the crossing (indexed by channel type), the road Class at the crossing (either temporary, permanent abandoned or permanent), and the average soil hazard rating for the roads draining to the crossing (indexed as an average for the watershed, refer to Ushk Bay Soils Effects Report, 1993). The road Class determines whether the structure will be left in place (if it will be left in place, the long term hazard is assumed to be increased), and the soil hazard for the road indicates the likelihood that road failures may occur.

The fisheries criteria used for the stream crossing sensitivity ratings is based on the type of AHMU stream Class (habitat quality) at, below, and upstream of a road crossing. Also used was important/critical spawning and rearing habitat within the depositional area of larger substrate downstream of a road crossing. The fisheries ratings are weighted depending on potential for the impact to occur and the value of the habitat.

The stream crossing sensitivity ratings consider the hydrologic parameters and aquatic habitat parameters of the receiving waters, and soil hazards along the road network within a watershed. Crossing structure, road management and fish passage is also considered. The ratings assume that road and stream crossing design will conform to accepted Forest Service practice. However, risk factors identified by the index values recognize the possibility of maintenance or operational problems. The following provides the indices, data and index values used and an explanation (footnotes) of the rating criteria. Hydrologic parameters are presented first and fisheries parameters second.

The stream crossing sensitivity ratings are compiled based on hydrologic concerns and based on fishery concerns. Each is developed as a summation of index values. The total potential impacts associated with each alternative is evaluated as the sum of all crossings in the watershed and/or VCU, representing impacts from all the crossings planned for the alternative. The average sensitivity value provides a means to assess the degree of impacts associated with stream crossings for each alternative.

HYDROLOGIC PARAMETERS

Index	Data	Index Value
A. Sediment transport conditions at crossing	Channel type	Value 1, 2 or 3 ¹
B. Potential damming effects at crossing	Stream crossing structure	Value 1 or 2 ²
C. Potential damming effect and sediment contribution from roads	Road Class and maintenance	Value 1, 2 or 3 ³
D. Potential slope erosion and mass wasting risk along roads in watershed which could be transported via road ditches to the stream crossing	Average soil hazard along roads in the watershed	Value between 1 and 4 ⁴

¹ 1 = Stable sediment transport channels. These channels types are sediment transport and delivery channels including A1, A2, A4, A5, A6, A7, D7, D2, HS and FR where sediment will typically be delivered past the stream crossing to downstream areas.

2 = Relatively stable channel in a depositional environment including channel types E1, E2, E3, E4, E5, L1, L2, L3, L4, L5, C4, C6, B8, B1, C1, C3, D1, D3, D4, D5, D8 where sediment will typically be deposited and stored, with gradual discharge to downstream areas. In these channels an appropriate crossing structure can usually be designed, however in some cases debris and sediment can build up and cause problems.

2 = transitional channel where depositional environment is variable. Channel Types include B5, A3, D6, C2, C5, B2, B3, B4, B6, B7. These channels are not necessarily stable, and can be transformed from a transport to a depositional channel in response to sediment load, flow conditions, bank sloughing, increased LWD and other factors. Appropriate design of a stable crossing structure is difficult, increasing the likelihood of damage to the road and structure with resulting environmental damage.

² 1 = lowest risk bridge structure. These structures pose the lowest risk due to no constriction or encroachment into stream bed.

2 = highest risk culvert structure. These structures pose the highest risk due to some constriction, even for a properly designed structure, by placement into stream channel.

³ 1 = lowest risk road (e.g., some temporary roads). These roads pose the lowest risk due to less imported road material, less clearing and construction, and obliteration of road after use (removal of all road construction material and drainage structures) minimizing long term impact.

2 = medium risk roads (e.g., some abandoned local and collector roads). These roads minimize long term impacts at stream crossings due to removal of all drainage structures, but leave imported road construction material in place.

3 = highest risk roads (e.g., some permanent local and collector roads). These roads pose the highest long term risk because the road and all drainage structures will be left in place. Future floods or poor maintenance practices can result in road washouts and environmental damage.

⁴ Soil hazard ratings 1 (lowest) through 4 (highest) risk of mass movement or landslide, from Soil Effects Report (USFS 1992c).

FISHERIES PARAMETERS

Index	Data	Index Value	Weighing Factor
A. Potential impact to aquatic habitat 1. at crossing 2. below crossing 3. above crossing	AHMU Class of impact streams	value 1, 2, 3, 4, or 5 ¹	X3 X2 X1
B. Potential impact to important or critical habitat 1. spawning 2. rearing	habitat identified in resource inventory	Value 1, 2, 3, 4, or 5 ²	X3 X3

- ¹
- 1 = Class III stream (least sensitive)
 - 2 = Class II and III streams
 - 3 = Class II stream
 - 4 = Class I and II streams
 - 5 = Class I stream (most sensitive)

The downstream rating includes the Class of stream or streams within the depositional area for larger sediment particles (larger than six to eight millimeters). This is an estimate of the area where most of the deposition will occur, which includes downstream areas where the gradient decreases from high or moderate gradients to low gradient (three to four percent) which is typically at a slope break. The upstream sensitivity is included to account for potential upstream passage for fish and receives a lower weighing factor because road crossings will be engineered to allow passage.

- ²
- 1 = areas not of special concern (least sensitive)
 - 2 = important small areas
 - 3 = important large areas
 - 4 = critical small areas
 - 5 = critical large areas (most sensitive)

Potential impact to important and critical habitat is provided to give emphasis to those areas thought to be the most important areas supporting fish production. Separate ratings are provided for spawning areas and rearing/overwintering areas and both have a maximum weighing factor. This information is provided by observations and data collected "on the ground". These areas are categorized as follows:

- Important small areas Potentially impacted Class I or II streams with a lineal distance of less than 0.2 miles and the area is not a slough used for rearing and overwintering or a prime spawning area
- Important large areas Potentially impacted Class I or II streams with a lineal distance of more than 0.2 miles and the area is not a slough used for rearing and overwintering of a prime spawning area
- Critical small areas Class I channel areas which include significant slough habitat or prime spawning habitat and are less than 0.2 miles in linear distance
- Critical large areas Class I channel areas which include significant slough habitat or prime spawning habitat and are more than 0.2 miles in linear distance

D.3 HARVEST UNIT RATING

The objective of the harvest unit sensitivity ratings is to evaluate the relative sensitivity and relative potential impacts from timber harvesting areas (harvest units) on streams and aquatic habitat. These criteria pertain to all harvest unit polygons within each watershed and VCU within the harvest area.

The hydrologic criteria for the harvest unit ratings is based on the potential generation of sediment (average soil hazard for the unit and harvest practice), the potential for transport of sediment downslope to a receiving stream, the potential for transport or deposition in the receiving stream channel, and the potential for impacting fish habitat downstream of the harvest unit. The fisheries criteria are basically the same described for road crossing sensitivity ratings except for the addition of a water quality component. The number of Class III streams that are present in

a cutting unit provide an index of water quality impacts such as fine sediment delivery and potential temperature increases to downstream areas.

The largest potential impact to the water resources in the Ushk Bay area results from mass movement and erosion of soils. The eroded material will potentially reach streams (if it is not deposited and stored on slopes) and may be transported further downstream within the stream system or may be deposited in the stream channel depending the size of the particles transported. Timber harvesting in areas with high soil hazard increase the potential for mass movement and erosion of soils by increasing soil saturation on harvested slopes, reducing the root strength in soils (by death of tree roots), and concentrating runoff.

The potential impacts from timber harvesting within a polygon can be indexed or rated by evaluating several hydrologic and aquatic habitat parameters. Each is developed as a summation of index values. The total potential impacts associated with each alternative is evaluated as the sum for all harvest units in a watershed and/or VCU, representing potential impacts from all the harvest units planned for the alternative. The average sensitivity value provides a means to assess the degree of impacts associated with stream crossings for each alternative.

HYDROLOGIC PARAMETERS

Index	Data	Index Value
A. Sediment delivery from the harvest unit	Sediment delivery class	Value 1, 2, 3, 4 or 5 ¹
B. Sediment transport from the harvest unit	Sediment transport class ¹	Value 1, 2, 3, or 4 ²
C. Potential sediment production from the harvest unit	Average soil hazard rating for the unit	Value 1, 2, 3 or 4 ³
D. Harvesting practice impact on potential sediment production	Harvest Practice includes helicopter, skyline, shovel and highlead	Value 1, 2, 3, or 4 ⁴

¹ 1 = very low risk, with polygon in low relief terrain (less than 15 percent slopes) not bordering any stream. Within these units, slope erosion would be low due to flat slopes, and delivery to streams would be low because there is no drainage transport channel adjacent to the unit.

2 = low risk, with polygon in low relief terrain (less than 15 percent slopes) not bordering unbuffered AHMU Class III streams, but may border buffered streams AHMU Class I and II streams. Within these units, slope erosion is low, but some sediment could be delivered to a stream through a buffer strip on Class I or II streams.

3 = medium risk, with polygon located in low relief terrain (less than 15 percent slopes) but may border or be traversed by an unbuffered AHMU Class III streams. Within these units, slope erosion is low, but delivery to a Class I or II stream via the bordering unbuffered stream may occur.

4 = high risk, with polygon on steeper terrain (between 15 and 30 percent slopes) bordering or traversed by unbuffered AHMU Class III streams. Within these units, slope erosion is more likely to be transported overland to a channel which can then transport the sediment downstream.

5 = very high risk, with polygon on very steep terrain (greater than 30 percent) bordering or traversed by unbuffered AHMU Class III streams. Within these units, slope erosion is most likely to be transported overland and further downstream.

² 1 = low sediment deposition and high transport, with polygon draining directly (receiving water immediately downslope of the unit) to steep sediment transport channels, typically AHMU Class III and channel types A1, A2, A3, A4, A5, A6, A7, B7, D2, D6, D7, HS and FR. In these channels, sediment entering from slopes is most likely to be transported and distributed in a downstream direction away from the entry channel reach. Downstream areas may be impacted due to the throughput of sediment, however the material will be distributed. Downstream impacts are ranked as part of the downstream habitat index.

2 = moderate sediment deposition and moderate transport, with polygon draining directly (receiving water immediately downslope of the unit) to confined channels with medium channel gradients, typically AHMU Class I and II and channel types B2, B3, B4, B5, B6, C5 and D3. In these channels, most of the sediment entering from slopes will be transported and distributed in a downstream direction away from the entry channel reach, but a significant amount will be deposited within the entry reach. Downstream areas may be impacted due to the throughput of sediment, however the material will be distributed. Downstream impacts are ranked as part of the downstream habitat index.

3 = high sediment deposition and low transport, with polygon draining directly (receiving water immediately downslope of the unit) low gradient channels with little sediment storage capacity, typically AHMU Class I and II and channel types B1, C1, C2, C3, D1, and D4. In these channels, most of the sediment entering from slopes will be deposited within the entry reach, with a significant amount distributed in a downstream direction away from the entry channel reach. Downstream areas may be impacted due to the throughput of sediment, however the material will be distributed. Downstream impacts are ranked as part of the downstream habitat index.

4 = very high sediment deposition and very low transport, with polygon draining directly (receiving water immediately downslope of the unit) to low gradient wide channels, typically AHMU Class I and channel types E1, E2, E3, L1, L2, L3, L4, L5, and D5. In these channels, the sediment entering from slopes is most likely to be deposited within the entry reach, with some distributed in a downstream direction away from the entry channel reach.

- ³ Soil hazard ratings 1 (lowest), 2, 3 or 4 (highest) risk of mass movement or landslide, from Ushk Bay Soil Inventory Report.
- ⁴ 1 = lowest risk of disturbance from helicopter logging. This logging practice disturbs the soil the least due to minimal dragging of logs on the ground, and minimal use of ground equipment. Minimized soil disturbance also minimizes the potential for increased slope erosion and slope drainage impacts.
- 2 = low risk of disturbance from skyline logging. This logging practice produces the least disturbance of ground based operations (as opposed to helicopter) due to suspension of logs during removal and transport to loading and transfer areas.
- 3 = medium risk of disturbance from shovel logging. A track mounted machine generally moves over any one portion of the harvest unit only once and generally travels on top of logging slash.
- 4 = high risk of disturbance from highlead logging. This logging practice drags logs on the ground to transfer them to the loading and transport area, causing the greatest amount of ground disturbance, which can lead to increased soil erosion and slope drainage impacts.

FISHERIES PARAMETERS

Index	Data	Index Value	Weighing Factor
A. Potential impact to aquatic habitat 1. at crossing 2. below crossing 3. above crossing	AHMU Class of impact streams	value 1, 2, 3, 4, or 5 ¹	X3 X2 X1
B. Potential impact to important or critical habitat 1. spawning 2. rearing	habitat identified in resource inventory	Value 1, 2, 3, 4, or 5 ²	X3 X3
C. Potential impact to downstream water quality	Number of Class III stream within a harvest unit	Value 1, 2, 3, 4 or 5 ³	X1

¹ 1 = Class III stream (least sensitive)
2 = Class II and III streams
3 = Class II stream
4 = Class I and II streams
5 = Class I stream (most sensitive)

The criteria used to determine potential impact to aquatic habitat are the same as described above for the road crossing sensitivity description.

- ²
- 1 = areas not of special concern (least sensitive)
 - 2 = important small areas
 - 3 = important large areas
 - 4 = critical small areas
 - 5 = critical large areas (most sensitive)

The criteria used to determine potential impact to important and critical aquatic habitat is the same as described above for the road crossing sensitivity description.

- ³
- 1 = no Class III channels in the harvest unit (least sensitive)
 - 2 = one or two Class III channels in harvest unit
 - 3 = two or three Class III channels in harvest unit
 - 4 = three or four Class III channels in harvest unit
 - 5 = more than four Class III channels in harvest unit (most sensitive)

This portion of the sensitivity rating is provided to account for water quality changes downstream of a cutting unit. The number of Class III streams that pass through a cutting unit is used as an indicator of the potential degree of impacts that could occur further downstream, which is not accounted for by the other fisheries ratings (depositional area of particles larger than six to eight millimeters).

Since Class three channels will not be provided with a vegetative buffer, they have a greater possibility of contributing finer sediments (less than six millimeters), nutrients, and affecting water temperature to stream sections further downstream. As described in the text, these potential impacts are believed to be minimal in degree and duration and therefore the weighing factor for this rating is also minimal.

Table D-1

Impact Ratings by VCU and Watershed for Alternative B
Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²						Relative Impact Rating
	Watershed Area (miles ²)	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Roaded Acres	Harvest Unit & Roaded Acres/ Watershed Area (acres/area)	Overall Watershed Sensitivity Rating Hydrology & Fisheries	Harvest Unit Sensitivity Rating Hydrology	Harvest Unit Sensitivity Rating Fisheries	Stream Crossing Sensitivity Rating Hydrology	Stream Crossing Sensitivity Rating Fisheries		
279	N81C	2.4	5.5	229	0.15	1.23	1.00	1.17	0.95	0.94	0.43	
Total		2.4	5.5	229							0.43	
Average					0.15						0.43	
280	N81B	5.0	4.8	301	0.09	1.00	0.96	0.97	0.91	0.93	0.07	
Total		5.0	4.8	301							0.07	
Average					0.09						0.07	
281	O10Z	0.7	2.1	24	0.06	0.35	NA	NA	1.13	0.36	0.03	
281	O11A	7.6	6.7	407	0.08	0.91	0.97	1.04	1.03	1.17	0.08	
281	O13A	1.0	2.6	107	0.16	0.92	1.14	0.89	1.07	1.09	0.46	
281	O14A	0.4	0.1	1	0.00	1.27	NA	NA	1.07	1.03	0.00	
281	O15A	3.9	4.3	321	0.13	1.34	1.01	1.28	1.08	1.06	0.28	
281	O16A	0.9	0.0	11	0.02	0.80	0.80	NA	NA	NA	0.00	
281	O17A	1.7	2.9	77	0.07	0.70	0.97	0.83	1.01	0.71	0.05	
281	O18A	2.7	0.5	22	0.01	1.14	1.03	1.06	0.82	1.45	0.00	
281	O45A	8.3	5.7	332	0.06	0.94	1.04	1.09	0.96	1.24	0.05	
Total		27.1	25.0	1302	0.07						0.96	
Average											0.11	
						Alternative Total		Alternative Average				
						1.46		0.13				

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.
² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.
 NA - not affected

Table D-2
 Impact Ratings by VCU and Watershed for Alternative C
 Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²				Relative Impact Rating		
	Watershed Area (miles ²)	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Rooded Acres	Road Miles per Watershed area (miles/miles ²)	Harvest Unit & Rooded Acres/ Watershed Area (acres/area)	Overall Watershed Sensitivity Rating Hydrology & Fisheries	Harvest Unit Sensitivity Rating Hydrology	Fisheries		Stream Crossing Sensitivity Rating Hydrology	Fisheries
279	N83A	2.0	5.7	383	2.83	0.30	0.81	1.16	0.63	1.04	0.59	0.31
279	N84A	0.8	0.2	130	0.25	0.24	0.54	1.08	0.55	NA	NA	0.02
279	N81C	2.4	5.5	248	2.29	0.16	1.23	1.00	1.17	1.00	0.92	0.49
Total		5.3	11.4	761								0.82
Average					1.79	0.23						0.27
280	N81B	5.0	4.4	320	0.87	0.10	1.00	0.97	0.97	1.00	0.92	0.08
280	N85A	3.9	2.6	192	0.66	0.08	1.00	1.25	0.90	1.04	0.92	0.06
280	N90Z	0.3	0.7	4	2.54	0.02	1.63	NA	NA	1.06	0.79	0.08
280	N91A	0.9	1.0	6	1.17	0.01	1.33	NA	NA	0.84	1.42	0.02
280	N91C	12.8	5.1	251	0.40	0.03	0.90	1.08	1.30	0.88	1.38	0.02
280	N93A	1.8	0.0	82	0.01	0.07	0.52	0.61	0.11	NA	NA	0.00
280	N94A	0.3	0.0	28	0.02	0.14	0.78	1.08	0.53	NA	NA	0.00
280	N95A	0.3	0.1	1	0.49	0.01	1.52	NA	NA	0.80	1.27	0.00
Total		25.2	13.9	884								0.26
Average					0.77	0.06						0.02
281	O10Z	0.7	2.2	29	3.31	0.07	0.35	NA	NA	1.03	0.36	0.03
281	O11A	7.6	6.9	474	0.91	0.10	0.91	0.91	1.06	0.96	1.16	0.09
281	O13A	1.0	2.6	107	2.58	0.16	0.92	1.14	0.89	0.97	1.09	0.42
281	O14A	0.4	0.1	9	0.32	0.03	1.27	0.68	0.43	0.97	1.02	0.00

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.

² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.

NA - not affected

Table D-2
 Impact Ratings by VCU and Watershed for Alternative C
 Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²						Relative Impact Rating
	Watershed Area (miles ²)	Watershed Road Miles	Harvest Unit & Routed Acres	Road Miles per Watershed area (miles/miles ²)	Harvest Unit & Routed Acres/ Watershed Area (acres/area)	Overall Watershed Sensitivity Rating		Harvest Unit Sensitivity Rating		Stream Crossing Sensitivity Rating		
						Hydrology & Fisheries	Fisheries	Hydrology	Fisheries	Hydrology	Fisheries	
281	O15A	3.9	4.5	368	1.14	0.15	1.34	1.03	1.18	1.00	1.05	0.29
281	O16A	0.9	0.2	12	0.27	0.02	0.80	0.68	NA	0.84	1.45	0.00
281	O17A	1.7	4.5	107	2.68	0.10	0.70	0.89	0.44	1.05	0.73	0.06
281	O18A	2.7	3.8	185	1.40	0.11	1.14	0.97	0.97	1.05	0.83	0.14
281	O29A	1.8	4.8	331	2.77	0.30	1.23	0.97	0.39	1.07	0.55	0.22
281	O45A	8.3	5.7	332	0.68	0.06	0.94	1.04	1.09	0.92	1.24	0.05
281	N82A	3.2	1.5	76	0.48	0.04	0.95	0.91	0.80	0.90	1.20	0.01
Total		32.1	36.8	2028	1.50	0.10						1.31
Average												0.12
											Alternative Total	2.38
											Alternative Average	0.11

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.

² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.
 NA - not affected

Table D-3
Impact Ratings by VCU and Watershed for Alternative D
Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²						Relative Impact Rating	
	Watershed Area (miles ²)	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Roaded Acres	Road Miles per Watershed area (miles/miles ²)	Harvest Unit & Roaded Area (acres/area)	Overall Watershed Sensitivity Rating		Harvest Unit Sensitivity Rating		Stream Crossing Sensitivity Rating		
							Hydrology & Fisheries	Hydrology & Fisheries	Hydrology	Fisheries	Hydrology		Fisheries
279	N83A	2.0	4.5	131	2.24	0.10	0.81	1.08	0.49	1.15	0.58	0.07	
279	N81C	2.4	5.0	190	2.08	0.12	1.23	1.10	1.19	1.11	0.94	0.43	
Total		4.4	9.5	321								0.50	
Average					2.16	0.11						0.25	
280	N81B	5.0	5.4	132	1.07	0.04	1.00	1.00	1.08	1.10	0.91	0.06	
280	N90Z	0.3	0.5	4	1.82	0.02	1.63	NA	NA	1.21	0.79	0.07	
280	N91A	0.9	1.0	6	1.17	0.01	1.33	NA	NA	0.99	1.44	0.03	
280	N91B	1.3	0.0	0	0.00	0.00	0.92	NA	NA	NA	NA	0.00	
280	N91C	12.8	5.9	179	0.46	0.02	0.90	1.09	1.37	1.07	1.35	0.02	
280	N93A	1.8	0.0	108	0.01	0.10	0.52	0.63	0.36	NA	NA	0.00	
280	N94A	0.3	0.0	0	0.02	0.00	0.78	NA	NA	NA	NA	0.00	
280	N95A	0.3	0.1	1	0.49	0.01	1.52	NA	NA	0.95	1.27	0.00	
Total		22.6	12.9	430								0.16	
Average					0.63	0.03						0.02	
281	N82A	3.2	1.8	34	0.56	0.02	0.95	0.91	0.87	1.11	1.13	0.01	
281	O10Z	0.7	2.2	22	3.31	0.06	0.35	NA	NA	1.13	0.36	0.03	
281	O11A	7.6	6.6	267	0.87	0.06	0.91	0.86	1.19	1.04	1.19	0.06	
281	O13A	1.0	2.1	73	2.10	0.11	0.92	1.14	0.82	0.94	1.45	0.27	

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.
² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.
 NA - not affected

Table D-3
Impact Ratings by VCU and Watershed for Alternative D
Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²						Relative Impact Rating
	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Roaded Acres	Road Miles per Watershed area (miles/miles ²)	Harvest Unit & Roaded Acres/ Watershed Area (acres/area)	Overall Watershed Sensitivity Rating		Harvest Unit Sensitivity Rating		Stream Crossing Sensitivity Rating		
						Hydrology & Fisheries	Fisheries	Hydrology	Fisheries	Hydrology	Fisheries	
281 O14A	0.4	0.1	1	0.32	0.00	1.27	NA	NA	1.07	1.03	0.00	
281 O15A	3.9	3.5	183	0.90	0.07	1.34	0.99	1.29	1.12	1.05	0.13	
281 O16A	0.9	0.2	38	0.27	0.07	0.80	0.80	1.16	0.94	1.45	0.02	
281 O17A	1.7	4.5	96	2.71	0.09	0.70	0.93	0.42	1.10	0.70	0.05	
281 O18A	2.7	0.5	23	0.20	0.01	1.14	1.03	1.06	1.19	1.45	0.01	
281 O29A	1.8	0.4	22	0.24	0.02	1.23	1.14	0.96	1.19	0.95	0.01	
281 O45A	8.3	4.4	168	0.53	0.03	0.94	1.12	1.33	1.03	1.22	0.03	
Total	32.1	26.4	927	1.14	0.05							
Average									Alternative Total	Alternative Average	1.27	
											0.06	
											0.06	

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.

² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.
NA - not affected

Table D-4
Impact Ratings by VCU and Watershed for Alternative E
Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²				Relative Impact Rating			
	Watershed Area (miles ²)	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Roaded Acres	Road Miles per Watershed Area (miles/miles ²)	Harvest Unit & Roaded Acres/ Watershed Area (acres/area)	Overall Watershed Sensitivity Rating		Harvest Unit Sensitivity Rating		Stream Crossing Sensitivity Rating		
							Hydrology & Fisheries	Fisheries	Hydrology		Fisheries	Hydrology	Fisheries
279	N83A	2.0	5.2	162	2.60	0.13	0.81	0.85	0.35	1.04	0.53	0.04	
279	N84A	0.8	1.1	39	1.34	0.07	0.54	0.68	0.17	0.95	0.36	0.00	
279	N81C	2.4	5.5	248	2.29	0.16	1.23	1.00	1.15	1.00	0.92	0.48	
Total		5.3	11.8	449								0.53	
Average					2.07	0.12						0.18	
280	N81B	5.0	5.0	324	0.99	0.10	1.00	0.98	1.03	0.99	0.99	0.10	
280	N85A	3.9	2.6	192	0.66	0.08	1.00	1.25	0.91	1.02	0.94	0.06	
280	N91C	12.8	6.5	260	0.51	0.03	0.90	1.08	1.30	0.93	1.37	0.03	
280	N93A	1.8	0.0	102	0.00	0.09	0.52	0.57	0.31	NA	NA	0.00	
280	N94A	0.3	0.0	9	0.00	0.04	0.78	1.14	0.80	NA	NA	0.00	
Total		23.8	14.1	887								0.18	
Average					0.43	0.07						0.04	
281	N82A	3.2	1.5	46	0.48	0.02	0.95	0.91	0.80	0.95	1.02	0.01	
281	O10Z	0.7	2.2	31	3.31	0.07	0.35	NA	NA	1.02	0.36	0.03	
281	O11A	7.6	8.6	484	1.14	0.10	0.91	0.98	1.08	0.92	1.21	0.12	
281	O13A	1.0	2.6	107	2.58	0.16	0.92	1.14	0.89	0.95	1.09	0.41	
281	O14A	0.4	0.1	9	0.32	0.03	1.27	0.57	0.43	0.95	1.02	0.00	

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.

² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.

NA - not affected

Table D-4
Impact Ratings by VCU and Watershed for Alternative E
Project Area, Ushk Bay

VCU ¹	Timber Harvest Information			Percent Disturbance		Sensitivity Rating ²						Relative Impact Rating	
	Watershed	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Roaded Acres	Road Miles per Watershed area (miles/miles ²)	Harvest Unit & Roaded Acres/Watershed Area (acres/area)	Overall Watershed Sensitivity Rating Hydrology & Fisheries		Harvest Unit Sensitivity Rating Hydrology		Stream Crossing Sensitivity Rating Fisheries		
							Hydrology	Fisheries	Hydrology	Fisheries	Hydrology		Fisheries
281	O15A	3.9	4.5	368	1.14	0.15	1.34	1.06	1.14	0.99	1.05	0.28	
281	O16A	0.9	0.3	40	0.34	0.07	0.80	0.80	1.16	0.83	1.45	0.02	
281	O17A	1.7	4.5	107	2.69	0.10	0.70	0.93	0.51	1.04	0.73	0.07	
281	O18A	2.7	3.8	185	1.40	0.11	1.14	0.97	0.75	1.04	0.83	0.11	
281	O29A	1.8	4.6	214	2.63	0.19	1.23	1.09	0.72	1.06	0.55	0.28	
281	O45A	8.3	5.7	332	0.68	0.06	0.94	1.04	1.09	0.91	1.20	0.05	
Total		32.1	38.3	1921	1.52	0.10						1.38	
Average												0.13	
												Alternative Total	2.09
												Alternative Average	0.11

¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.

² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.

NA - not affected

**Table D-5
Impact Ratings by VCU and Watershed for Alternative F
Project Area, Ushk Bay**

VCU ¹	Timber Harvest Information			Percent Disturbance			Sensitivity Rating ²				Relative Impact Rating	
	Watershed Area (miles ²)	Total Road Miles	Harvest Unit & Roaded Acres	Road Miles per Watershed area (miles/miles ²)	Harvest Unit & Roaded Area (acres/area)	Overall Watershed Sensitivity Rating		Harvest Unit Sensitivity Rating		Stream Crossing Sensitivity Rating		
						Hydrology & Fisheries	Fisheries	Hydrology	Fisheries	Hydrology		Fisheries
279	N84A	0.8	0.7	5	0.80	0.01	0.54	NA	NA	1.00	0.36	0.00
279	N81C	2.4	5.5	229	2.27	0.15	1.23	1.00	1.19	1.01	0.92	0.46
Total Average		3.3	6.1	234	1.54	0.08						0.46 0.23
280	N81B	5.0	6.6	318	1.30	0.10	1.00	0.97	0.92	0.90	0.98	0.10
280	N91C	12.8	7.2	253	0.56	0.03	0.90	1.08	1.30	0.90	1.36	0.03
Total Average		17.9	13.8	571	0.93	0.06						0.13 0.06
281	O10Z	0.7	2.1	24	3.30	0.06	0.35	NA	NA	0.93	0.36	0.02
281	O11A	7.6	8.6	418	1.13	0.09	0.91	0.97	1.04	0.91	1.21	0.10
281	O13A	1.0	2.6	107	2.58	0.16	0.92	1.14	0.89	0.93	1.09	0.40
281	O14A	0.4	0.1	1	0.32	0.00	1.27	NA	NA	0.94	1.06	0.00
281	O15A	3.9	4.3	321	1.09	0.13	1.34	1.10	1.28	1.00	1.06	0.28
281	O16A	0.9	0.0	11	0.00	0.02	0.80	0.80	NA	NA	NA	0.00
281	O17A	1.7	3.0	77	1.79	0.07	0.70	1.02	0.83	1.00	0.71	0.05
281	O18A	2.7	0.5	22	0.19	0.01	1.14	1.02	1.06	0.97	1.45	0.00
281	O45A	8.3	5.7	332	0.68	0.06	0.94	1.04	1.09	0.81	1.25	0.05
Total Average		27.1	26.9	1312	1.23	0.07						0.90 0.10
										Alternative Total		1.49
										Alternative Average		0.12

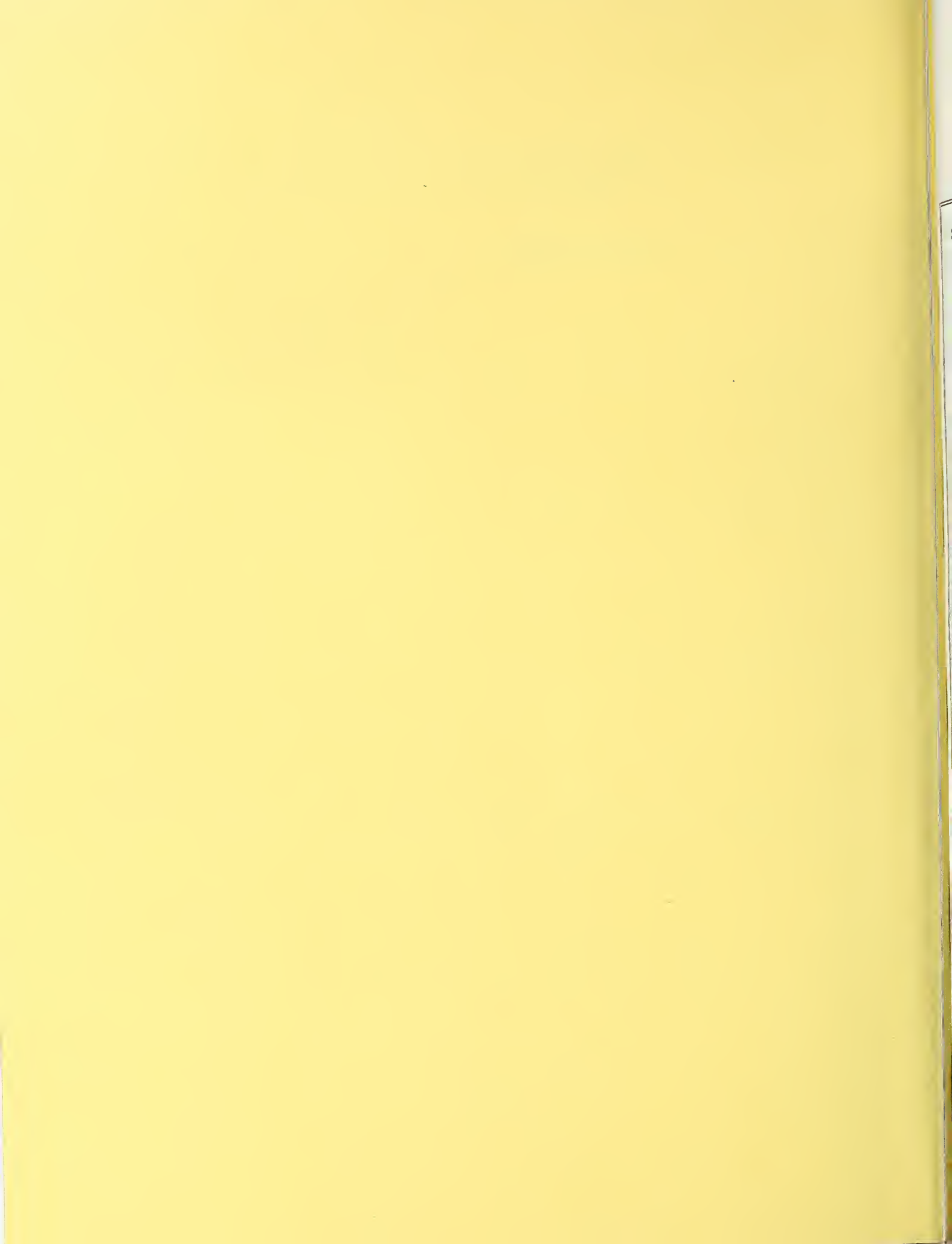
¹ Portions of watershed N81B and N81C are in VCU 279 and 280, watershed area assigned to VCU with largest portion of area.
² See Appendix Table A.1 through A.5.5 Values normalized on the mean for all watersheds, harvest units and stream crossings.
 NA - not affected

Table D-6
Disturbance Information and Sensitivity Ratings by Alternative & VCU
Project Area, Ushk Bay

Alternative	VCU	Total Road Miles	Harvest Unit & Rooded Acres	Road Miles/ Watershed	Harvest Unit/ Watershed	Sensitivity Rating	
						Total	Average
B	279	5.47	228.85	2.27	0.15	0.43	0.43
	280	4.84	300.65	0.96	0.09	0.07	0.07
	281	<u>24.98</u>	<u>1301.78</u>	<u>1.20</u>	<u>0.07</u>	<u>0.96</u>	<u>0.11</u>
	Total	35.29	1831.27	4.43	0.31	1.46	0.61
C	279	11.39	761.24	1.79	0.23	0.82	0.27
	280	13.90	884.43	0.77	0.06	0.26	0.02
	281	<u>36.78</u>	<u>2028.45</u>	<u>1.50</u>	<u>0.10</u>	<u>1.31</u>	<u>0.12</u>
	Total	62.06	3674.11	4.06	0.40	2.38	0.41
D	279	9.49	320.77	2.16	0.11	0.50	0.25
	280	12.94	429.84	0.63	0.03	0.16	0.02
	281	<u>26.40</u>	<u>926.74</u>	<u>1.14</u>	<u>0.05</u>	<u>0.61</u>	<u>0.06</u>
	Total	48.82	1677.36	3.93	0.19	1.27	0.32
E	279	11.84	449.11	2.08	0.12	0.53	0.18
	280	14.08	887.09	0.43	0.07	0.18	0.04
	281	<u>38.35</u>	<u>1921.20</u>	<u>1.52</u>	<u>0.10</u>	<u>1.38</u>	<u>0.11</u>
	Total	64.27	3257.40	4.03	0.29	2.09	0.32
F	279	6.15	233.76	1.54	0.08	0.46	0.23
	280	13.79	571.01	0.93	0.07	0.13	0.06
	281	<u>26.89</u>	<u>1312.32</u>	<u>1.23</u>	<u>0.07</u>	<u>0.90</u>	<u>0.10</u>
	Total	46.82	2117.09	3.70	0.21	1.49	0.39

Appendix E

Marine



Appendix E.1 Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Ushk Bay

- | | | |
|-----|--|---|
| S1. | Proximity to Rearing and Spawning areas: Siting of log transfer and log storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited. | Mouth of salmon spawning stream is 1.2 miles away at head of the bay. Known areas of red king crab and Dungeness crab spawning and aggregation are over 0.5 mile away across bay. |
| S2. | Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming. | Dog leg of bay provides excellent protection from open water to the east. NOAA chart 17323 indicates log storage area near head of bay. Communications from APC indicate the bay was used for log storage from 1969 through 1985. |
| S3. | Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face. | There is no flat land immediately adjacent to this site. There are several acres of flat land 1.5 miles to the west. The operating face on the water exceeds 60 feet. |
| S4. | Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% or less for specialized equipment. | Access grades are about 2% for several hundred feet in each direction. To the east, the grade then pitches to 12% favorable, with good alignment. |
| S5. | Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided. | Moderate slope and depth at proposed site along with biological indications of moderate currents at this site should help to disperse bark and reduce its accumulation. |
| S6. | Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones. | Intertidal and subtidal at LTF site are not particularly more or less productive than the majority of areas with similar habitat within the region. Mapped storage site is relatively close to known crab spawning areas. |
| S7. | Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to effect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas. | Proposed site is not close enough to directly effect any known sensitive habitat. |

Appendix E.1 (Continued) Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Ushk Bay

S8. **Safe Marine Access to Facilities:** Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides on most winter days.

Ushk Bay is wide enough and deep enough to afford safe and easy passage of tug boats, log rafts, etc. Configuration of bay affords good protection from weather and open water at the this site.

S9. **Storage and Rafting:** Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet (12 meters) or deeper measured at mean lower low water (mllw) for log raft storage is preferred.

Bay is large enough and deep enough to provide sufficient space for rafting and storage of logs. Grounding of logs would only occur if storage were done very close to shore or at the head of the bay.

S10. **Avoid Bald Eagle Nests:** Site log transfer facilities to avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.

There are no eagle-nest trees within 330 feet of the proposed site.

Appendix E.2 Summary of Findings Relative to
 ATTF Log Transfer Facility Siting Guidelines:
Poison Cove, North

S1.	<p>Proximity to Rearing and Spawning areas: Siting of log transfer and log storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited.</p>	<p>This site is approximately 1/4 mile from the mouth of a salmon stream.</p>
S2.	<p>Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.</p>	<p>Poison Cove is an active log storage area, and appears to be quite protected from storms. The proposed LTF though may occasionally be exposed to rough weather during winter storms.</p>
S3.	<p>Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face.</p>	<p>This site is adjacent to a flat, well-drained area in excess of 5 acres. The operating face on water exceeds 60 feet.</p>
S4.	<p>Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% or less for specialized equipment.</p>	<p>Access grades to this site are quite gentle for 500 feet in all directions.</p>
S5.	<p>Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.</p>	<p>The site is close enough to the mouth of the cove that currents within Peril Strait should facilitate bark dispersal.</p>
S6.	<p>Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.</p>	<p>Intertidal and subtidal substrate at this site is of alluvial origin. The intertidal at this site is very low in productivity. The subtidal is not uniquely more productive than similar habitat from a semi-protected area.</p>
S7.	<p>Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sites on or adjacent to (i.e., near enough to effect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas.</p>	<p>The proposed LTF is slightly east of an extensive tide flat at the head of the bay that is exposed during periods of low tide. The existing log storage area within Poison Cove lies between the LTF site and the tide flat.</p>

Appendix E.1 (Continued) Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Ushk Bay

S8.	Safe Marine Access to Facilities: Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides on most winter days.	Ushk Bay is wide enough and deep enough to afford safe and easy passage of tug boats, log rafts, etc. Configuration of bay affords good protection from weather and open water at the this site.
S9.	Storage and Rafting: Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet (12 meters) or deeper measured at mean lower low water (mllw) for log raft storage is preferred.	Bay is large enough and deep enough to provide sufficient space for rafting and storage of logs. Grounding of logs would only occur if storage were done very close to shore or at the head of the bay.
S10.	Avoid Bald Eagle Nests: Site log transfer facilities to avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.	There are no eagle-nest trees within 330 feet of the proposed site.

Appendix E.2 Summary of Findings Relative to
 ATTF Log Transfer Facility Siting Guidelines:
Poison Cove, North

S1.	<p>Proximity to Rearing and Spawning areas: Siting of log transfer and log storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited.</p>	<p>This site is approximately 1/4 mile from the mouth of a salmon stream.</p>
S2.	<p>Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.</p>	<p>Poison Cove is an active log storage area, and appears to be quite protected from storms. The proposed LTF though may occasionally be exposed to rough weather during winter storms.</p>
S3.	<p>Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face.</p>	<p>This site is adjacent to a flat, well-drained area in excess of 5 acres. The operating face on water exceeds 60 feet.</p>
S4.	<p>Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% or less for specialized equipment.</p>	<p>Access grades to this site are quite gentle for 500 feet in all directions.</p>
S5.	<p>Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.</p>	<p>The site is close enough to the mouth of the cove that currents within Peril Strait should facilitate bark dispersal.</p>
S6.	<p>Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.</p>	<p>Intertidal and subtidal substrate at this site is of alluvial origin. The intertidal at this site is very low in productivity. The subtidal is not uniquely more productive than similar habitat from a semi-protected area.</p>
S7.	<p>Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to effect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas.</p>	<p>The proposed LTF is slightly east of an extensive tide flat at the head of the bay that is exposed during periods of low tide. The existing log storage area within Poison Cove lies between the LTF site and the tide flat.</p>

Appendix E.2 (Continued) Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Poison Cove, North

S8. **Safe Marine Access to Facilities:** Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides on most winter days.

Poison Cove is likely to get somewhat congested with log transfer and log storage activities occurring simultaneously within its boundaries. There is substantial maneuvering area just outside the mouth of the cove within Peril Strait.

S9. **Storage and Rafting:** Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet (12 meters) or deeper measured at mean lower low water (mllw) for log raft storage is preferred.

Poison Cove is an active log storage area. Stored logs have been observed to ground during very low tides.

S10. **Avoid Bald Eagle Nests:** Site log transfer facilities to avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.

An eagle-nest tree is located just beyond the 330 foot limit approximately 400' northeast of the LTF site.

Appendix E.3 Summary of Findings Relative to
 ATTF Log Transfer Facility Siting Guidelines:
Poison Cove, South

S1.	Proximity to Rearing and Spawning areas: Siting of log transfer and log storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited.	This site is approximately 1/4 mile from the mouth of a salmon stream.
S2.	Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.	Site is on a north-facing rocky headland. Intertidal community indicative of relatively protected environment.
S3.	Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face.	Immediately adjacent to the site there is one acre of flat land. There are several acres of flat land 1/3 mile to the west of the site. The operating face of the LTF on the water exceeds 60 feet.
S4.	Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% or less for specialized equipment.	Access grades are gentle for 200 feet, then 15% favorable for 800 feet with only fair alignment.
S5.	Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.	Subtidal with moderate to steep slope to depths greater than 30 m at the mouth of the cove. Vigorous tidal currents from Peril Strait should disperse bark debris very well.
S6.	Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.	Intertidal and subtidal are not particularly more productive than similar habitat from semi-protected shorelines in other areas of the region.
S7.	Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to effect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas.	The proposed LTF is slightly east of an extensive tide flat at the head of the bay that is exposed during periods of low tide. The existing log storage area within Poison Cove lies between the LTF site and the tide flat.

Appendix E.3 (Continued) Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Poison Cove, South

S8. **Safe Marine Access to Facilities:** Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides on most winter days.

Poison Cove is likely to get somewhat congested with log transfer and log storage activities occurring simultaneously within its boundaries. There is substantial maneuvering area just outside the mouth of the cove within Peril Strait.

S9. **Storage and Rafting:** Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet (12 meters) or deeper measured at mean lower low water (mllw) for log raft storage is preferred.

Poison Cove is an active log storage area. Stored logs have been observed to ground during very low tides.

S10. **Avoid Bald Eagle Nests:** Site log transfer facilities to avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.

Nearest eagle nest is approximately 1000 feet southwest of the proposed site.

Appendix E.4 Summary of Findings Relative to
 ATTF Log Transfer Facility Siting Guidelines:
Goal Creek

S1.	<p>Proximity to Rearing and Spawning areas: Siting of log transfer and log storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited.</p>	<p>While the actual log dump site will be located more than 500 feet from the mouth of a salmon stream, the head of access road along the intertidal to the site will be much nearer the stream.</p>
S2.	<p>Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.</p>	<p>The site is located at a narrow point within Peril Strait. It is quite protected from weather effects, but provides little protection from currents.</p>
S3.	<p>Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face.</p>	<p>There are no adjacent flat uplands at this site. The operating face on water exceeds 60 feet.</p>
S4.	<p>Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% or less for specialized equipment.</p>	<p>The access grade is 15% favorable with good alignment.</p>
S5.	<p>Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.</p>	<p>Subtidal community observed at this location was indicative of an area with high currents. This site is likely to be the best of all those proposed for the potential to disperse bark debris from the operation of an LTF.</p>
S6.	<p>Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.</p>	<p>Intertidal and subtidal are not particularly more productive than similar habitat from other areas of the region.</p>
S7.	<p>Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to effect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas.</p>	<p>Use of this site would require the building of road across approximately 500 feet of an alluvial intertidal beach.</p>

Appendix E.4 (Continued) Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Goal Creek

S8. **Safe Marine Access to Facilities:** Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides on most winter days.

Except for the influence of tidal currents this area should afford safe access for marine operations. Site is sufficiently removed from the navigable waterway to pose not interference to normal marine traffic.

S9. **Storage and Rafting:** Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet (12 meters) or deeper measured at mean lower low water (mllw) for log raft storage is preferred.

North of the proposed LTF there is a large area that is sufficiently removed from the navigable waterway to provide space for rafting and storage. Since this site is on Peril Strait tidal currents could impact rafting and storage activities.

S10. **Avoid Bald Eagle Nests:** Site log transfer facilities to avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.

No eagle nests are known to be in close proximity to this site.

Appendix E.5 Summary of Findings Relative to
 ATTF Log Transfer Facility Siting Guidelines:
Deep Bay

<p>S1. Proximity to Rearing and Spawning areas: Siting of log transfer and log storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited.</p>	<p>Proposed site is over 1/2 mile from the mouth of a salmon stream. General area may be important crab spawning area.</p>
<p>S2. Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.</p>	<p>Deep bay is well protected and would afford excellent protection from the weather for logging activities.</p>
<p>S3. Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least five acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face.</p>	<p>The proximity of a fish stream limits potential flat land development immediately adjacent to the site to about 2 acres. Several acres of flat land are available 1/2 mile to the northwest. The operating face on water exceeds 60 feet.</p>
<p>S4. Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10% or less for trucks and 4% or less for specialized equipment.</p>	<p>Access grades are gentle.</p>
<p>S5. Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.</p>	<p>Substrate conditions indicate little water movement in the head of the bay suggesting little possibility for bark dispersal.</p>
<p>S6. Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.</p>	<p>Intertidal and subtidal habitat at the point of the proposed LTF are no more productive than similar habitat within the region.</p>
<p>S7. Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to effect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas or shellfish concentration areas.</p>	<p>Other than the possibility that the entire bay is a crab spawning area, no sensitive habitats are in close proximity to the site. There is a large tide flat at the head of the bay approximately 1/2 mile to the west of the site.</p>

Appendix E.5 (Continued) Summary of Findings Relative to
ATTF Log Transfer Facility Siting Guidelines:
Deep Bay

S8. **Safe Marine Access to Facilities:** Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides on most winter days.

Deep Bay is sufficiently large enough and protected from open water and weather that marine activities could be conducted quite safely.

S9. **Storage and Rafting:** Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet (12 meters) or deeper measured at mean lower low water (mllw) for log raft storage is preferred.

Bay is large enough and deep enough to provide sufficient area for rafting and storage of logs.

S10. **Avoid Bald Eagle Nests:** Site log transfer facilities to avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.

There is an eagle nest 400 feet south of the proposed LTF.

Appendix F

Mass Movement Hazard

APPENDIX F MASS MOVEMENT HAZARD RANKING SYSTEM

Some of the factors that influence the erosion and mass wasting of soils and the stability of the slopes that they form include the following:

- Soil Type and Texture
- Soil Moisture
- Slope Gradient
- Slope Shape
- Drainage Shape
- Sliding Surface Gradient
- Sliding Surface Roughness
- Climate
- Soil Drainage
- Soil Depth
- Slope Length
- Slope Anchors
- Drainage Density Area
- Sliding Surface Orientation
- Existing Unstable Conditions

These factors and others were considered in the geology and soils investigation and mapping programs. The conditions of the various soil masses were evaluated and the mass wasting hazard of the individual areas were determined and mapped. The geotechnical hazard evaluations performed by Dames & Moore were incorporated into the Forest Service's mass failure hazards ranking system, which is based on their experience in the Tongass National Forest. Referring to the Table F-1, the different hazard levels are defined as low, moderate, high, and extreme. According to Forest Service policy, all extremely hazardous areas are considered to be unsuitable for logging activities. Some of the factors used in the ratings are listed below in an order of decreasing importance. A map showing the Mass Movement Hazard Ratings within the Ushk Bay Project Area appears at the end of this appendix.

For example, a soil that is highly susceptible to failure and extremely hazardous would be the following:

- A fine-grained volcanic ash which has a greasy texture and very little internal, grain-to-grain friction.
- One that is poorly drained and very moist. This effectively reduces its shear strength, and increases its unit weight and the downward pull of gravity on the soil.
- One that is only a few feet thick and is easily set into motion.
- One that lies on a long, straight, steep, smooth slope upon which there are few trees to root and anchor the soil to the slope.
- One that is deeply dissected with frequent, oversteepened, V-notch drainages.
- One that is underlain by a steep, relatively smooth, glaciated bedrock surface that dips down the slope and is jointed in a down-slope orientation. These factors facilitate down-slope failure and movement of the soil and underlying rock.
- One that lies below some cliffs which frequently produce rock falls, avalanches, and triggers down-slope instabilities.
- One that lies on a slope above a high energy beach which has undercut and destabilized the toe of the slope.
- One that is situated in a very wet environment which receives a lot of rainfall in the summer and a lot of warm, wet snow in the winter.

A soil mass is considered to have an overall hazards ranking that takes into account the weighted average of the factors included in the table given above. Since almost all of the soils in the Project Area above the valley bottoms are poorly drained from a geotechnical point of view, being either organic-rich soils, silty residual and colluvial soils, or compact fine-grained tills, almost all slopes over 75 percent are considered to an extremely hazard ranking and many slopes over 55 percent may have this extreme level of potential hazard particularly if they are deeply dissected by V-notch drainages and show other signs of instability.

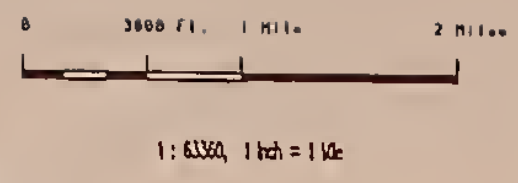
TABLE F-1. MASS MOVEMENT HAZARD RATING METHOD ⁽¹⁾







CRITERIA	MASS MOVEMENT HAZARD RATING				INDEX
	Low (1)	Moderate (2)	High (3)	Extreme (4)	
Landform					
Slope Shape	Irregular	Irregular	Convex	Concave or Straight	5x__ = __
Slope Length	0-70 ft. Very Short	70-500 ft. Short	500-1500 ft. Long	>1500 ft. Very Long	5x__ = __
Slope Gradient	5-35% Gentle	35-55% Moderate	55-75% Steep	>75% Very Steep	20x__ = __
Drainage Features					
Drainage Area Density	0-9% Infrequent	10-19% Moderately Frequent	20-39% Frequent	>40% Very Frequent	10x__ = __
Soils					
Soil Drainage	Well Drained	Moderately Well Drained	Somewhat Poorly Drained	Poorly Drained	10x__ = __
Soil Depth	40 in. Moderately Deep	40 in. Moderate	40-20in. Shallow	20 in. Very Shallow	5x__ = __
Geology					
Parent Material	carbonates colluvium alluvium	noncarbonates granitics glacial till	compact till marine sediments	volcanic ash	5x__ = __
Textural Class	sands gravel fragmental	loamy	silty	medial	5x__ = __
				TOTAL	_____
Map Unit Mass Movement Hazard Rating					Total/260 x 100 _____

⁽¹⁾ Source is Land Systems Inventory for Chatham Area of Tongass National Forest



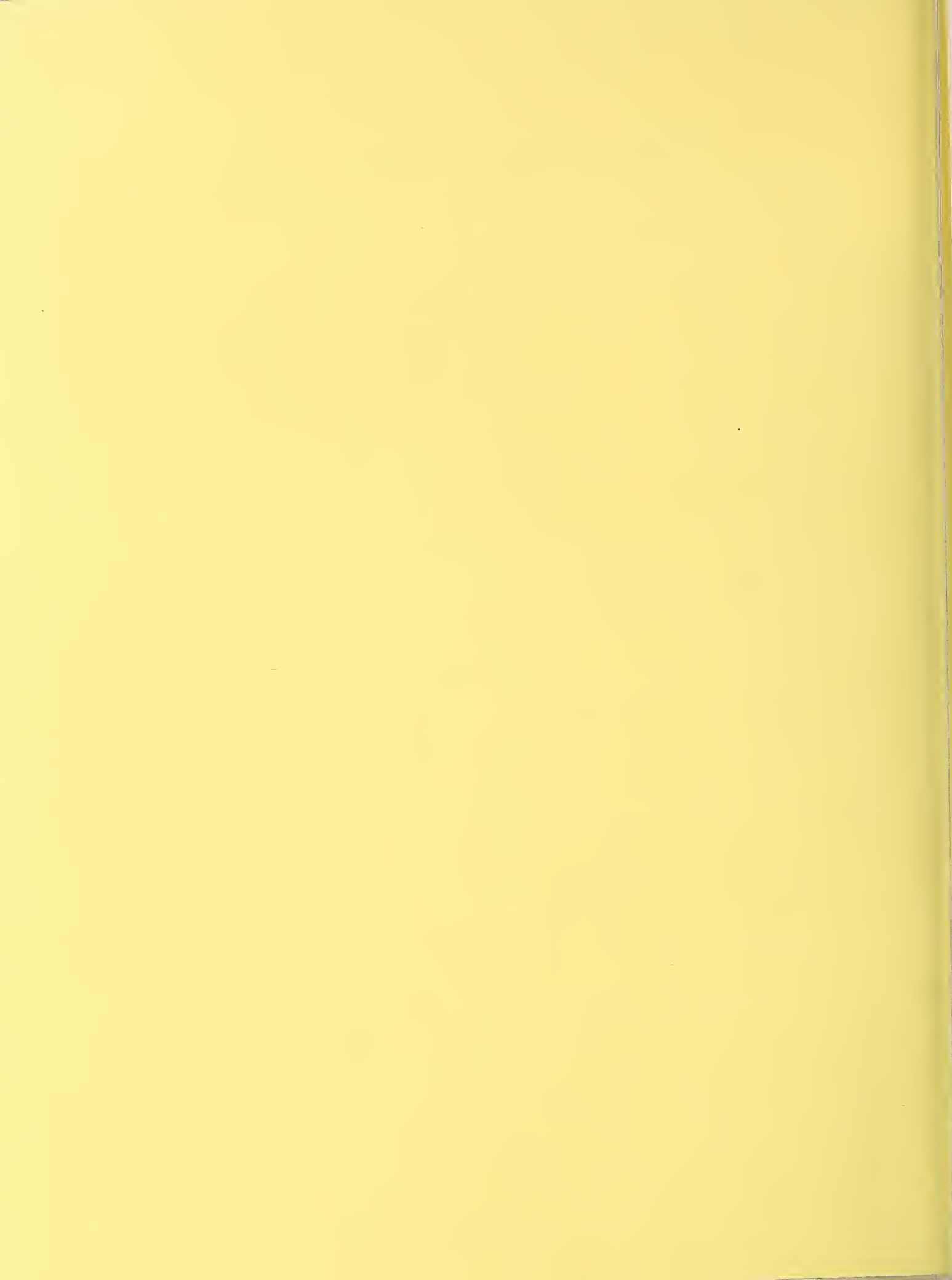
USHK BAY PROJECT MASS MOVEMENT HAZARD

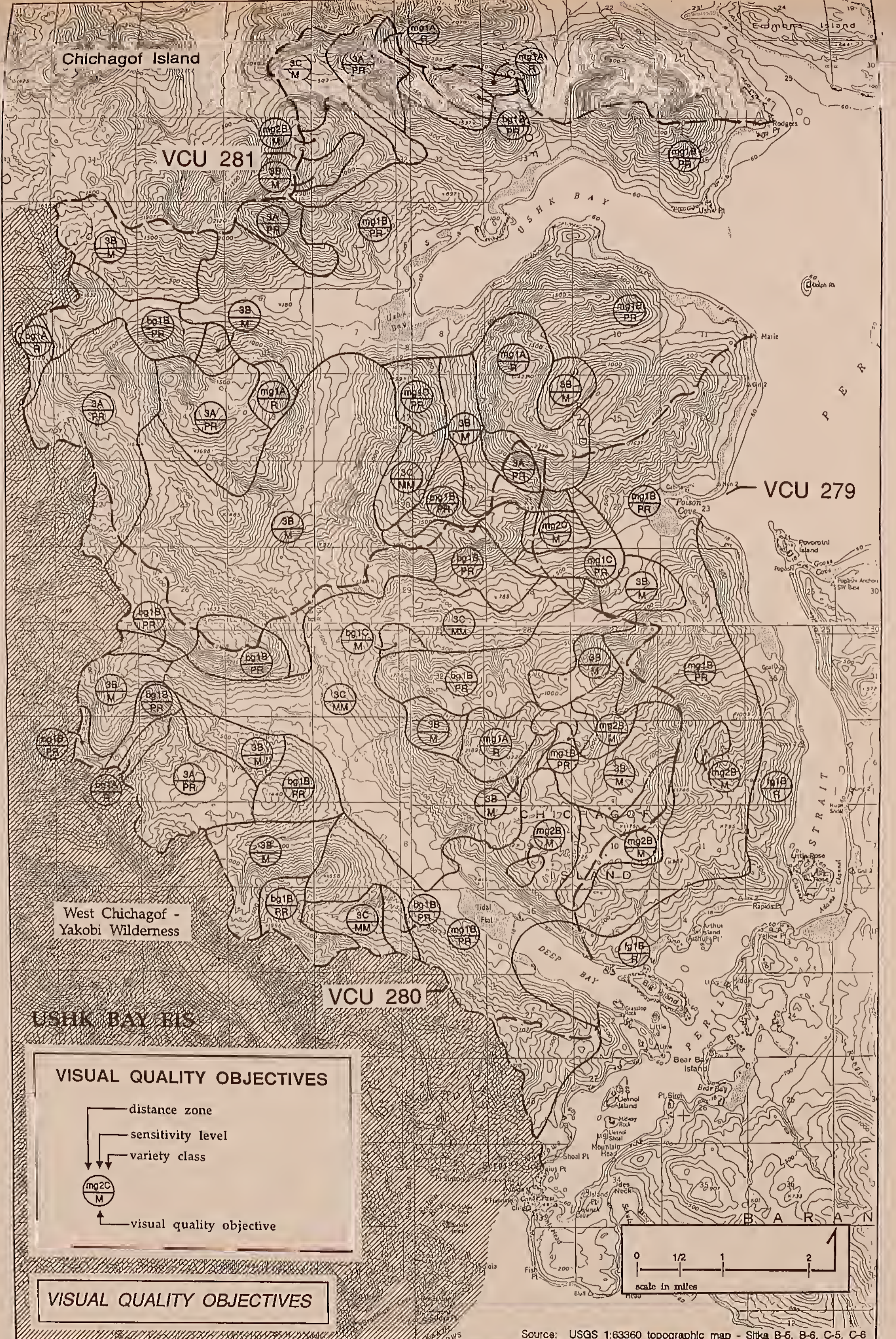


-  Hazard Rating One
-  Hazard Rating Two
-  Hazard Rating Three
-  Hazard Rating Four
-  Lakes
-  VCU Boundary

Appendix G

Visual





Chichagof Island

VCU 281

VCU 279

VCU 280

West Chichagof - Yakobi Wilderness

USHK BAY EIS

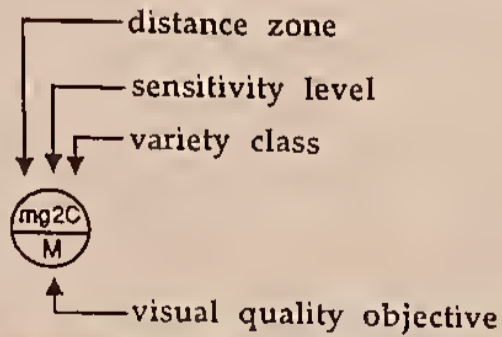
CHICHAGOF ISLAND

DEEP BAY

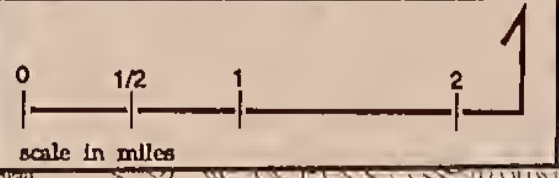
BEAR BAY ISLAND

BARRAN

VISUAL QUALITY OBJECTIVES



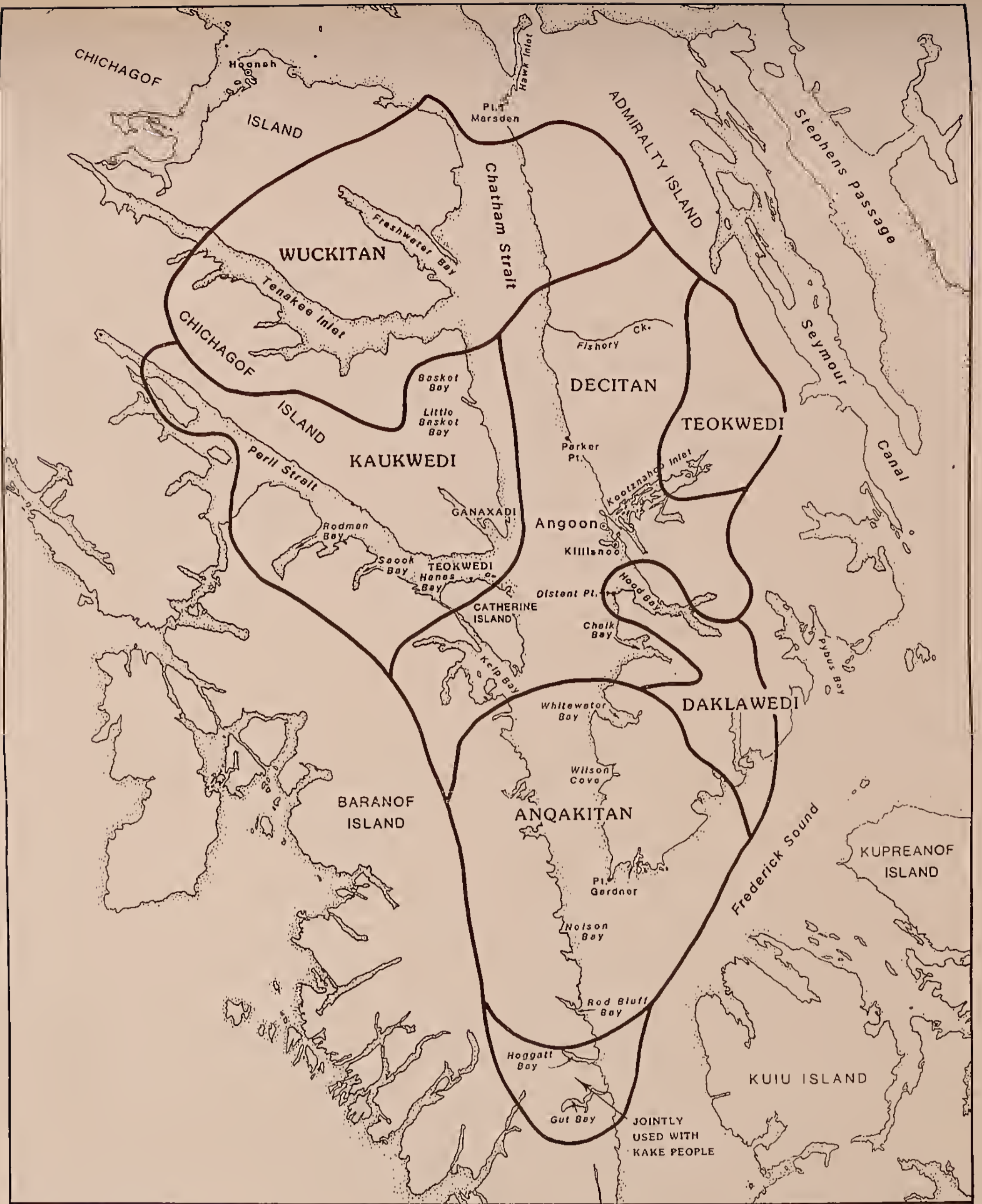
VISUAL QUALITY OBJECTIVES



Source: USGS 1:63360 topographic map - Sitka B-5, B-6, C-5, C-6

Appendix H

Subsistence



TRADITIONAL USE AREA OF THE ANGOON TLINGIT
adapted from Goldschmidt and Haas 1946

— Use Area Boundary

See: "Timber Management and Fish and Wildlife Utilization in Selected Southeast Alaska Communities; Angoon, Alaska, Technical Paper 159, for further information.

SCALE

0 5 10 15 20 Miles

Map Taken from Alaska Department of Fish & Game Technical Paper 159

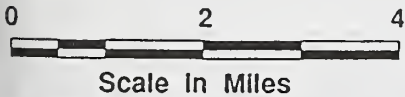
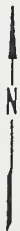
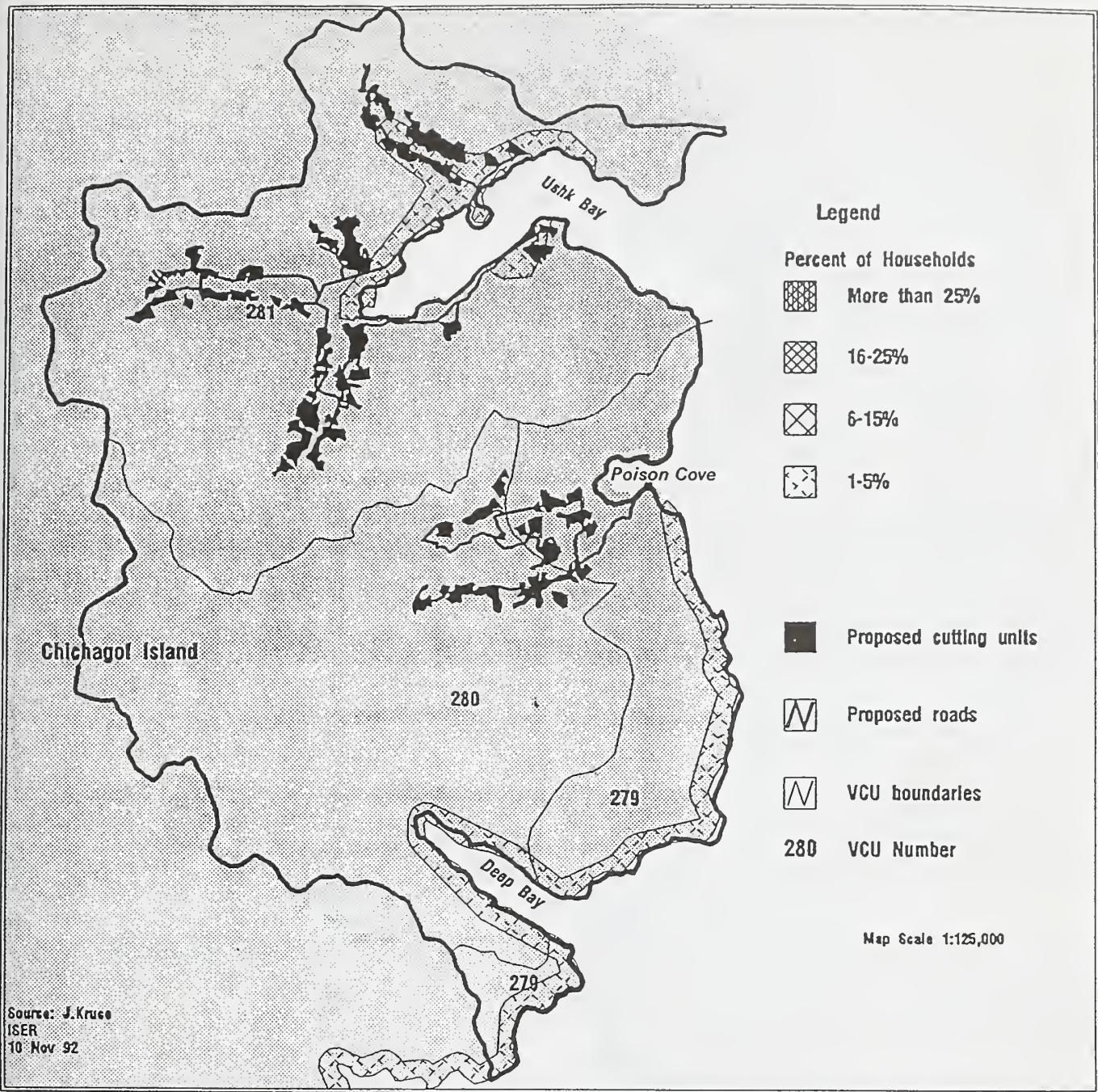


STATE OF ALASKA DEPT. OF FISH AND GAME
Sijbeletence Division



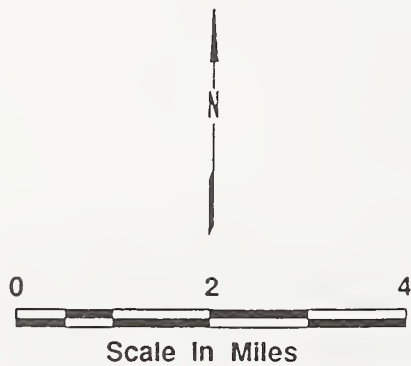
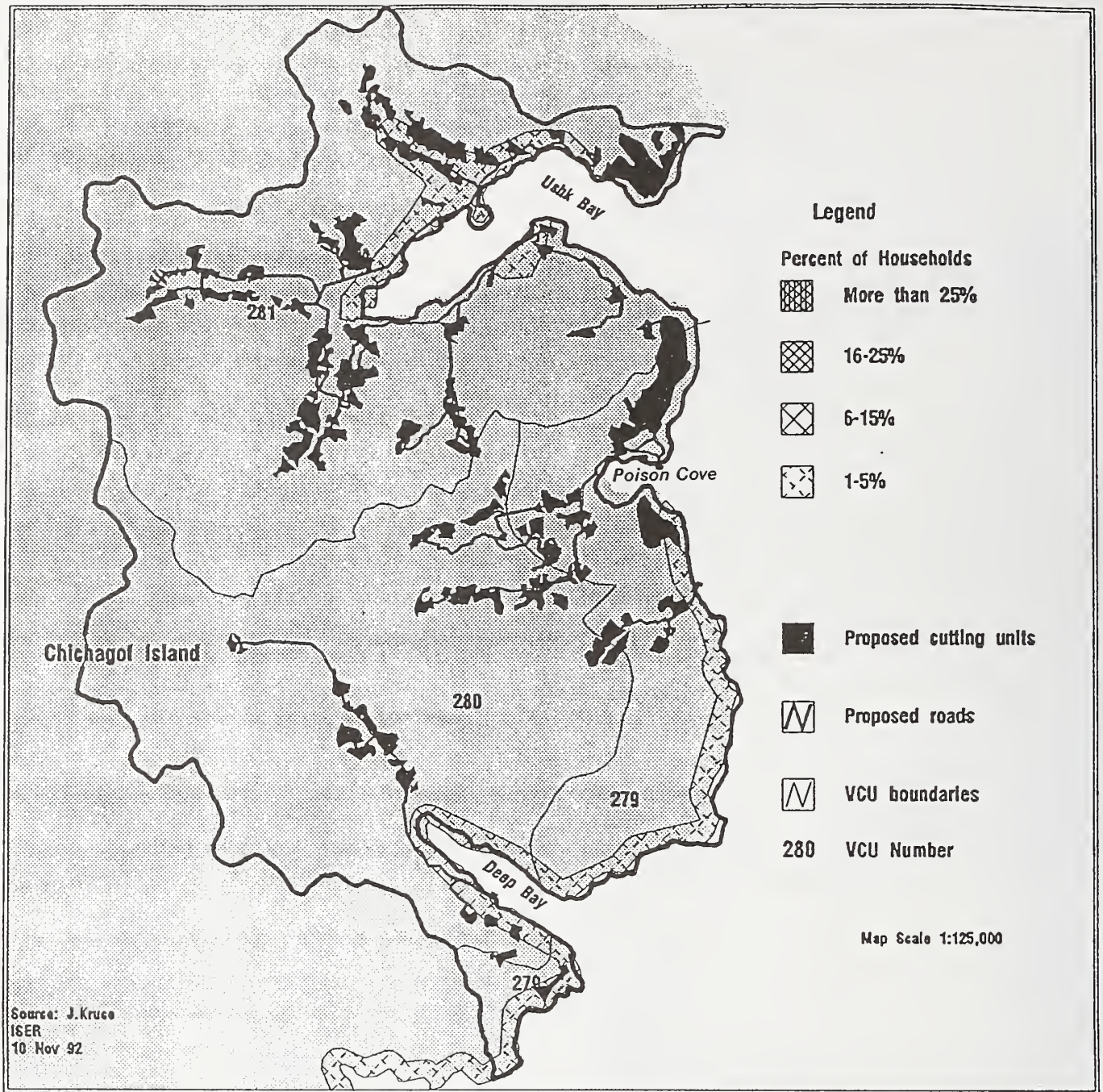
Location
Map



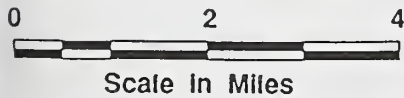
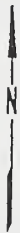
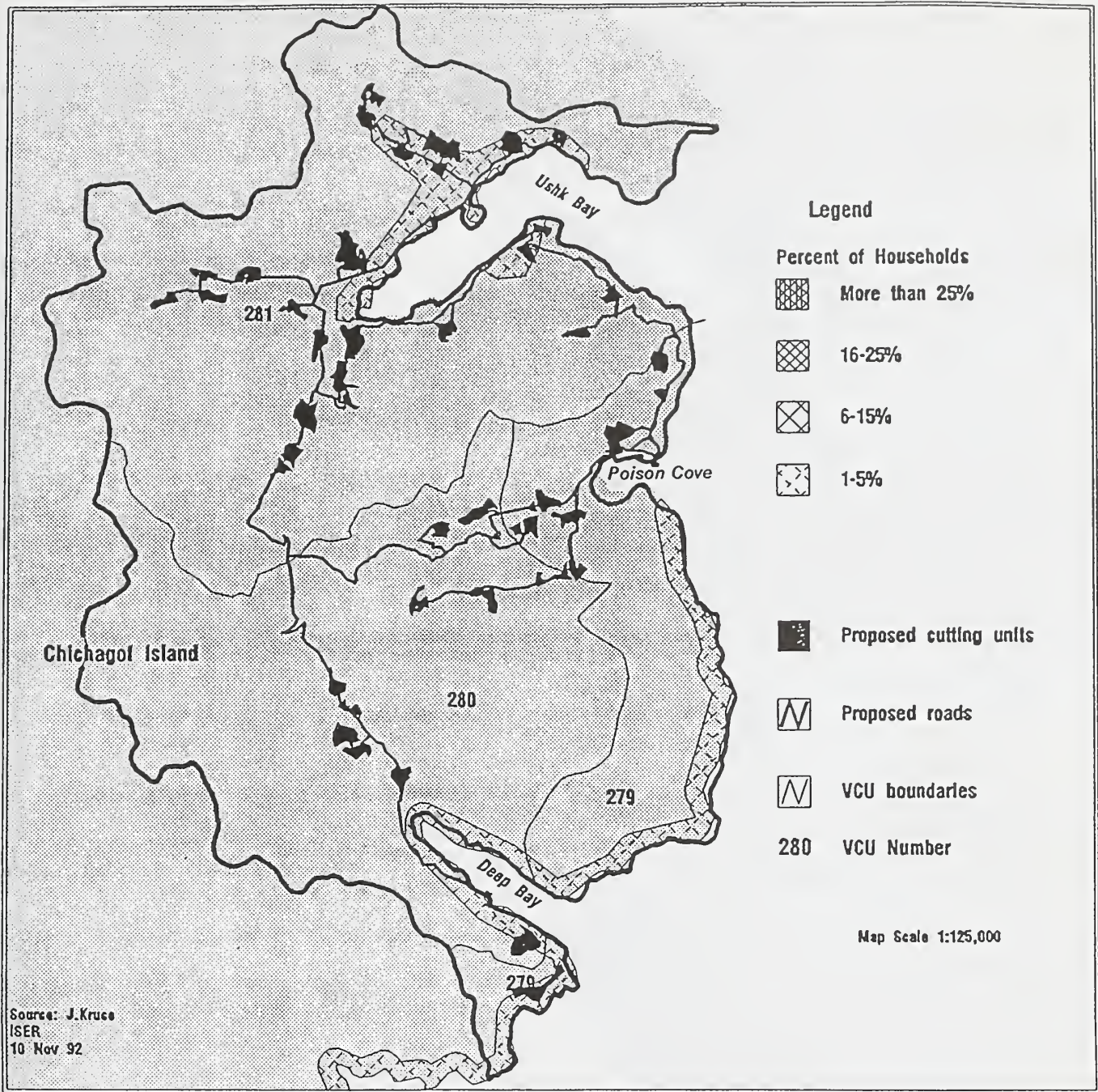


**USHK BAY: ALTERNATIVE B
PERCENTAGE OF HAINES HOUSEHOLDS
EVER HUNTING DEER IN AREA**

Ushk Bay Project

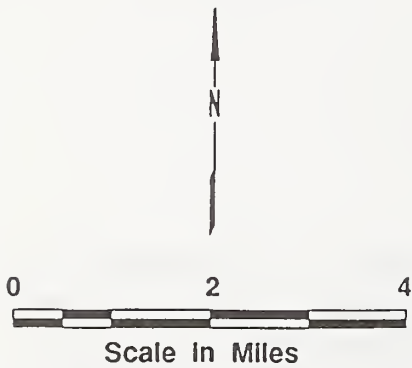
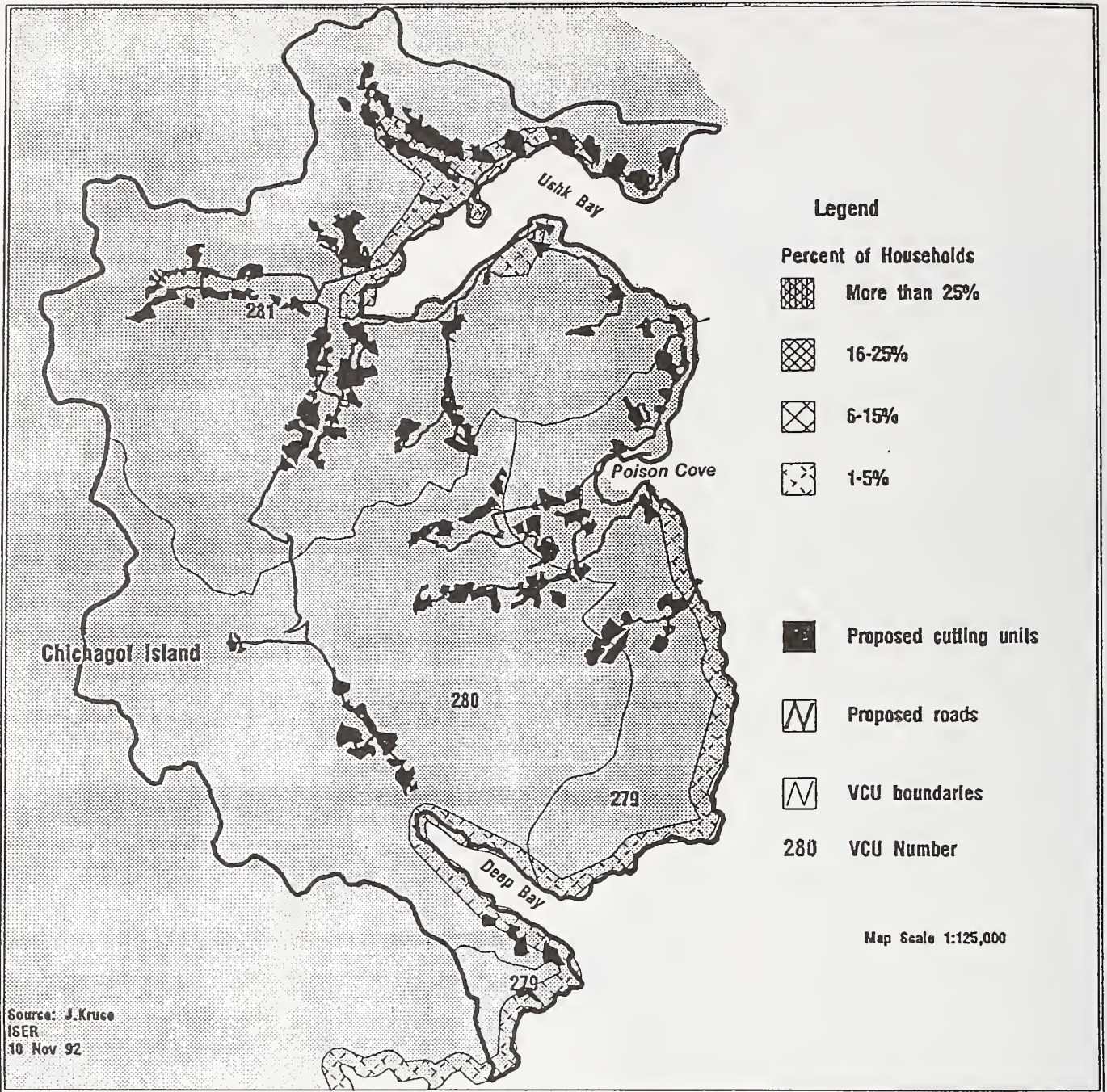


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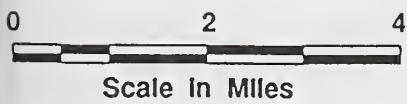
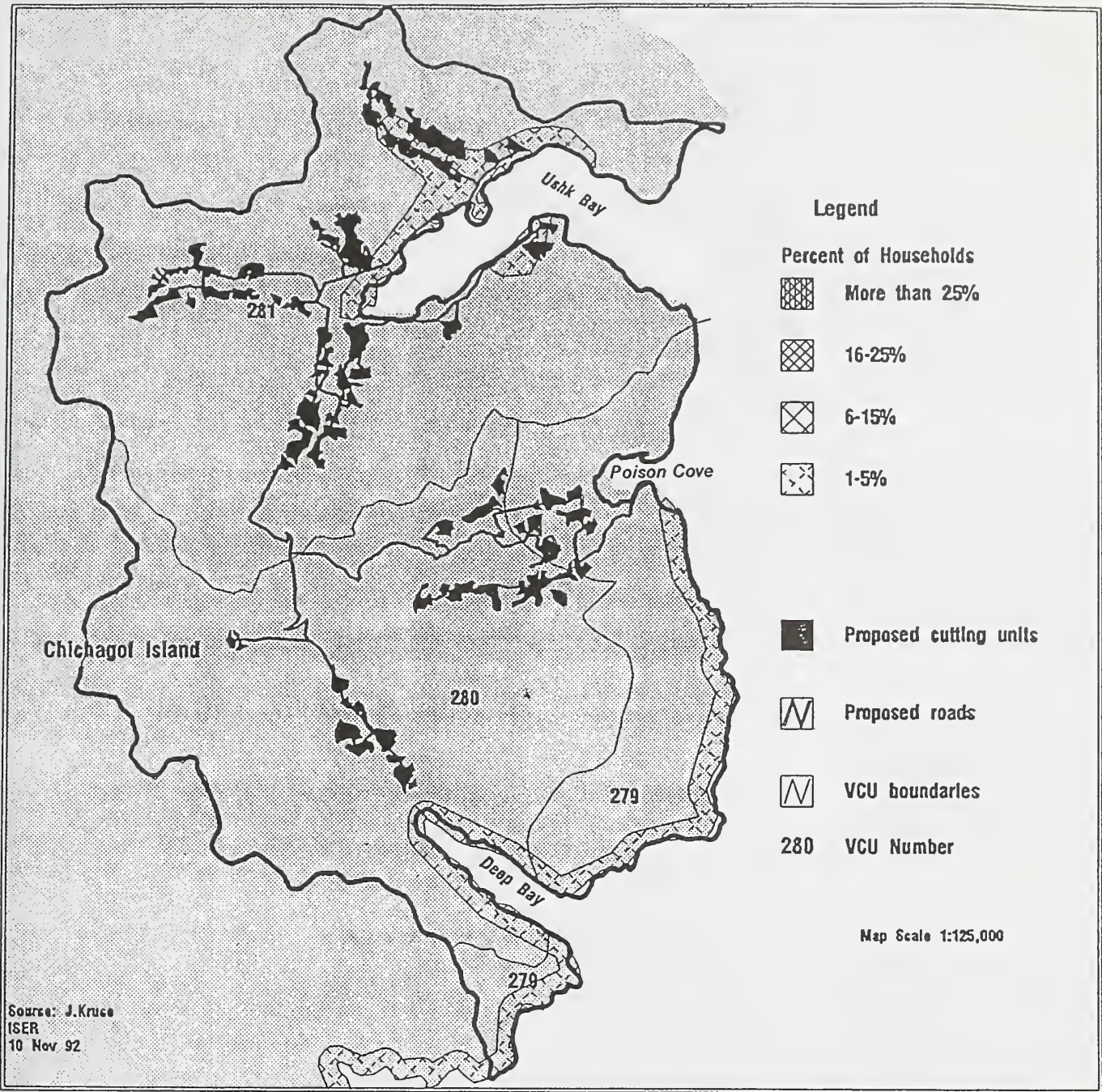


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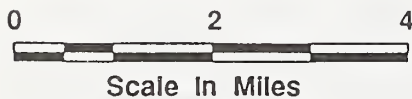
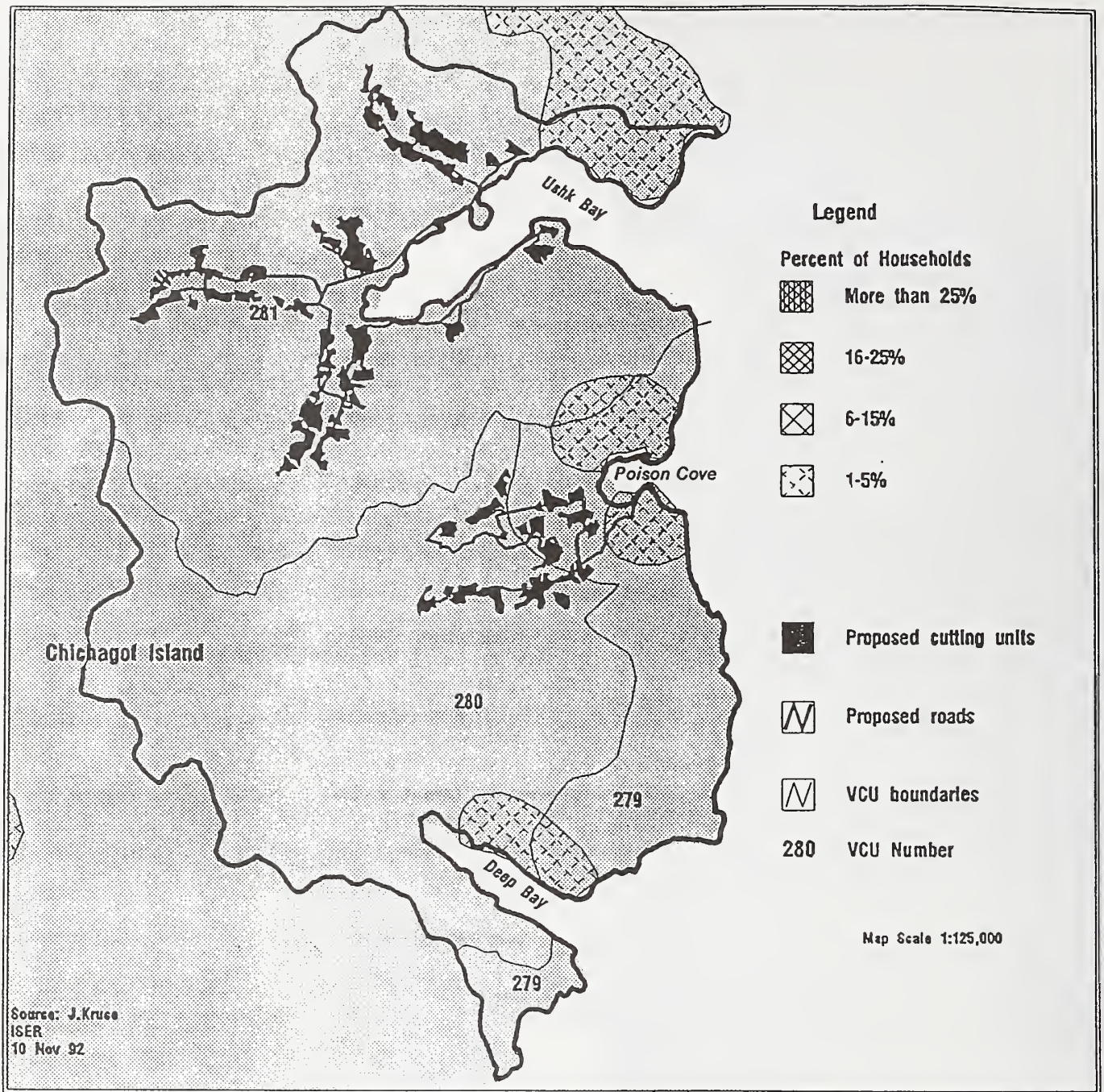


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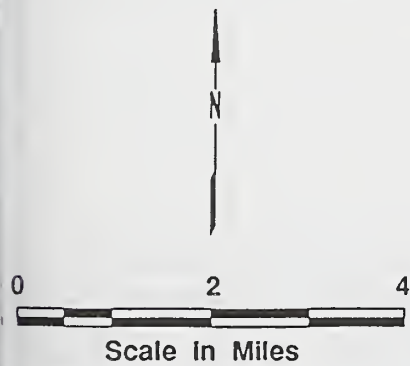
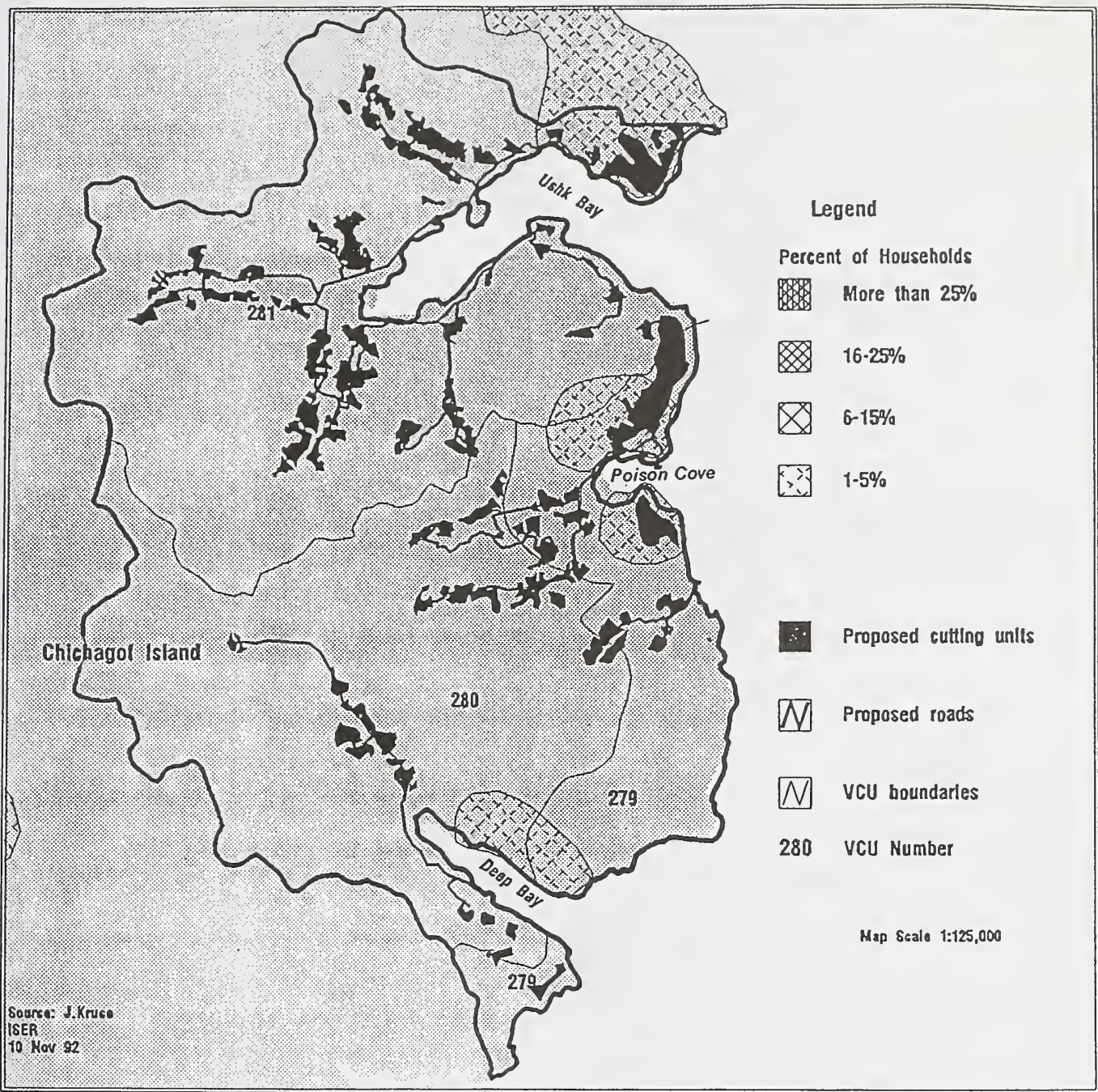
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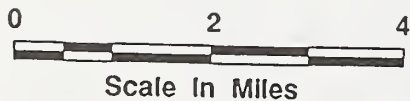
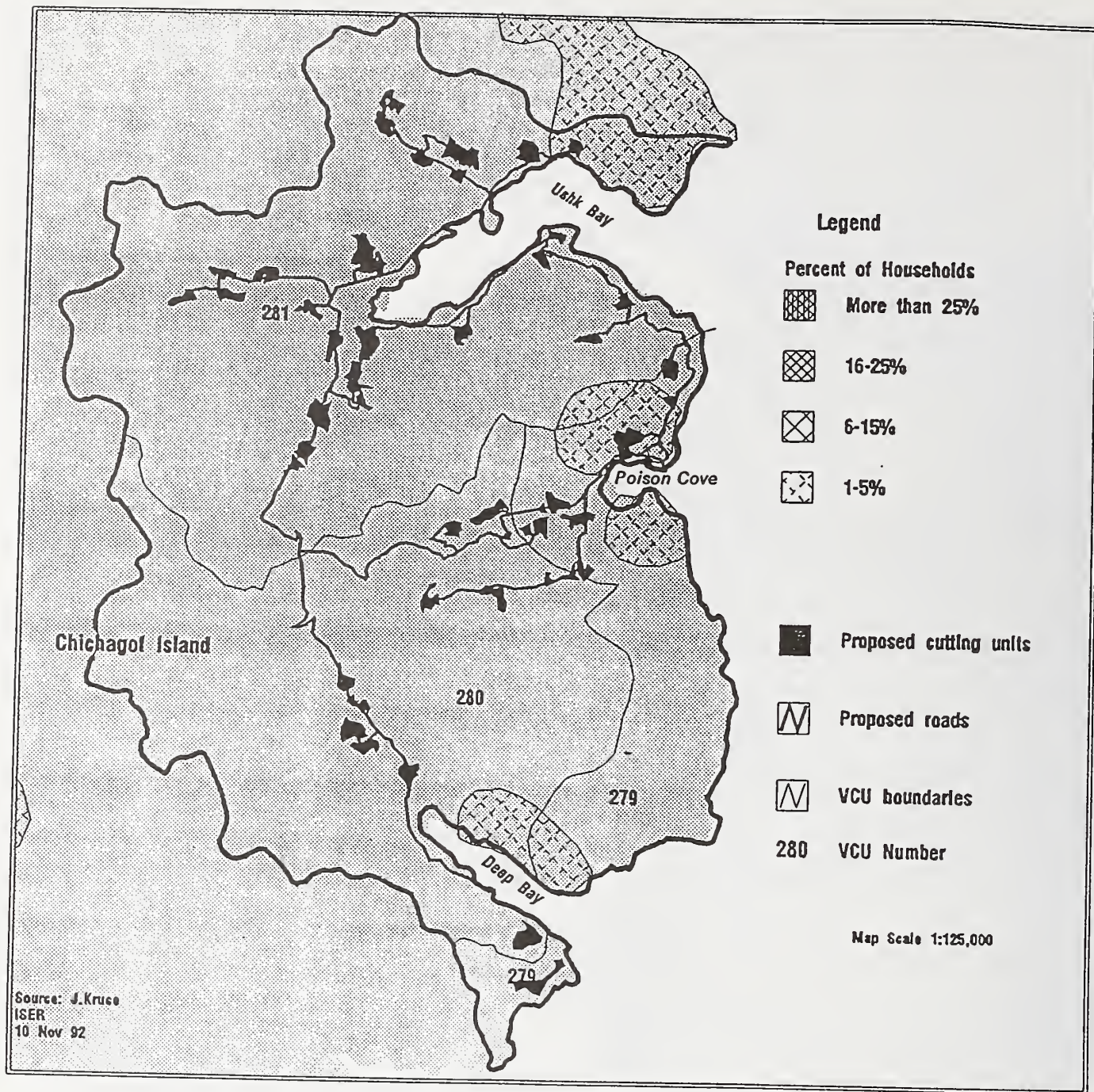
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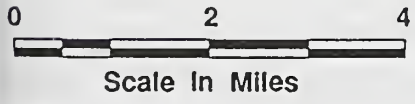
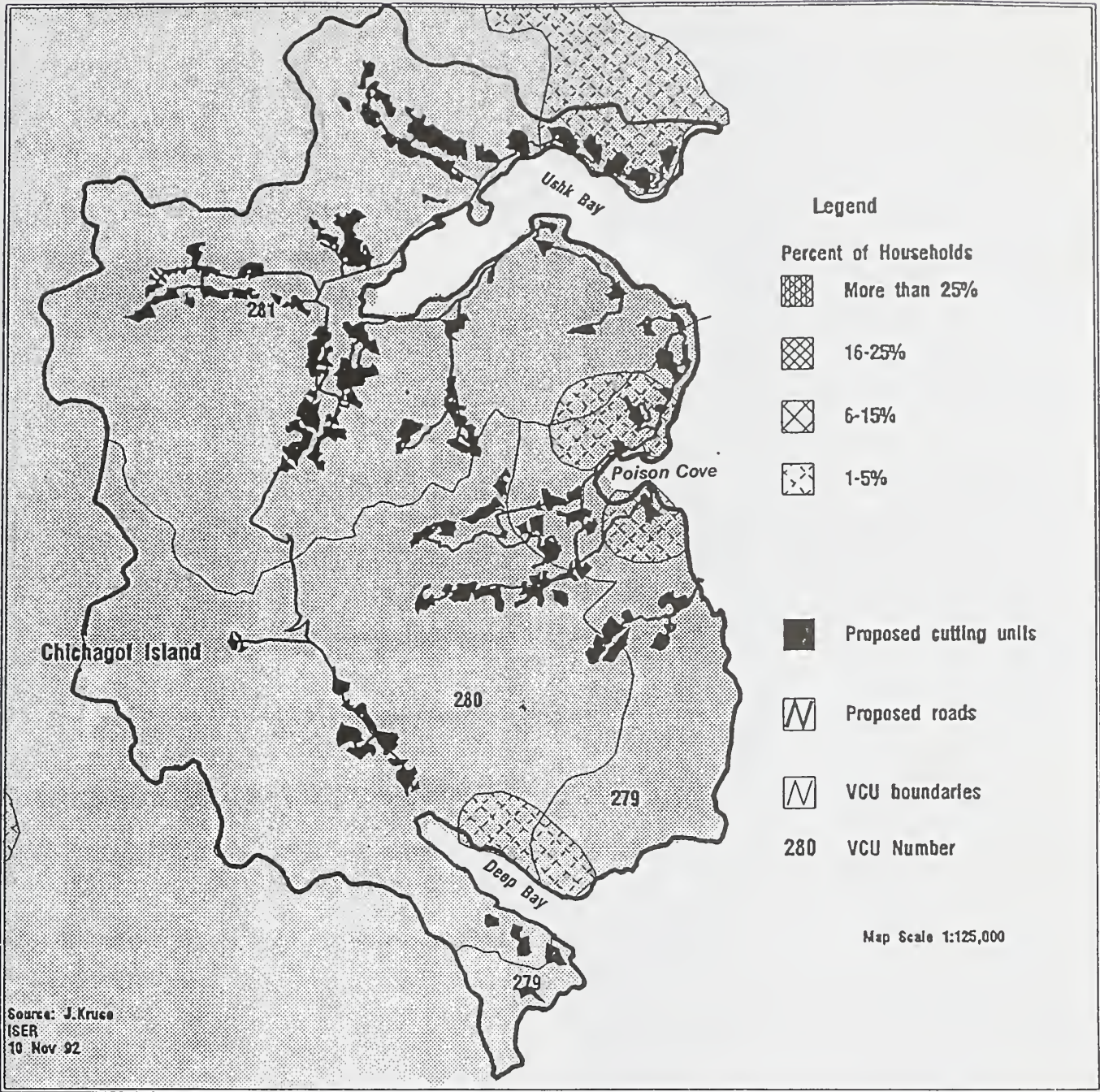


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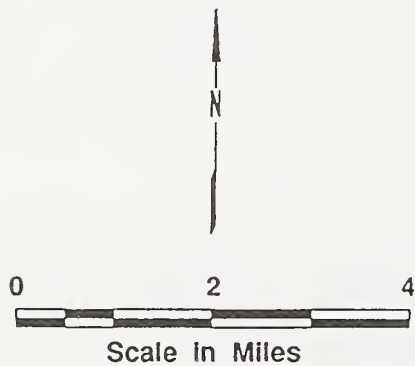
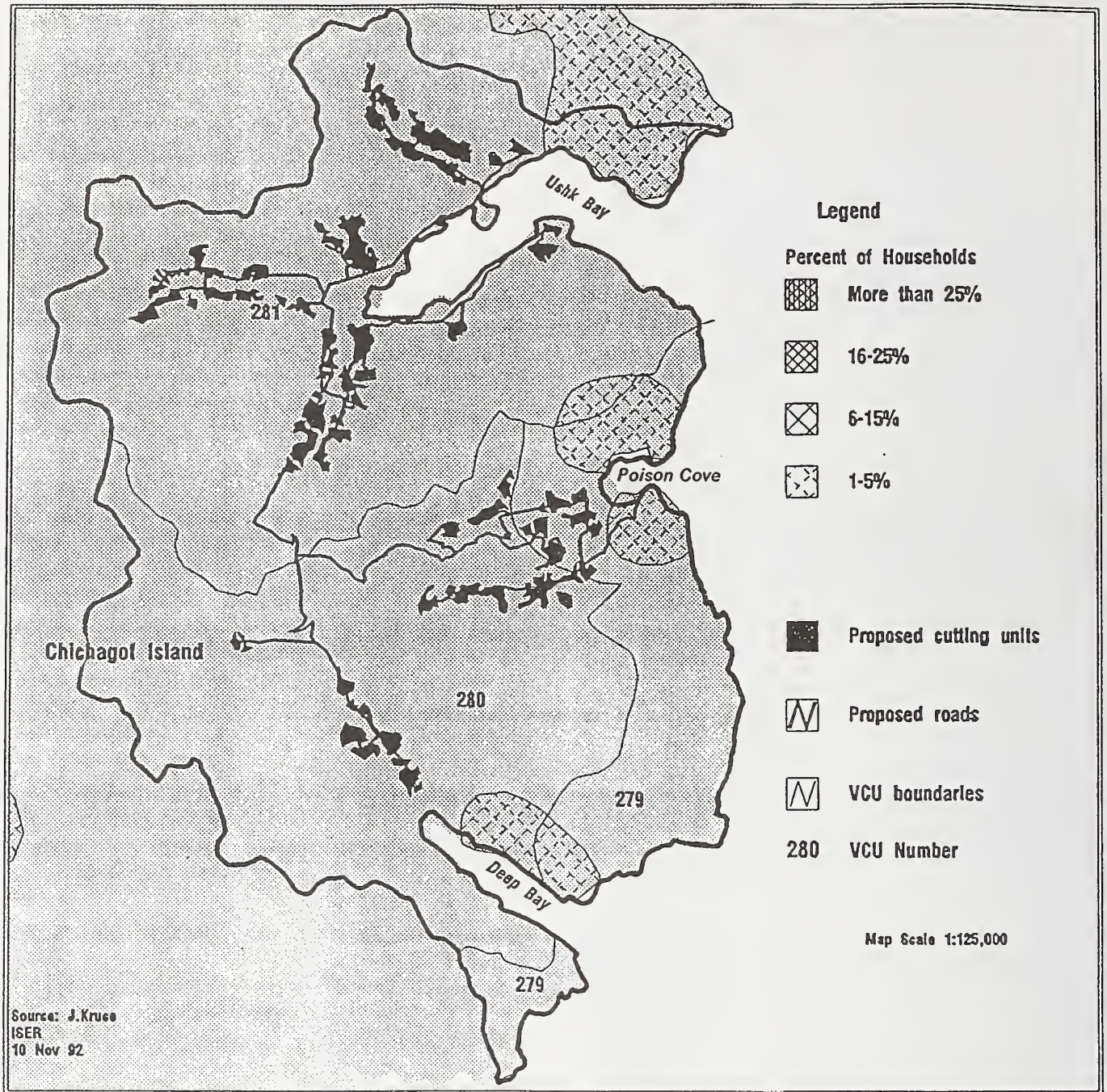


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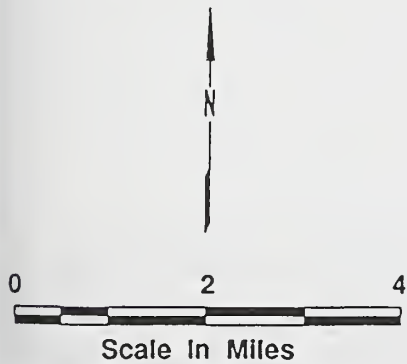
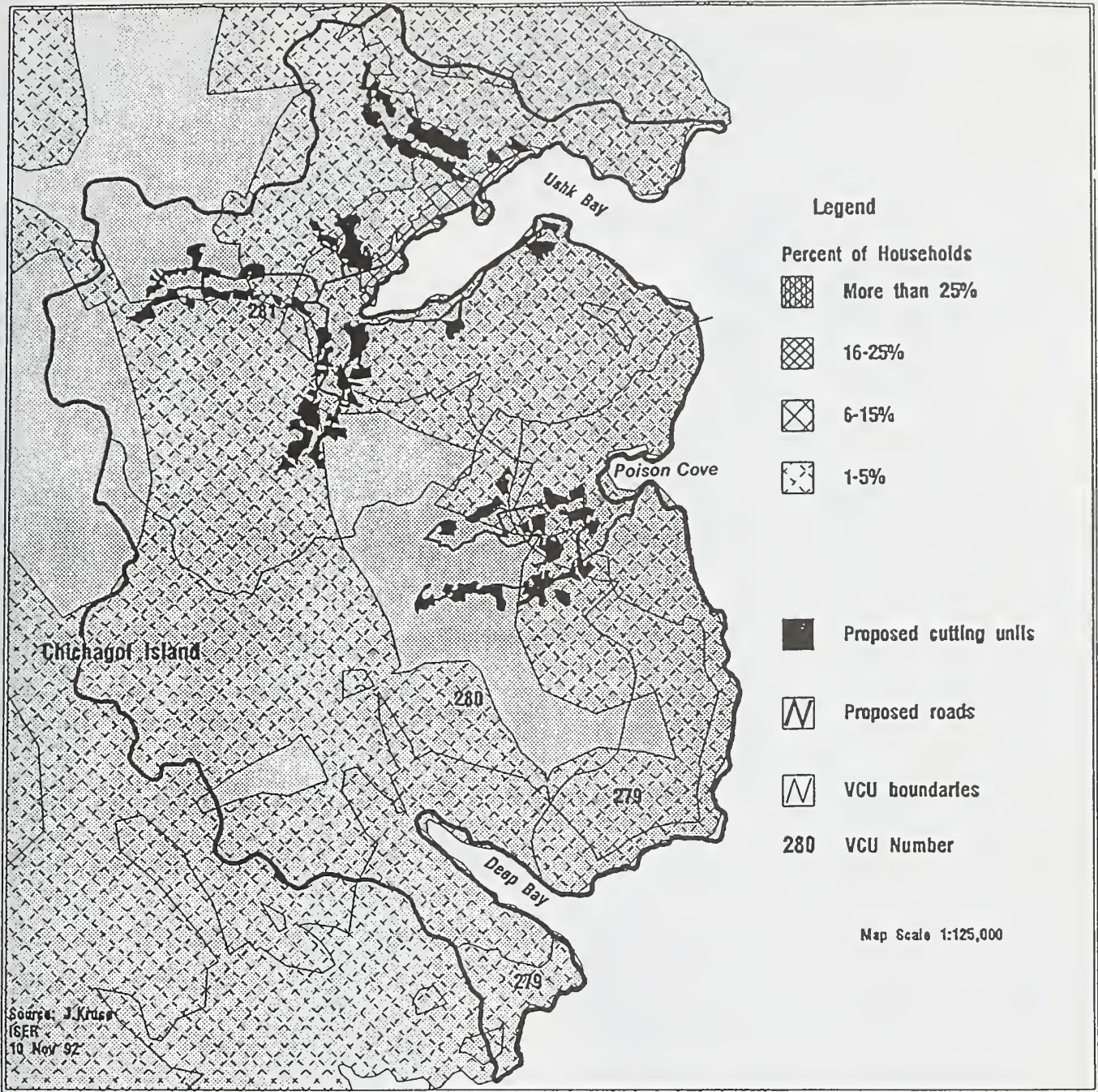
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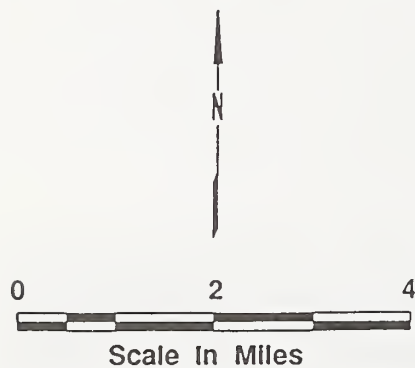
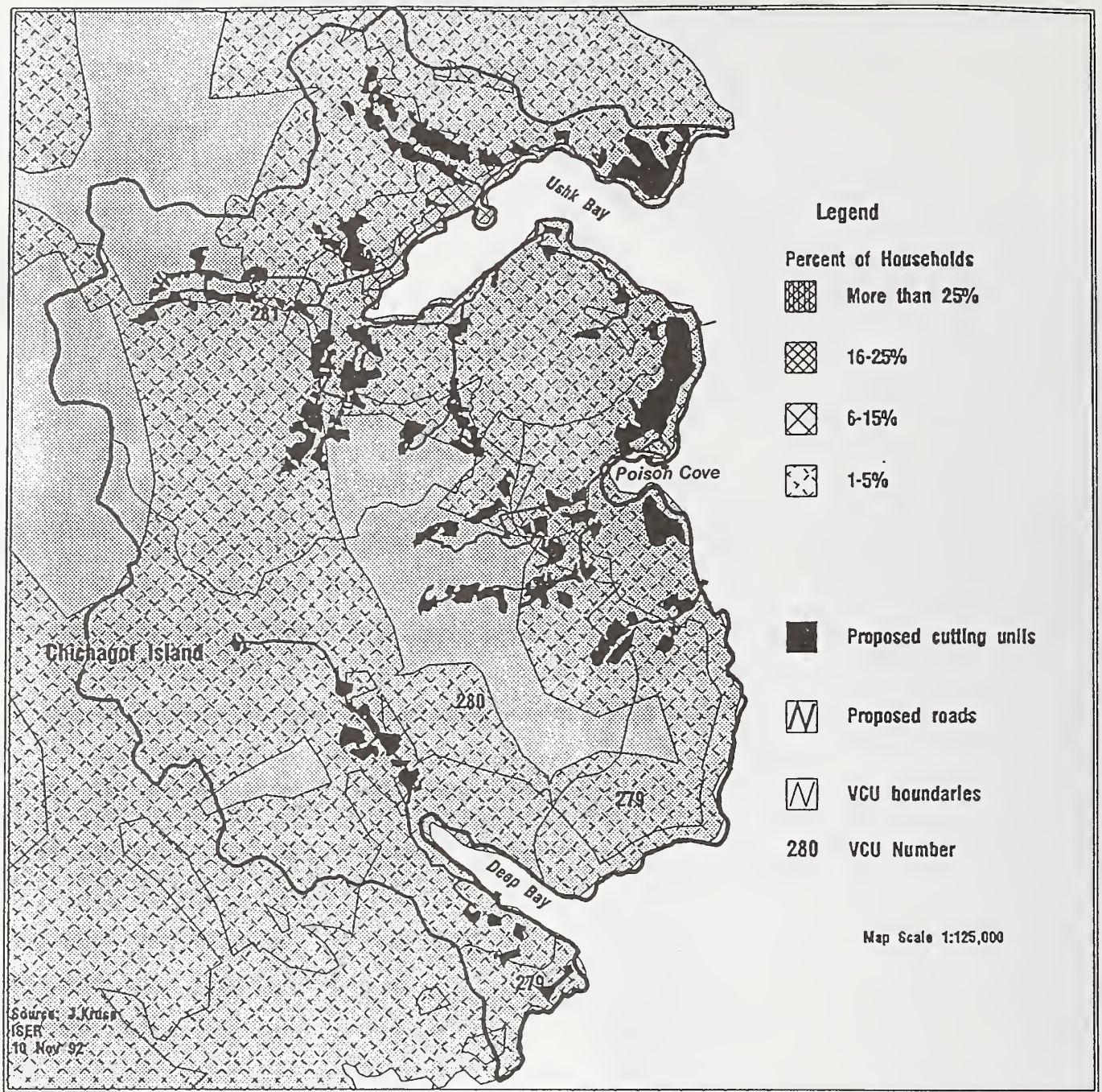
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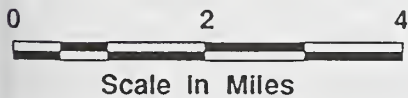
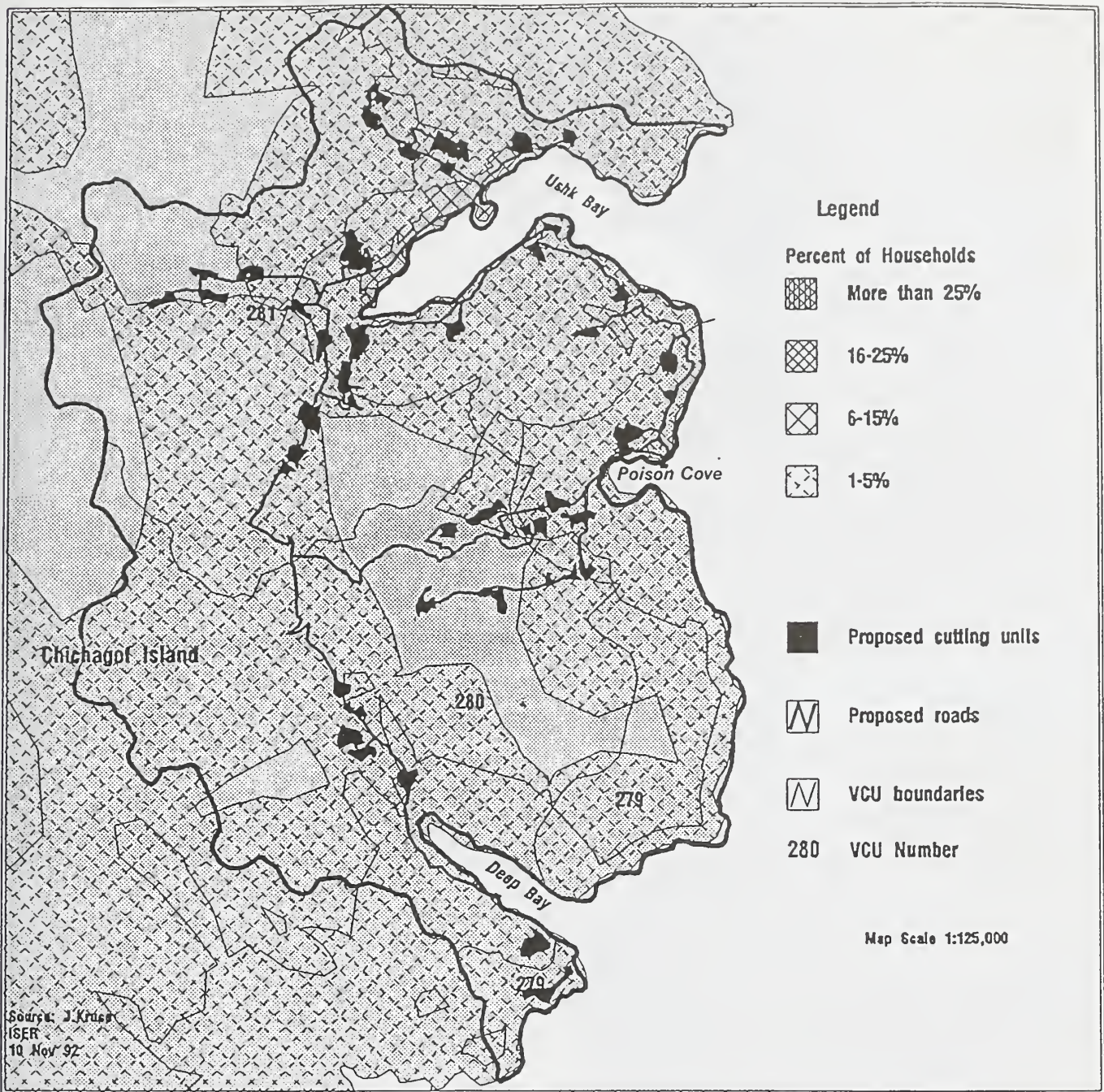


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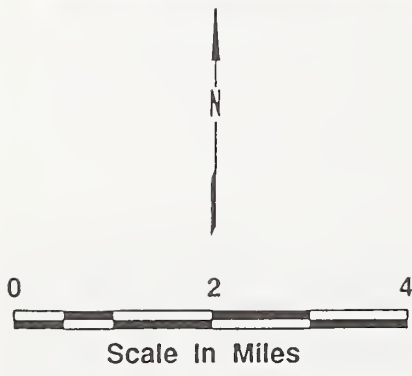
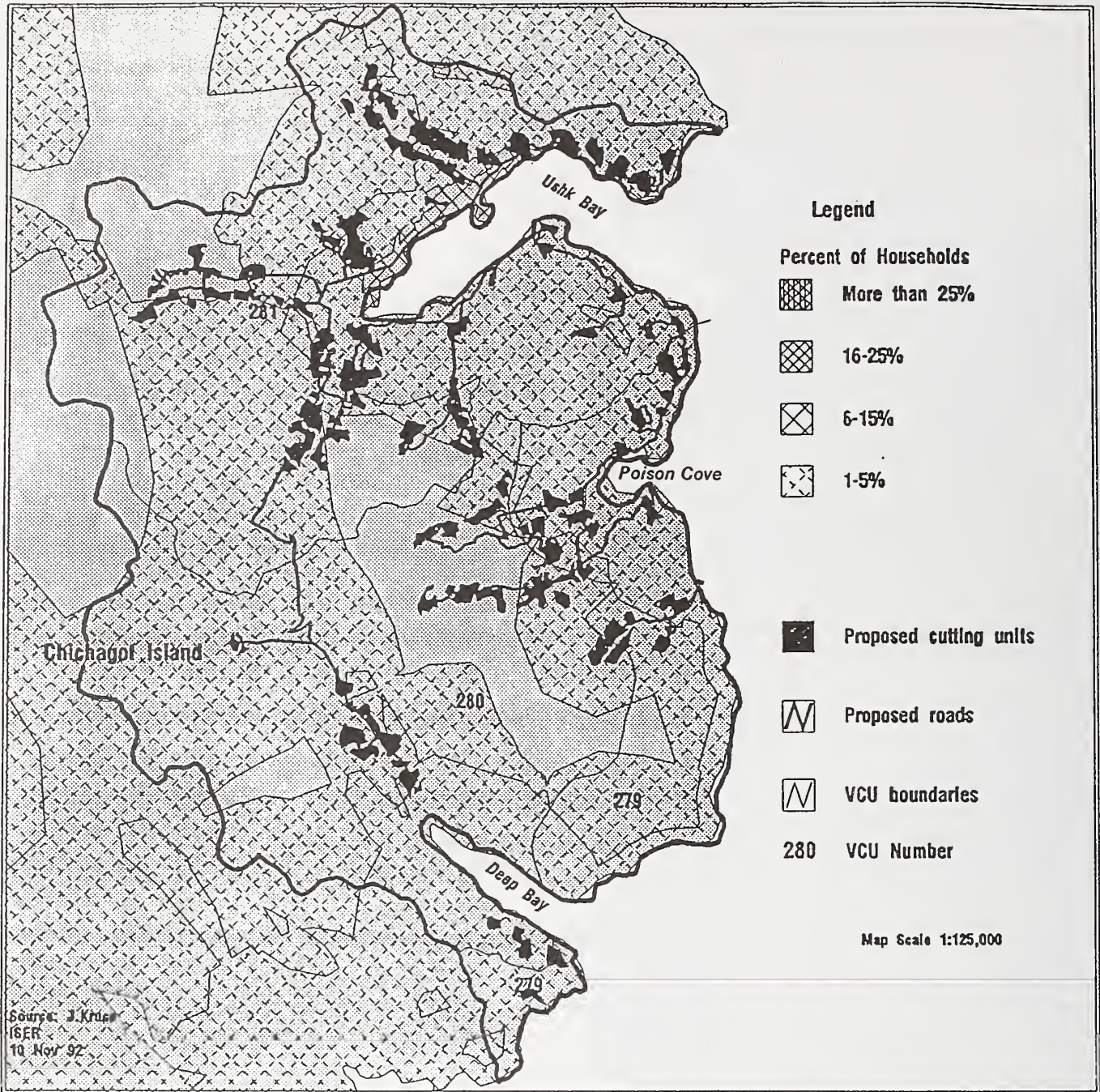


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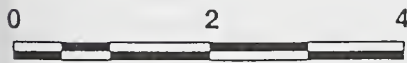
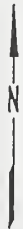
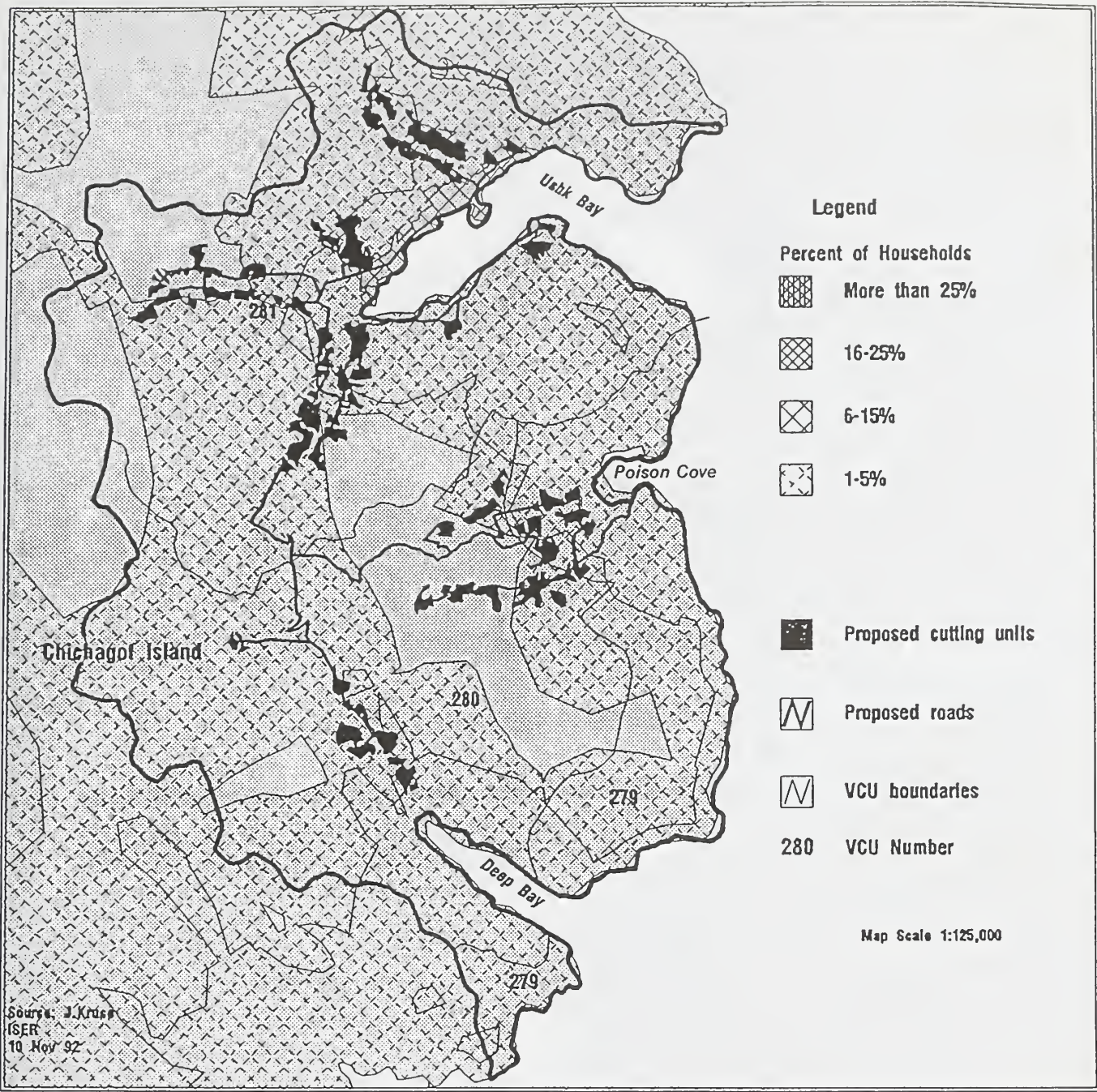
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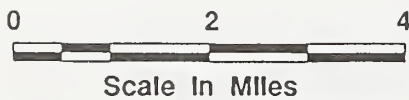
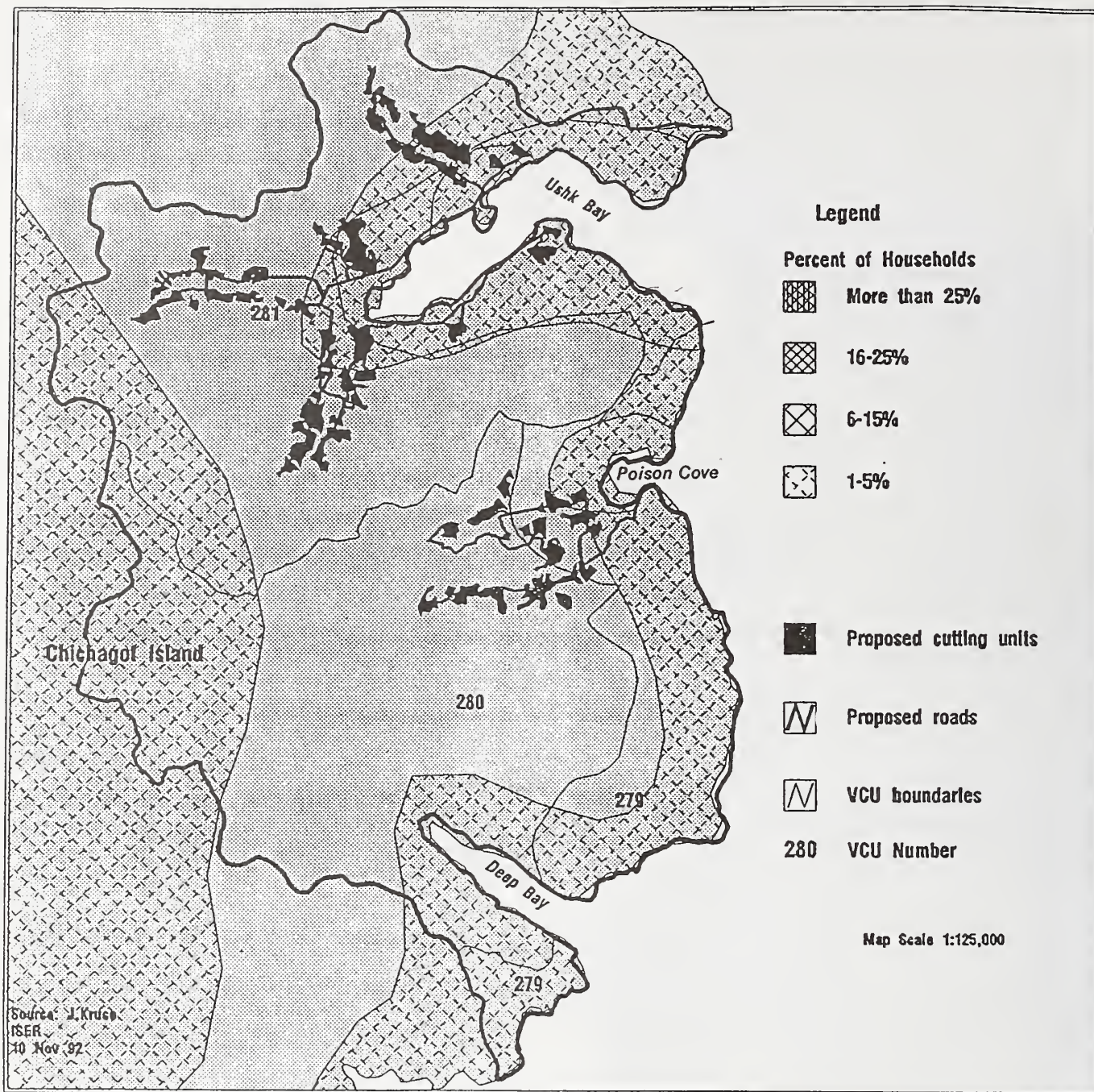
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Scale In Miles

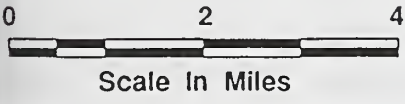
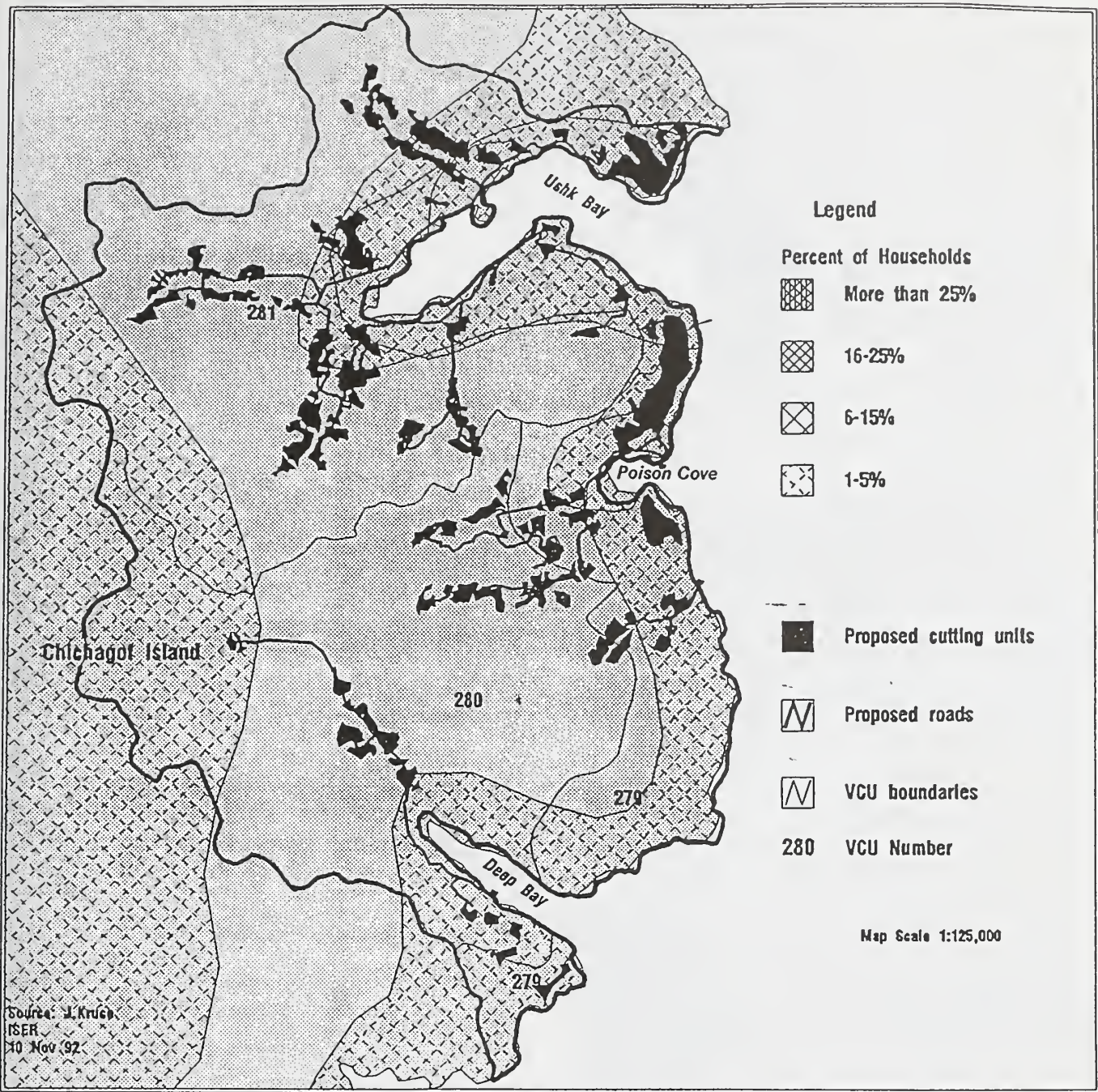
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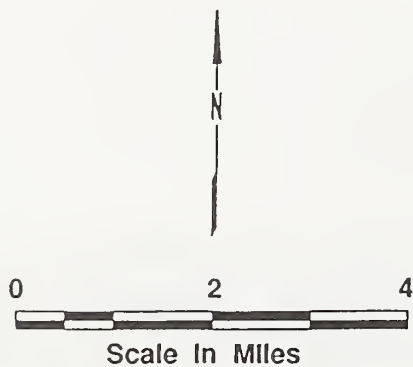
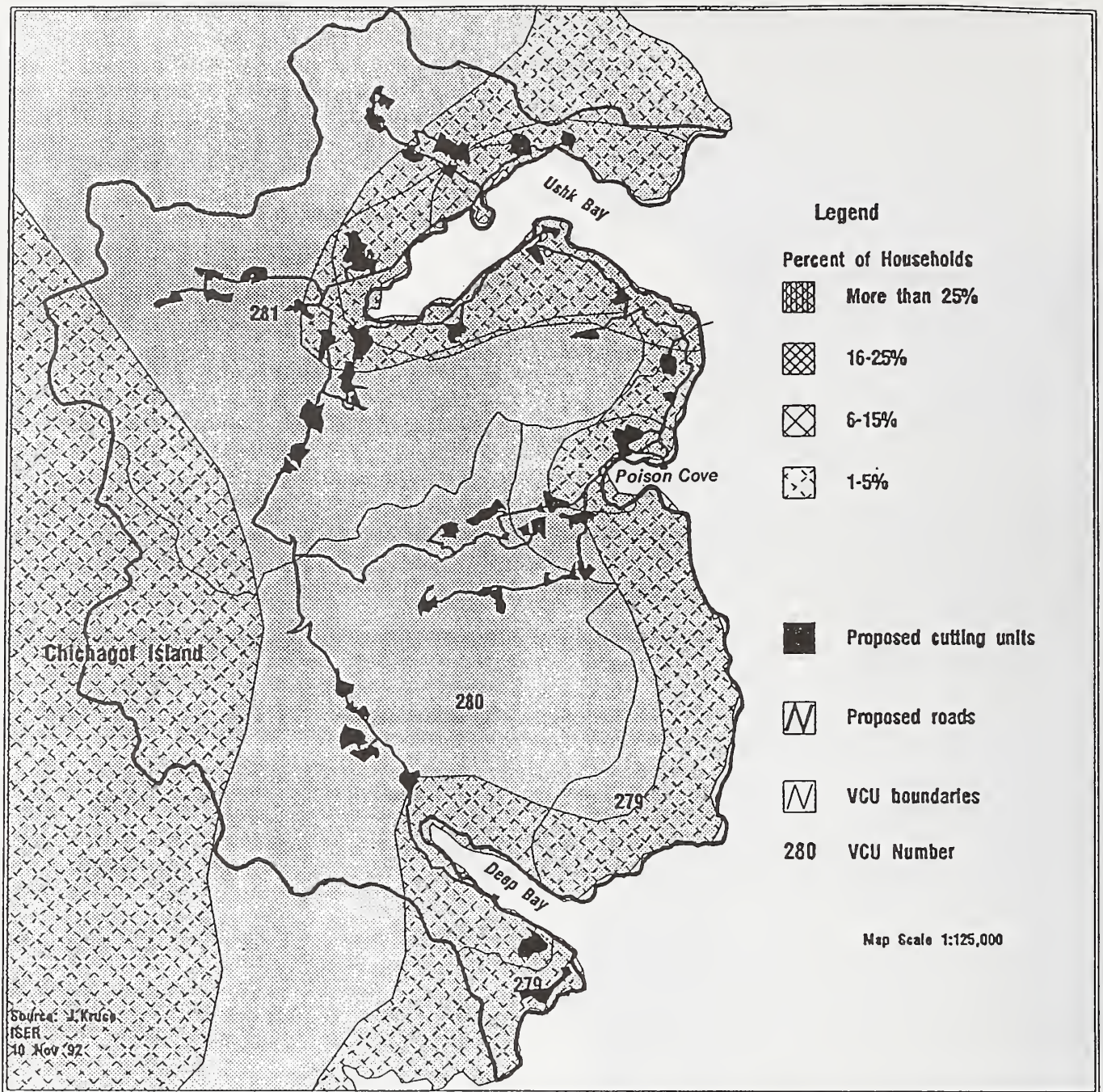
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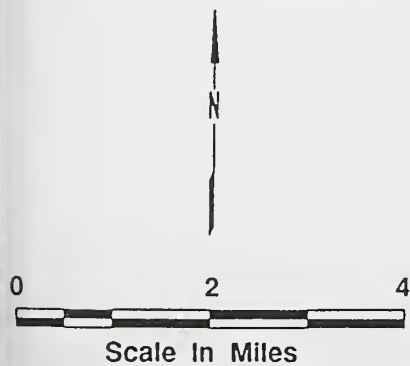
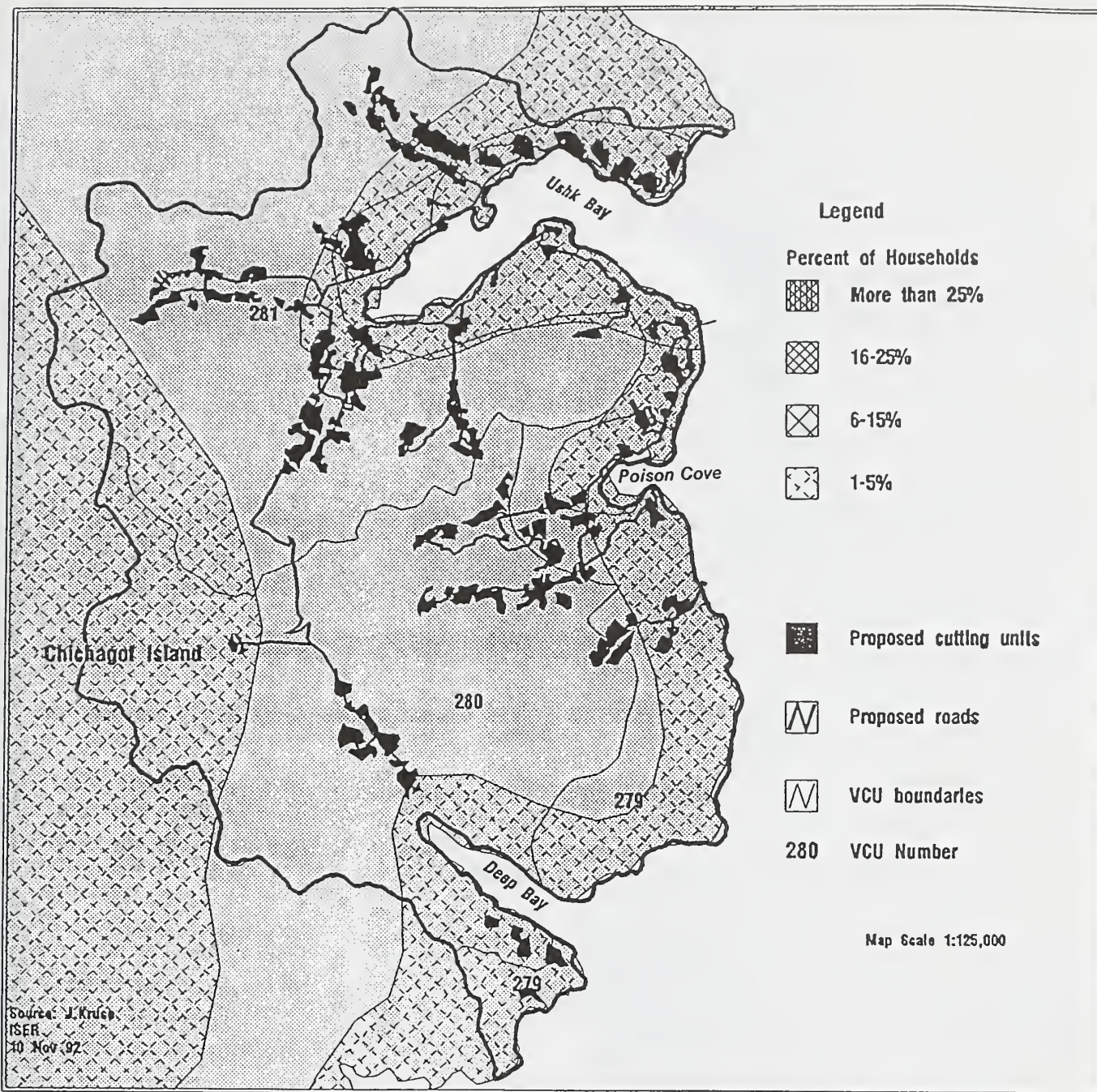


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Ushk Bay Project

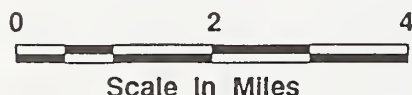
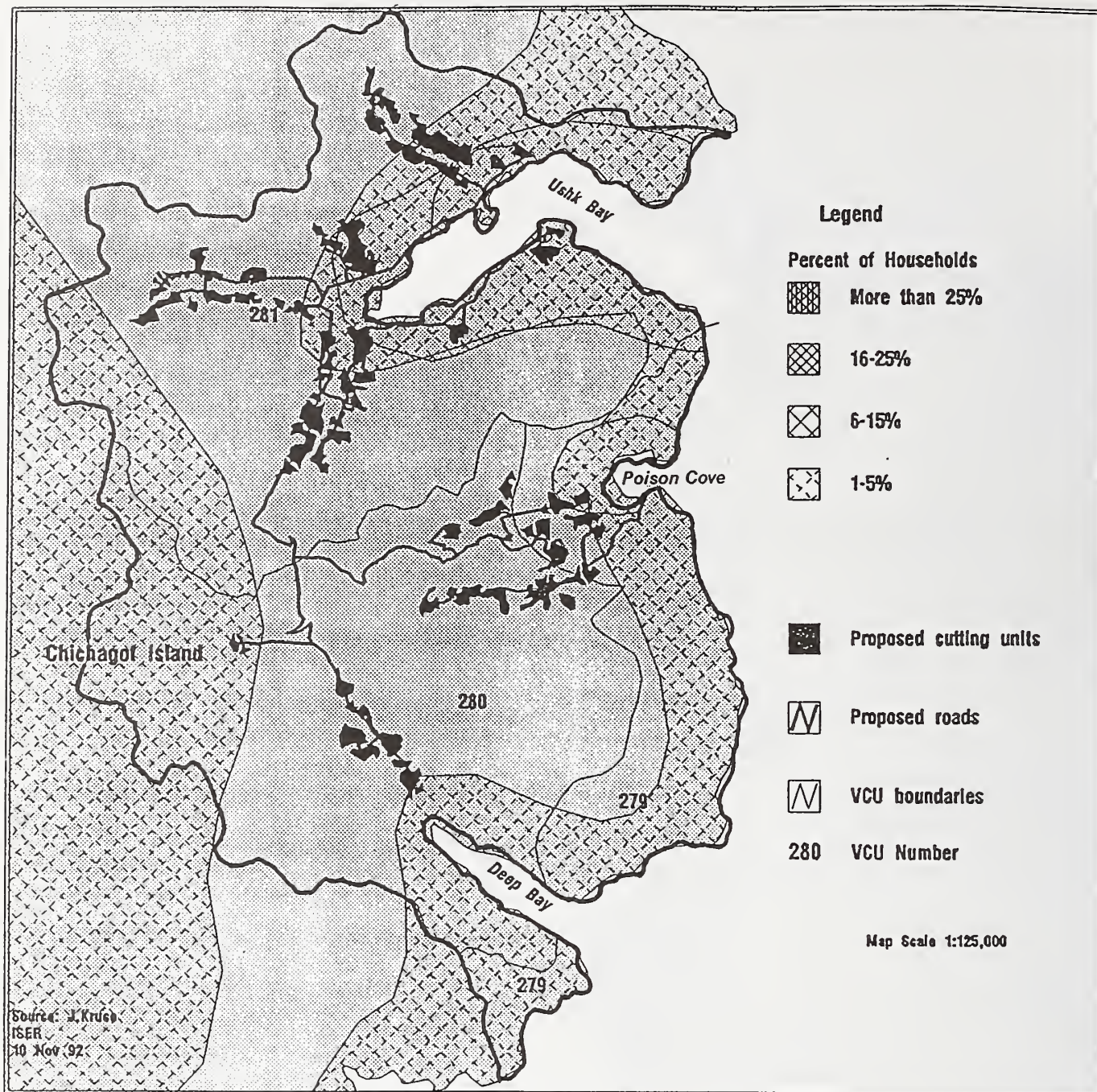


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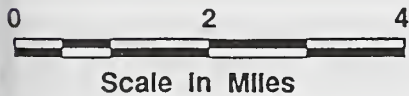
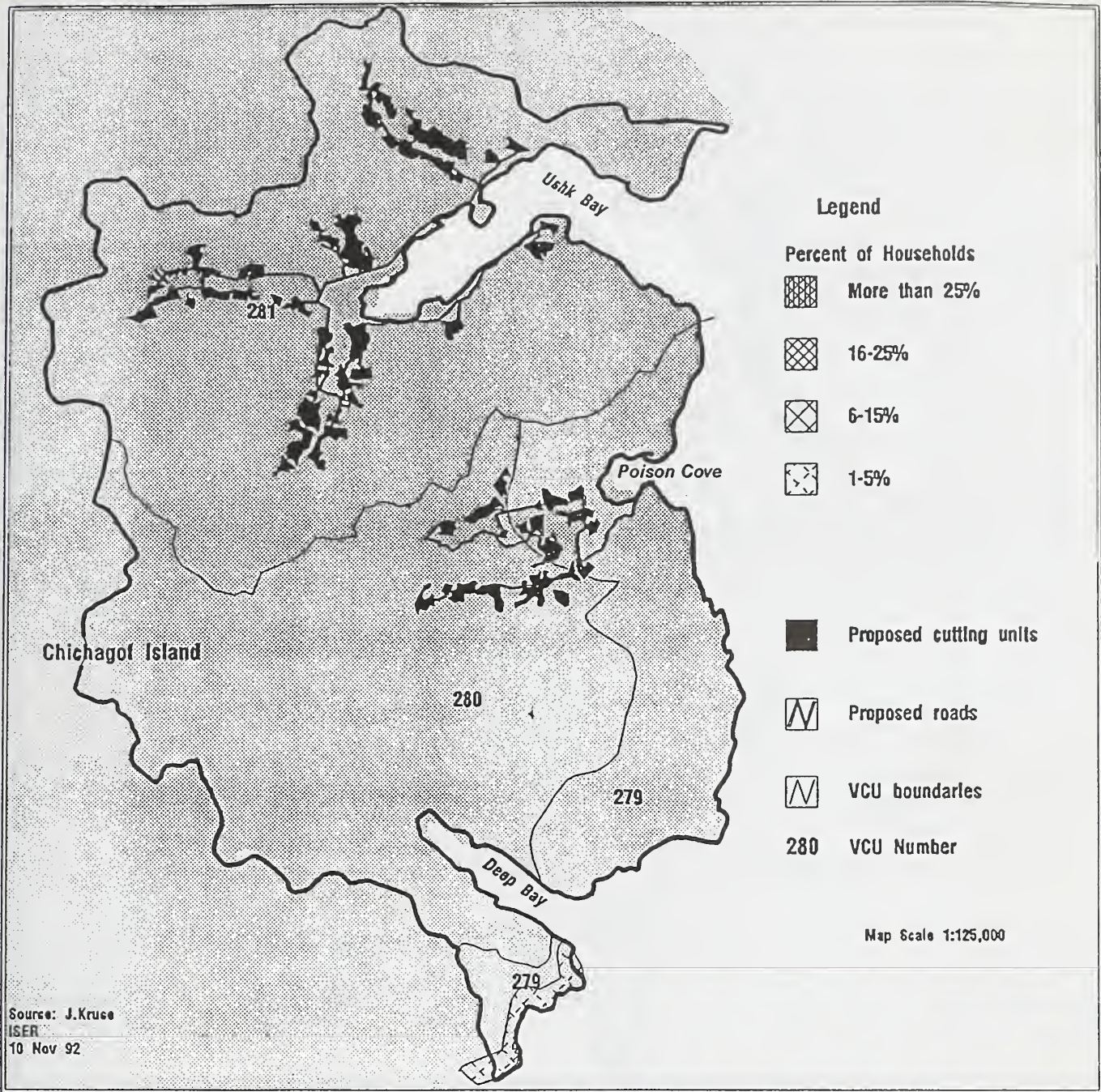


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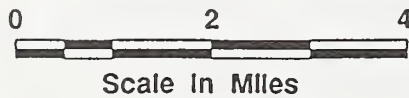
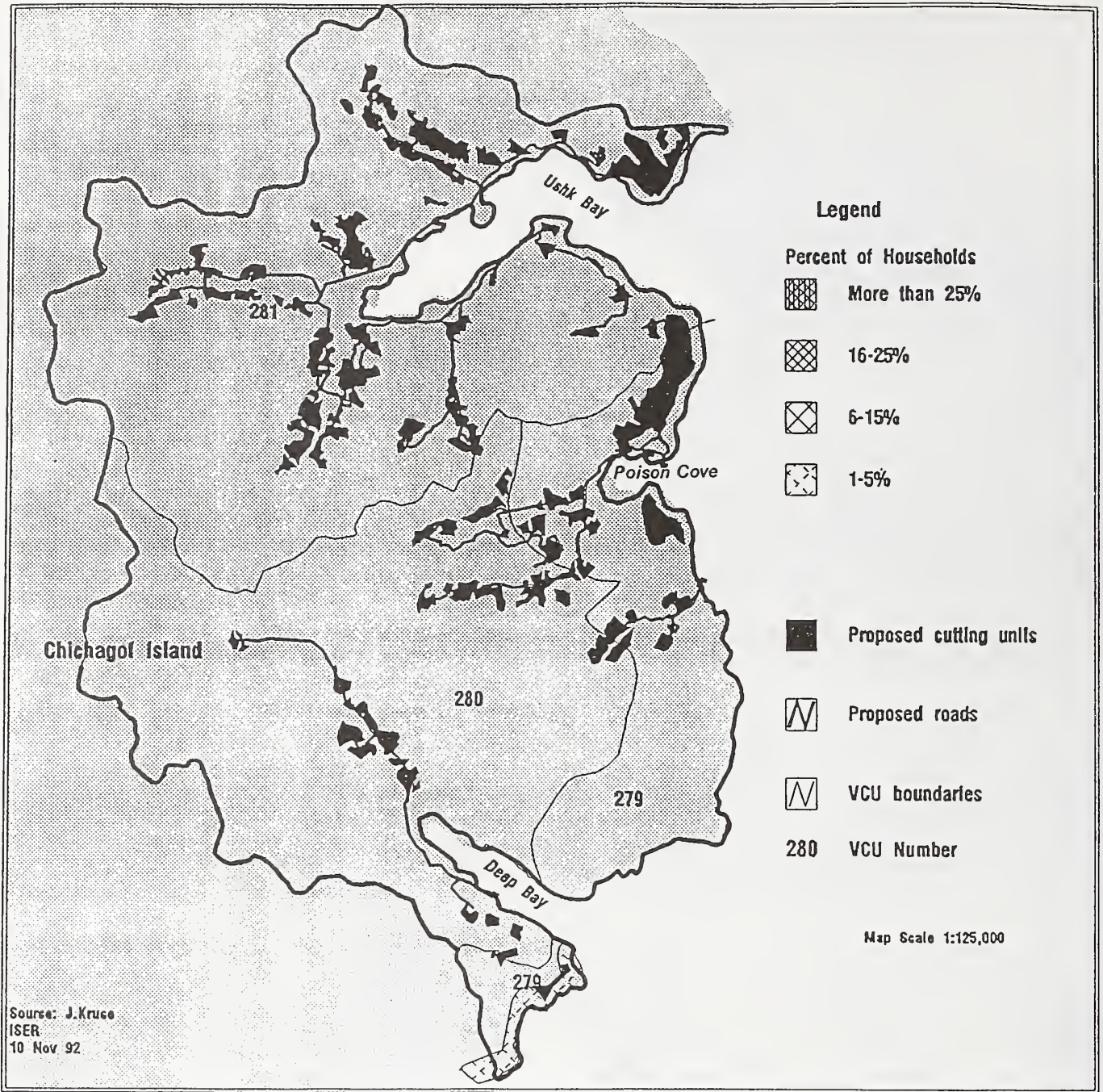
Ushk Bay Project



**USHK BAY: ALTERNATIVE F
PERCENTAGE OF WRANGELL HOUSEHOLDS
EVER HUNTING DEER IN AREA**



USHK BAY: ALTERNATIVE B PERCENTAGE OF ANGOON HOUSEHOLDS EVER HUNTING DEER IN AREA

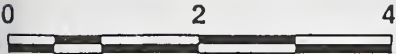
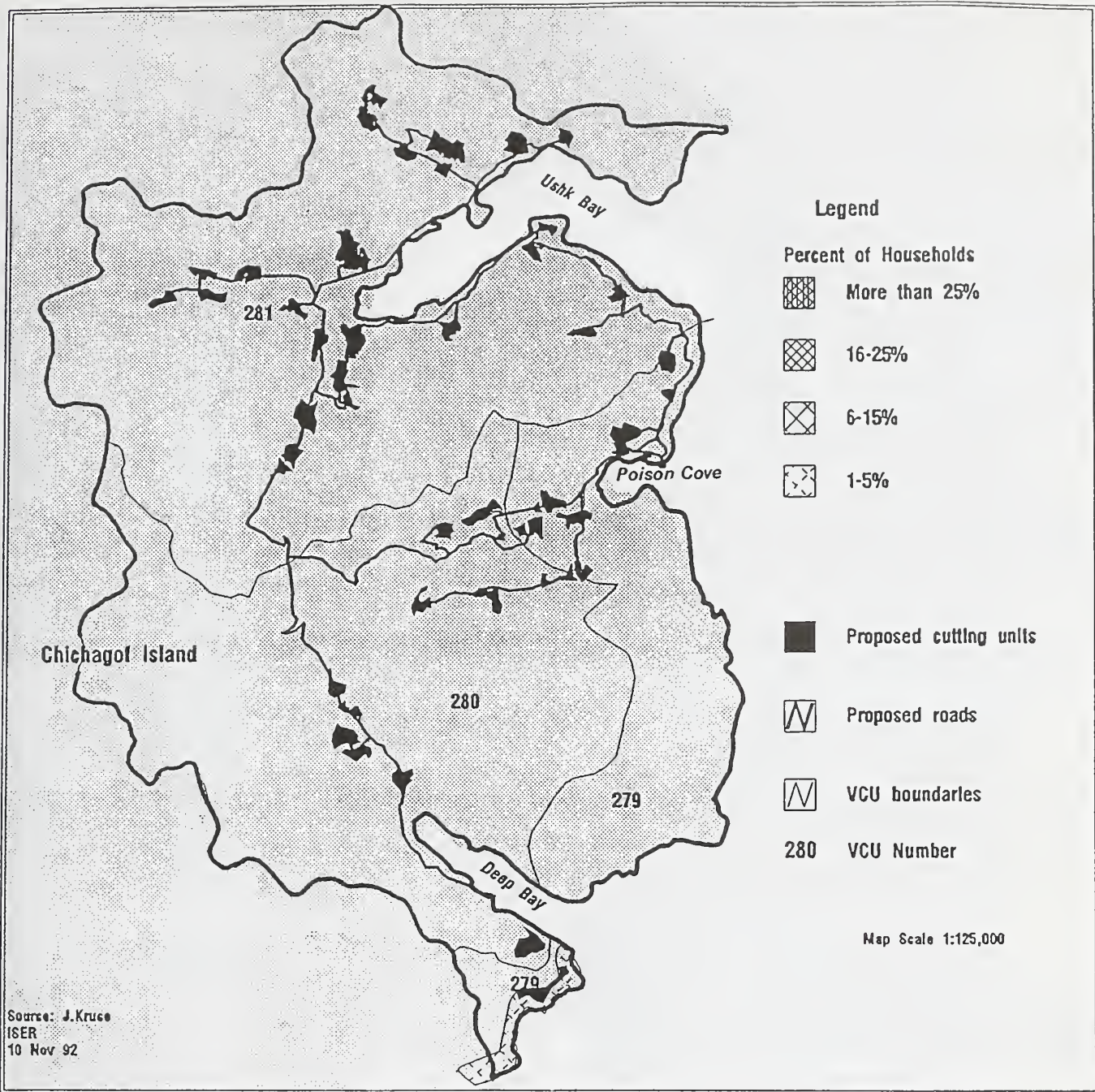


**USHK BAY: ALTERNATIVE C
PERCENTAGE OF ANGOON HOUSEHOLDS
EVER HUNTING DEER IN AREA**



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Job No. 03619-034-020

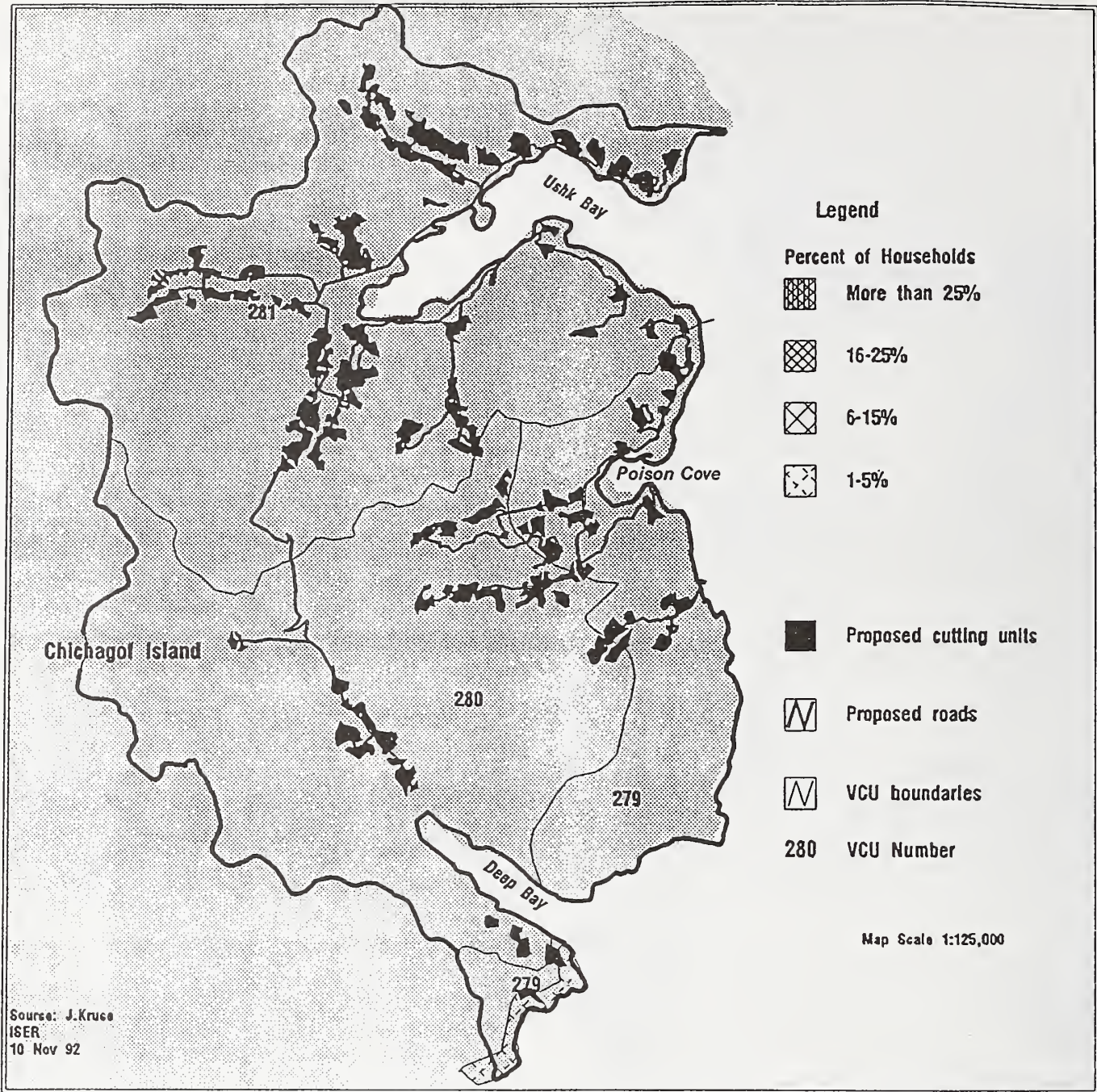
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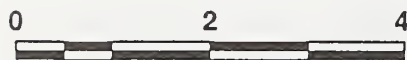
Scale In Miles

USHK BAY: ALTERNATIVE D PERCENTAGE OF ANGOON HOUSEHOLDS EVER HUNTING DEER IN AREA

Ushk Bay Project



Source: J. Kruse
ISER
10 Nov 92



Scale In Miles

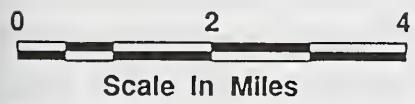
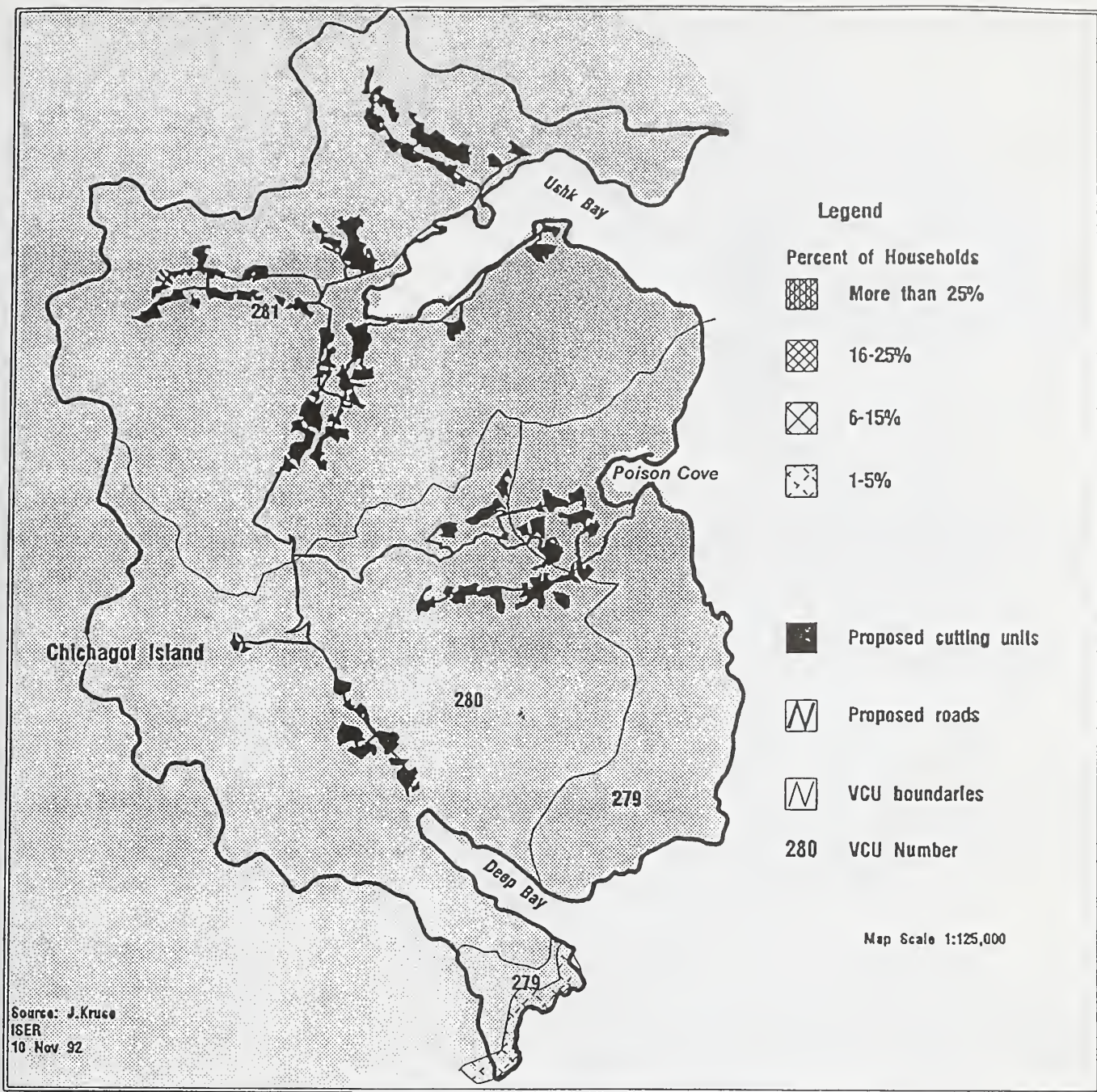
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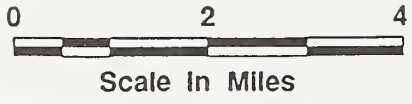
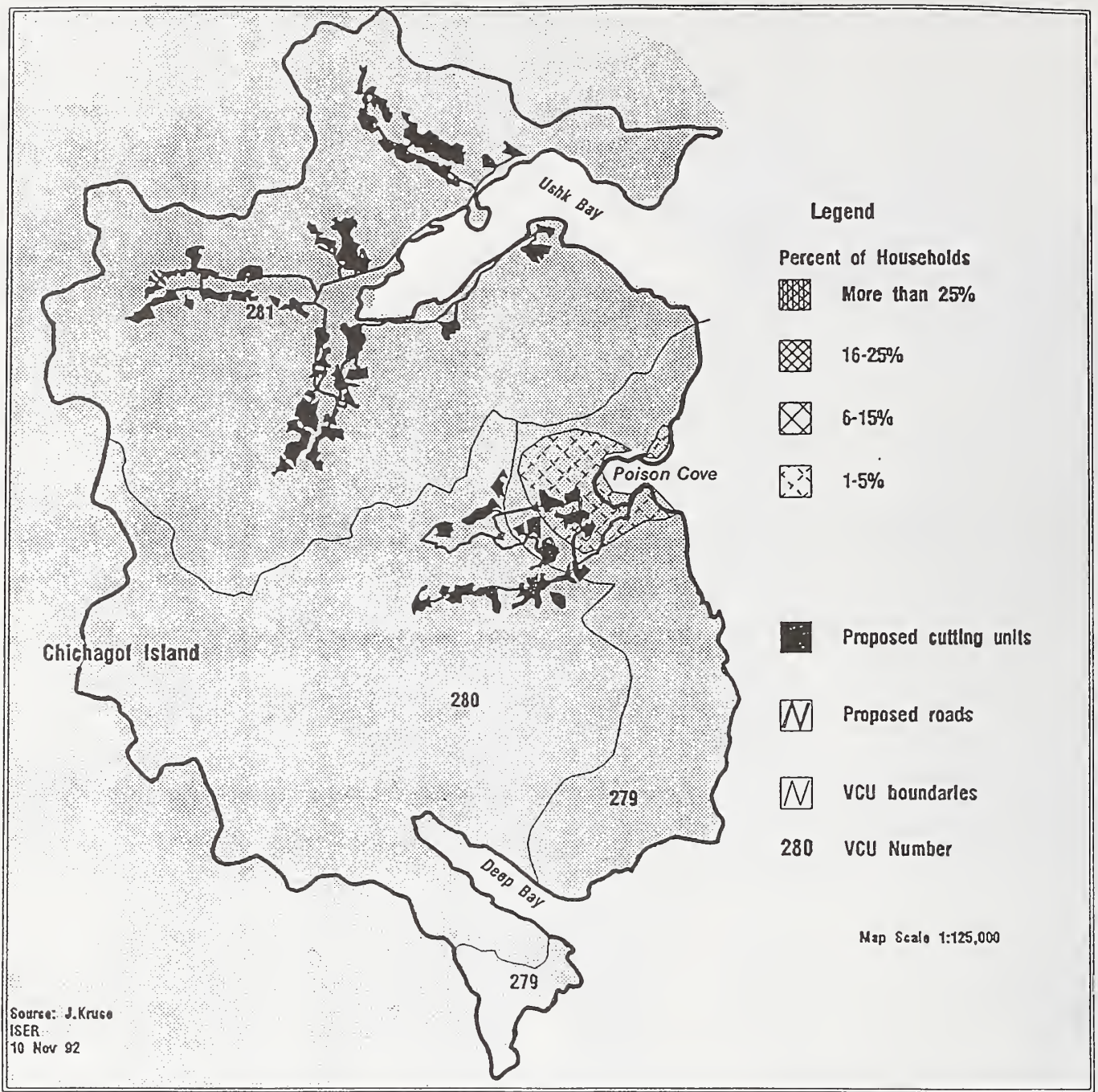
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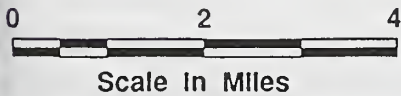
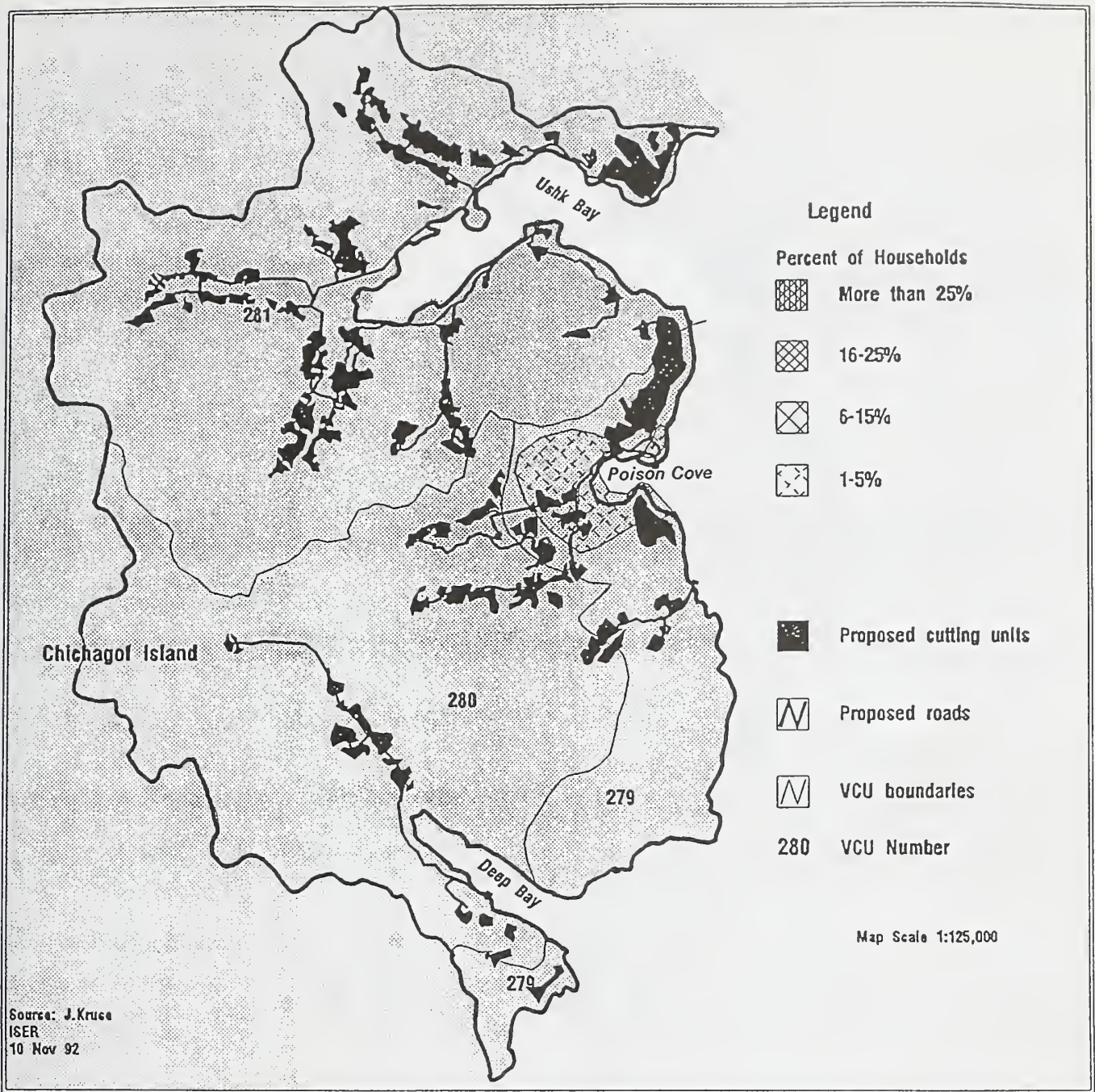
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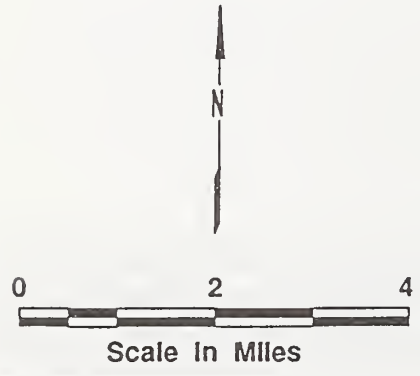
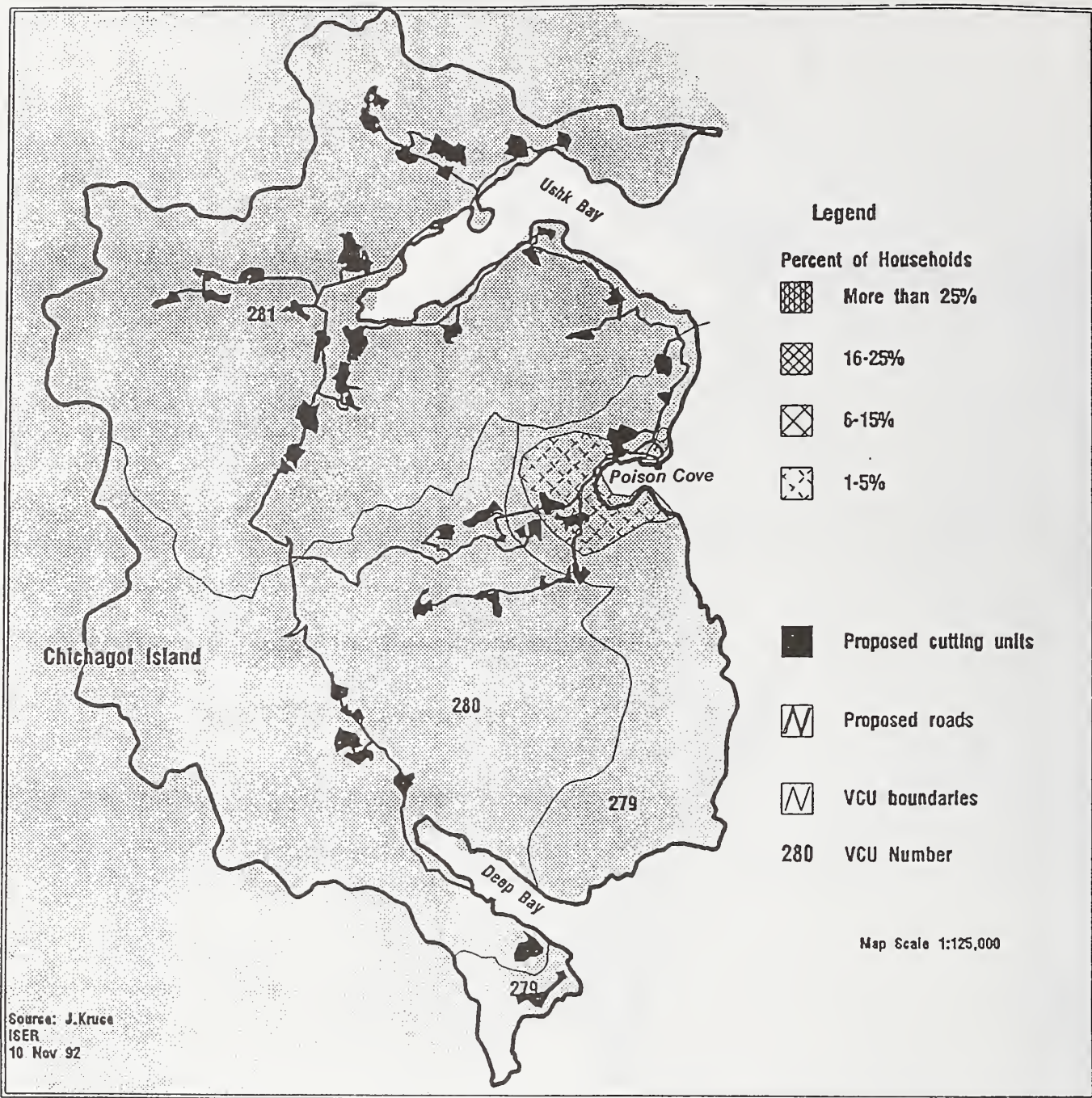


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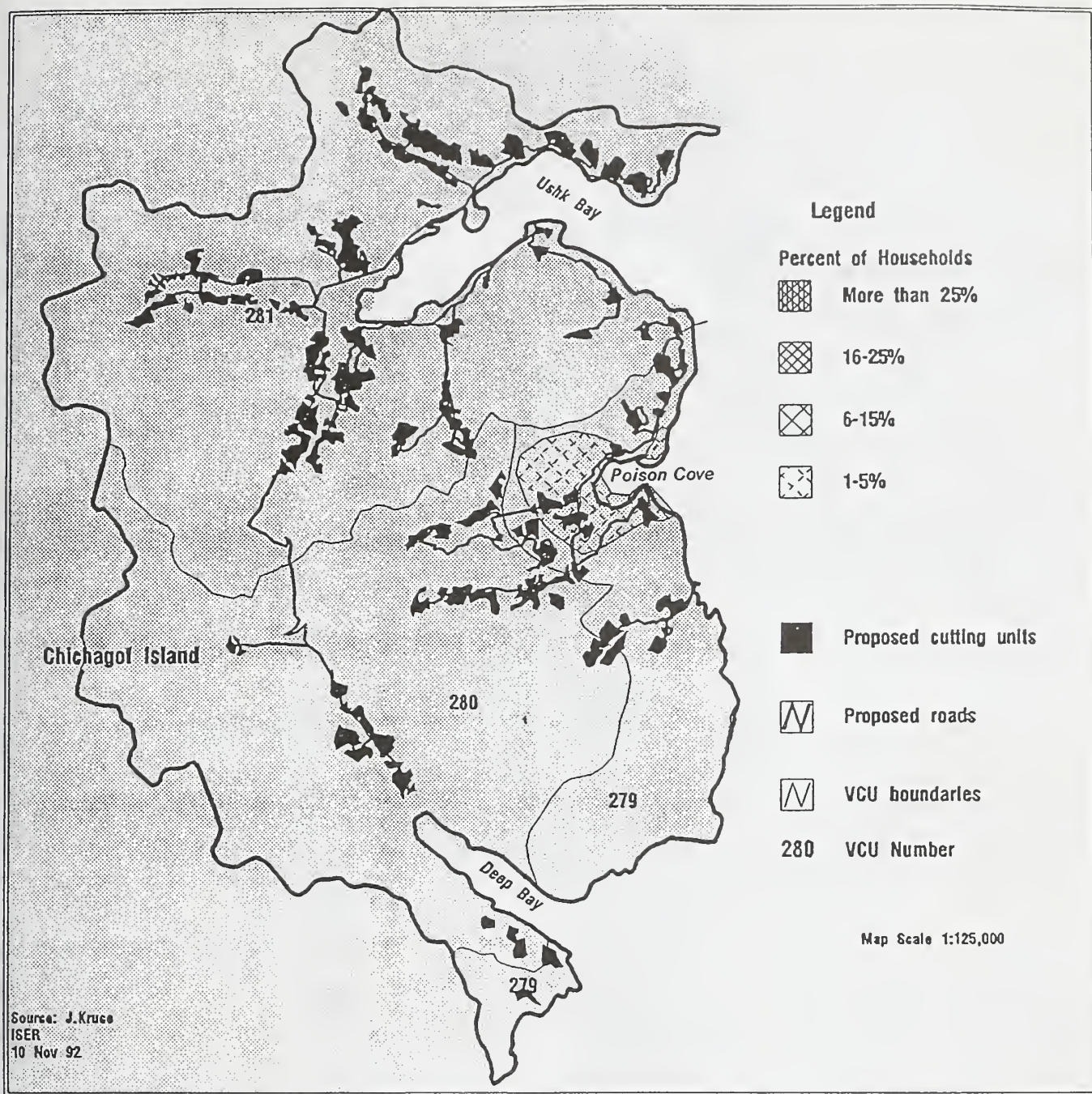


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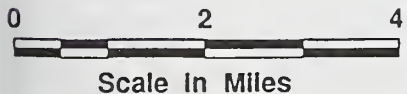
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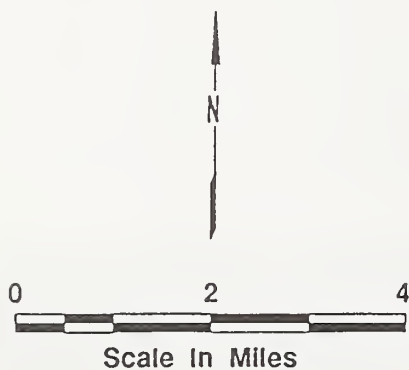
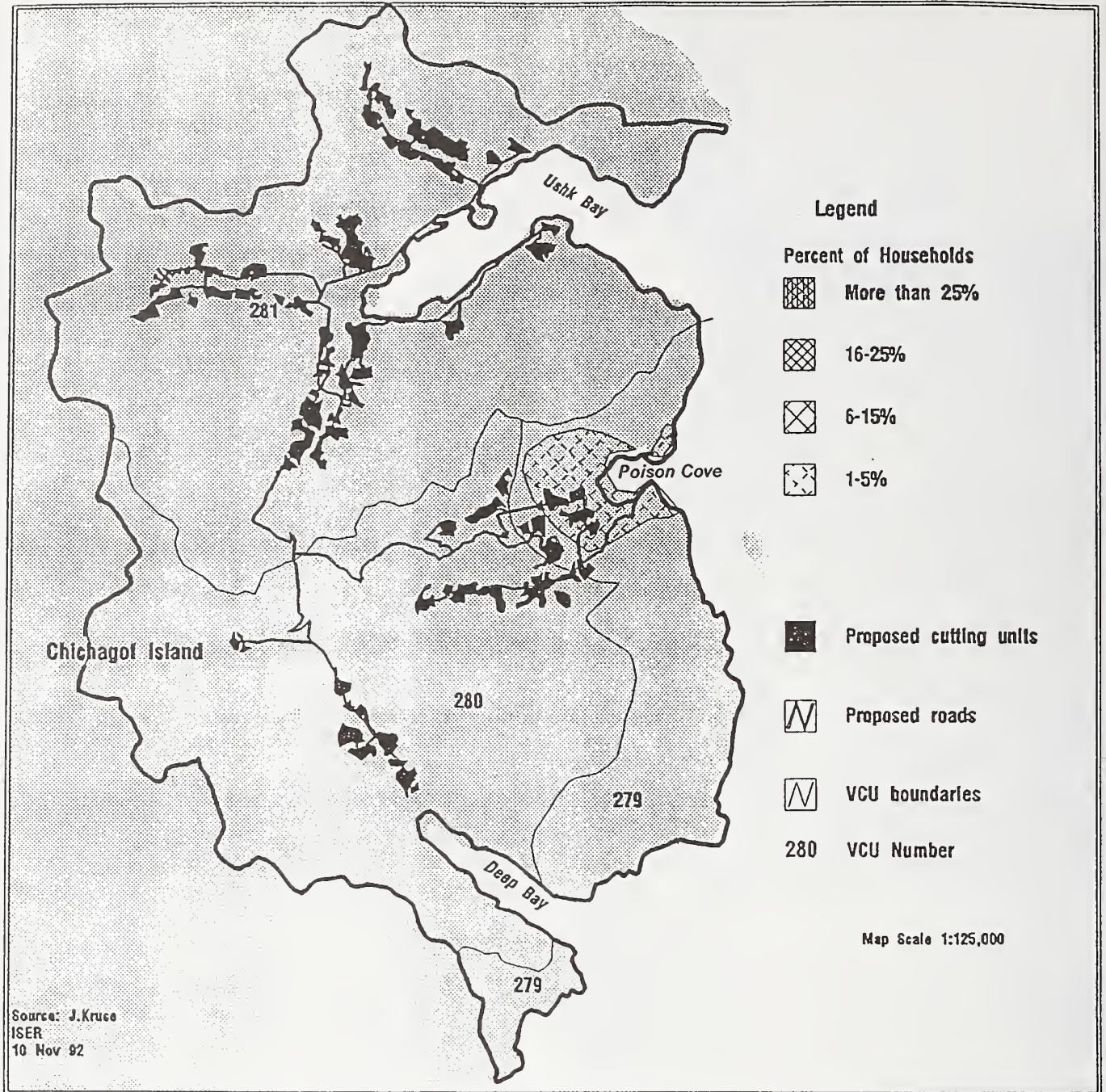
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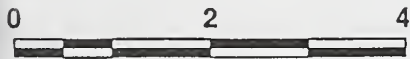
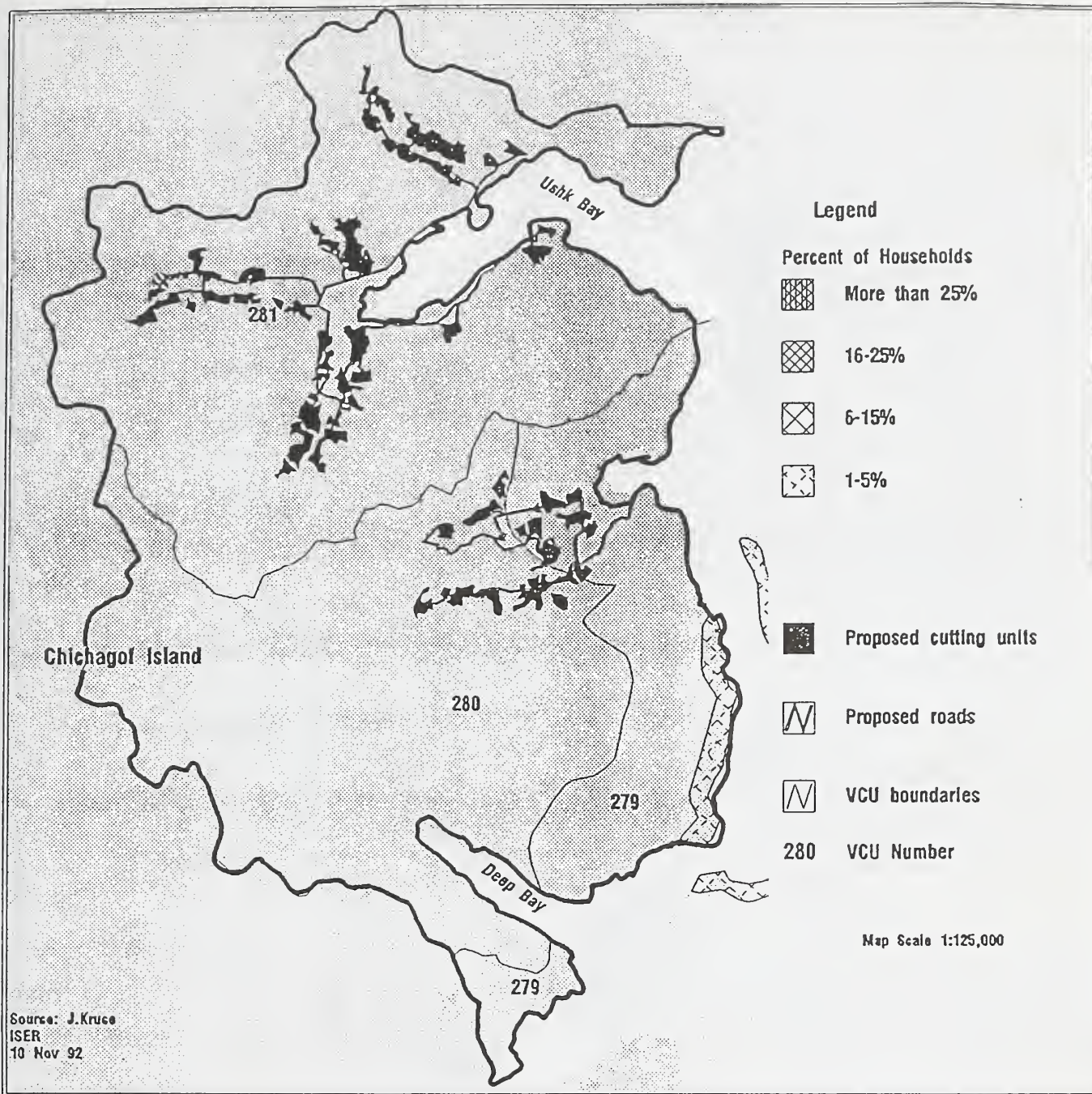
Source: J. Kruse
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10 Nov 92



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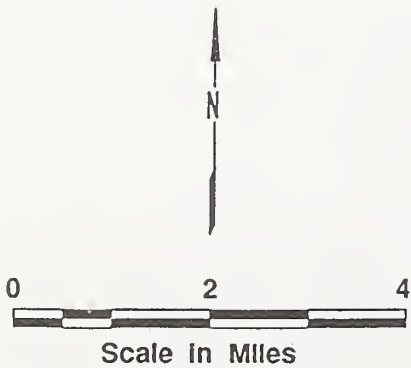
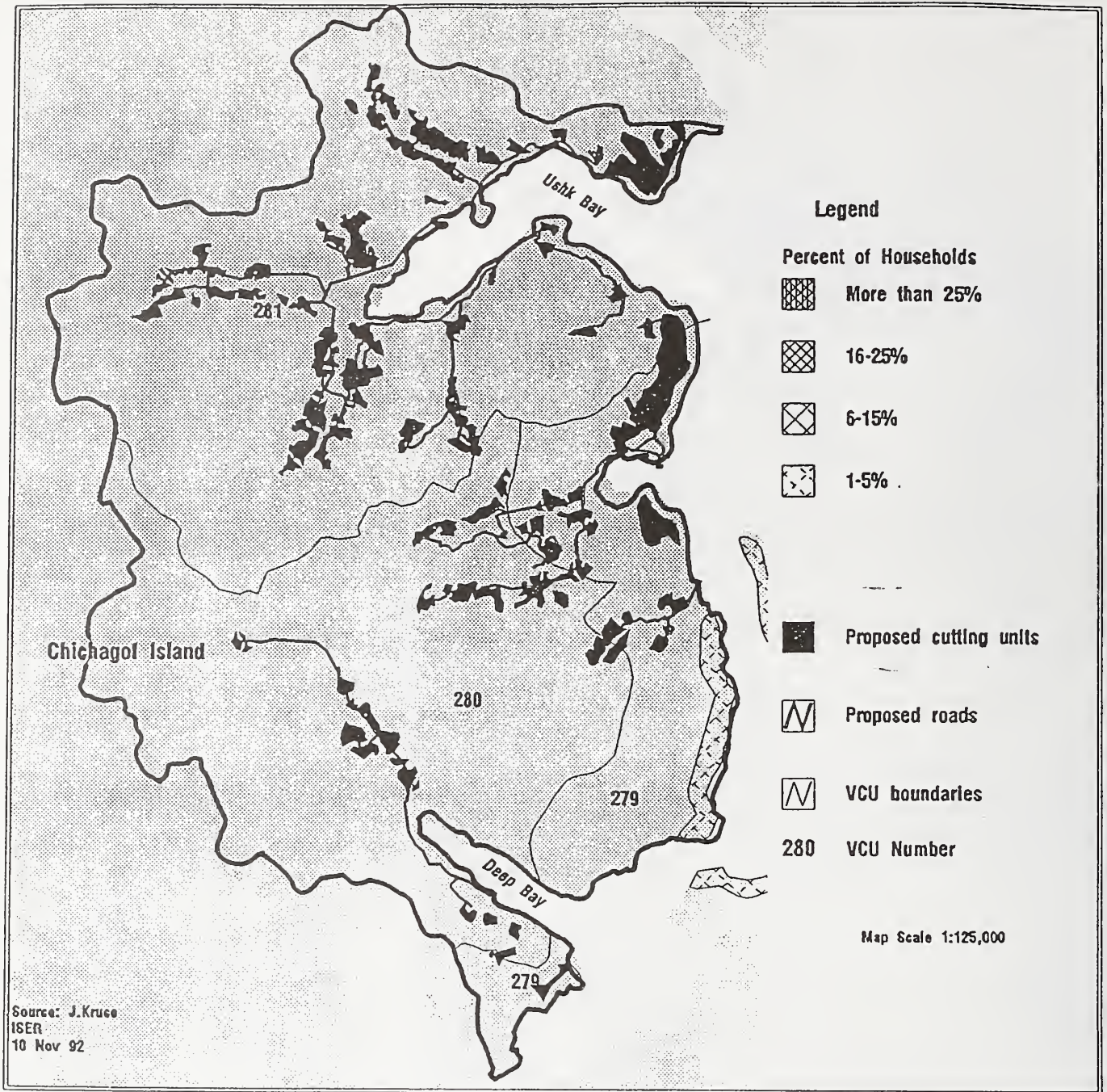
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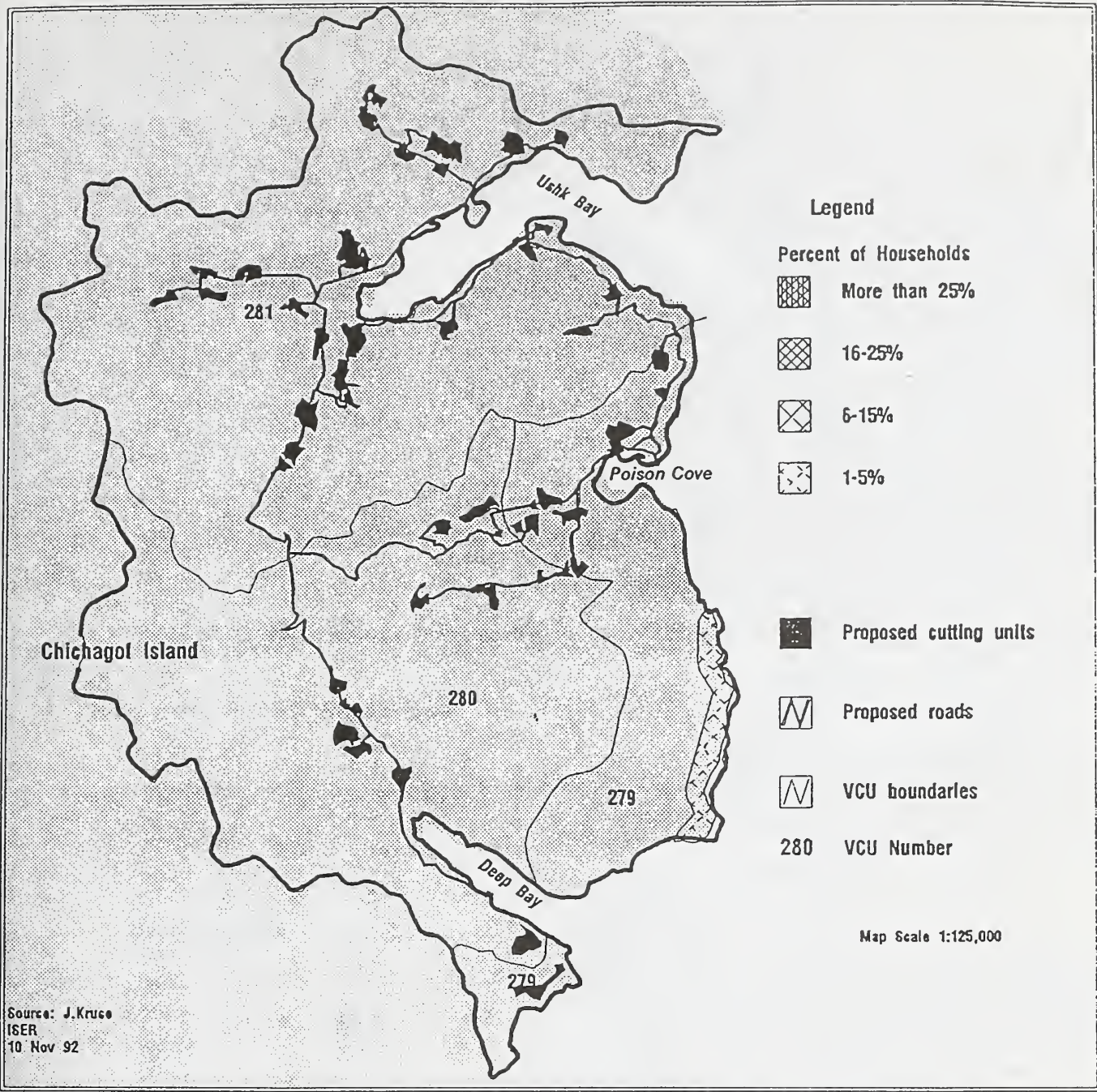
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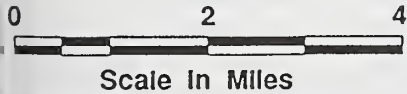
Ushk Bay Project



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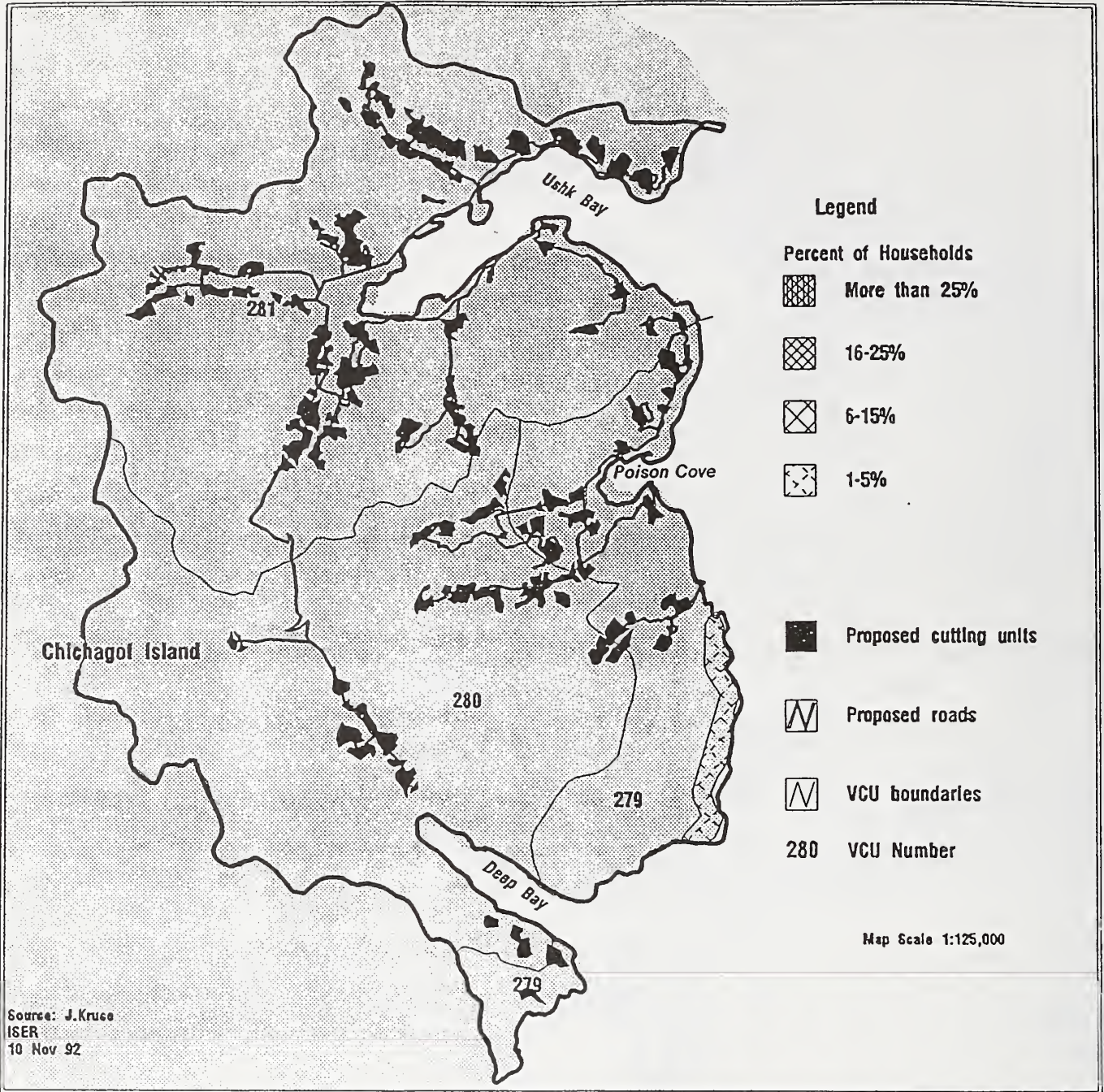


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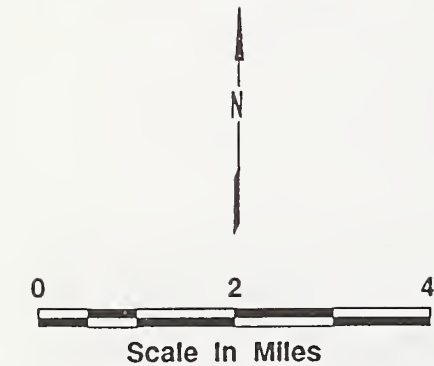
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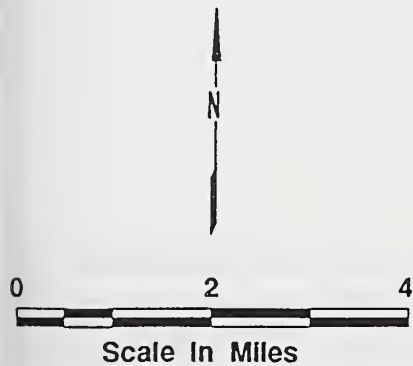
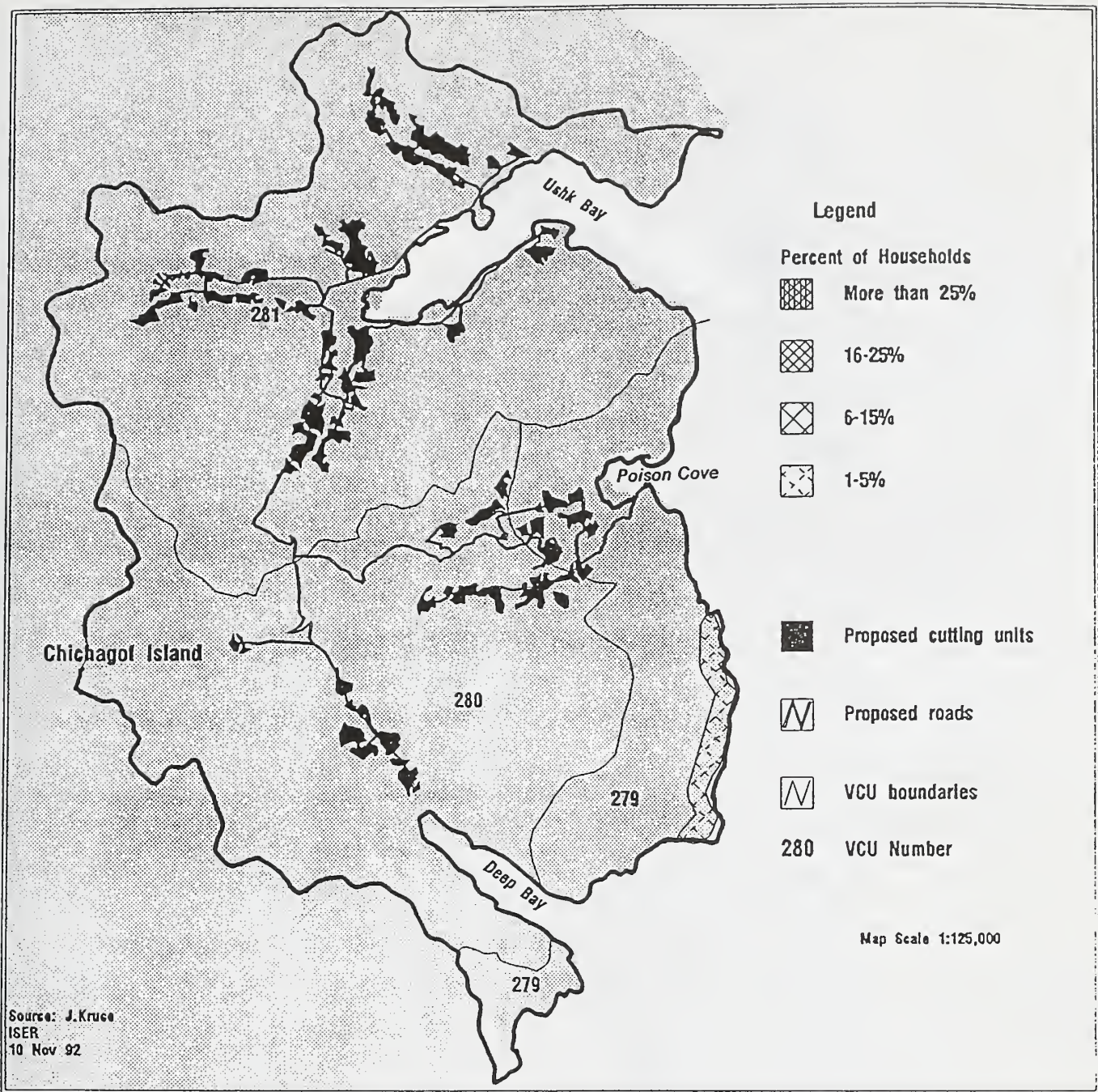
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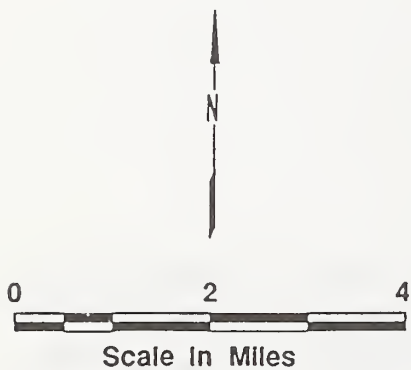
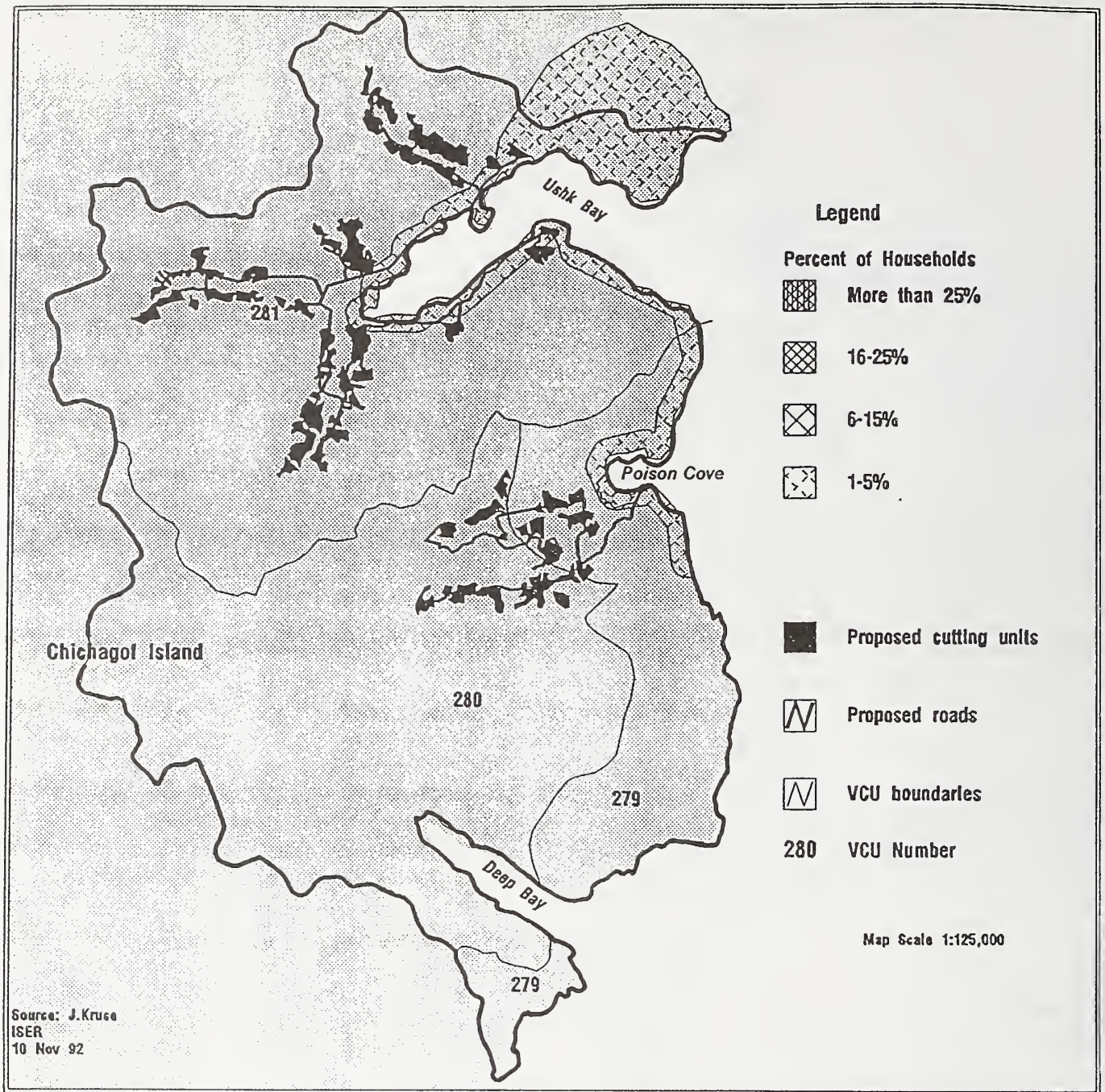
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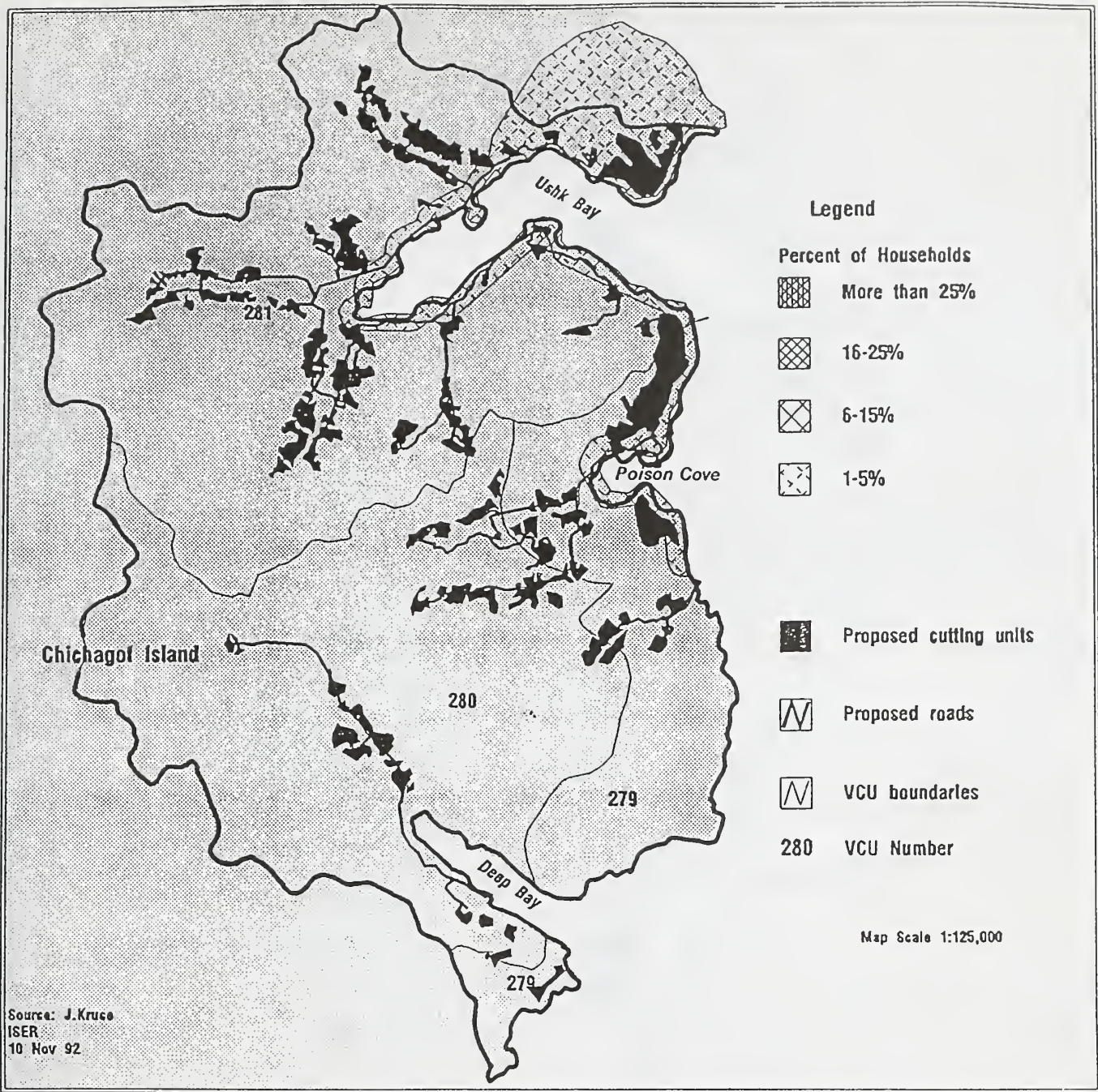


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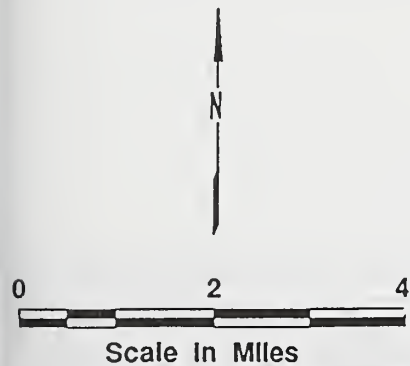
Ushk Bay Project



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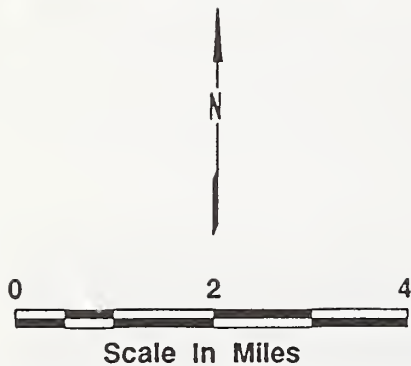
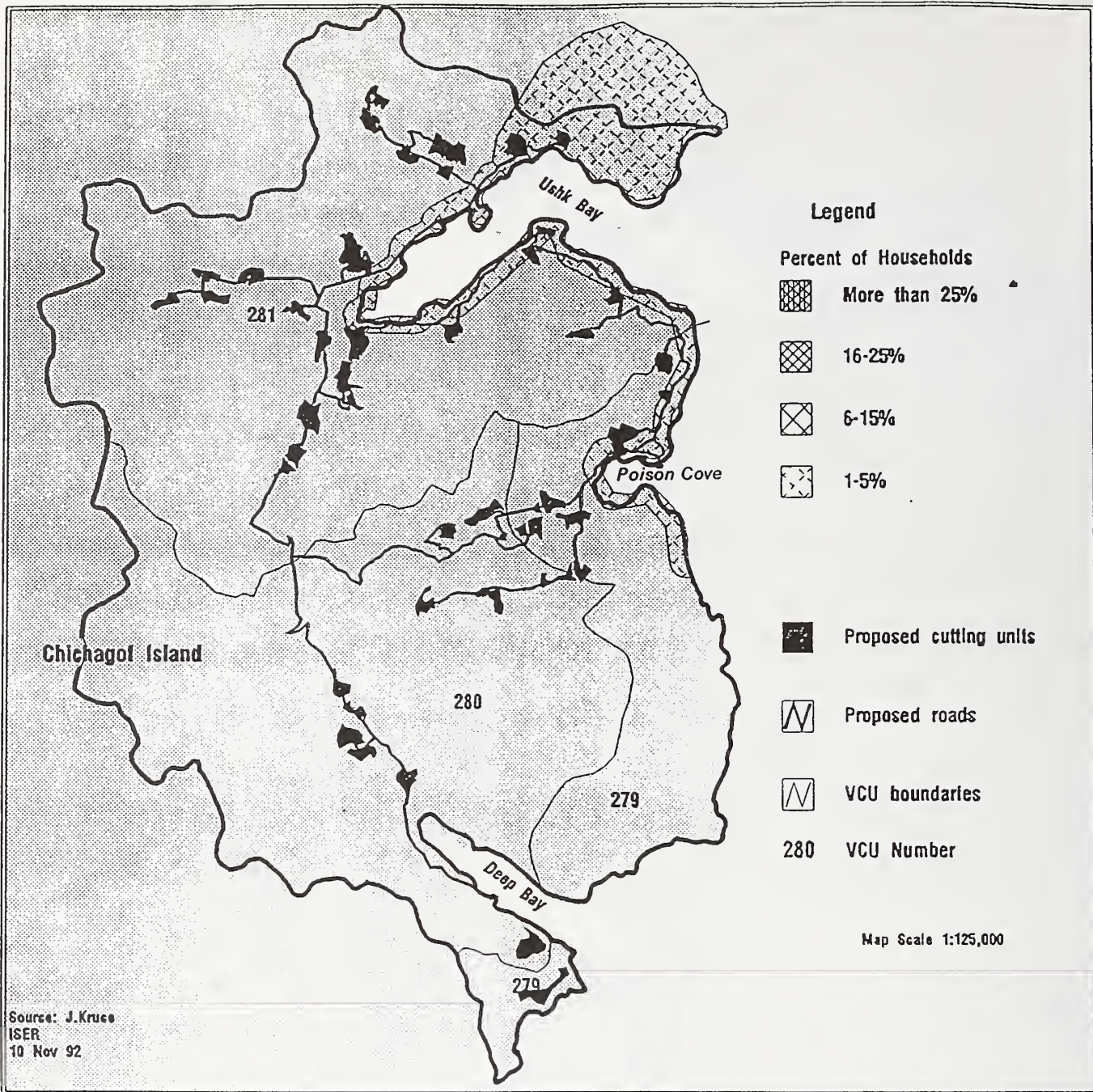


Source: J. Kruse
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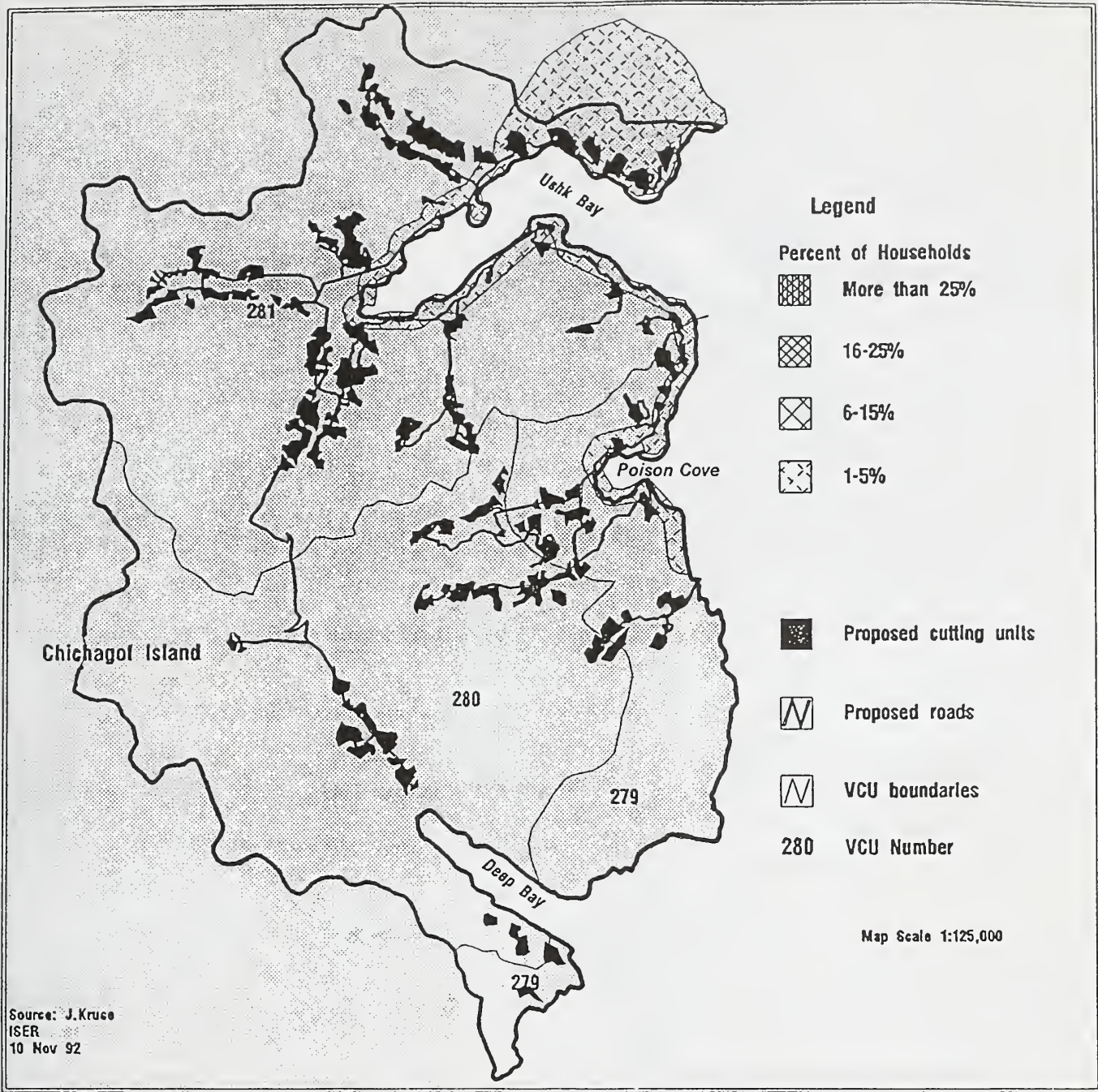


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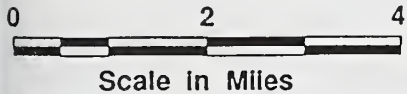
Ushk Bay Project



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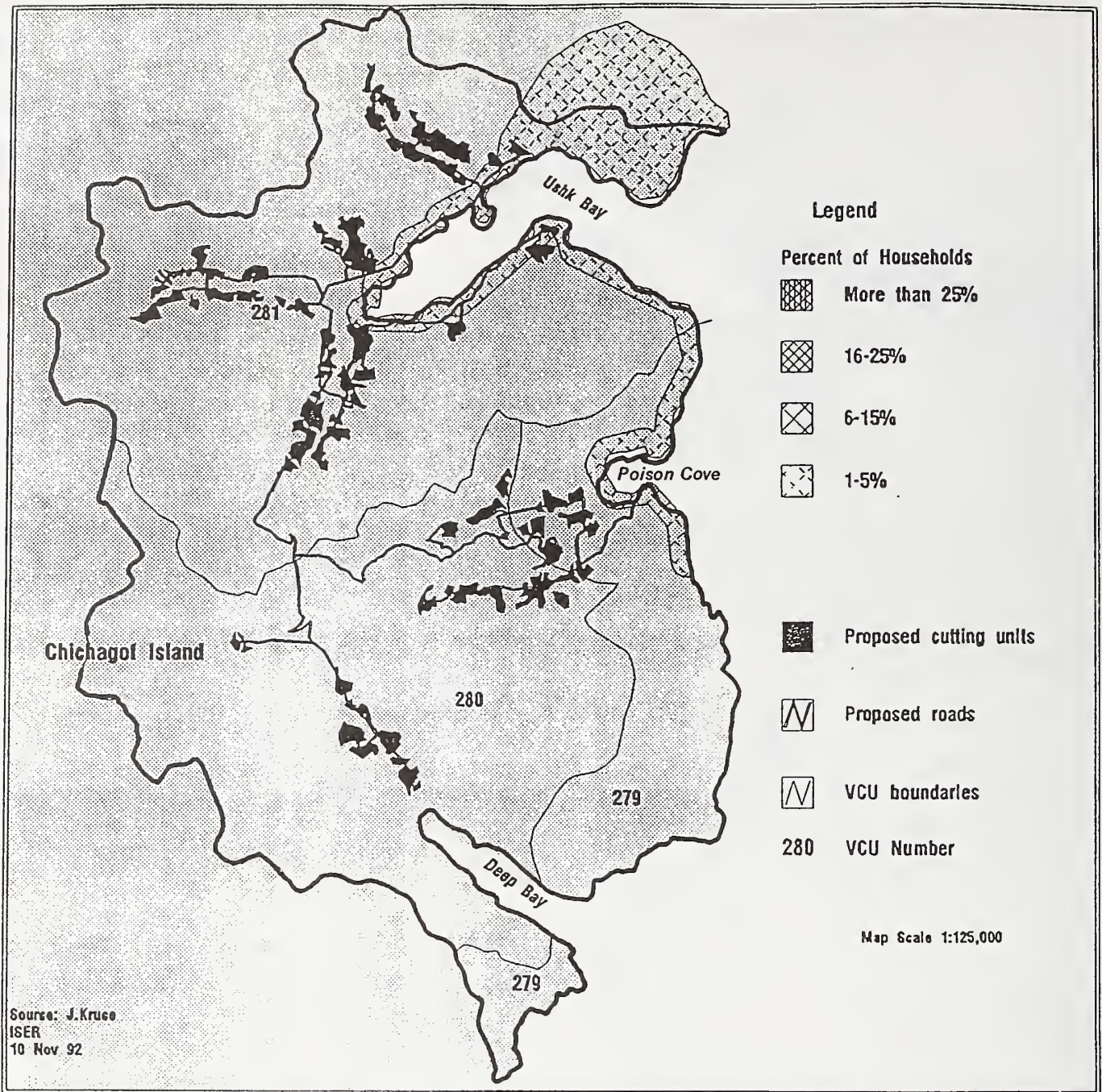


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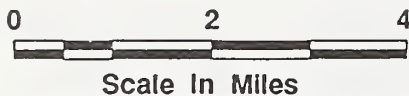


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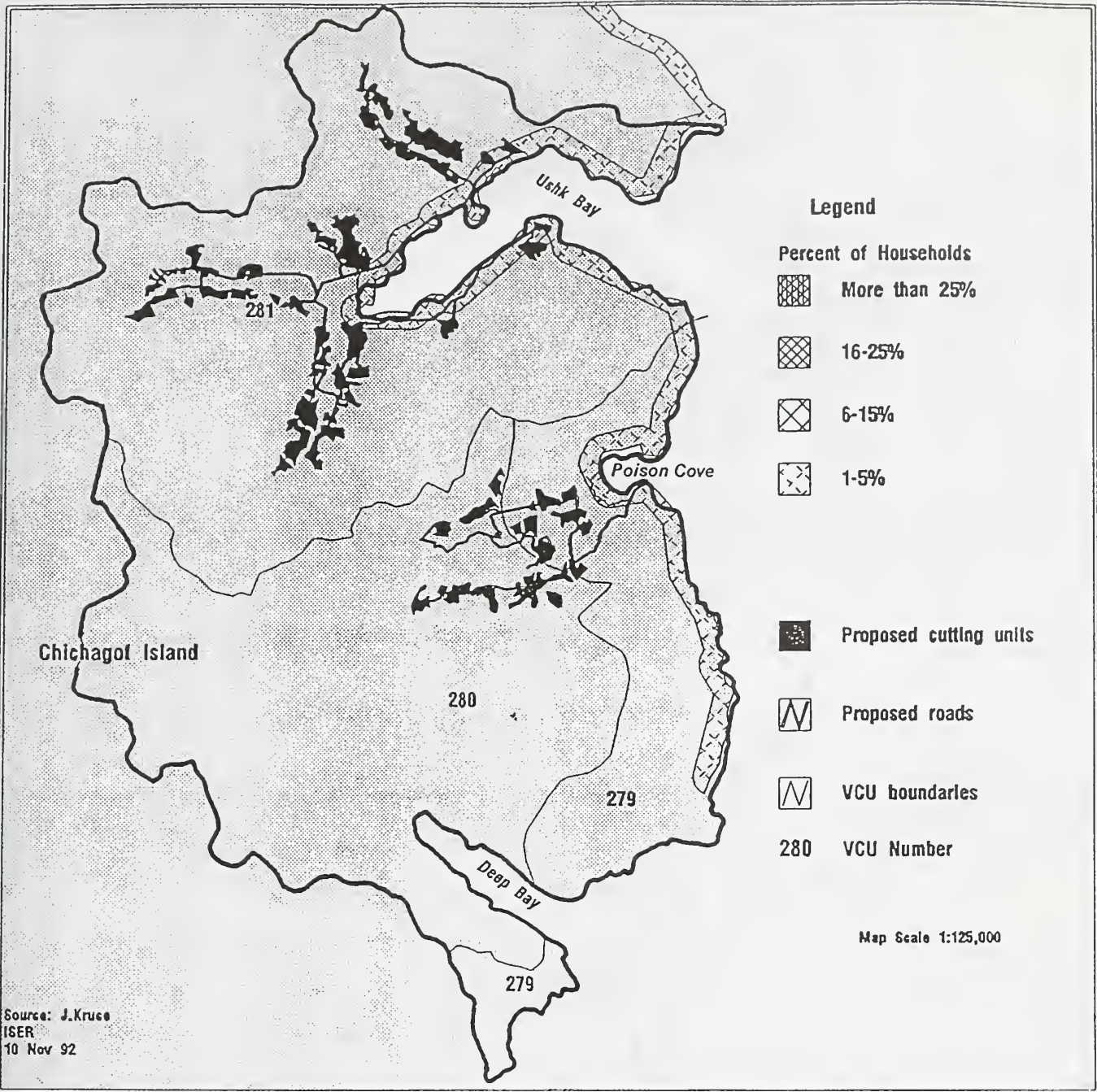


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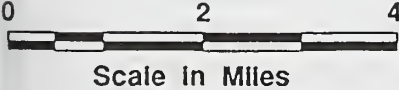
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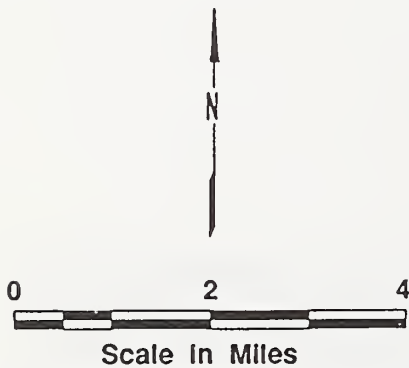
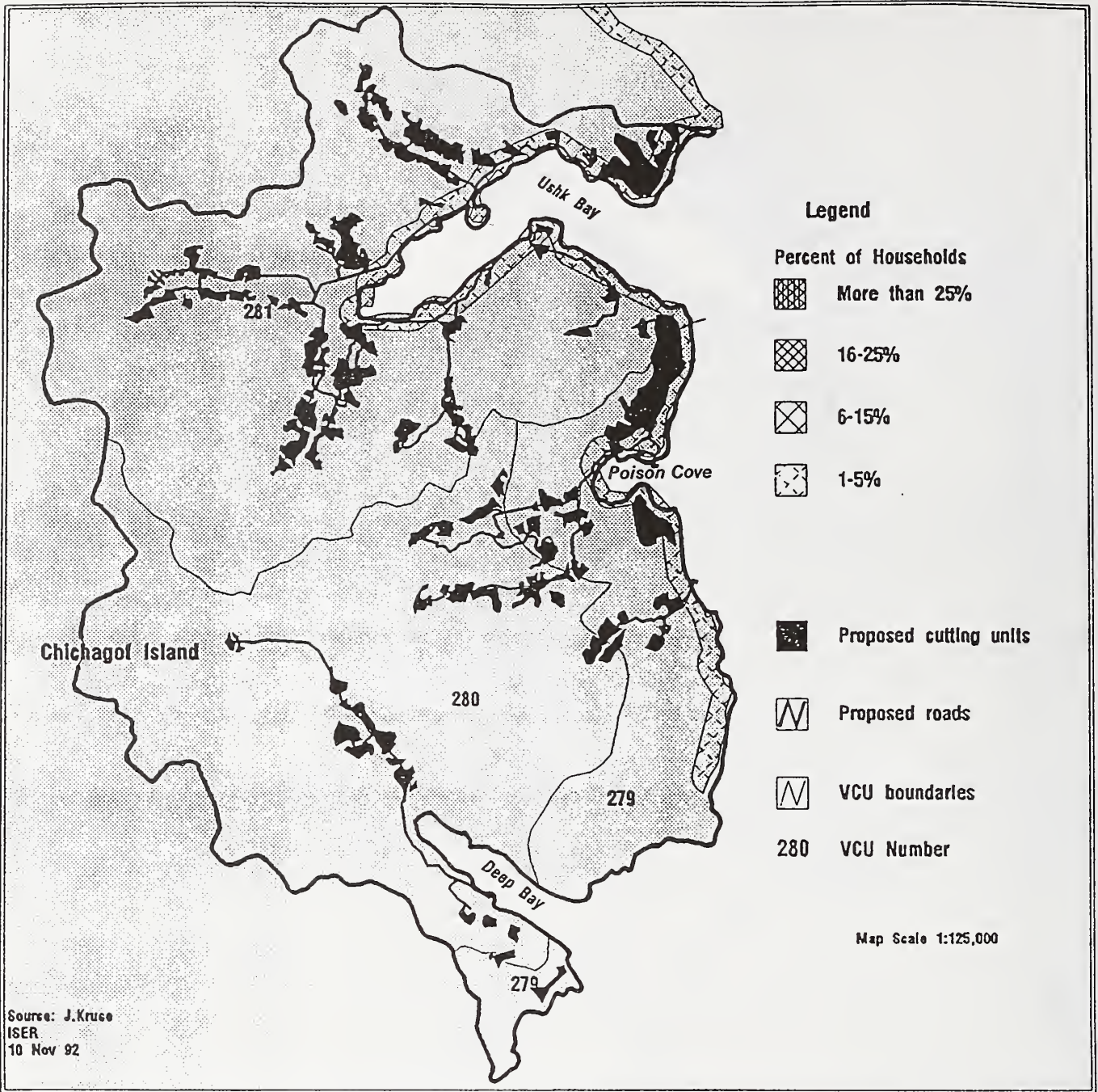


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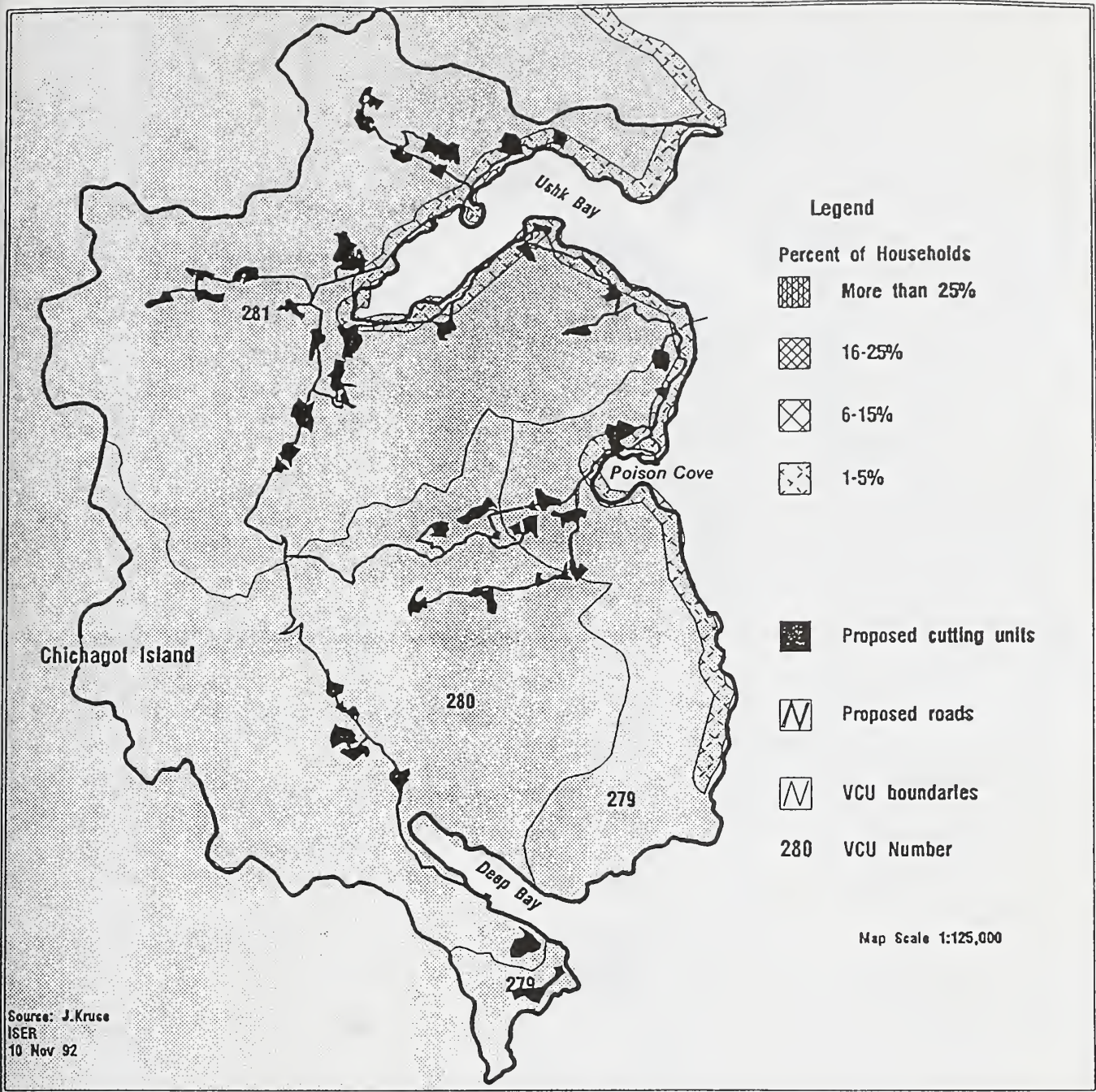


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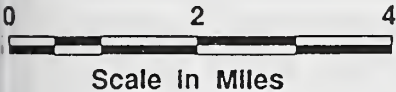
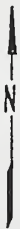
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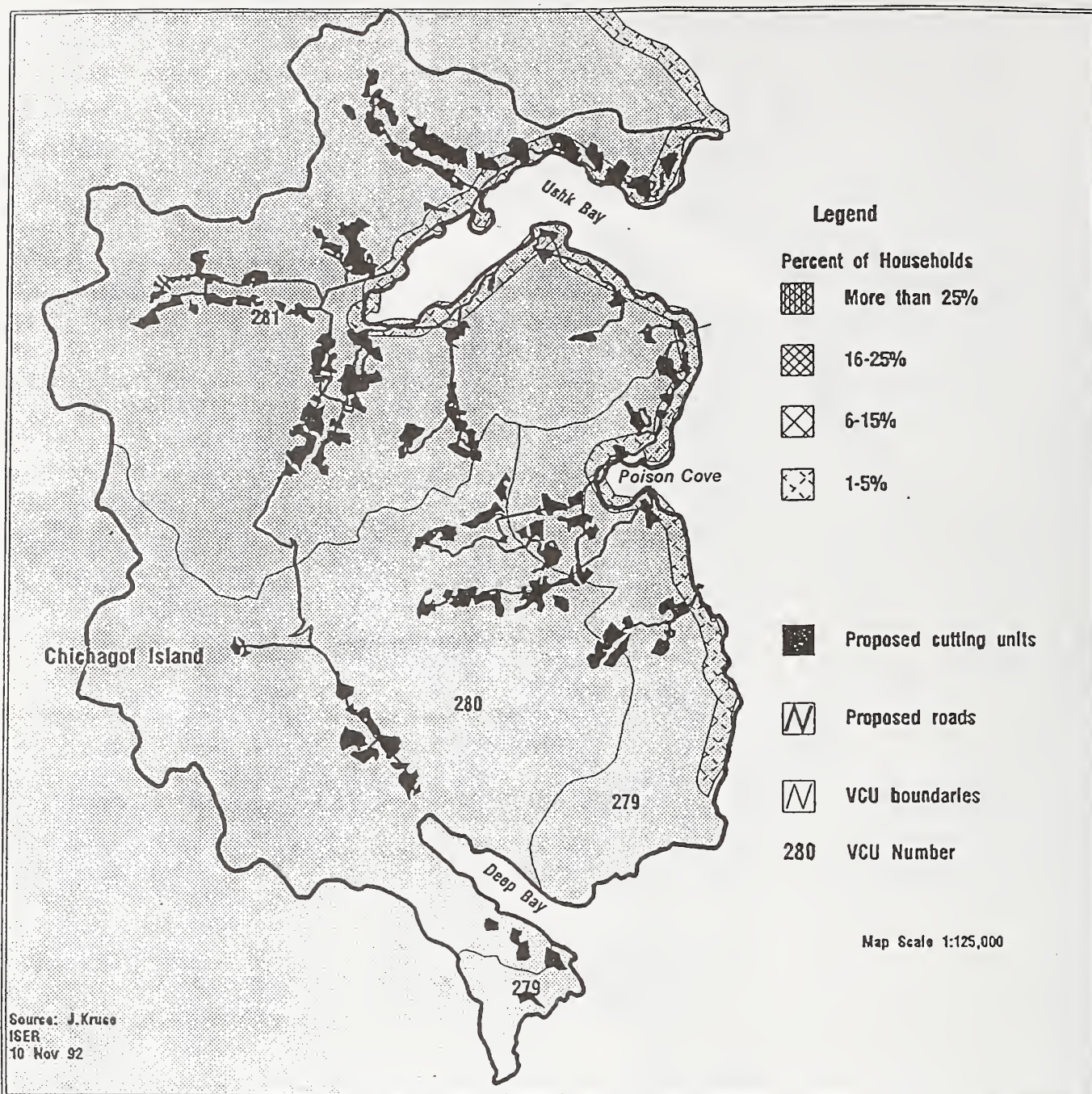


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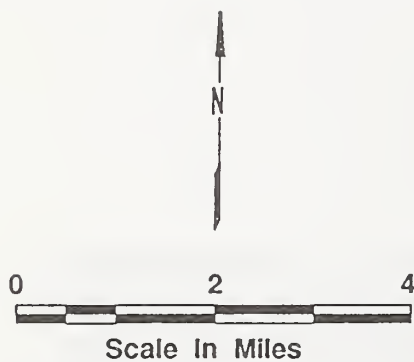
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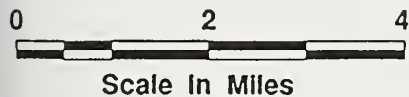
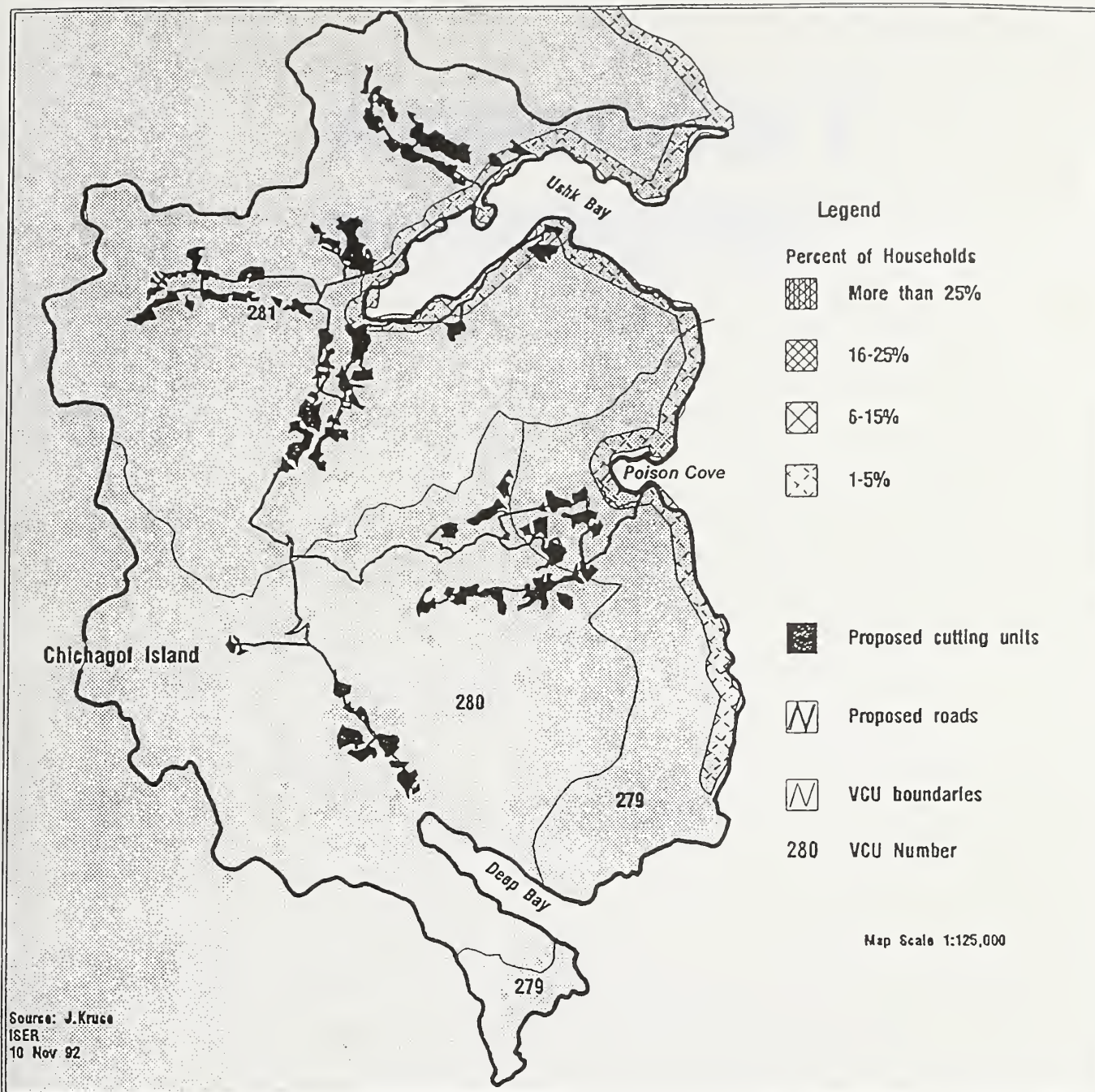
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USHK BAY: ALTERNATIVE F PERCENTAGE OF TENAKEE SPRINGS HOUSEHOLDS EVER HUNTING DEER IN AREA

Ushk Bay Project

Appendix I

Monitoring Plan



MONITORING PLAN

TYPES OF MONITORING

Monitoring the project will help the Forest Service fulfill the resource management objectives outlined in the Ushk Bay EIS. The results will indicate if mitigation and protection measures are being implemented in a timely manner. Whatever alternative is selected, monitoring will continue throughout the project to ensure that Forest Service standards and guidelines are met. Two types of monitoring are described below.

Implementation Monitoring

Implementation monitoring assesses whether the project was implemented as designed and whether it complies with the TLMP. Implementation monitoring actually began during planning of the timber sale. Specialists used aerial photographs as well as computer and on-the-ground inventories to prepare documents known as unit and road cards for each harvest unit and road segment in the project area. Resource specialists noted their concerns on the cards and described how the concerns could be addressed in designing harvest units and road segments. The cards provide a baseline for sale administrators and road inspectors to determine if the specialists' recommendations were implemented.

Implementation monitoring of soil and water resources will largely consist of monitoring the application of Best Management Practices (BMPs) and Aquatic Habitat Management Unit (AHMU) prescriptions. BMPs are defined in the Region 10 Soil and Water Conservation Handbook (USDA FSH 2509.22) as procedures designed to ensure protection of soil and water resources. Watershed specialists will coordinate annual IDT reviews of BMP implementation in the Project Area.

Effectiveness Monitoring

Effectiveness monitoring examines the effectiveness of the project's design, including unit layouts, road location, and mitigation measures that preserve natural resources and their beneficial uses. Each activity is monitored separately, and the resulting data is analyzed and reported by staff responsible for the activity. Implementation and effectiveness monitoring results will be combined into an annual report that will be submitted to the Alaska Department of Environmental Conservation (ADEC).

MONITORING ACTIVITIES

Implementation Monitoring

Following is a description of implementation monitoring activities planned in conjunction with the Ushk Bay project.

Timber Unit Layout

Objective:	To minimize the effects of timber harvest on other natural resources.
Desired result:	Unit card design specifications allow timber harvest to "lay lightly" on the land.
Measurement:	Sale layout employees will follow guidance on the cards. Other resource specialists will assist in unit layouts as indicated on the unit cards. At least 20 percent of the units implemented each year will be sampled for compliance with unit card design. (BMPs 13.3, 13.8)
Threshold:	Unit sample should be within ten percent of the parameters stated on the unit card.
Corrective action:	If needed, determine why unit was not laid out as designed. Document changes if they benefit the environment; change unit layout to match the design if effects are within BMPs.
Responsible staff:	Sitka Ranger District (SRD) sale layout employees.
Record of results:	As-laid-out unit cards.
Annual cost:	Ongoing business. No additional funding needed.
Personnel needs:	None.

Timber Unit Yarding

Objective:	To ensure yarding minimizes the potential risk of soil loss in units with high-hazard soils.
Desired result:	Use of log suspension and yarding away from V-notches to protect high-hazard soils from erosion.
Measurement:	Sale administrator will ensure log suspension occurs in designated units. Specialists may spot check up to 20 percent of the units with high hazard soils for compliance with BMPs. (BMPs 13.2, 13.4, 13.5, 13.9, 13.12, and 13.15)
Threshold:	Exposure of more than ten percent of the affected area to bare mineral soil.
Corrective action:	Stop implementation and resolve among sale administrator, soil scientist, and timber sale operator. If not resolvable at the field level, bring to District Ranger.
Responsible staff:	Soil scientist and SRD sale administration employees.
Record of results:	Daily diaries of engineering representatives and sale administrators, and memos of soil scientist documenting field verification activities.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Road Location and Design

Objective:	To ensure that roads are located as specified in the EIS.
Desired result:	Road survey and design standards capture the stated intent of the EIS, which is to minimize impacts to soil and water resources. (BMPs 14.2, 14.5, 14.6, 14.10, 14.12, 14.14). Post sale road management is implemented as specified in the EIS.
Measurement:	Engineering representatives and road designers will review roads during contract preparation, field design staking and at the close of the timber sale. Final plan-in-hand review will ensure compliance with RMOs.
Threshold:	Less than ten percent variation between plans and field location. No variation from specified road management.
Corrective action:	Correct designs as needed in the pre-implementation stages. During plan-in-hand review, implement changes specified in design if not in compliance. Implement specified road management.
Responsible staff:	Engineering staff, and District Ranger for final approval.
Record of results:	Road survey and designs, and memos noting plan-in-hand review.
Annual cost:	Ongoing business; no additional funding needed.
Personnel needs:	None.

Slope Stabilization

Objective:	To determine if road designs and construction have met the intent of the EIS to reduce risk of mass failure.
Desired result:	Design roads that minimize the potential for road-related mass failures during and after timber harvest. (BMPs 14.7, 14.8, 14.12, 14.20)
Measurement:	Engineering representatives and road designers will review roads during contract operations, assisted by the soil scientist or geotechnical engineer as needed. Final plan-in-hand review will ensure compliance with road design standards. The survey of timber unit areas and roads five years following close of operations will be scheduled by soil scientist or geotechnical engineer.
Threshold:	Less than ten percent variation between plans and implementation.
Corrective action:	Correct designs as needed in the pre-implementation stages. During plan-in-hand review, contractor implements changes specified in design if not in compliance.
Responsible staff:	District Ranger (final approval).
Record of results:	Road survey and designs, and memos noting plan-in-hand review or findings of soil scientist.

Annual cost: \$4,000.
Personnel needs: 0.2 FTE, a geotechnical engineer as needed.

Erosion Control Measures

Objective: To minimize erosion and sedimentation in timber harvest and road construction and maintenance activities.

Desired result: Road survey and design standards capture the stated intent of the EIS, which is to minimize the risk of soil erosion and sedimentation to streams. (BMPs 13.13, 13.16, 13.17, 14.5, 14.11, 14.16, 14.17, 14.18, 14.20, 14.22, and 14.26).

Measurement: Engineering representatives and road designers will review roads during and following contract operations, assisted by soil scientist as needed. Periodic survey following close of operations will be scheduled by the soil scientist.

Threshold: Erosion control methods in place 90 percent of the time.

Corrective action: Correct designs as needed in the pre-implementation stages. During sale operations, contractor will implement changes specified by design guidelines if not in compliance.

Responsible staff: Engineering staff and soils staff (post-harvest).

Record of results: Daily diaries of engineering representative; following sale operations, results recorded by soil scientist in follow up reviews.

Annual cost: \$3,000.

Personnel needs: 0.1 FTE.

LTFs - Petroleum Spills

Objective: To ensure that petroleum spills do not affect marine waters.

Desired result: LTF design and implementation will prevent fuel spillage from entering nearby waters.

Measurement: Routine observation by LTF operator for oil sheen as required by EPA 402 permit. (BMPs 12.8, 12.16, and 14.4)

Threshold: Evidence of oil sheen on surface of water.

Corrective action: Suspend operations and remedy the situation.

Responsible staff: Sale administrator and field engineer.

Record of results: Daily diaries of field inspectors.

Annual cost: Ongoing business; no additional funding needed.

FTE needs: None.

LTF Removal

Objective: To minimize permanent effects of LTFs on the marine environment.

Desired result: Apply mitigation measures by removing temporary LTF structures at completion of contract operations. (Other measures may be stipulated in LTF permits following Record of Decision.)

Measurement: Enforcement of contract specifications at completion of operations.

Threshold: Removal of LTF is incomplete.

Corrective action: Withhold release of performance bond until mitigations are in compliance with contract specifications.

Responsible staff: Sale administrator and engineering representative.

Record of results: Letter authorizing movement of sale operations.

Annual cost: Ongoing business; no additional funding needed.

Personnel Needs: None.

Stream Buffers for Tongass Timber Reform Act

Objective: To ensure compliance with TTRA.

Desired result: Ensure that minimum 100-foot buffers are maintained to protect water quality and stream habitat for all Class I streams and Class II streams that flow directly into Class I streams near timber harvest units. (BMPs 12.6, 12.7, and 13.15)

Measurement: Spot-check 20 percent of all units near anadromous fish streams for compliance with TTRA. Field verification prior to timber harvest.

Threshold: Minimum 100-foot buffer.

Corrective action: Postpone implementation until minimum buffer widths are verified.

Responsible staff: Fisheries Specialist and SRD timber layout and sale administration employees.

Record of results: Sale layout cards for units and daily diaries of sale administrators.

Annual cost: Ongoing business; no additional funding needed.

Personnel needs: None.

Stream Buffers for Streams Not Covered by TTRA

Objective:	To ensure protection of water quality streams.
Desired result:	For all Class II and Class III streams, manage according to the AHMU handbook (FSH 2609.22). (BMPs 12.6, 12.7 and 13.15)
Measurement:	Specialists will spot-check up to 20 percent of the units offered for sale each year. Where units cross these types of channels, log suspension is required in the timber sale classes and yarding occurs away from the V-notches to minimize soil disturbance.
Threshold:	Boundaries along Class II and III streams will stop where planned in 90% or more of the units checked.
Corrective action:	Stop implementation and resolve among sale administrator, timber sale operator, and timber layout employees. If not resolvable at the field level, bring to District Ranger.
Responsible staff:	Hydrology specialist and SRD timber layout and sale administration employees.
Record of results:	As-laid-out cards for units prepared by layout employees, or daily diaries of engineering representatives and sale administrators.
Annual cost:	Ongoing business; no additional funding needed.
Personnel needs:	None.

Eagle Nesting Habitat

Objective:	To ensure Forest Service maintains minimum 330-foot buffers around eagle nest locations or minimizes impacts on nest locations with approved variances.
Desired result:	Protect eagle nest locations.
Measurement:	During sale implementation activities, observe eagle activities in nests close to logging camps and major road crossings, especially where variances to 330-foot minimum buffers were negotiated.
Threshold:	Management activities encroach on 330-foot minimum buffers or on trees with approved variances, causing eagle nesting to cease.
Corrective action:	If it appears eagle nesting is disrupted because of management activities, consult with the U.S. Fish and Wildlife Service (USFWS) to resolve potential problem.
Responsible staff:	Sale administrator and wildlife specialist.
Record of results:	Daily diaries of sales administrators, and memos of wildlife specialists recording findings at nest sites.
Annual cost:	Ongoing activity for sale administration. Site visits by wildlife specialists would cost an estimated \$4,000 per year during active logging operations.

FTE needs: None.

Beach Fringe, Estuary Fringe and Riparian Habitat

Objective: Avoid extending harvest units into beach or estuary fringe habitat. Ensure that travel corridors are protected.

Desired result: Avoid loss of wildlife habitat or other effects beyond the parameters of the preferred alternative.

Measurement: Unit cards identify unit locations, noting if they are adjacent to protected travel corridors, estuaries, or beach fringes. If so noted, the units must not be enlarged in a manner that adversely affects these wildlife features. Twenty percent of units laid out each year will be spot-checked for conformance with unit card design guides.

Threshold: More than 10 percent of the spot-checked units deviate from wildlife concerns stated on cards.

Corrective action: If landing or boundary locations are not feasible, the layout employee will contact a wildlife specialist and resolve desired changes at the time of layout. If still unresolved, bring to the District Ranger.

Responsible staff: SRD timber layout and sale administration employees.

Record of results: As-laid-out unit cards, as part of the pre-sale files.

Annual cost: Ongoing business; no additional funding needed.

Personnel needs: None.

Cultural Resources

Objective: To ensure cultural resources are protected.

Desired result: Resolve conflicts between goal of protecting cultural resources and need for timber harvest, road construction, and log transfer facility construction to conform to the National Historic Preservation Act as amended. Confirm that cultural resources are protected before operations begin.

Measurement: Evaluate impacts on cultural resources discovered after the start of timber harvest, road building, or LTF construction.

Threshold: Evidence of cultural materials discovered during operations.

Corrective action: Cultural resource specialist will ensure known sites are protected prior to implementing any land-disturbing activities. In the event of future discoveries, suspend activities until mitigation and protection measures are designated jointly by cultural resources staff, State Historic Preservation Officer, the Advisory Council on Historic Preservation, and District Ranger.

Responsible staff: Sale layout employees, engineering and road design employees, and field inspectors of timber sale operations. Cultural resource specialist is available for field inspection as needed.

Record of results: New discoveries will be recorded in daily diaries of field inspectors. Cultural resource specialist will develop and maintain appropriate records for new discoveries brought to his or her attention.

Annual cost: Ongoing business; no additional funding needed.

Personnel needs: None.

Effectiveness Monitoring Activities

The following is a description of the effectiveness monitoring activities expected to take place in conjunction with the Ushk Bay Project.

Proportion of Timber Harvest

Objective: To ensure proportion of Volume Classes 6 and 7 can be met by the end of the APC contract for each Management Area (MA).

Desired result: MAs in proportion in compliance with TTRA.

Measurement: Calculate proportion of Volume Class 6 and Volume Class 7 acres harvested based on actual unit location (as of 11-28-90).

Evaluation: Determine if harvest proportion is in compliance with TTRA.

Responsible staff: Timber management staff.

Record of results: Results documented in a short report to Forest Supervisor.

Annual cost: \$500.

Personnel needs: None.

Timber Restocking

Objective: To ensure restocking occurs within minimum time frames stated in NFMA.

Desired result: Adequately restocked timber stands.

Measurement: Stocking surveys at the first, third, or fourth year.

Evaluation: Determination that stocking is adequate. Corrective action (i.e., planting) if natural regeneration is inadequate.

Responsible staff: SRD staff.

Record of results: Annual restocking report (NFMA).
Annual cost: Ongoing business; no additional funding needed.
FTE needs: None.

Site Utilization

Objective: To ensure timber growth on high productive sites is managed for future fiber production.
Desired result: On high site index sites, thin stands aged 15 to 20 years.
Measurement: Conduct surveys of stands aged 10 to 12 years to identify and plan future thinning activities.
Evaluation: Assess and document survey findings. Prioritize and program the best stands for thinning when they are 15 to 20 years old.
Responsible staff: SRD employees.
Record of results: Annual report of overall thinning and precommercial thinning (Supervisor's Office).
Annual cost: Ongoing business; no additional funding needed.
Personnel needs: None.

Post-Sale Road Use

Objective: To determine if RMOs for post-sale use are reflected by actual use.
Desired result: Use of road systems after harvesting conforms to guidelines. Effects of road use on resources do not exceed standards.
Measurement: Random visits to beach heads from May to November.
Evaluation: Determine if use is occurring, if RMOs are being met, and if vehicles are honoring road closures.
Responsible staff: District timber staff, with assistance from recreation specialist as needed.
Record of results: Memo documenting findings of random visits (completed after each visit).
Annual cost: \$2,500.
Personnel needs: 0.1 FTE.

LTFs - Bark Accumulation

- Objective:** To minimize effect on marine environment of transferring logs to salt water.
- Desired result:** Ensure bark accumulation below active LTFs is less than ten cm in depth and one acre in area as prescribed by Alaska Timber Task Force (ATTFS) guidelines.
- Measurement:** Dive and sample transects as required by EPA NPDES permit.
- Evaluation:** Evaluate dive results in light of ATTF guidelines.
- Responsible staff:** Sale administrators during sale operations, and District Fish and Wildlife (F&W) staff after harvesting.
- Record of results:** Dive records and memos analyzing dive results. Possible recommendation for future design and use of LTFs.
- Annual cost:** \$10,000 every other year.
- Personnel needs:** None.

Stream Buffers for Windfirmness

- Objective:** To determine if buffers for protecting stream habitat and water quality are effective and windfirm.
- Desired result:** Complete buffers during lay out and implementation.
- Measurement:** Periodically spot-check buffers following harvest for width and windfirmness using field transects and photogrammetry.
- Evaluation:** Determine if buffers are intact and within ten percent of prescribed width. Note recommendations for future buffer design to improve protection of habitat and water quality.
- Responsible staff:** District F&W staffs.
- Record of results:** Memos noting findings and recommendations.
- Annual cost:** \$2,000.
- Personnel needs:** None.

Stream Crossing Structures

- Objective:** To determine if stream-crossing structures maintain water quality and permit the passage of fish on Class I streams.
- Desired result:** Fish passage and effective design of crossing structures.

Measurement: For all Class I stream crossings, inspect the placement of structures and check for presence of fish above and below the site both during and after the harvest.

Evaluation: Evaluate effectiveness of crossing structures. Note recommendations for improving installation or maintenance of structures.

Responsible staff: District fisheries and engineering staff.

Record of results: Memos noting findings of site visits and recommendations.

Annual cost: \$4,000

Personnel needs: 0.1 FTE.

Sitka Black-tailed Deer

Objective: To determine if deer harvest levels change because of timber harvest operations.

Desired result: Keep harvest levels at the same level, assuming other major changes do not affect population (e.g., a severe winter).

Measurement: Joint analysis of deer harvest ticket data by ADF&G and Forest Service wildlife specialists.

Evaluation: If harvest level drops, assess known factors, including correlation to timber harvest operations or other factors explaining the change (weather, season changes, etc.).

Responsible staff: District wildlife staff and ADF&G biologists.

Record of results: Brief reports by wildlife staff and ADF&G biologists.

Annual cost: \$3,000.

Personnel needs: None.

Brown Bear

Objective: To keep camps clean and educate camp residents in order to minimize the risk of human-bear encounters.

Desired result: Minimize bear kills resulting from property intrusions and self-defense.

Measurement: Review hunting and self-defense kill records, and observe camp compliance with sanitation and incineration guidelines.

Evaluation: Yearly report of bear kills by ADF&G biologist.

Responsible staff: ADF&G and District wildlife staff.

Record of results: Brief reports by wildlife staff or ADF&G biologists.

Annual cost: \$500.

Personnel needs: None.

Cultural Resources

Objective: To protect known and newly discovered cultural resource sites from vandalism.

Desired result: Protect cultural resource sites inside the project area from vandalism.

Measurement: Periodic visits to known sites to ensure that they are not disturbed.

Evaluation: In the event of a disturbance, notify Forest Service archaeologist, District Ranger, and appropriate law enforcement personnel.

Responsible staff: Sale administrators, engineering representatives, and cultural resource specialists.

Record of results: Normally none, unless a violation occurs.

Annual cost: \$3,000.

Personnel needs: None.

Marten and Brown Bear Harvest

Objective: To determine if regulation changes, road closures, or other measures are necessary to maintain viable populations of marten and brown bear.

Desired result: Maintain healthy populations of marten and brown bear.

Measurement: Review ADF&G sealing records the years during timber harvest and two years following completion of harvest activities for martin and brown bear in coordination with ADF&G biologists.

Evaluation: If the ratio of young to mature marten in the harvest is less than 3:2 and the ration of males to females in the harvest is less than 2:1, then evaluate if changes in the harvest regulations or hunter access are necessary and take appropriate actions. If harvest of brown bear exceeds five percent of the estimated populations or if the harvest of female brown bears exceed 2 percent of the estimated females in the population, then evaluate if changes in harvest regulations or hunter access are necessary and take appropriate actions.

Responsible staff: Sitka Ranger District biologist in cooperation with Chatham Area wildlife and ADF&G wildlife biologists.

Record of results: Document coordination and actions taken in a memorandum or propose regulation changes.

Annual cost: \$500

Personnel needs: 0.1 FTE

Additional Sitka Black-tailed Deer Hunting

Objective: To monitor use of the Project Area for deer hunting, deer harvest, and to gather feedback on the impact of Forest Service management activities on deer hunting.

Desired result: Have reliable information available to base management decisions on relative to regulating harvest, managing roads, and the effects of forest management actions on deer hunting.

Measurement: Survey hunters during the fall/winter deer season the years during timber harvest and two years following completion of harvest activities, in the community of Sitka and in the logging camp. Gather information on time and length of hunt, number in hunting party, effort, success, location, mode of transportation, access, presence of deer, presence of other hunters, and other comments, including the influence of timber harvest and timber management activities.

Evaluation: Evaluate if deer hunter survey data indicate harvest effort, kill per hunter, access to preferred locations or comments regarding effects of timber management activities are below objective levels (plus or minus 15 percent of a community's average harvest, a majority of users say that Forest Service actions did not reduce their opportunity to hunt or hunting effort) then take appropriate mitigation measures such as changes in harvest regulations, and road management. Apply any appropriate mitigation or enhancement measures.

Responsible staff: District wildlife staff with assistance by the Chatham Area wildlife biologist and ADF&G biologists.

Record of results: Document results in a memorandum, summary report, or proposed regulation changes.

Annual cost: \$2,000

Personnel needs: 0.2 FTE

Subsistence

Objective: To determine what effects, if any, timber harvest activities in the Project Area have on the gathering of subsistence resources.

Desired result: Maintain or improve the ability to gather subsistence resources in the Project Area.

Measurement: Solicit comments from subsistence users in the Project Area, the years during timber harvest and two years following completion of harvest activities in the communities of Angoon and Tenakee Springs. Work cooperatively with the Southeast Alaska Federal Regional Advisory Council to gather and solicit concerns from rural residents who use the Ushk Bay Project Area for subsistence resource gathering.

Evaluation: If there are concerns expressed from subsistence users, evaluate the magnitude of these concerns and the relationship to timber harvest activities. Formulate an action plan or take other reasonable steps to address concerns.

Responsible staff: Area subsistence coordinator with assistance from area tribal relations coordinator, Sitka Ranger District staff, ADF&G Wildlife and Subsistence Divisions.

Record of results: Note findings and recommendations in a memorandum to the Sitka District Ranger.

Annual cost: 2,000

Personnel needs: 0.1 FTE

Water Quality and Fish Habitat

Buffers for Stream Channel and Fish Habitat Integrity

Objective: To determine if buffers left for protection of stream habitat were effective in protecting channel integrity and fish habitat.

Desired result: Buffers standing with periodic "natural" recruitment of large woody debris into the stream channel.

Measurement: Identify approximately five buffered stream reaches using a stratified random sampling design to serve as permanent index sites. Measure channel stability, large woody debris recruitment, and fish habitat units for each sample reach. Link information to other buffer monitoring efforts.

Evaluation: Evaluate condition of buffers and stream habitat three to five years after harvest. Initiate mitigation actions if necessary and make recommendations for future buffer design criteria. If it appears that buffer strips are not effective, then expand study to evaluate a larger percentage of stream reaches. If necessary, develop a plan for rehabilitation of stream channels and submit for funding.

Responsible staff: District fish and wildlife staff with review by Area hydrologist.

Record of results: Note findings and recommendations in a memorandum or report.

Annual cost: \$3,000

Personnel needs: 0.1 FTE

Mass-wasting Events

Objective: To determine the effectiveness of timber harvest and road BMPs in limiting the occurrence of significant (greater than 10 cu. yd.) mass-wasting events.

Desired result: Timber harvest and road BMPs are effective in limiting significant mass-wasting events after timber harvest.

Measurement: Aerial reconnaissance of the Project Area within the season of harvest and 7 to 15 years after harvest, focusing on recent harvest areas will be conducted to catalog major landslides. Ground survey and aerial photo interpretation techniques will be used to assess slide volume and amount of sediment delivered to streams.

Evaluation: Evaluate what activities may have contributed to triggering significant landslides. Note recommendations for mitigation and recommendations for changes in BMPs for unit and road layout and design.

Responsible staff: District soil scientist and Chatham Area hydrologist.

Record of results: Note findings of site visits and recommendations in a memorandum. Incorporate information gathered into the GIS landslide database.

Annual cost: \$2,000

Personnel needs: 0.1 FTE

Erosion Sources and Control Measures

Objective: To determine road erosion sources and effectiveness of sediment control measures.

Desired result: BMPs and road design are effective in controlling erosion from roads.

Measurement: Investigation should be similar to the study by Doug Swanson and Forestry Sciences Laboratory on Hoonah Ranger District and include sampling two different site conditions over a one to two year period.

Evaluation: Evaluate effectiveness of erosion control measures and note recommendations for improving BMPs and road designs. Develop mitigation action plan if needed.

Responsible staff: District fish and wildlife staff with assistance from the area hydrologist.

Annual cost: \$10,000

Personnel needs: 0.3 FTE



Appendix J

Biological Assessment



BIOLOGICAL ASSESSMENT
for the
USHK BAY EIS

March, 1993

1.0 INTRODUCTION

This biological assessment was prepared for the Ushk Bay Project Area to fulfill the requirements of Section 7 of the Endangered Species Act of 1973, as amended. This assessment evaluates the occurrence and potential effects of the proposed action on four listed species: the humpback whale (*Megaptera novaengliae*), Steller sea lion (*Eumetopias jubatus*), American peregrine falcon (*Falco peregrinus anatum*), and Arctic peregrine falcon (*Falco peregrinus tendrius*). These species were identified by the US Fish and Wildlife Service and the National Marine Fisheries Service as potentially occurring in the project area (Appendix A).

2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

In 1956, the Forest Service and Alaska Lumber and Pulp, now the Alaska Pulp Corporation (APC), entered into a timber sale contract for a 50-year period between 1961 and 2011. The Forest Service has proposed to harvest timber in the Ushk Bay Project Area to help fulfill requirements of the APC Long-Term Timber Sale Contract. The Ushk Bay Project is one of a series of timber harvest projects currently being considered in the APC contract boundary.

2.2 PROJECT LOCATION

The Ushk Bay Project Area is located in the Tongass National Forest on the southwest end of Chichagof Island, approximately 30 air miles north of Sitka. Adjoining the West Chichagof-Yakobi Wilderness, it contains Value Comparison Units (VCUs) 279, 280, and 281 (Figure 1).

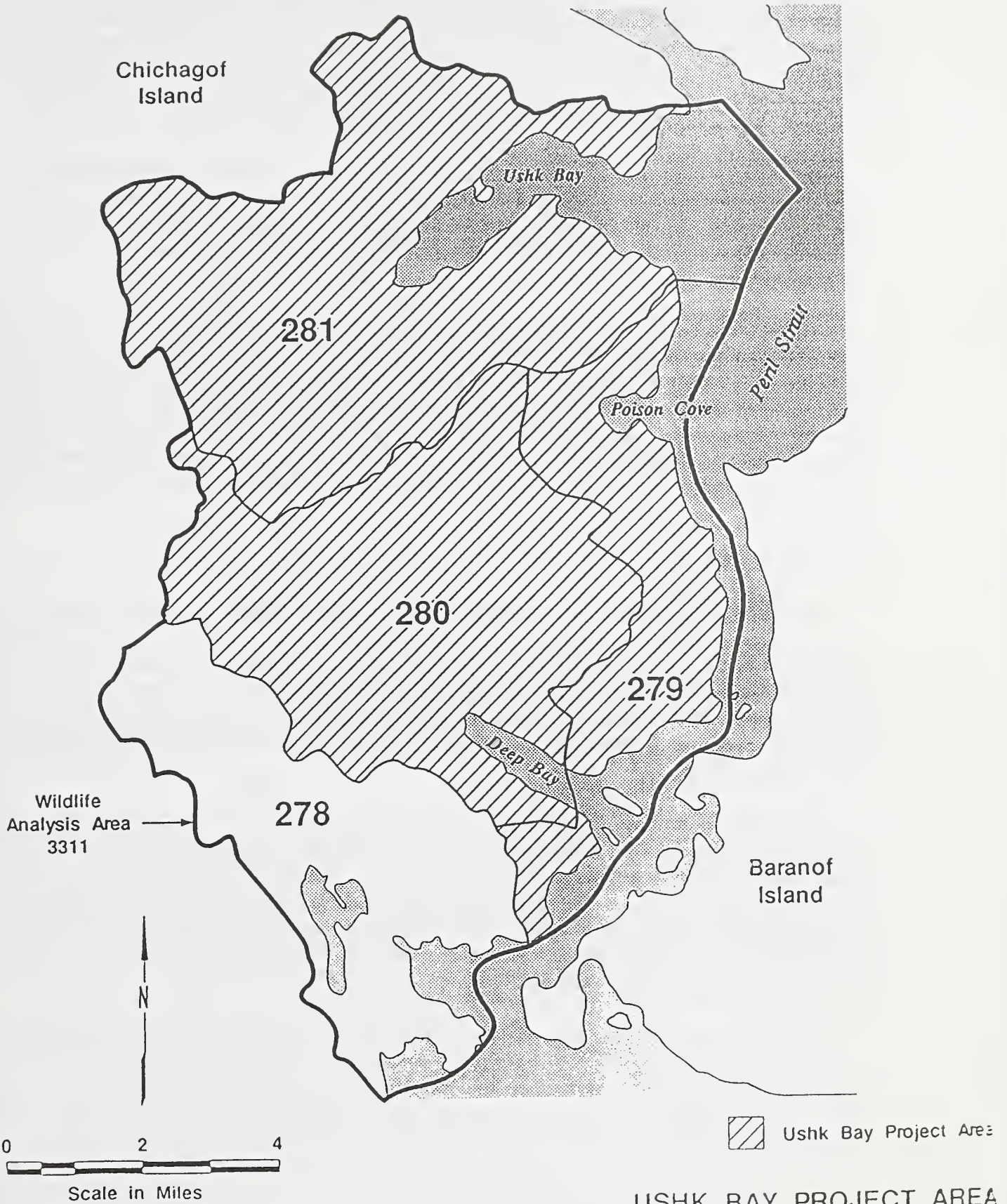
2.3 ALTERNATIVES

Six alternatives, including the no-action alternative, are proposed for the Ushk Bay Project Area. Under the no-action alternative (Alternative A), no roads or log transfer facilities (LTFs) would be constructed, and no timber would be harvested in the project area. The action alternatives, designated Alternatives B-F, provide for road and LTF construction, harvesting timber, and logging camps for project workers. The action alternatives differ primarily according to the number and locations of harvest units, roads, and LTFs proposed. Under the action alternatives, 1,400 to 3,500 acres of old-growth forest would be harvested and 36 to 65 miles of roads would be constructed.

3.0 SPECIES DISTRIBUTIONS AND POPULATIONS

3.1 HUMPBACK WHALE

The humpback whale, a federally listed endangered species, occurs in all oceans of the world. In winter, most humpbacks occur in temperate and tropical waters of both hemispheres. In summer, most humpbacks are in waters of high biological productivity, usually in the higher latitudes.



USHK BAY PROJECT AREA

The humpback whale is the most abundant endangered species of whale that occurs in Southeast Alaskan waters. Humpback whales are regularly sighted in the Inside Passage and coastal waters from Yakutat Bay south to Queen Charlotte Sound (National Marine Fisheries Service 1991a). Humpback whales feed in Southeast Alaska from about May through December although some have been seen every month of the year (Baker, et al. 1985). Peak numbers of whales are usually found in near-shore waters during late August and September, but substantial numbers usually remain until early winter (Baker, et al. 1985).

The local distribution of humpbacks in Southeast Alaska appears to be correlated with the density and seasonal availability of prey, particularly herring (*Clupea harengus pallasii*) and krill (*Euphasia pacifica*, *Thysanoessa spinifera*, and *T. raschii*) (Bryant, et al. 1981, Baker, et al. 1985). Important feeding areas in Southeast Alaska include Glacier Bay, Icy Strait, Stephens Passage, Frederick Sound, Seymour Canal, and Sitka Sound (Baker, et al. 1985; Straley 1990).

Humpback whales were sighted several times in marine waters of the Ushk Bay Project Area during field reconnaissance in June and July 1992. In addition, humpback whales have been observed regularly feeding in and near Deep Bay and Ushk Bay (Straley pers. comm. 1992). Marine waters extending from Deep Bay to Sitka Sound (south of the project area) provide important feeding habitat for humpback whales. As many as 200 individual humpbacks were observed in this area during one fall season (Straley pers. comm. 1992). Whereas the marine waters from Deep Bay to Sitka Sound have been documented as providing important feeding habitat (Straley 1990), the relative importance of Peril Strait and Ushk Bay in and near the project area has not been documented.

3.2 STELLER SEA LION

The Steller sea lion was designated as a threatened species on April 5, 1990. The range of the Steller sea lion extends around the North Pacific Ocean rim from northern Japan, the Kuril Islands and Okhotsk Sea, through the Aleutian Islands and Bering Sea, along Alaska's southern coast, and south to California. The centers of abundance and distribution are the Gulf of Alaska and Aleutian Islands. A major population decline of Steller sea lions has occurred in the central and western Gulf of Alaska, the Aleutian Islands, the Bering Sea, and California. In Southeast Alaska, numbers of Steller sea lions show a stable or possibly increasing trend (National Marine Fisheries Service 1991b).

Steller sea lion habitat includes marine and terrestrial areas that are used for a variety of purposes. The most well known habitats are rookeries where adult animals congregate for pupping and breeding. Rookeries usually occur on beaches of relatively remote islands, often in areas exposed to wind and waves, where access by humans and other mammalian predators is difficult. No haulouts or rookeries occur in the Ushk Bay Project Area. One rookery, White Sisters, is located on the west side of Chichagof Island, approximately 18 miles west of the project area. Counts of sea lions at the White Sisters rookery between 1979 and 1991 ranged from 734 animals to 980 animals (National Marine Fisheries Service 1991b).

No Steller sea lions were observed in marine waters of the project area during reconnaissance, although they were observed in the vicinity of Deep Bay and Poison Cove during previous dive surveys (USDI Fish and Wildlife Service 1974). Steller sea lions are expected to feed in the vicinity of the project area (Pennoyer pers. comm. 1992). Steller sea lions eat a variety of fish and invertebrates. Potential prey items in marine waters of the project area include Pacific cod, Pacific herring, and salmon (Pennoyer pers. comm. 1992).

3.3 AMERICAN AND ARCTIC PEREGRINE FALCONS

The American peregrine falcon is a federally listed endangered species, and the Arctic peregrine falcon is a federally listed threatened species. These two subspecies are primarily associated with interior Alaska for breeding, nesting, and rearing of young. They occur in Southeast Alaska only during migration. The primary habitat factor affecting the presence of peregrine falcons during migration is the availability and abundance of prey. Food sources in Southeast Alaska are likely to include shorebirds, waterfowl, and passerines. Peregrines forage over open sites such as over open water, marshes, grasslands, and shorelines. No peregrines were observed during field reconnaissance. Actual migration routes and patterns, and foraging areas have not been identified in Southeast Alaska.

4.0 DETERMINATION OF EFFECTS

4.1 HUMPBACK WHALE

There are no known studies or literature on the effects of logging activities on humpback whales. The only proposed activities that could potentially affect humpback whales are the development and use of LTFs and associated work camps, and the movement of log rafts from LTFs to mills. Construction and operation of LTFs and other docking facilities are restricted to small, very localized near-shore areas of the marine environment. One to four LTFs are proposed for the Ushk Bay Project Area, which would disturb a maximum of 2.5 acres of marine benthic communities at each LTF.

Construction and operation of LTFs are unlikely to directly affect humpback whales. One humpback whale was found entangled in cables at an inactive LTF site in the Stikine Area during the summer of 1989, the only reported direct effect incident related to LTFs. Humpback whales will not be affected by steel cables at LTFs in the project area because disposal of steel cables in marine waters is prohibited by permits issued for new LTFs.

Nor are construction and operation of LTFs likely to affect prey availability for humpback whales. The permitting process for LTFs requires that monitoring be conducted to maintain water quality and marine circulation and flushing during construction and operation of LTFs. As a result, no impacts are expected to affect humpback whale prey.

However, humpback whales could be disturbed by increased boat traffic associated with LTFs. Log raft towing occurs at relatively constant speeds and directions, and is less likely to elicit avoidance behavior from whales than other types of boating activity. Recreational boating by LTF workers involves frequent changes in speed and direction. Disturbance impacts are likely to be localized in nature, and would be highly variable, depending on many factors, including the size of the bay, water depth, number of boats, and individual behavioral responses of humpback whales. Behavioral responses could include sounding, breaching, evasive underwater maneuvers, and maintaining distance. None of the in-water activities are new to the area; none would increase the level of activity dramatically. The consequences of the disturbance and resulting responses would likely be small and insignificant.

4.2 STELLER SEA LION

There are no known studies or literature on the effects of logging activities on Steller sea lions. No direct effects associated with timber harvests or indirect effects from harassment or displacement have been reported in the Tongass National Forest.

Although the potential impacts of human disturbances on Steller sea lions have not been documented, Steller sea lions could potentially be affected by harassment from activities such as boating, recreation, aircraft, log transfer facilities, and log raft towing. However, harassment is unlikely because the Forest Service standards and guidelines specifically prohibit "taking" of Steller sea lions, which includes any form of harassment of this species (USDA Forest Service 1991, pages 4-68 and 4-69).

LTF construction and operation are unlikely to affect prey availability for Steller sea lions, since these and related activities are restricted to small, very localized areas of the marine environment. In addition, the permitting process for LTFs requires that monitoring be conducted to maintain water quality and marine circulation and flushing during construction and operation of LTFs. As a result, no impacts are expected to affect Steller sea lion prey species.

4.3 AMERICAN AND ARCTIC PEREGRINE FALCONS

The American and Arctic peregrine falcons are unlikely to be affected by any of the proposed alternatives. These two subspecies occur in Southeast Alaska only during migration. Peregrine falcons generally occur in areas of high prey densities, such as seabird rookeries or waterfowl concentration areas, which do not occur in the project area.

5.0 CONCLUSIONS

None of the proposed alternatives are likely to cause any direct effects on humpback whales or Steller sea lions in the project area. Indirect effects may be associated with possible increased disturbance of humpback whales. These effects would be localized and highly variable, depending on many factors. The magnitude of indirect effects on humpback whales is unknown, but likely to be small. Steller sea lions are not likely to be affected because U.S. Forest standards and guidelines are designed to prevent or reduce indirect effects such as harassment or displacement caused by Forest Service management activities (USDA Forest Service 1991, pages 4-68 and 4-69).

Construction and operation of LTFs and other docking facilities are unlikely to affect prey availability for either humpback whales or Steller sea lions because these activities are restricted to small, very localized areas of the marine environment. The permitting process for LTFs requires that monitoring be conducted to maintain water quality and marine circulation and flushing during construction and operation of LTFs. As a result, no impacts are expected to affect humpback whale or Steller sea lion prey species.

The two subspecies of the peregrine falcon occur in the project area as transients and likely would not be affected by the proposed action.

6.0 REFERENCES

- Baker, C.S., L.M. Herman, A. Perry, W.S. Lawton, and J.M. Straley. 1985. Population characteristics and migration of summer and late-season humpback whales (*Megaptera novaeangliae*) in Southeast Alaska. *Marine Mammal Science* 1(4):304-323.
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- USDA Forest Service. 1991. Tongass Land Management Plan. Revision to the Draft Environmental Impact Statement. Proposed Revised Forest Plan. Alaska Region. Series No. R10-MB-149.
- USDI Fish and Wildlife Service. 1974. Southeast Alaska Pre-Project Investigations. Southeast Alaska Ecological Services. Juneau, Alaska.

APPENDIX A

THREATENED AND ENDANGERED SPECIES CONSULTATION



500 MARKET PLACE TOWER, 2025 FIRST AVENUE, SEATTLE, WASHINGTON 98121
(206) 728-0744 FAX: (206) 727-3350

May 12, 1992

U.S. Fish and Wildlife Service
Office of Endangered Species
P.O. Box 21287
Juneau, AK 99802

Request for Threatened and Endangered
Species Data for the Ushk Bay EIS

To Whom It May Concern:

Dames & Moore has been contracted by the U.S. Forest Service to prepare an Environmental Impact Statement for the proposed Ushk Bay timber sale on Chichagof Island. Timber sale activities are proposed to occur within Wildlife Analysis Area 3311 as indicated on the enclosed map.

We are writing to initiate consultation under Section 7 of the Endangered Species Act of 1973, as amended. We would appreciate any information on the occurrence of or potential effects on federally listed threatened, endangered or proposed species or critical habitats for those species that occur within or near the Project Area. If we find that any listed or proposed species or critical habitats may be affected by the project, we will work with the U.S. Forest Service and your office to complete the biological assessment and Section 7 consultation.

Please contact me at (206) 728-0744 if you have any questions or require additional information for your response.

Sincerely,

DAMES & MOORE

A handwritten signature in cursive script, reading "Vanessa L. Artman".

Vanessa L. Artman

Attachment (1): Map of Ushk Bay project area



500 MARKET PLACE TOWER, 2025 FIRST AVENUE, SEATTLE, WASHINGTON 98121
(206) 728-0744 FAX: (206) 727-3350

May 12, 1992

National Marine Fisheries Service
U.S. Department of Commerce, NOAA
P.O. Box 21668
Juneau, AK 99802-1668

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Please contact me at (206) 728-0744 if you have any questions or require additional information for your response.

Sincerely,

DAMES & MOORE

A handwritten signature in cursive script, appearing to read "Vanessa L. Artman".

Vanessa L. Artman

Attachment (1): Map of Ushk Bay project area



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Fish and Wildlife Enhancement
Ecological Services Juneau
Southeast Alaska Ecological Services
P.O. Box 021287
Juneau, Alaska 99802-1287
(907) 586-7240

DAMES & MOORE
SEATTLE
JUN 10 1992

IN REPLY REFER TO:

Vanessa Artman
Dames and Moore
500 Market Place Tower
2025 1st Avenue
Seattle, WA 98121

June 8, 1992

Dear Ms. Artman:

This responds to your May 12, 1992 letter requesting information about the occurrence of and potential effect on threatened or endangered species, and those proposed for such listing, that may occur within the proposed Ushk Bay Timber Sale, Wildlife Analysis Area 3311, Chichagof Island, Alaska.

Based on currently available information, the following endangered, threatened or candidate species may occur in the proposed project area.

<u>Common Name</u>	<u>Scientific Name</u>	<u>ESA Status</u>
American peregrine falcon	<u>Falco peregrinus anatum</u>	endangered
Arctic peregrine falcon	<u>Falco peregrinus tundrius</u>	threatened
Marbled murrelet	<u>Brachyramphus marmoratus</u>	category 2 candidate
Northern goshawk	<u>Accipiter gentilis</u>	category 2 candidate
Harlequin duck	<u>Histrionicus histrionicus</u>	category 2 candidate

Both subspecies of the peregrine falcon would occur in the project area as transients, primarily during seasonal migration and likely would not be adversely affected by the proposed action.

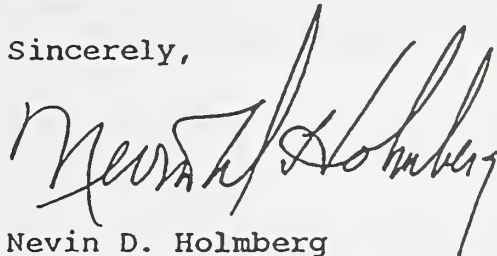
Three category 2 candidate animal species are likely to occur in the proposed project area, including the Queen Charlotte goshawk, marbled murrelet, and Harlequin duck. The marbled murrelet and Queen Charlotte goshawk are typically associated with old growth forest habitat, which provides one or more critical elements of their life requirements. Where the proposed actions would result in loss of old growth forest habitat, it is likely there would be significant adverse impacts on these species. Harlequin ducks nest adjacent to inland rivers and streams and commonly use near shore coastal waters throughout the year. The affect of the proposed actions on Harlequin ducks would depend on the nature and time of site specific land alteration. It is likely that significant perturbation of near stream habitat, particularly

during the nesting period, would adversely impact Harlequin ducks within the project area.

There are several category 2 plant species potentially occurring in the project area, including Aster yukonensis, Calamagrostis crossiglumis, Carex lenticularis var. dolia and Montia bostockii. Information concerning these or other sensitive plant species is limited, but the FEIS should include a review and discussion of candidate plants.

These comments are offered for endangered and threatened species for which the U.S. Fish and Wildlife Service has responsibility under Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1521 et seq.) and its amendments. The above comments are specific to the Endangered Species Act and do not reflect agency concerns regarding other organisms or habitats for which the Service has legislated responsibilities.

Sincerely,

A handwritten signature in black ink, appearing to read "Nevin D. Holmberg". The signature is written in a cursive style with a large, prominent initial "N".

Nevin D. Holmberg
Field Supervisor

cc: ADF&G, Douglas
NMFS, Juneau



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

May 26, 1992

DAMES & MOORE
SEATTLE

MAY 29 1992

Vanessa L. Artman
Dames & Moore
500 Market Place Tower
2025 First Avenue
Seattle, Washington 98121

Dear Ms. Artman:


Thank you for your letter requesting a list of threatened and endangered species present in the vicinity of the proposed Ushk Bay timber sale on Chichagof Island. Both the endangered humpback whale (Megaptera novaengliae) and threatened Steller Sea Lion (Eumetopias jubatus) are present in the area.

Ms. Jan Straley of Sitka has been studying humpback whale activity in the surrounding waters of the proposed timber sale and has documented fall and winter feeding there, especially in Deep Bay. Ms. Straley should be consulted as you investigate the potential effects of the timber sale on humpback whales and may be contacted at P.O. Box 273, Sitka, AK 99835 and (907) 747-5431.

A list of Steller sea lion haulouts and rookeries in Southeast Alaska is enclosed along with a map indicating those closest to the project area. Although none of these sites occur within the boundaries of the timber sale, Steller sea lions would be expected to use the area for feeding; walleye pollock, Pacific cod, flatfish, Pacific herring, Pacific salmon spp., euchalon, and cephalopods are potential prey items. Therefore you should consider the possible effects of the project to these Steller sea lion food resources.

For your information, we are also enclosing copies of the Final Recovery Plan for the Humpback Whale and Draft Final Revision of the Recovery Plan for the Steller Sea Lion (Eumetopias jubatus). We look forward to your assessment of the impacts of these activities on listed species. Please contact Linda Shaw at (907) 586-7510 if you need additional information or assistance.

Sincerely,


Steven Pennoyer
Director, Alaska Region

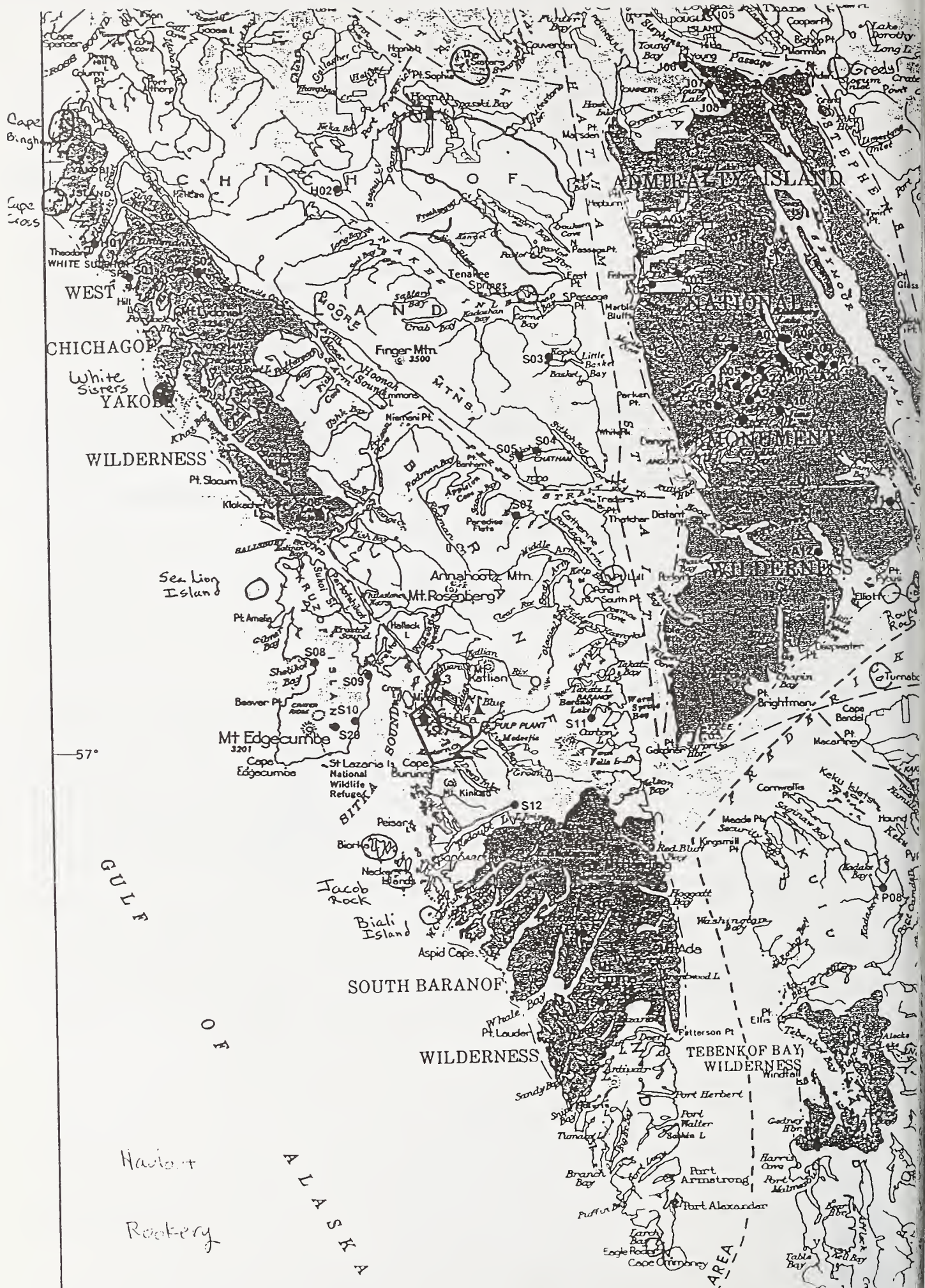
Enclosures



Southeast Alaska Steller Sea Lion Rookery & Haulout Locations

Site	Latitude	Longitude	
Benjamin Island	58°33'5"N	134°54'5"W	
Biali Rock	56°43'0"N	135°20'5"W	
Biorka Island	56°51'0"N	135°32'0"W	
Cape Addington	55°26'5"N	133°48'5"W	
Cape Bingham	58°05'5"N	136°32'0"W	
Cape Cross	57°55'5"N	136°33'0"W	
Cape Ommaney	56°09'5"N	134°39'5"W	
Coronation Island	55°49'5"N	134°16'5"W	
Forrester ¹	54°51'0"N	133°32'0"W	<u>to</u> 54°52'5"N 133°35'5"W
Graves Rock	57°14'5"N	136°45'5"W	
Grindle Island	55°26'5"N	132°07'5"W	
Hazy ¹	55°52'0"N	134°34'0"W	<u>to</u> 55°51'5"N 134°35'0"W
Inian Island	58°15'0"N	136°20'0"W	
Jacob Rock	56°43'5"N	135°23'5"W	
Lull Point	57°18'0"N	135°48'5"W	
Met Pt. (Lynn Canal)	58°20'0"N	134°54'0"W	
Pinta Rocks	57°05'0"N	134°00'0"W	
Round Rock	57°16'5"N	133°52'5"W	
Sea Lion Island	57°17'0"N	135°52'5"W	
St. Lazaria Island	56°59'5"N	135°43'0"W	
Stephens Passage	58°08'0"N	134°10'0"W	
Sunset Island	57°30'5"N	133°35'0"W	
Tenakee Cannery Pt.	57°46'4"N	135°04'0"W	
The Brothers	57°17'5"N	133°50'0"W	
The Sisters	58°10'3"N	135°15'5"W	
Timbered Island	55°42'0"N	133°48'0"W	
Turnabout Island	57°08'0"N	133°59'0"W	
White Sisters ¹	57°38'0"N	136°15'5"W	
Wolf Rock	55°01'2"N	133°29'2"W	
Yasha Island	56°58'0"N	134°33'5"W	

¹ Rookery sites



CHICHAGOF ISLAND

WEST CHICHAGOF
White Sisters
YAKOLE

WILDERNESS

Sea Lion Island

57°

GULF

SOUTH BARANOF

WILDERNESS

TEBENKOF BAY WILDERNESS

Harbour

Rookery

ALASKA

AREA

United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National Forest

Chatham Area
204 Siginaka Way
Sitka, Alaska 99835
(907) 747-6671

Reply To: 1950

Date: March 26, 1993

Mr. Nevin D. Holmberg
Field Supervisor
U. S. Fish and Wildlife Service
P.O. Box 021287
Juneau, AK 99802-1287

Dear Mr. Holmberg:

In compliance with Section 7 of the Endangered Species Act, we have completed a Biological Assessment for the humpback whale, Steller sea lion, American peregrine falcon, and the Arctic peregrine falcon for the Ushk Bay Environmental Impact Statement. The assessment is enclosed for your review of the sections pertaining to species under your agency's authority. The Assessment is also being mailed to the National Marine Fisheries Service for their review.

The assessment concludes that none of the proposed alternatives are likely to cause any adverse effects to Steller sea lions or the two subspecies of peregrine falcon. It also concludes that no direct adverse effects are likely to humpback whales and that indirect effects from boating traffic could occur but would likely be small.

We would be pleased to discuss portions of the Biological Assessment that concern your agency. Please contact Mike Weber (747-6671) if you have any questions.

Sincerely,



GARY A. MORRISON
Forest Supervisor

Enclosure

930324 1652 IDT1 1950 MW

United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National Forest

Chatham Area
204 Siginaka Way
Sitka, Alaska 99835
(907) 747-6671

Reply To: 1950

Date: March 26, 1993

Mr. Steven Pennoyer
Director, Alaska Region
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668.

Dear Mr. Pennoyer:

In compliance with Section 7 of the Endangered Species Act, we have completed a Biological Assessment for the humpback whale, Steller sea lion, American peregrine falcon, and the Arctic peregrine falcon for the Ushk Bay Environmental Impact Statement. The assessment is enclosed for your review of the sections pertaining to species under your agency's authority. The Assessment is also being mailed to the U.S. Fish and Wildlife Service for their review.

The assessment concludes that none of the proposed alternatives are likely to cause any adverse effects to Steller sea lions or the two subspecies of peregrine falcon. It also concludes that no direct adverse effects are likely to humpback whales and that indirect effects from boating traffic could occur but would likely be small.

We would be pleased to discuss portions of the Biological Assessment that concern your agency. Please contact Mike Weber (747-6671) if you have any questions.

Sincerely,



GARY A. MORRISON
Forest Supervisor

Enclosure

930324 1625 IDT1 1950 MW



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Fish and Wildlife Enhancement
Ecological Services Juneau

Southeast Alaska Ecological Services

P.O. Box 021287

Juneau, Alaska 99802-1287

(907) 586-7240

DAMES & MOORE
SEATTLE

APR 13 1993

IN REPLY REFER TO:

Vanessa Artman
Dames and Moore
500 Market Place Tower
2025 1st Avenue
Seattle, WA 98121

April 8, 1993

Dear Ms. Artman:

The U.S. Fish and Wildlife Service (Service) has reviewed the March, 1993 biological assessment for threatened and endangered species occurring in the Ushk Bay timber sale project area, Chichagof Island. The assessment evaluated the effects of proposed actions on the endangered American peregrine falcon (Falco peregrinus anatum), and threatened arctic peregrine falcon (Falco Peregrinus tundris).

For the purposes of Section 7 consultation, we agree that populations of both the American and arctic peregrine falcon would not likely adversely affected as a result of the proposed project. Accordingly, no incidental take is authorized.

Although not specifically required by the consultation provisions of the Endangered Species Act, we encourage agencies to include in their biological assessments: 1) a review of Category 2 candidate plant and animal species that may be present in a proposed project area and 2) an assessment of project effects and cumulative effects on these species. Many Federal agencies have instituted policies to protect candidate species. Your consideration of candidate species is important in their conservation and preventing their inclusion on the Endangered Species list.

These comments are offered for endangered and threatened species for which the U.S. Fish and Wildlife Service has responsibility under Section 7 of the Endangered Species Act of 1973 (16 USC 1521 et seq.) and its amendments. The above comments are specific to the Endangered Species Act and do not reflect agency concerns regarding other organisms or habitats for which the Service has legislated responsibilities.

Sincerely,

Nevin D. Holmberg
Field Supervisor

cc: Janis Burns, USFS, Chatham Area, Sitka



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

April 13, 1993



Gary A. Morrison
Forest Supervisor, Chatham Area
Tongass National Forest
USDA Forest Service
204 Siginaka Way
Sitka, Alaska 99835

Dear Mr. Morrison:

Thank you for your recent letter containing the Biological Assessment (BA) for the Ushk Bay timber sale area on Chichagof Island. The BA evaluates the potential for effects to humpback whales and Steller sea lions as a result of harvesting timber, constructing roads, and construction of log transfer facilities. You have determined that the proposed actions, mitigated by the Tongass Forest Plan Revision Forest-wide Standards and Guidelines that limit vessel and aircraft proximity to marine mammals, are not likely to affect these listed species.

We concur with your conclusion that the proposed actions are not likely to affect endangered or threatened species within our purview. This concludes Section 7 consultation requirements for the Ushk Bay timber sale area. If new information or circumstances arise that could cause us to alter this determination, consultation pursuant to Section 7 of the ESA should be reinitiated. For further coordination regarding Section 7 consultation, contact Tamra Faris at (907) 586-7235.

Sincerely,

Steven Pennoyer
Director, Alaska Region



Appendix K

Road Management Objectives and Timber Harvest Units Specific to the Alternatives

Table 1

Ushk Bay Road Management Objectives
Alternative B

TRAFFIC CODES: LCV = Low Clearance Vehicle
RV = Recreation Vehicle

HCV = High Clearance Vehicle
ATV = All Terrain or Off-Road Vehicle
Ped = Pedestrian

VCU NUMBER	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	SERVICE	TRAFFIC SERVICE		POST-HARVEST HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES			POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)				
						LEVEL	FUNCT. CLASS		LEVEL	FUTURE COMML VOL	SILVIC/ ADMIN	PUBLIC/ RECREATION	HYDRO/ SOILS	W/L	SUB- SIS.	FISH
279	7516	1.1	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE					
	751608	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE				X	
	75166	1.0	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	751665	1.0	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE					
	7516653	0.5	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE			X		

280	75166	1.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	75167	0.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	75168	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE					
	75169	0.5	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE					

281	7516	4.0	P	SHORT-TERM	D	D	C	1	NO	HCV	DISCOURAGE			X		
	751601	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	751603	0.7	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	75161	0.4	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE					
	7518	5.8	P	SHORT-TERM	D	D	C	1	NO	HCV	DISCOURAGE				X	
	75184	2.1	P	SHORT-TERM	D	D	L	1	NO	HCV	DISCOURAGE				X	
	751843	0.7	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	75185	1.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		
	75186	2.3	P	SHORT-TERM	D	D	C	1	NO	HCV	DISCOURAGE			X		

¹ Intermittent Service Life refers to roads developed and operated for periodic service and closed for more than one year between periods of use.

² Functional Class C refers to collector roads that are forest roads serving smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long term facilities. Functional Class L refers to local roads that are forest roads connecting terminal facilities with forest collector or forest arterial roads. Usually forest local roads are single purpose transportation facilities and can either be long or short term in nature.

³ Maintenance Level 1 infers that drainage structures may be removed, the roadbed is seeded and the road allowed to naturally close after use. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level.

⁴ Future commercial volume refers to volume scheduled for the foreseeable future in the Chatham Area Timber Sale Schedule. See Chapter 4, page 11, in the FEIS.

Ushk Bay Road Management Objectives
 Alternative C (cont.)

TRAFFIC CODES: LCV = Low Clearance Vehicle
 HCV = High Clearance Vehicle
 RV = Recreation Vehicle
 ATV = All Terrain or Off-Road Vehicle
 Ped = Pedestrian

VCU NUMBER	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	SERVICE	TRAFFIC SERVICE LEVEL	FUNCT. CLASS	HARVEST MAINT. LEVEL	POST-HARVEST				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)					
									ACCESS NEEDS/TRAFFIC STRATEGIES		PUBLIC/RECREATION		HYDRO/	SOILS	W/L	SIS.	SUB-	FISH
									FUTURE	COMML VOL	SILVIC/ ADMIN	ACCEPT						
281	7518	6.1	P	INTERMITTENT	D	D	C	2	NO	NONE	ACCEPT					X		
	7518	1.6	P	INTERMITTENT	D	D	C	2	NO	NONE	ACCEPT							
	751809	0.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE							
	75182	0.5	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE							
	75184	1.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE					X		
	75184	0.9	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE							
	751843	0.7	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		X		
	75185	1.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE			X		X		
	75186	1.7	P	INTERMITTENT	D	D	C	2	NO	HCV	ACCEPT			X				
	75186	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE							
	751608	0.3	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE					X		

- ¹ Intermittent Service Life refers to roads developed and operated for periodic service and closed for more than one year between periods of use.
- ² Functional Class C refers to collector roads that are forest roads serving smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long term facilities. Functional Class L refers to local roads that are forest roads connecting terminal facilities with forest collector or forest arterial roads. Usually forest local roads are single purpose transportation facilities and can either be long or short term in nature.
- ³ Maintenance Level 1 infers that drainage structures may be removed, the roadbed is seeded and the road allowed to naturally close after use. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level.
- ⁴ Future commercial volume refers to volume scheduled for the foreseeable future in the Chatham Area Timber Sale Schedule. See Chapter 4, page 11, in the FEIS.

Ushk Bay Road Management Objectives Alternative D

TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
 RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
 Ped = Pedestrian

VCU	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	TRAFFIC SERVICE LEVEL	FUNCT. CLASS	POST-HARVEST HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES CONCERNS (SEE ROAD CARDS)			POST-HARVEST RESOURCE			
								FUTURE COMM. VOL.	SILVIC/ADMIN	PUBLIC/RECREATION	HYDRO/SOILS	W/L	SIS.	FISH
279	7516	4.3	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT		X		
	751606	0.1	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT				
	75164	0.3	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				
	75165	0.4	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				
	75166	1.0	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT		X		

280	7516	3.8	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT		X		
	75166	1.0	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT				
	75166	0.6	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		
	75167	0.2	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		
	75168	0.6	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				
	75169	0.5	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				
	7518	4.5	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT				
	7518	1.3	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		
	75189	0.4	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		

281	7516	7.4	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT		X		X
	751603	0.7	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				
	751605	0.3	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		
	7516205	0.5	P	SHORT-TERM	D	L	1	NO	HCV	ACCEPT				
	7518	7.0	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT				X
	7518	1.3	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				
	75184	1.0	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE				X
	75184	1.1	P	SHORT-TERM	D	L	1	NO	HCV	ACCEPT				X
	751843	0.7	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		X
	75185	1.2	P	SHORT-TERM	D	L	1	NO	NONE	DISCOURAGE		X		X
	75186	1.7	P	INTERMITTENT	D	C	2	NO	HCV	ACCEPT		X		

¹ Intermittent Service Life refers to roads developed and operated for periodic service and closed for more than one year between periods of use.

² Functional Class C refers to collector roads that are forest roads serving smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long term facilities. Functional Class L refers to local roads that are forest roads connecting terminal facilities with forest collector or forest arterial roads. Usually forest local roads are single purpose transportation facilities and can either be long or short term in nature.

³ Maintenance Level 1 infers that drainage structures may be removed, the roadbed is seeded and the road allowed to naturally close after use. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level.

⁴ Future commercial volume refers to volume scheduled for the foreseeable future in the Chatham Area Timber Sale Schedule. See Chapter 4

Table 4

Ushk Bay Road Management Objectives
 Alternative E
 TRAFFIC CODES: LCV = Low Clearance Vehicle
 RV = Recreation Vehicle
 HCV = High Clearance Vehicle
 ATV = All Terrain or Off-Road Vehicle
 Ped = Pedestrian

VCU	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	SERVICE	TRAFFIC SERVICE LEVEL	FUNCT. CLASS	POST-HARVEST HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)				
									FUTURE	COMML VOL	ADMIN	SILVIC/	RECREATION	SOILS	W/L	SUB-	HYDRO/
279	7516	3.2	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	751607	0.8	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75164	0.3	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75165	0.8	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75166	1.0	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	751665	1.7	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	7517	1.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75171	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75172	0.3	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					X

280	7516	1.4	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE		X			
	751608	0.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					X
	75166	1.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	75167	0.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	75168	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75169	0.5	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	7517	0.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	7518	3.5	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	75188	1.0	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75189	0.4	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		

281	7516	6.7	P	SHORT-TERM	D	D	L	1	NO	HCV	DISCOURAGE	DISCOURAGE			X		
	751601	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	751603	0.7	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	751605	0.3	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	75161	2.4	P	SHORT-TERM	D	D	L	1	NO	HCV	DISCOURAGE	DISCOURAGE			X		
	7516105	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE			X		
	7516205	0.7	P	SHORT-TERM	D	D	L	1	NO	HCV	DISCOURAGE	DISCOURAGE					X
	7518	10.8	P	SHORT-TERM	D	D	C	1	NO	HCV	DISCOURAGE	DISCOURAGE					
	751809	0.3	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75181	0.6	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					
	75182	0.5	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE	DISCOURAGE					

Table 4 continued

Uskb Bay Road Management Objectives
 Alternative B (CONT.)

TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
 RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
 Ped = Pedestrian

VCU NUMBER	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	SERVICE	TRAFFIC SERVICE LEVEL	FUNCT. CLASS	MAINT. LEVEL	POST-HARVEST				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)				
									HARVEST		ACCESS NEEDS/TRAFFIC STRATEGIES		HYDRO/	SOILS	W/L	SUB-	FISH
									FUNCT. CLASS	LEVEL	FUTURE COMM. VOL.	SILVIC/ADMIN					
281	75183	0.1	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE						
	75184	2.1	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE						
	751843	0.7	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE		X				X
	75185	1.2	P	SHORT-TERM	D	D	L	1	NO	NONE	DISCOURAGE		X				X
	75186	2.3	P	SHORT-TERM	D	D	C	1	NO	NONE	DISCOURAGE		X				X

¹ Intermittent Service Life refers to roads developed and operated for periodic service and closed for more than one year between periods of use.

² Functional Class C refers to collector roads that are forest roads serving smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long term facilities. Functional Class L refers to local roads that are forest roads connecting terminal facilities with forest collector or forest arterial roads. Usually forest local roads are single purpose transportation facilities and can either be long or short term in nature.

³ Maintenance Level 1 infers that drainage structures may be removed, the roadbed is seeded and the road allowed to naturally close after use. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level.

⁴ Future commercial volume refers to volume scheduled for the foreseeable future in the Chatham Area Timber Sale Schedule. See Chapter 4, page 11, in the FEIS.

Table 5

Ushk Bay Road Management Objectives Alternative F
 TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
 RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
 Ped = Pedestrian

VCU NUMBER	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	SERVICE	TRAFFIC SERVICE LEVEL	FUNCT. CLASS	MAINT. LEVEL	POST-HARVEST			POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
									HARVEST	ACCESS NEEDS/TRAFFIC STRATEGIES	HYDRO/SOILS	W/L	SUB-SIS.	FISH	
									FUTURE COMML VOL	SILVIC/ADMIN	PUBLIC/RECREATION				
279	7516	1.1	P	SHORT-TERM		D	C	1	NO	NONE	DISCOURAGE				
	751608	0.2	P	SHORT-TERM		D	C	1	NO	HCV	DISCOURAGE			X	
	75166	1.0	P	SHORT-TERM		D	C	1	NO	NONE	DISCOURAGE		X		
	751665	1.0	P	SHORT-TERM		D	C	1	NO	NONE	DISCOURAGE				
	7516653	0.5	P	SHORT-TERM		D	C	1	NO	NONE	DISCOURAGE		X		

280	7516	3.7	P	SHORT-TERM		D	C	1	NO	NONE	DISCOURAGE	X			
	75166	1.6	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE				
	75167	0.2	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE				
	75169	0.5	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE				
	7518	4.0	P	SHORT-TERM		D	C	1	NO	NONE	DISCOURAGE		X		
	75188	0.9	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE				
	75189	0.4	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE		X		

281	7516	4.5	P	SHORT-TERM		D	L	1	NO	HCV	DISCOURAGE		X		
	751601	0.6	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE		X		
	75161	0.5	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE				
	7518	7.4	P	SHORT-TERM		D	C	1	NO	HCV	DISCOURAGE			X	
	75184	2.1	P	SHORT-TERM		D	L	1	NO	HCV	DISCOURAGE			X	
	751843	0.7	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE		X		
	75185	1.2	P	SHORT-TERM		D	L	1	NO	NONE	DISCOURAGE		X		
	75186	2.3	P	SHORT-TERM		D	C	1	NO	HCV	DISCOURAGE		X		

1 Intermittent Service Life refers to roads developed and operated for periodic service and closed for more than one year between periods of use.

2 Functional Class C refers to collector roads that are forest roads serving smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long term facilities. Functional Class L refers to local roads that are forest roads connecting terminal facilities with forest collector or forest arterial roads. Usually forest local roads are single purpose transportation facilities and can either be long or short term in nature.

3 Maintenance Level 1 infers that drainage structures may be removed, the roadbed is seeded and the road allowed to naturally close after use. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level.

4 Future commercial volume refers to volume scheduled for the foreseeable future in the Chatham Area Timber Sale Schedule. See Chapter 4, page 11, in the FEIS.

Table 6

Summary of Miles of New Road Construction

VCU	Road Type	B	C	D	E	F
279	Specified	4.2	8.7	6.1	10.3	3.8
	Temporary	1.2	2.2	1.1	1.7	1.4
	Total	5.4	10.9	7.2	12	5.2
280	Specified	2.9	9.8	12.9	9.5	11.3
	Temporary	1.2	3.4	2.1	3.4	5.4
	Total	4.1	13.2	15	12.9	16.7
281	Specified	17.8	27.1	23.2	32.3	19.9
	Temporary	8.9	11.1	4.1	7.4	5.2
	Total	26.7	38.2	27.3	39.7	25.1
Total Specified Road		24.9	45.6	42.2	52.1	35
Total Temporary Road		11.3	16.7	7.3	12.5	12
Total by Alternative		36.2	62.3	49.5	64.6	47

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

**Table 7
Alternative B**

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres		
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel	
	279	27	886					35.0	35.0	
	279	31	880				14.2	17.0	31.2	
	279	33	547				13.6		13.6	
	279	101	1292						34.2	
	279	102	1483					40.2	40.2	
	279	103	890				17.8		17.8	
	279	30-A	729				16.5	5.1	21.5	
	279	31-A	118				5.3		5.3	
VCU Total			6825				67.3	97.2	34.2	198.7
	280	28	717	29.1					29.1	
	280	29	1436		8.0		38.7	22.1	68.8	
	280	30	2111	8.8	6.4	19.8	30.9	20.7	86.6	
	280	34	619			22.7			22.7	
	280	35	425				31.3	9.8	41.1	
	280	36	232	22.4					22.4	
	280	52	479			19.9			19.9	
	280	29-A	247				7.4		7.4	
VCU Total			6266	60.3	14.4	62.4	108.3	52.6	298.0	
	281	3	750					16.7	4.1	20.8
	281	4	5683	8.5		11.0	60.0	39.7	119.2	
	281	5	604				29.3		29.3	
	281	7	1172	23.8		32.2			56.1	
	281	8	1172				43.6		43.6	
	281	10	1211			23.1	21.0		44.1	
	281	11	1155	20.8			6.9		5.9	33.6
	281	12	865	26.5					26.5	
	281	13	3553	46.7	9.7	13.1	36.0	15.6	121.1	
	281	15	594				5.3		10.3	15.6
	281	16	118					5.6	5.6	
	281	37	1413	27.3					16.6	43.9
	281	40	929	4.8				25.9	30.7	
	281	67	240	14.4					14.4	
	281	68	592	38.8					38.8	
	281	72	2015	41.3				20.2	61.5	
	281	74	1318	34.0					22.9	56.8
	281	75	1533	28.5	7.7		20.1		56.3	
	281	77	1397		6.3		9.1	18.2	33.6	
	281	79	973				15.1		12.3	27.4
	281	81	278			7.3			7.3	

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 7
Alternative B

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel
281	82	1173			12.8	20.2		33.0	
281	86	1588		18.4		21.0		3.9	
281	89	580				12.6			
281	90	1498				45.4			
281	16-A	1671				1.7	30.9	6.7	
281	37-A	608	25.0						
281	5-A	46				1.4			
281	7-A	140				9.5			
281	74-A	243	5.2					6.5	
281	78-A	431		11.1					
281	78-B	82		2.4					
281	78-C	173				4.6			
281	78-D	144				5.0			
281	78-E	132				3.5			
281	79-A	671				15.3		2.1	
281	79-B	152			4.0				
281	86-A	649			11.4	5.0		1.3	
VCU Total		37546	345.6	55.6	114.9	391.6	172.8	92.6	1173.2
Alt B Total		50637	405.9	70.0	177.3	567.2	322.6	126.8	1669.9

Note: Acreage totals by VCU may vary from figures displayed elsewhere in this document because unit acreages for units that straddle VCU lines were included with the VCU where the unit predominated rather than being split between two VCUs. Volumes are net sawlog plus utility.

Table 8
Alternative C

Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method						Unit Acres
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line	Shovel	
279	26	1007				34.7			34.7
279	27	886	35.0						35.0
279	31	880				14.1	16.9		31.2
279	33	547				13.6			13.6
279	50	3158				4.4	81.1		85.5
279	101	1292						34.2	34.2
279	102	1482	18.1				22.1		40.2
279	103	537				17.8			17.8
279	110	1119		30.4		13.0			43.4
279	116	377	24.9						24.9
279	117	301		10.4					10.4
279	30-A	723				2.5	19.0		21.5
279	31-A	118				5.3			5.3
279	GROUP I	387			85.5				85.5
279	GROUP II	923			220.3				220.3
VCU Total		13737	78.0	40.8	340.5	70.7	139.1	34.2	703.4
280	19	1056		24.9				2.4	27.3
280	20	2077	51.7	7.9			4.3		63.9
280	21	2180					10.2	25.0	35.2
280	22	1469		26.6				17.2	43.8
280	23	885				2.9		8.7	11.6
280	25	219			13.0				13.0
280	28	717	29.1						29.1
280	29	2444		11.7		43.9	22.1		77.7
280	30	2130	8.8	6.4	20.5	30.8	20.7		87.3
280	34	617			22.7				22.7
280	35	1468				31.1	10.1		41.2
280	36	832	23.3						23.3
280	52	480			19.9				19.9
280	118	1337					34.5		34.5
280	119	1676					48.3		48.3
280	138	283				4.0		5.8	9.8
280	138-A	160						6.3	6.3
280	21-A	241				3.6			3.6
280	22-A	745						27.2	27.2
280	25-A	229			22.8				22.8
280	25-B	137			14.0				14.0
280	25-C	184			10.6				10.6
280	29-A	247				7.4			7.4
VCU Total		21813	112.9	77.5	123.5	123.7	150.2	92.6	680.4

Table 8
Alternative C

Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method						Unit Acres
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line	Shovel	
281	2	551				15.7			15.7
281	3	750					16.7	4.1	20.8
281	4	5758	8.5		8.7	64.2	39.6		121.0
281	5	604				29.3			29.3
281	6	44			3.0				3.0
281	7	1172	23.8		32.3				56.1
281	8	1172				43.6			43.6
281	10	1211			23.1	21.0			44.1
281	11	1155	20.8			6.9		5.9	33.6
281	12	865	26.5						26.5
281	13	3553	46.7	9.7	13.1	36.0	15.6		121.1
281	14	71			6.8				6.8
281	15	594				5.3		10.3	15.6
281	16	118					5.6		5.6
281	37	2546	62.1			8.6		16.6	87.3
281	39	3404				66.3		11.9	78.2
281	40	881	6.0				25.6		31.6
281	41	587				21.1			21.1
281	43	286				8.0			8.0
281	45	293	7.1						7.1
281	53	137		6.5					6.5
281	55	637	10.3				11.3		21.6
281	67	240	14.4						14.4
281	68	287	17.6						17.6
281	70	967				34.0			34.0
281	72	2058	12.9				15.8	20.2	48.9
281	74	1318	33.9					22.9	56.8
281	75	1836	19.4	7.7			34.3		61.4
281	77	2184	16.8	8.8		24.5		4.5	54.4
281	79	973				15.1		12.3	27.4
281	81	278			7.3				7.3
281	82	1173			12.8	20.2			33.0
281	86	1865		18.4		21.0		3.9	43.3
281	89	1263				12.5	14.8		27.3
281	90	1505				45.4			45.4
281	93	135				11.6			11.6
281	16-A	2297				8.3	30.8	14.9	54.0
281	5-A	46				1.4			1.4
281	7-A	141				9.5			9.5
281	74-A	243	5.2					6.5	11.7
281	78-A	431		11.1					11.1

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 8
Alternative C

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Hell	Running Skyline	Slack-Line		Shovel
281	78-B	82		2.4					2.4
281	78-C	173				4.6			4.6
281	78-D	144				5.0			5.0
281	78-E	132				3.5			3.5
281	79-A	671				15.3		2.1	17.4
281	79-B	152			4.0				4.0
281	86-A	665			20.5	5.0		1.3	26.8
281	GROUP III	1131			249.9				249.9
281	GROUP IV	52			2.5				2.5
281	GROUP V	211			5.3				5.3
281	GROUP VI	135			15.8				15.8
VCU Total		49177	332.0	64.6	405.1	562.9	210.1	137.4	1712.1
Alt C Total		84727	522.9	182.9	869.1	757.3	499.4	264.2	3095.8

Note: Acreage totals by VCU may vary from figures displayed elsewhere in this document because unit acreages for units that straddle VCU lines were included with the VCU where the unit predominated rather than being split between two VCUs. Volumes are net sawlog plus utility.

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 9
Alternative D

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel
279	26	1642			54.5			54.5	
279	27	886	35.0					35.0	
279	31	880				14.3	16.9	31.2	
279	48	382					12.8	12.8	
279	50	2322				4.4	54.9	59.3	
279	60	1241	34.7					34.7	
279	101	1292						34.2	
279	30-A	723				2.5	19.0	21.5	
279	31-A	118				5.3		5.3	
VCU Total		9486	69.7		54.5	26.5	103.6	34.2	288.5
280	19	1056		24.9				2.4	27.3
280	20	532	12.6	7.9					20.5
280	21	2179					10.3	24.9	35.2
280	22	1469		26.6				17.2	43.8
280	25	788			53.7				53.7
280	28	717	29.1						29.1
280	35	1452				31.3	9.8		41.1
280	36	568	22.4						22.4
280	98	985				32.7			32.7
280	22-A	745						27.2	27.2
280	32-A	654				23.9			23.9
VCU Total		11145	64.1	59.4	53.7	87.9	20.1	71.7	356.9
281	2	607				19.4			19.4
281	3	1569					39.7	7.2	46.9
281	4	3136	8.5			17.4	39.7		65.6
281	5	604				29.3			29.3
281	7	511	23.8						23.8
281	8	357					16.9		16.9
281	10	593				21.0			21.0
281	11	1155	20.8			6.9		5.9	33.6
281	12	865	26.5						26.5
281	13	2566	46.7	9.7		9.8	15.6		81.8
281	15	594				5.3		10.3	15.6
281	37	1622	30.5			7.2		16.6	54.3
281	40	958	5.3				26.3		31.6
281	41	587				21.1			21.1
281	43	286				8.0			8.0
281	55	637	10.3				11.3		21.6
281	67	240	14.4						14.4

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 9
Alternative D

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel
281	68	304	21.2					21.2	
281	72	1960	38.7				20.2	58.9	
281	75	1041	30.7					30.7	
281	77	862	18.1					18.1	
281	86	1094		18.4		6.6		3.9	28.9
281	90	842				26.2			26.2
281	10-A	973				15.1		12.3	27.4
281	16-A	1848					32.5	8.4	40.9
281	5-A	46				1.4			1.4
VCU Total		25857	295.5	28.1		194.7	202.2	64.6	785.1
Alt D Total		46488	429.3	87.5	108.2	309.1	325.9	170.5	1430.5

Note: Acreage totals by VCU may vary from figures displayed elsewhere in this document because unit acreages for units that straddle VCU lines were included with the VCU where the unit predominated rather than being split between two VCUs. Volumes are net sawlog plus utility.

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 10
Alternative E

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel
279	26	657			19.8			19.8	
279	27	886	35.0					35.0	
279	31	880				14.2	16.9	31.1	
279	33	547				13.6		13.6	
279	48	382					12.8	12.8	
279	49	723					21.0	21.0	
279	59	285				14.5		14.5	
279	66	1667	48.2					48.2	
279	101	1292					34.2	34.2	
279	102	1482					40.2	40.2	
279	103	537				17.8		17.8	
279	104	536				4.4	8.9	13.3	
279	105	721					21.3	21.3	
279	110	1119		30.4		13.0		43.4	
279	116	377		24.9				24.9	
279	117	301			10.4			10.4	
279	26-A	798				33.7		33.7	
279	30-A	723					2.5	19.0	
279	31-A	118					5.3	5.3	
VCU Total		14031	83.2	55.3	30.2	111.2	128.9	53.2	462.0
280	19	1056		24.9				2.4	27.3
280	20	1991	50.5	7.9			4.3		62.7
280	21	2180					10.2	25.0	35.2
280	22	1469		26.6				17.2	43.8
280	23	885				2.9		8.7	11.6
280	25	561			37.3				37.3
280	28	717	29.1						29.1
280	29	2444		11.7		43.9	22.1		77.7
280	30	2130	8.8	6.4	20.5	31.8	20.7		88.2
280	34	617			22.7				22.7
280	35	1465				31.1	10.1		41.2
280	36	709	23.3						23.3
280	52	480			19.9				19.9
280	118	1337					34.5		34.5
280	119	1523					48.3		48.3
280	138	283				4.0		5.8	9.8
280	138-A	160						6.3	6.3
280	21-A	241				3.6			3.6
280	22-A	745						27.2	27.2
280	25-C	184			10.6				10.6

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 10
Alternative E

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method						Unit Acres
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line	Shovel	
280	29-A	247				7.4			7.4
VCU Total		21424	111.7	77.5	111.0	124.7	150.2	92.6	667.7
281	2	1474	9.5			40.2			49.7
281	3	1733					43.0	7.8	50.8
281	4	5758	8.5		8.7	64.2	39.6		121.0
281	5	604				30.3			30.3
281	6	192			3.0				3.0
281	7	1172	23.8		32.3				56.1
281	8	1173				43.6			43.6
281	10	1211			23.1	21.0			44.1
281	11	1155	20.8			6.9		5.9	33.6
281	12	865	26.5						26.5
281	13	3553	46.7	9.7	13.1	36.0	15.6		121.1
281	14	73			7.0				7.0
281	15	594				5.3		10.3	15.6
281	16	118					5.6		5.6
281	37	2546	62.1			8.6		16.6	87.3
281	39	3404				66.3		11.9	78.2
281	40	881	6.0				25.6		31.6
281	41	587				21.1			21.1
281	43	286				8.0			8.0
281	45	293	7.1						7.1
281	53	137		6.5					6.5
281	55	637	10.3				11.3		21.6
281	58	314	13.2						13.2
281	67	240	14.4						14.4
281	68	287	17.6						17.6
281	70	962					33.8		33.8
281	72	2058	12.9				15.8	20.2	48.9
281	74	1318	33.9					22.9	56.8
281	75	1836	19.4	7.7			34.3		61.4
281	77	2272	18.8	8.8		24.5		4.5	56.6
281	79	973				15.1		12.3	27.4
281	81	278			7.3				7.3
281	82	1173			12.8	20.2			33.0
281	86	1865		18.4		21.0		3.9	43.3
281	89	1263				12.5	14.8		27.3
281	90	1498				45.4			45.4
281	93	460				14.7	17.1		31.8
281	94	1958	34.5			7.7			42.2
281	95	1016	38.6			3.7			42.3

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

**Table 10
Alternative E**

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method						Unit Acres
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line	Shovel	
281	96	1327				29.4			29.4
281	16-A	2297				8.3	30.8	14.9	54.0
281	5-A	191				1.4			1.4
281	7-A	141				9.5			9.5
281	74-A	243	5.2					6.5	11.7
281	78-A	431		11.1					11.1
281	78-B	104		2.4					2.4
281	78-C	173				4.6			4.6
281	78-D	144				5.0			5.0
281	78-E	132				3.5			3.5
281	79-A	671				15.3		2.1	17.4
281	79-B	152			4.0				4.0
281	86-A	666			20.5	5.0		1.3	26.8
VCU Total		54889	429.8	64.6	131.8	598.3	287.3	141.1	1652.9
Alt E Total		90344	624.7	197.4	273.0	834.2	566.4	286.9	2782.6

Note: Acreage totals by VCU may vary from figures displayed elsewhere in this document because unit acreages for units that straddle VCU lines were included with the VCU where the unit predominated rather than being split between two VCUs. Volumes are net sawlog plus utility.

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

Table 11
Alternative F

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel
279	27	886					35.0	35.0	
279	31	880				14.2	17.0	31.2	
279	33	547				13.6		13.6	
279	101	1292						34.2	
279	102	1482					40.2	40.2	
279	103	537				17.8		17.8	
279	30-A	723				16.5	5.1	21.5	
279	31-A	118				5.3		5.3	
VCU Total		6465				67.3	97.2	34.2	198.7
280	19	1056		24.9				2.4	27.3
280	20	1996	48.9	7.9			4.3		61.1
280	21	2179					10.3	24.9	35.2
280	22	1470		26.6				17.2	43.8
280	23	885				2.9		8.7	11.6
280	28	716	29.1						29.0
280	29	3390		11.7		41.7	22.1		75.5
280	30	2130	8.8	6.4	19.8	30.9	20.7		87.3
280	34	619			22.7				22.7
280	35	1452				31.3	9.8		41.1
280	36	569	22.4						22.4
280	52	479			19.9				19.9
280	138	283				4.0		5.8	9.8
280	138-A	160						6.3	6.3
280	21-A	238				3.6			3.6
280	22-A	745						27.2	27.2
280	29-A	247				7.4			7.4
VCU Total		18614	109.2	77.5	62.4	121.8	67.2	92.5	531.3
281	3	750					16.7	4.1	20.8
281	4	5683	8.5		11.0	60.0	39.7		119.2
281	5	604				29.3			29.3
281	7	1172	23.8		32.2				56.1
281	8	1172				43.6			43.6
281	10	1211			23.1	21.0			44.1
281	11	1155	20.8			6.9		5.9	33.6
281	12	865	26.5						26.5
281	13	3553	46.7	9.7	13.1	36.0	15.6		121.1
281	15	594				5.3		10.3	15.6
281	16	118					5.6		5.6
281	37	1413	27.3					16.6	43.9

Table 11
Alternative F

**Proposed Timber Harvest
By VCU, Harvest Unit, and Logging Method**

VCU	Harvest Unit Number	Total Volume (MBF)	Logging Method					Unit Acres	
			Live Skyline	High-Lead	Heli	Running Skyline	Slack-Line		Shovel
281	40	929	4.8				25.9		30.7
281	67	240	14.4						14.4
281	68	592	38.8						38.8
281	72	2015	41.3				20.2		61.5
281	74	1318	34.0					22.9	56.8
281	75	1533	28.5	7.7		20.1			56.3
281	77	1397	18.2	6.3		9.1			33.6
281	79	973				15.1		12.3	27.4
281	81	278			7.3				7.3
281	82	1173			12.8	20.2			33.0
281	86	1588		18.4		21.0		3.9	43.3
281	89	580				12.6			12.6
281	90	1498				45.4			45.4
281	16-A	1438				1.7	30.9	1.2	33.8
281	37-A	608	25.0						25.0
281	5-A	46				1.4			1.4
281	7-A	140				9.5			9.5
281	74-A	243	5.2					6.5	11.7
281	78-A	431		11.1					11.1
281	78-B	82		2.4					2.4
281	78-C	173				4.6			4.6
281	78-D	144				5.0			5.0
281	78-E	132				3.5			3.5
281	79-A	671				15.3		2.1	17.4
281	79-B	152			4.0				4.0
281	86-A	649			11.4	5.0		1.3	17.7
VCU Total		37313	363.8	55.6	114.9	391.6	154.6	87.1	1167.7
Alt F Total		62392	473.0	133.1	177.3	580.7	319.0	213.8	1897.7

Note: Acreage totals by VCU may vary from figures displayed elsewhere in this document because unit acreages for units that straddle VCU lines were included with the VCU where the unit predominated rather than being split between two VCUs. Volumes are net sawlog plus utility.

Appendix L

Comment Letters and Subsistence Hearing Transcript



Appendix L

Comment Letters and Subsistence Hearing Transcript

This appendix includes a complete list of the comment letters received on the Ushk Bay Draft EIS. In that list, each letter is given a letter number and the author and organization is listed. In addition, each commenter at the Subsistence Hearing is listed as an author.

The letters that include most of the substantive comments, including those from State and Federal agencies, are included in this appendix, and each has its letter number written on it. Following that, the complete Subsistence Hearing Transcript is included, and the comment numbers are written beside each commenter's name.

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
	Comment Letters		
1	Abrahamson, Jeffrey E.	Wrangell	
2	Adams, Dale L.	Sitka	Adams Alaskan Safaris
3	Ady, Linda Marie	Pelican	
4	Alexander, Karen	Wrangell	
5	Alsup, Paul R.	Sitka	
6	Angerman, Fred	Wrangell	
7	Angerman, J.R.	Wrangell	
8	Bache, Ralph A.	Sitka	
9	Bailey, Richard A.	Juneau	
10	Barrow, Karen	Reno, NV	
11	Barstad, Crystal	Pacifica, CA	
12	Begareath, Al	Juneau	
13	Behnken, Nancy and Gregg Jones	Sitka	
14	Bell, Jackie	Wrangell	
15	Bell, Mike	Wrangell	
16	Berry, Paul	Gustavus	
17	Binkler, Dick		
18	Blevins, Eric	Juneau	
19	Blinton, Rollard	Wrangell	
20	Blundell, Gail	Juneau	
21	Boekman, Noah	Rowan Bay	
22	Booker, Dennis H.	Juneau	
23	Bottoms, Wayne	Juneau	
24	Bowe, Gary G.	Sitka	
25	Brabender, Jack	Rowan Bay	
26	Brenner, Steve	Sitka	
27	Brink, Kim	Wrangell	
28	Brock, Lavina R.	Wrangell	
29	Brock, Drake E.	Wrangell	
30	Bruneff, T.R.	Juneau	
31	Brylinsky, Scott	Sitka	
32	Buhler, Georgianna	Juneau	
33	Bunch, Genevieve	Wrangell	
34	Buness, Olive	Wrangell	
35	Burdett, Betsey	Ketchikan	
36	Campbell, Carl		
37	Campbell, L.T.	Wrangell	
38	Campbell, Lynne	Wrangell	
39	Campbell, Marlene A.	Sitka	City and Borough of Sitka, Public Services
40	Capps, Kevin D.	Juneau	
41	Capps, Tracy L.	Juneau	
42	Carper, Curtis	Juneau	
43	Carper, James	Juneau	
44	Casey, Dee	Sitka	
45	Christian, Brian	Wrangell	
46	Christian, Kim M.	Wrangell	

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
47	Cleman, Deanna L.		
48	Cleman, Michael L., Sr.		
49	Clengeman, Leonard	Wrangell	
50	Clough, Raymond G.	Sitka	
51	Coats, Gary and Sara	Sitka	APC Rowan Bay Logging Camp
52	Cochran, Claire and Noel Johnson	Sitka	
53	Cogburn, Bob	Juneau	
54	Colli, James W.	Wrangell	
55	Collins, J.	Juneau	
56	Colton, James	Rowan Bay	
57	Colton, Patty	Rowan Bay	
58	Comstock, Glenda	Sitka	
59	Cottingham, David	Washington, D.C.	NOAA
60	Crist, Q.R.	Indianapolis, IN	
61	D'Arienzo, Joe	Sitka	
62	Darin, David	Juneau	
63	David, Jerry	Wrangell	
64	Davidson, M.E.	Wrangell	
65	Davis, Nancy	Wrangell	
66	Dennison, Brad	Sitka	
67	Drury, Helen M.	Sitka	
68	Dunaway, Delmar	Juneau	
69	Dzugan, Jerry	Sitka	Alaska Wyldewind Charters
70	Edwards, Larry	Sitka	Greenpeace
71	Edwards, Larry		
72	Ellis, John	Wrangell	
73	Else, Page	Sitka	Sitka Conservation Society
74	Emmeny, Clayton, R., Sr.	Wrangell	
75	Emmory, Mary M.	Wrangell	
76	Erroh, Charlie	Wrangell	
77	Etulain, Dan	Sitka	North Star Television Network
78	Evensen, James A.	Sitka	
79	Farnell, Dick	Sitka	
80	Fernandez, Andrew E.	Valdez	
81	Ferguson, Jim	Southeast Regional Office	Alaska Department of Environmental Conservation
82	Fisher, Stanley E.	Juneau	
83	Fordzen, Randall M.	Wrangell	
84	Gabriel, John P.	Ketchikan	
85	Gangler, Richard M.	Juneau	
86	Gardner, Alan	Anchorage	
87	Gardner, Jess	Juneau	
88	Garrison, L. Dean	Juneau	
89	Gasaway, Duane H.	Wrangell	City of Wrangell
90	Gates, Paul	Anchorage	U.S. Department of the Interior
91	Gerle, Kelly	Sitka	
92	Gibson, G.J.	Juneau	
93	Gilbert, John R.	Ketchikan	

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
94	Ginn, Robert A.	Sitka	
95	Gordon, David A.	Sitka	
96	Graham, Owen J.	Ketchikan	
97	Grant, Travis	Wrangell	
98	Grant, Tyler T.	Wrangell	
99	Gronhong, Ralph C.	Rowan Bay	
100	Gross, Alice E.	Wrangell	
101	Gulick, Darlene	Sitka	
102	Hames, Barbara R.	Sitka	
103	Hames, Lloyd F.	Sitka	
104	Hammond, J.K.		
105	Hammons, Kenneth J.	Sitka	Alaska Pulp Corporation
106	Hammons, Kenneth J.	Sitka	
107	Hammonuu, C., Debbie Stilson, Tammee Hansen, and Jeff Serfert		
108	Hansen, H.	Wrangell	
109	Harder, Susan M.	Sitka	
110	Heath, Tom	Juneau	
111	Helen, Mary	Sitka	
112	Helena, Theresa	Sitka	
113	Himschoot, Rebecca	Sitka	
114	Hinkler, William H., Jr.	Juneau	
115	Hitcher, Steven, G.K. Hilan, K. Berman, Susan Sina, Tom Sina, and William E. Jelley		
116	Hobart, Charles	Juneau	
117	Holle, Eric	Haines	Lynn Canal Conservation, Incl
118	Holman, Teryl M.	Sitka	
119	Holmberg, Nevin D.	Juneau	USFWS
120	Hosier, Mary Lou	Wrangell	
121	House, P.	Wrangell	
122	Streveler, Greg	Gustavus	
123	Huffman, Raymond L.	Wrangell	
124	Hughes, Marin	Sitka	Venneberg Insurance, Inc.
125	Iverson, Kurt	Sitka	
126	Jackson, James	Juneau	
127	Jacobsen, T.E.	Sitka	
128	James, Allen	Wrangell	
129	Johnson, Kelly L.	Juneau	
130	Johnson, Larry D.	Juneau	
131	Johnson, Michael D.	Wrangell	
132	Johnson, Wayne	Juneau	
133	Jones, M.	Wrangell	
134	Jones, Marc R.	Wrangell	
135	Jordan, Sarah	Sitka	
136	Jordan, Todd	Wrangell	
137	Kangas, Charles	Wrangell	
138	Karpstein, Terri	Sitka	

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
139	Karthals, Kurt M.	Sitka	
140	Katz, Dave	Juneau	Southeast Alaska Conservation Council
141	Katz, Dave	Juneau	Southeast Alaska Conservation Council
142	Keck, Betty	Sitka	
143	Keck, Dan	Sitka	City and Borough of Sitka
144	Keene, Pat	Juneau	
145	Kent, Chris S.	Juneau	
146	Keso, Dorren	Wrangell	
147	Kihs, Thomas	Wrangell	
148	King, James E.	Wrangell	
149	Kirschner, Kathi	Sitka	
150	Kirschner, Mike	Sitka	
151	Kreuer, Larry	Rowan Bay	
152	Lamberty, Dwight	Juneau	
153	Landry, Leo J.	Wrangell	
154	Larsen, Larry	Juneau	
155	Larson, Loyd M.	Juneau	
156	Leccese, Michael and family	Sitka	
157	Lee, Warren	Sitka	
158	Lehmer, Chris	Sitka	
159	Lepschat, Norman	Juneau	
160	Leslie, Wilma E.	Wrangell	
161	Linton, Chuck E.	Sitka	
162	Littlefield, J.H.	Sitka	
163	Lofftus, Robert E.	Wrangell	
164	Machaler, Petr, Louise Lindley, and Janna Machaler	Petersburg	
165	Mackovjak, James R.	Gustavus	Pont Adolphus Seafoods
166	Martin, Jeannie	Wrangell	
167	Martin, Syd	Wrangell	
168	Maxans, Robert	Wrangell	
169	Mays, James R. and Vinita L.	Rowan Bay	
170	McCabe, John	Petersburg	
171	McCarty, Cliff	Rowan Bay	
172	McClurry, D.W.	Juneau	
173	McGill, Joanne J.	Wrangell	
174	McNelly, Anna	Rowan Bay	
175	McNelly, Audrey	Rowan Bay	
176	Meissner, Charles	Wrangell	
177	Merrell, Ted	Juneau	
178	Metcalf, K.J.	Angoon	
179	Metcalf, K.J.	Angoon	
180	Metcalf, K.J.	Angoon	
181	Miller, Billy Jo	Juneau	
182	Miller, Dave	Wrangell	
183	Miller, Pearl L.	Juneau	

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
184	Miller, Shirley, Loren L. Erpelding, and O. Moore		
185	Minn, Beverly P.	Sitka	
186	Mitchell, B.	Sitka	
187	Morain, Andy	Juneau	
188	Morris, Joy	Juneau	
189	Muller, Don	Sitka	
190	Nauman, E. Robert and Barbara	Juneau	
191	Nelson, Richard	Sitka	
192	Newman, Darren	Wrangell	
193	Newman, David	Wrangell	
194	Nichol, Harold P.	Wrangell	
195	Nielsen, James J.	Sitka	
196	Nielson, Lyle D.	Juneau	
197	Nielson, Patricia F.	Juneau	
198	Nore, Robert, M.	Wrangell	
199	O'Connell, Tory	Sitka	
200	O'Hara, James	Juneau	
201	Oetken, E.R.	Sitka	
202	Oliver, Tim	Wrangell	
203	Olson, Wallace M.	Auke Bay	
204	Owens, Becky J.	Sitka	
205	Parker, Eric and Catherine	Sitka	
206	Patty, Leon	Juneau	
207	Paul, Tom	Douglas	ADFG
208	Paxton, Gary L.	Sitka	City and Borough of Sitka
209	Pennoyer, Steven	Juneau	NMFS
210	Philife, J.F.	Juneau	
211	Phillips, Ronald P.	Wrangell	
212	Polinkus, Brian	Juneau	
213	Pool, Christine	Sitka	
214	Pool, Megan	Sitka	
215	Pool, Rollo, W.	Sitka	
216	Powers, Mr. and Mrs. Danny R.	Rowan Bay	
217	Powers, Susan K.	Wrangell	
218	Raichl, Andrej	Juneau	
219	Raichl, Monica	Juneau	
220	Rasler, Randy L.	Wrangell	
221	Ray, David D., Sr.	Sitka	
222	Rehfeldt, Jim	Juneau	
223	Resturg, William	Wrangell	
224	Richards, Barbara R.	Sitka	
225	Rims, Marshall	Juneau	
226	Riste, Al	Sitka	
227	Rivers, John W.	Rowan Bay	
228	Rosenbruch, Jimmie C.	Glacier Bay	Glacier Guides, Inc.
229	Roshut, Todd		
230	Routh, Sharon	Sitka	

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
231	Russell, James R., Jr.	Juneau	
232	Schmidt, Lee M.	Sitka	
233	Scott, Paula	Sitka	
234	Shaffer, Betty A.	Sitka	
235	Sheffer, Cathy	Sitka	
236	Shirley, Jacqueline, G.	Sitka	
237	Smith, Alana	Sitka	
238	Smith, Loretta R.	Wrangell	
239	Smith, Pete	Ketchikan	Tongass Cave Project
240	Stahla, Edward A.	Sitka	Law Offices
241	Stauffer, Steve	Sitka	
242	Stedman, Bert K.	Sitka	Pioneer Capital Management
243	Stedman, Ken, Bonita, and Karl	Sitka	Stedman Insurance Agency
244	Stidham, Kenneth	Sitka	
245	Stockemer, Paul	Wrangell	
246	Stonelake, Robin E.	Juneau	
247	Stortz, William A.	Sitka	
248	Stratton, Jim	Anchorage	
249	Teasly, Gary L.	Juneau	
250	Thomas, R.E.	Juneau	
251	Thomsen, Dorothy	Sitka	
252	Thurston, Fred	Wrangell	
253	Thurston, Fred and Carolee	Wrangell	
254	Tonant, Stanley R.	Wrangell	
255	Trani, Larry	Sitka	
256	Turner, Jim	Juneau	
257	Turner, Kile and Kirby	Juneau	
258	Twohig, Pamela	Sitka	
259	Vantrease, Kenneth W.	Juneau	
260	Vantrease, Glenn	Juneau	
261	Vantrease, Scott W.	Juneau	
262	Venneberg, Ed	Sitka	Venneberg Insurance, Inc.
263	Venneberg, Mike	Sitka	Venneberg Insurance, Inc.
264	Vennetti, Joan G.	Sitka	
265	Versteeg, C.T.		
266	Versteeg, Janice L.	Wrangell	
267	Wallace, Sally	Rowan Bay	
268	Watson, Bonnie J.	Juneau	
269	Weatherly, Larry J.	Juneau	
270	Weimann, Barbara	Juneau	
271	Westburg, Edward R.	Wrangell	
272	White, Clifford	Wrangell	
273	White, Jerry Dean	Juneau	
274	White, Tracy	Wrangell	
275	White, Walter E.	Wrangell	
276	Whitson, Robert	Juneau	
277	Widmark, L.A., J.S. Nielsen, and R.S. Nielsen, Jr.	Sitka	Sitka Tribe of Alaska

List of Commenters on the Ushk Bay Draft EIS

Number	Name	City	Organization
278	Willman, Mary	Sitka	
279	Wilson, Albert W. and M. Signe	Sitka	
280	Wilson, Holly	Wrangell	
281	Wilson, Jack W.	Juneau	
282	Wirth, Roland	Sitka	
283	Wolfe, Sylvia Ellen	Sitka	
284	Womack, James	Sitka	
285	Womack, Shirley	Sitka	
286	Womack, Todd	Sitka	
287	Woolsey, Robert	Sitka	
288	Wright, Brenda	Sitka	
289	Wright, Ted A.	Sitka	Sitka Tribe of Alaska
290	Wright, Ted A.	Sitka	Sitka Tribe of Alaska
291	Hardy, Dave	Sitka	ADFG
Subsistence Hearing Testimony, 7/19/93			
300	Muller, Don	Sitka	
301	Joensuu, Pat	Sitka	Alaska Pulp Corporation
302	Pool, Rollo	Sitka	
303	Jacobs, Mark, Jr.	Sitka	Southeast Native Subsistence Commission
304	Brylinsky, Scott	Sitka	
305	Lawson, John	Sitka	
306	Lowe, Ann L.	Sitka	ADF&G Advisory Committee System
307	Katz, Dave	Ketchikan	Southeast Alaska Conservation Council
308	Kitka, Herman	Sitka	
309	Pate, Jude	Sitka	
310	Dick, Ronn	Sitka	
311	Nielsen, Ray, Jr.	Sitka	Sitka Tribes of Alaska
312	Stortz, William	Sitka	
313	Evans, Mandy	Sitka	
314	Nelson, Richard	Sitka	
Subsistence Staff Notes from Dale Kanen, 8/24/93			
315	Jacobs, Mark	Sitka	Sitka Tribes of Alaska
316	Littlefield, John	Sitka	Sitka Tribes of Alaska
317	Neilson, John	Sitka	Sitka Tribes of Alaska
318	Truitt, Gil	Sitka	Sitka Tribes of Alaska

Comment Letters



City and Borough of Sitka

PUBLIC SERVICES

304 Lake Street • Sitka, Alaska 99835

Phone (907) 747-5500

Fax (907) 747-3158

August 24, 1993

Mr. Michael Weber, Planning Team Leader
U.S. Forest Service, Chatham Area
204 Siginaka Way
Sitka, AK 99835

AUG 25 1993

Dear Mr. Weber:

The Sitka Coastal Management Program has reviewed the Ushk Bay Timber Sale Draft Environmental Impact Statement. We appreciate the opportunity to comment on this EIS as well as the extension of the comment period.

With the recent notice of the closure of the Alaska Pulp Corporation mill, the City and Borough of Sitka is greatly concerned about the future of the timber industry employment in our community, and other industries as well. Your plan suggests that economic development is an important goal of this timber plan, and that Sitka's economic well-being is directly related to timber employment. The Sitka mill provides 400 full-time and 560 part-time jobs, for a payroll of approximately \$30 million. While the Coastal District policies support the preservation and enhancement of both recreational and subsistence opportunities, the policies clearly permit timber harvest as a high priority even in areas set aside as "Special Management Areas".

A portion of Ushk Bay has been designated a Special Management Area due to its heavy recreational and subsistence uses. The area leased for log storage by Alaska Pulp Corporation was specifically excluded from the Special Management Area, and the development of necessary roads and other transportation facilities necessary to conduct timber harvest is specifically permitted in Enforceable Policy #7.

The alternative which provides the most economical timber for the Mill's harvest is Alternative C. However, this alternative will very heavily impact other uses of Ushk Bay. If the final alternative could avoid the harvest areas adjacent to the Bay wherever possible (for example, on the northeast corner of the Bay from Harvest Unit 93 eastward, where substantial deer are concentrated), this would reduce impacts to subsistence and recreational users.

I am not aware of significant recreational or subsistence uses in the Poison Cove area, which is already a log storage area. Although the viewshed along Peril Strait is of importance, VCU 2B1 and 279 are far enough away from the main navigational channel that timber harvest in these areas should not substantially adversely impact Peril Strait commuters. If less harvest units are selected in Ushk Bay and/or Deep Bay, perhaps the quantities could be made up in the Poison Cove harvest units.

Mr. Michael Weber
August 24, 1993
Page 2

In general, the Coastal District supports keeping roads open for other users after logging has ceased, as long as subsistence uses are not significantly adversely impacted. There is certainly need for more road access to recreational opportunities which could be provided by maintaining the roads.

The reopening of the Alaska Pulp Corporation mill will depend on several factors -- timber contract modifications, market conditions, and the availability of timber. Timber plans should not be deferred, and timber harvesting conditions must be reasonable and timber prices fair and realistic to permit Alaska Pulp Corporation to continue to operate. The City and Borough of Sitka is committed to assisting the mill to reopen.

Thank you for the opportunity to comment.

Sincerely,

Marlene A. Campbell
Coastal Management Coordinator

cc: Kenneth J. Hammons, APC
Dave Hardy, ADF&C

MEMORANDUM

STATE OF ALASKA

Department of Environmental Conservation

TO: Lorraine Marshall
Project Review Coordinator
OMB-DGC

DATE: July 19, 1993

FILE NO: AK930607-02J

THRU:

TELEPHONE NO: 465-5365

JMF

FROM: Jim Ferguson
Program Coordinator, Forest Practices
Southeast Regional Office

SUBJECT: Ushk Bay Timber Sale DEIS

The Department of Environmental Conservation has completed a review of the Draft EIS for the Ushk Bay Timber Sale, part of the Alaska Pulp Corporation long-term timber sale contract. The preferred alternative proposes to harvest 97.3 MMBF of timber on 2,999 acres. 62 new miles of road are proposed. Four new LTFs would be required. The LTFs will undergo a separate ACMP review, and are subject to an ADEC 401 certification of reasonable assurance. These comments are intended to assist the Forest Service in preparing a final EIS that will be consistent with the ACMP and the Clean Water Act, Section 319, and which will meet the intent of the USFS/ADEC Memorandum of Agreement on water quality management.

NEPA Comments

1. The preferred alternative is not the most environmentally preferable. The projected potential impacts to water quality from timber harvest, road building and use, and LTF construction and operation are larger than for any other alternative other than, perhaps, Alternative E. For example, the preferred alternative has a high density of road construction, and a large number of stream crossings per unit area (or volume harvested), in comparison to other timber sales. Also, the preferred alternative proposes an LTF for Deep Bay, which is associated with a watershed that produces large numbers of salmon. The area is primarily LUD IV, which stresses "commodity production." Therefore, the value of the fish produced by this watershed should be carefully considered when making a decision to favor production of another commodity (timber), especially when there could be an impact on the production of a valuable commodity (fish).

Was the primary reason for choosing Alternative C as the preferred alternative the fact that it is the only alternative that projects a positive net return (though it appears to essentially break even)? If so, is there some way that a profitable alternative could be designed that has lower projected water quality impacts? It also appears that, with the announced closure of the APC Mill in Sitka, the Purpose and Need for this sale have

changed. How does this change affect the scheduling and scale of this timber sale?

2. ADEC would like to know why the road system will remain open only in Alternatives C and D. Given the experience with roads in the False Island area, is there a reasonable expectation that these roads will be maintained at a level that will keep them driveable? For the other alternatives, the roads will be closed after the sale is concluded. Does this mean that APC will not receive purchaser road credits for building these roads?

Clean Water Act, Section 319 Consistency Comments

1. Page 4-53, Cumulative Impacts: Were watershed harvest thresholds of concern calculated for the watersheds affected by the proposed timber sale? Were sediment delivery potentials calculated? A cumulative effects analysis would be appropriate, particularly given that 41% of the harvest proposed in the preferred alternative occurs on extremely high MMI soils. Further, 12.5% of the proposed road building is on high and 4.5% on high MMI soils. BMP 12.6, citing guidance in FSM 2526 and R-10 SUPP 2526 states, in part: "Give preferential consideration to riparian dependent resources when conflicts among land use activities occur." [BMP 12.6(2)]. Also, BMP 12.6(7) states: "Manage riparian areas to provide for long-term conservation, productivity, biological diversity, and ecosystem integrity." These mandates, as well as the provisions of the Clean Water Act, suggest that a cumulative impact analysis must be done.

2. Appendix I, Monitoring:

The monitoring plan for this timber sale appears to closely follow that for the Southeast Chichagof Timber Sale. Therefore, some of the comments made on that monitoring plan apply to this monitoring plan as well. Likewise, some new comments on the Ushk Bay monitoring plan could be helpful in the implementation of the Southeast Chichagof monitoring plan.

Implementation Monitoring: The baseline is actually established at layout, but it is true that an initial baseline is established at the planning level.

It is important to note that timber sale administrators and road inspectors generally check to see if contract clauses are being met. While very important, this work would most properly be considered contract enforcement or management control—it is not BMP implementation monitoring unless the results are summarized and reported to ADEC. For example, under Timber Unit Yarding, Road Location, Design and Management, and Erosion Control Measures, will the results be summarized and reported to ADEC?

The Forest Service should carefully consider how implementation will be measured, particularly for Timber Unit Layout, Road Location, Design, and Management, Slope Stabilization, Erosion Control Measures, and Stream Buffers for Stream Not Covered by

TTRA. The units of measure for these monitoring tasks were not clear.

Finally, it should be noted that the monitoring proposed for LTFs-Petroleum Spills is not implementation monitoring, but is NPDES compliance monitoring, and that LTF Removal is not monitoring, but a management strategy.

Effectiveness Monitoring: Note that the activities proposed under Proportion of Timber Harvest are actually implementation monitoring, and that those proposed under Timber Restocking are not strictly effectiveness monitoring. The measurement of bark accumulations at LTFs is an NPDES compliance activity, though it could be considered effectiveness monitoring. The Precommercial Thinning proposal is a management activity, and is not effectiveness monitoring.

Another aspect of effectiveness monitoring is the approved Chatham Area Effectiveness Monitoring Action Plan. It would be desirable to tier some of the effectiveness monitoring activities for the Ushk Bay project to this Plan. For example, the proposal for Stream Buffer Windfirmness is actually a combination of two of the four individual proposals in the Action Plan. The Stream Crossing Structures reflects a third proposal in the Action Plan. The fourth proposal in the Action Plan, Landslide Mitigation, is not discussed in the DEIS monitoring plan.

3. Unit Cards:

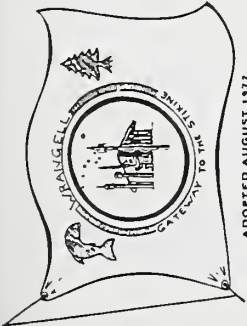
BMPs are not cited in the unit cards. While not required, this procedure is recommended in BMP 13.1, and can greatly facilitate the conduct of BMP implementation monitoring.

Under the recommendations sections, are the specialists stating that the units *should* be designed for windfirmness, or that the units *have* been designed for windfirmness? If the latter is the case, then ADEC must disagree, given a sample of unit cards that were examined.

ADEC appreciates the opportunity to comment.

cc: Dick Stokes, ADEC, Juneau
 Lana Shea, ADF&G, Juneau
 Dave Hardy, ADF&G, Sitka
 Jim McAllister, ADNR, Juneau
 Gary Morrison, USFS, Sitka ✓
 Michael Weber, USFS, Sitka
 Wayne Elson, USEPA, Seattle

2/19/88



ADOPTED AUGUST 1972

CITY of WRANGELL, ALASKA

INCORPORATED JUNE 15, 1903

80X 531-99929 (907) 874-2381
FAX: (907) 874-3952

89.

CITY OF WRANGELL, ALASKA

Michael Weber
July 23, 1993
Page 2

Of the 97.3 million board feet harvested under Alternative C, one half is destined for the Wrangell sawmill and represents nearly one year of wood supply. Alternative C also represents 501 jobs and \$13.45 million dollars in payroll.

The reopening of the Alaska Pulp Corporation mill will depend on several factors -- timber contract lawsuit and modifications, new markets, market conditions and the availability of timber. Timber plans should not be deferred because of the pending, indefinite closure of the Sitka mill. Timber harvesting conditions should be reasonable and timber prices should be fair and realistic.

The Wrangell Economic Development Action Plan stresses the importance of economic value. Alternative C appears to maximize economic benefit to Wrangell while not precluding other land uses and other development options.

Sincerely,

Duane H. Gasaway
Duane H. Gasaway
City Manager

DHG:fv

cc: Mayor and City Council
Frank Roppel, APC

July 23, 1993

Michael Weber
Planning Team Leader-USHK BAY
U.S. Forest Service
204 Siginaka Way
Sitka, AK 998035

FAX: 747-4331

Re: USHK Bay Environmental Impact Statement

Dear Mr. Weber:

Thank you for the opportunity to comment on the USHK Bay EIS. The City of Wrangell has undertaken a significant effort toward an overall economic development plan (Economic Development Action Plan). Among its goals is to minimize the impact of boom and bust cycles in the forest and fishing industries. The plan is ambitious and seeks in a variety of ways to diversify and strengthen Wrangell's economy.

The plan also notes that economic development efforts must not ignore existing businesses. Rather, these efforts must sustain and enhance the existing economy. Because of our sawmill's relationship to the Sitka pulp mill, the USHK Bay EIS is directly related to our community's economic health.

With the recent notice of the closure of the Alaska Pulp Corporation mill in Sitka, the City of Wrangell is greatly concerned about the future of the timber industry employment in our town.

Of the six alternatives to the plan, we favor the alternative that provides the most economical timber for our dependent industry, while at the same time providing protection for fisheries and subsistence values. The alternative that best meets our economic goal is Alternative C.



United States Department of the Interior

OFFICE OF THE SECRETARY

Office of Environmental Affairs
1689 C Street, Room 119
Anchorage, Alaska 99501-5125



ER #93/0476

Michael Weber, Planning Team Leader
USDA Forest Service - Chatham Area
204 Siglinaka Way
Sitka, Alaska 99835

JUL 22 1993

Dear Mr. Weber:

In response to your letter of May 20, 1993, we have reviewed the Draft Environmental Impact Statement (DEIS) for the Ushk Bay Timber Sale and offer the following comments for your consideration.

General Comments

Based on recent interagency coordination, including a 7/13/93 field trip, we are aware that U.S. Forest Service (USFS) planners have recently proposed a new alternative log transfer facility (LTF) site along the north shore of Ushk Bay. We recommend this new site, along with the potential changes in road locations and harvest areas, be added into the range of alternatives and thoroughly evaluated in the final EIS. To ensure a consistent and equitable comparison of the LTF alternatives, we recommend that professional biologists or ecologists with training in marine sciences evaluate the new site.

We recommend the DEIS better analyze proposed log storage areas in Ushk Bay. Other than identification of an old site near the head of Ushk Bay, no alternatives within the Bay were considered. The old site, which may not have been used for 15 or 20 years, is located in and adjacent to sensitive wetland, (intertidal eelgrass beds, *Zostera marina*) and shellfish habitat (dungeness and red king crab). The site does not meet the Alaska Timber Task Force Guidelines (TTF) (1985) S-6, S-7, and S-9 criteria for siting LTFs. We recommend the final EIS consider and evaluate other alternative sites in Ushk Bay.

Subsistence and personal use harvest of king and dungeness crab are likely to increase dramatically with the influx of timber workers and logging camp residents into the project area. The increased take of shellfish resources (especially king crab) may result in over-harvest of the local stocks and lead to reductions in crab populations in the Peril Strait-Hoonah Sound area. We believe that increased harvest of shellfish resources by timber workers and camp residents, and the impacts on subsistence and commercial use of these resources, should be further examined in the final EIS. We recommend that issues of overharvest and increased competition for shellfish resources be thoroughly analyzed under Section B10 of the Alaska National Interest Lands Conservation Act.

The Bureau of Mine's Minerals Availability Systems and Mining Claim Information System databases indicate that the project area contains sixteen prospects. These prospects were explored between the years of 1901 to 1977, with no apparent success.

Mineral exploration in the Ushk Bay area was small-scale, erratic, and can be divided into three time periods. The first period was from 1901 to 1947, during which some 79 claims were staked and later abandoned. This was followed by 27 years of no apparent activity from 1947-1974. In 1974, sixty claims were staked and were active until 1977; these claims were later abandoned.

Two other prospects were also explored in the early 1980s. The exact year and number of claims is unknown, but both prospects are now abandoned. At this time, there are no known claims active in the area.

Given the history of mining exploration in the area, the timber sale will have little or no effect on the mineral resources in the project area. Although the past record of exploration is discouraging, the timber sale may benefit new mineral exploration. Proposed roads will improve accessibility and new road cuts could reveal mineralization that may not otherwise be exposed. If further information on the mineral occurrences in the area are needed, please contact Mr. James R. Coldwell (907) 364-2111.

Specific Comments

Chapter 3, page 33, paragraph 3. We do not believe that the Alaska Pulp Corporation (APC) holds an active Corps of Engineers (Corps) permit for log storage in Ushk Bay. Generally, permits for inactive operations expire if not used. The status of this permit should be confirmed with the Corps. Regardless of the status of the permit for the old site, we believe that alternatives having less impact on marine resources and meeting the TTF guidelines should be considered and evaluated in the final EIS.

Chapter 3, page 35, paragraph 2. The DEIS states that "ADP&G, Habitat Division, is not disposed to approve construction of an LTF within the confines of Ushk Bay." The U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) are also on record as opposing LTF development in Ushk Bay (Robinson-Wilson, FWS, July 9, 1986 letter to Roberts, USFS). We believe this should be stated in the final EIS in context with the Alaska Department of Fish and Game's (ADF&G) position.

Chapter 3, page 37, paragraph 6. The document states that areas selected for possible construction of LTFs do not differ biologically from surrounding areas. However, the DEIS acknowledges that there have been significant observations of king crab and Dungeness crab in Ushk Bay. Although the general appearance and structure of the marine and estuarine habitats may appear similar, there is considerable anecdotal evidence that Ushk Bay is extremely important habitat for molting, mating, and rearing of red king crab and Dungeness crab. This habitat is considered critical to maintenance of the regional Hoonah Sound-Peril Strait king crab stocks, and we suggest this be clarified in the final EIS.

Chapter 3, page 33. We suggest that the final EIS further describe the marine, wetland, and wildlife habitat values found at the head of Ushk Bay where the proposed log storage site would be located. This area is strongly influenced by freshwater and estuarine conditions found at the mouth of streams flowing into Ushk Bay. These alluvial shallow water habitats are characterized by extensive eelgrass beds and highly productive biological communities that are different from those found in the vicinity of the proposed LTF sites.

Chapter 3, page 62, paragraph 1. The DEIS is inconsistent; on page 62 it states that APC has applied for a Corps permit, and on page 33, it states that APC currently has an active permit for log storage in Ushk Bay. We recommend this be clarified and corrected in the final EIS.

Chapter 4, page 28, paragraph 5. The document states that variances to the Memorandum of Understanding (MOU) between the USFS and the FWS would be required to construct roads in the vicinity of two bald eagle nest sites near Poison Cove. It is our understanding that an additional variance to the MOU would be required if the LTF at Goal Creek were constructed as proposed. We recommend that alternative access routes and mitigation measures to minimize land use activities within the 330-ft eagle nest tree buffer zone should be analyzed in the final EIS.

Chapter 4, page 28, paragraph 4. We suggest you also note in the final EIS that bald eagles and their nest sites are also protected under provisions of the Eagle Protection Act (16 USC 668-668d).

Chapter 4, page 32, paragraph 3. The DEIS states that harvest of old growth timber in the project area could reduce availability of nesting habitat for the marbled murrelet by 9-17 percent. As stated in the DEIS, the marbled murrelet is under investigation as a candidate 2 species under provision of the Endangered Species Act. We believe the DEIS should address cumulative effects on marbled murrelets due to logging activities, as proposed in the DEIS and in other areas in the region. Furthermore, it downplays the effects of the proposed action by stating that the Project Area contains only a small fraction of the suitable murrelet habitat in the region. We believe cumulative effects of this and other logging projects in the region and throughout the Tongass National Forest (TNF) should be considered in the final EIS.

We suggest that marbled murrelet pre-breeding flight counts and intensive surveys during the breeding season be conducted in the project area, and the results included in the interagency database and final EIS. Additionally, we recommend the final EIS address the development of a management plan for marbled murrelets to ensure maintenance of the species throughout the TNF.

We do not believe that current USFS programs on the TNF adequately protect the marbled murrelet. Increased efforts are needed to locate nest sites and to study nesting ecology. We view nest management on a site-specific basis as an interim stop-gap measure. Ecosystem/landscape-based management to maintain marbled murrelet habitat on the TNF should be addressed in the final EIS.

Chapter 4, page 32, paragraph 4. The DEIS states that the USFS Region 10 interim guidelines would be implemented to ensure viability of the northern goshawk in the project area. As with marbled murrelets, protection of single nest sites is only a short-term strategy and cannot be expected to succeed in maintaining goshawks in the TNF. It is our understanding that the FWS has advised the USFS that these guidelines are not adequate.

Although all North American goshawk subspecies exhibit relatively consistent patterns of habitat use, we recommend continued investigations of the northern goshawk in Southeastern Alaska be addressed in the final EIS. We also recommend that a monitoring program be established in cooperation with the FWS to evaluate the region-wide cumulative effects of current timber harvest practices on goshawks in southeast Alaska.

Chapter 4, page 45, paragraph 4. The DEIS states that the actual construction of the LTF would be the most severe direct impact to the marine environment. We believe the discharge of bark and woody debris should also be considered in the final EIS as a direct impact of LTF development. It is generally accepted that, especially for larger sales, the operational discharge and deposition of bark and other woody debris has the greatest direct impact on marine resources.

Chapter 4, page 46, paragraph 3. The DEIS states that bark accumulation can impact benthic abundance without affecting diversity. Although there may be locations where this has occurred, we believe that this generalization is unsubstantiated and contradicted by literature. Shultz and Berg (1976) found that plants and epifauna were significantly reduced in bark covered areas; other observers and researchers have also noted a general lack of epifauna in areas of bark accumulation (Ellis, 1979; Lehman, 1970; McDaniel, 1973; Waldchuck, 1979).

We are unaware of studies supporting the DEIS statement that sessile epibenthic organisms increase in abundance in bark covered areas. Researchers have reported that deposit feeders tend to replace sessile suspension feeders on bark deposits (Conlan and Ellis, 1979, and Jackson, 1986). We have also observed that as bark deposits begin to decompose, the resulting altered substrate consists of soft fibrous or gelatinous materials that provide virtually no solid surface for attachment of sessile organisms. We believe that the final EIS should be corrected or modified to more accurately reflect professional observations and analysis on the subject.

Chapter 4, page 48, paragraph 1. The DEIS states that it is unlikely that any residual effect from LTF operation would linger if a second harvest were approved. Although the effects may be somewhat mitigated by the relatively small volume of timber proposed for transfer, Conlan and Ellis (1972) and Ellis (1979) reported that the effects of bark deposits on the substrate last several decades. We believe impacts from first and second harvests should be addressed as cumulative impacts.

Chapter 4, page 47, paragraph 4. The DEIS states that the cumulative buildup of woody debris is dependent on continuous input of material. Freese (1987) reported that the amount of timber transferred accounted for only a small amount of the observed variation in the size of bark deposits at the LTFs. We believe that this and other factors affecting woody debris and its impacts should be discussed in the final EIS.

Chapter 4, page 48, paragraph 4. We believe that the DEIS significantly underestimates probable impacts that may occur from reactivation of a log storage site at the head of Ushk Bay. Major usage of the old site probably predates the 1985 date reported in the DEIS. Previous harvest in Ushk Bay occurred in the 1960s and its use as storage for logs in transit has been minimal for at least the last 20 years. Although the reported lack of bark deposits is relevant, it is not sufficient justification in itself to reactivate the old site without consideration of alternatives. The site does not meet current TTF guidelines, and the lack of any meaningful alternative analysis makes the range of alternatives inadequate. Other log storage sites in Ushk Bay should be surveyed and evaluated in the final EIS.

We appreciate the opportunity to review and comment on the subject document.

Sincerely,



Regional Environmental Officer - Alaska

Attachment

Literature Cited

- Alaska Timber Task Force Subcommittee, 1985. Log Transfer facility siting, Construction, Operation, and Monitoring/Reporting Guidelines. Unpublished interagency/industry recommendations. State of Alaska, Juneau, Alaska. 19pp.
- Conlan K.E., 1977. The effects of wood deposition from a coastal log handling operation on the benthos of a shallow sandbed in Saanich Inlet, B.C. MS thesis, University of Victoria. 203pp.
- Conlan and Ellis, D.V. 1979. Effects of woodwaste on sandbed benthos. Mar. Poll. Bull. 10, 262-267.
- Ellis, R.J. 1970. Preliminary biological survey of log rafting and dumping areas in southeastern Alaska. Marine Fisheries Review. 35, 19-22.
- Freese, J.L. 1987. Factors affecting benthic deposition of bark debris at 13 log transfer facility sites in southeastern Alaska. NMFS Auke Bay Laboratory, Juneau, Alaska. 73pp.
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- McDaniel, N.G. 1973. A survey of the benthic macroinvertebrate fauna and solid pollutants in Howe Sound. Fisheries Res. Bull. 15, 127-128.
- Waldichuk M. 1979. Ecological impacts of logs. Mar. Pollut. Bull. 10, 33-34.
- Shultz, R. and Berg, R. 1976. Some effects of log dumping on estuaries. NOAA-NMFS Report, Environmental Assessment Division, Juneau, Alaska 64pp.

7-21-94

(143)

Michael Weber
Planning Team Leader
USFS - Chatham Area
204 Signaka Way
Sitka, AK 99835

RE: USHK BAY EIS

Dear Mr. Weber,

I support the alternative that offers the maximum amount of economical timber.

Signed,

*Dan Keck
Mayor, City of Barrow, Alaska*



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Southeast Alaska Ecological Services
3000 Vniska Park Blvd., Suite 201
Juneau, Alaska 99801

IN REPLY PLEASE TO

119

August 17, 1993

Mr. Gary Morrison, Supervisor
Chatham Area, Tongass National Forest
204 Siginaka Way
Sitka, Alaska 99835

RE: Ushk Bay Timber Sale

Dear Mr. Morrison:

We have received your letter and attached biological assessment dated July 28, 1993, regarding a proposed log transfer facility (LTF) on the north shore of Ushk Bay. The facility would be developed in concert with the Ushk Bay Timber Sale.

Our comments on the Ushk Bay Sale Draft Environmental Impact Statement (DEIS) were previously submitted to your agency as part of the Department of Interior's consolidated review of the project (ref. Gates to Weber letter dated 7/22/93). The North Ushk Bay site was not evaluated or identified as an alternative in the DEIS; therefore, the issues and concerns identified below supplement our previous comments on the Ushk Bay DEIS.

The North Ushk site was not evaluated in context with, or compared to, the other alternatives LTF sites described in the DEIS. The affected resources and potential impact to those resources should be compared for the full range of alternatives in Ushk Bay.

The alternatives are evaluated by personnel contracted by the U.S. Forest Service with significantly different professional backgrounds and areas of expertise. The sites on the south shore of Ushk Bay were investigated and evaluated by Dames and Moore, Inc., a well respected environmental consultant group, while the biological evaluation for North Ushk site was done by a dive shop operator. To ensure a consistent and equitable comparison of alternatives, we strongly recommend that professional biologists or ecologists with training and experience in the marine sciences should be employed to evaluate the biological resources and environmental effects.

The biological assessment does not adequately address the crab resource in the vicinity of the proposed LTF site. The DEIS acknowledged that there have been significant observations of king and Dungeness crab in Ushk Bay. There is considerable anecdotal evidence that subtidal mating and rearing habitat in Ushk Bay may be critical to the maintenance of king crab stocks in the Hoonah Sound area.

The cover letter states that the LTF slide would be constructed on the natural 15% grade the beach provides. The proposed 15% slide will not meet the 3-ft/sec maximum entry velocity criteria that the Environmental Protection Agency routinely incorporates into the NPDES 402 permit for LTFs. A study performed by Quadra Engineering, "Incline Plane Log Bundle Transfer Study," dated February 1985, calculates that a 150-ft ramp built on a 14% slope would have an entry velocity of 23 ft/sec. Unless some restraining device is incorporated into the design, it is highly unlikely that the LTF could comply with the best-management provisions of the 402 permit.

Sincerely,

Nevin D. Holmberg
Field Supervisor

cc: EPA, Anchorage
ADF&G, FWE, Sitka
NMFS, Juneau

MEMORANDUM State of Alaska

To: Lorraine Marshall 5 August 1993
DCC
Juneau
Tele#558#265
From: Tom Paul Ushk Baybember
Wildlife Technician/Planner
ADFG/DWC Douglas
Saie DEIS COORDINATION
comments

AUG 6 1993
GOVERNMENTAL
COORDINATION

The following are Division of Wildlife Conservation comments on the Ushk Bay APC Long Term Sale DEIS. Please append these to the other DR&G comments submitted by Habitat and Restoration Division in their July 16 memo. We agree with all items in the H&R memo and have these additional concerns.

Maps
The maps accompanying the DEIS are inadequate for meaningful analysis of site-specific affects of the proposed action. The maps provided show only the outline of the area, streams, and proposed harvest units. Topography, extent of productive forest land, location of high volume stands, planned permanent retention and previous clearcuts are missing. High value wildlife habitat for deer, martens, and bears should be depicted on maps in the DEIS. All these are important for reviewing proposed harvest units and for assessing how the proposed harvest affects the mosaic of forest and habitat in the project area. Frankly, we have not seen maps this inadequate in a long-term sale BIS for more than a decade. The deficiency is great enough that we believe a supplement to the draft which includes better maps is probably necessary. Because the ROD is typically issued with the Final BIS, waiting until the FEIS for better maps provides no opportunity to review and comment before a decision is made.

Patch-Size and Fragmentation
Because the DEIS does not analyze the effects of old-growth patch size and fragmentation on wildlife species, we believe it overestimates the habitat capability remaining on the project area both as a result of this project and of future actions. Both the previously released CPOW and North Revilla DEISs in the Ketchikan Area have excellent fragmentation maps, and the analysis in the Central Prince of Wales FEIS includes effects on wildlife habitat capability. These should be used as models for the Ushk Bay DEIS and other Chatham Area NEPA analyses. Patch size factors were always intended to be important aspects of the habitat capability models for some old-growth sensitive species and accurate analysis is incomplete without them.

Proportionality
In its analysis of timber harvest proportionality the DEIS admits that no alternative meets the TTRA proportionality requirement for Management Area C-39 and that alternatives C and E do not meet the proportionality requirement in MA C-40. The DEIS excuses this

shortcoming by saying the discrepancies will be corrected during future timber sale planning. However, the DEIS also states on page 4-32 that according to the forest plan schedule, no additional timber harvesting is planned for the project area at least until 2011. For the preferred alternative, about 175 acres of low- and mid-volume forest need to be harvested without taking any high volume trees to bring the acreage harvested in C-39 back to proportionality. It appears that over 700 acres of low- and mid-volume forest must be cut without taking any additional high volume trees to bring C-40 to the correct acreage proportions. If no further harvest is planned in the area before the end of the APC contract, we wonder how the Forest Service plans to achieve proportionality. It seems unlikely any operator but a pulp mill would be interested in purchasing the low- to mid-volume timber necessary to bring the agency into compliance with the law. Under the circumstances, we believe the Forest Service should achieve proportionality this entry or it needs to explain how it plans to do so in the future.

Is timber harvested from road rights-of-way included in proportionality analysis?

Cumulative effects
Cumulative effects analysis is inadequate. The analysis should consider the effects of the proposed timber sale in combination with the effects of sales in surrounding areas. TIMP did not do such site- and action-specific analysis claiming that only project level planning could address these impacts. We agree with Subsistence Division that Sitka's and other communities' hunting patterns are also being affected by other timber sales nearby. Treating this sale in isolation does not allow adequate evaluation of effects on subsistence users of the area.

Non-rural hunting
The DEIS ignores hunting by non-rural residents. Hunters from Ketchikan, Juneau, other parts of the state, and nonresidents have all hunted deer in WAA 3311 in recent years yet there is no analysis of the impacts to these users. Federal regulations now prohibit "non-subsistence" hunters in the project area. But the loss of additional habitat capability from any of the action alternatives makes it more unlikely that non-rural hunters will be allowed to hunt the area again if deer populations rebound to the levels of the mid-1980s. The DEIS should address this issue. The DEIS does mention that non-rural hunters take most of the brown bears harvested but does no analysis of the effects of logging, roading, and habitat loss on bear hunters.

Tourism
The section on recreation and tourism in chapter 3, pages 55-56 is incomplete in that only tour ship tourism is mentioned. Tourism which concentrates on wildlife viewing is completely ignored. In a 1989 survey of non-hunting wildlife-oriented businesses in southeast Alaska, Shea (1990) found this to be one of the most rapidly growing sectors of the southeast Alaska economy, with 143,000 clients, direct expenditures of \$43 million, and a total estimated use value to the local economy of more than \$65 million

a year in 1989. That year, two businesses made a total of 4 trips into the Ushk Bay area, carrying 31 clients on both overnight and day trips. Given the growth of this industry and the proximity of the project area to Sitka, use will probably increase. The survey found this type of tourism is adversely affected by logging and other actions which decrease wildlife habitat and numbers and diminish scenic beauty. Data from this survey has been given to the TLMP team. We also note that although the DEIS presented values for the timber industry in terms of dollars, no dollar value was estimated for tourism, fishing, subsistence or other activities on the forest.

Roading

We are very uncomfortable with the proposal that the preferred alternative would leave all roads in the project area open. The DEIS gives no rationale for this action. It is puzzling given that no additional logging is planned there for the foreseeable future, and given that the DEIS acknowledges the high potential for overharvest of deer, bear, and marten and the risk of disturbance to bears. The effect on marten will likely be even greater than the DEIS estimates. On northern Chichagof, Flynn found that 90% of study animals were harvested during only three weeks of the trapping season in areas where roads were open for trapping. With the road systems of the preferred alternative extending far into every major drainage of the study area, it is possible resident, reproducing adult marten could be extirpated from the study area.

Of equal concern is the effect of a road system on brown bears. Disturbance factors due to roads and camps have apparently not been incorporated in the habitat capability models for brown bears. If not, effects of the alternatives on brown bears have likely been underestimated. This is especially true if roads are to remain open. On page 4-61 the DEIS states that because alternatives C and D would maintain their road systems, outfitter/guides would use the system "to find bears for their clients." Because hunter use of roads led to serious overharvesting of bears on northern Chichagof, the use of motorized vehicles for hunting bears on those logging road systems has been prohibited. Even if hunting bears were prohibited on the Ushk Bay area road system, the penetration of roads into every major drainage of the project area will likely lead to increased bear/human encounters, increased DLP kills of bears, and increased disturbance of bears particularly where roads are close to salmon streams. From the standpoint of mitigating detrimental effects on wildlife, the prudent course would be to close roads in this area after timber harvest.

Habitat Capability models

We are very concerned that the habitat capability for deer displayed in the DEIS differs from that used by TLMP. In table 3-13, the DEIS says more site-specific data is responsible for the higher numbers. But a 272 deer difference in capability indicates a considerable change in the habitat from what was previously assumed. We are not aware of what kind of new site-specific data exists and as co-authors of the models would like to be consulted on its use with the models. In any event, if the current habitat capability for deer is determined to be 1,715 the ADF&G population objective in Table 3-15 and the text page 3-22 should be adjusted to equal that. Our objectives were set to accommodate hunter demand or to be equal to current habitat capability if hunter demand exceeded it (see introduction to ADF&G Deer Population Objectives).

The entire discussion of Habitat Capability Changes on pages 4-91 through 4-94 confuses population levels with habitat capability and demonstrates a fundamental misunderstanding of the habitat capability models and what they are designed to do. In addition, many statements are inaccurate. The sections should be rewritten in consultation with ADF&G. The DEIS is erroneous in its description of what the habitat capability models predict. The deer model estimates habitat capability on the average over the long-term. This includes mild and average, as well as severe winters. The models are designed to take into account fluctuations in weather in estimating average long-term capability. Deer populations may be higher during mild winters but those high populations cannot be sustained by the habitat. After severe winters, populations may well be much lower than the habitat capability estimate. The effect of the habitat capability reduction on subsistence hunting is that average long-term populations will be lower and consequently the deer available for harvest will likely be fewer.

It is not reasonable to assume that the deer population of WAA 3311 has been substantially more than 1,715 deer during 1988-91 as the DEIS claims on page 4-92. The winter of 1990-91 was not mild as the DEIS claims on pages 4-92 and 4-93 but severe in that the snowpack persisted well into the spring. As a result, winter kill was high. The low hunter harvest was likely more a result of low deer numbers than deer staying away from the beaches.

The discussion of deer hunter demand versus supply on page 4-93 also needs to be rewritten. Portions are inaccurate and the discussion demonstrates the problems of defining demand as equal only to the number of deer harvested any given year. With that definition, no matter how poor the harvest or how few the number of deer, it can always be claimed demand for deer was met. ADF&G has maintained that demand exists independently of harvest. Our hunter demand estimate of 431 deer annually in WAA 3311 is based on a hunter survey and should be used instead of the harvest-based demand in the DEIS. Whichever figure is used, demand exceeds the long-term sustainable supply of deer as indicated by the habitat capability estimate. Also, the discussion of summer habitat capability on pages 4-92 and 4-93 is irrelevant and should be

deleted. The limiting factor is winter capability.

Finally, the models cannot be used to predict actual population declines for a particular year. Actual population reductions (and reductions in hunter harvest) caused by the proposed actions may be greater after a severe winter than the DEIS claims on pg. 4-93 and 4-94. For example, even without loss of habitat the deer harvest in 1991 declined to one-sixth the previous three year average.

Monitoring
Monitoring is inadequate. No monitoring is planned for windfirmness of wildlife corridors. Monitoring of marten harvest and populations should occur during logging to prevent overharvesting of marten while roads are in use.

The percentage of units checked in implementation monitoring for conformance with wildlife concerns on unit cards is too low. Likewise, only half of units with TIRA-mandated stream buffers will be checked for compliance. We believe all units and buffers should be monitored before and during logging.

As written, the effectiveness monitoring program for deer is meaningless. The problem with logging is that it exacerbates the bad effects of severe weather on deer. It can always be claimed that weather is as responsible as logging for deer population declines because they act together to cause those declines. So many factors influence the number of deer harvested from an area in a year that simply reviewing harvest ticket data is inadequate monitoring. The question that monitoring should address is whether after winters of severe weather, deer population declines are greater in logged areas than in unlogged ones. That would require a greater investment in time and resources than simply examining harvest ticket data, but it would give more useful information.

Thank you for the opportunity to comment.

Literature cited
Shea, L. C. 1990. Impacts of development on the non-hunting, wildlife-oriented businesses of southeast Alaska. Paper presented at meeting of Alaska Chapter of Wildlife Society in Juneau, April 1990.

cc: Dave Hardy, Phil Mooney, H&R, Sitka
Kim Titus, WC, Douglas
Tom Thornton, Subsistence, Douglas

faxed to Jim Ferguson, DEC

Mike Weber, USFS, Sitka 747-4331



City and Borough of Sitka

304 LAKE STREET · SITKA, ALASKA · 99835

Michael Weber, USFS
July 26, 1993
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July 26, 1993

Michael Weber, USFS
Planning Team Leader
U.S. Forest Service, Chatham Area
204 Siginaka Way
Sitka, AK 99835

Re: Ushk Bay EIS

Dear Mr. Weber:

I am sorry that you did not receive considerable testimony from members of this community during the Ushk Bay hearing. There is a large, silent, unorganized majority that the U.S. Forest Service should keep in mind. Please recall the many that turned out supporting roads and more local recreational emphasis on Kruzof.


The City strongly endorses a method whereby timber is made available to APC, especially in these rather dismal economic times. While this may not immediately help the situation here in Sitka, it will help our Wrangell neighbors to the south in keeping their people working. It is significant that roads be planned and systems developed so that recreational opportunities are afforded to not only Sitkans, but also to large numbers throughout the United States, not just a privileged few who can make it to remote areas without roads. I cite for example, the planned road system in and around Ketchikan and on Prince of Wales Island. Sitka has fallen behind both areas.

The City urges the U.S. Forest Service not to tear out existing culverts and structures after they are completed. Rumor indicates that the False Island bulkhead will be eliminated once the timber operation is complete.

Over 15 years ago logging activity occurred on Kruzof Island. Some of the areas as presently thinned and growing like weeds are fantastically beautiful and accessible by road. In many of the areas the U.S. Forest Service needs to do a little work to make them more accessible as they are considerably overgrown with alder and other brush, and somewhat unsafe after the removal of culverts. When the public hearings were held on this area before it was logged over 15 years ago, there was a representation by the U.S. Forest Service that recreational opportunities, serving those using off road vehicle and not necessarily limited to people who could fly in or walk in, would be developed on Kruzof.

I appreciate the opportunity to comment and urge you to do whatever is in your power to maximize economical timber available to APC.

Sincerely,



Gary L. Paxton
Administrator

cc: Frank Roppel, APC
Dick Smith, Public Works Director



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

July 19, 1993

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Ushk Bay Planning Team
Mr. Mike Weber, Planning Team Leader
204 Sigimaka Way
Sitka, Alaska 99835

RE: Ushk Bay Timber Sale, Draft Environmental Impact Statement

Dear Mr. Weber:

The Alaska Regional Office, National Marine Fisheries Service, has reviewed the subject document. The following comments are provided for your consideration.

The document tends to minimize the long-term effects of log transfer from land to water. Deposits of bark and woody debris in the marine environment can have long-term adverse effects on benthic communities. A previous study (Schultz and Berg, 1976) of abandoned log transfer facilities (LTF) in southeast Alaska indicated that about three acres of marine habitat was affected at each LTF site and that bark/woody debris still persisted on some sites that had been inactive for as long as 30 years. Other studies of old LTF sites indicated that water quality and benthic communities are adversely affected by decaying woody debris (Jackson, 1986; McDaniel, 1973; Schaumburg, 1973). It is our position that LTFs should be located in areas where long-term effects to marine resources are minimized.

Siting of the LTF and log raft storage area is the most important means of controlling adverse impacts to living marine plants and animals. For that reason it is important to have underwater evaluations of several possible locations for a LTF site prior to selection of any one location. The location of the proposed LTF in Ushk Bay shown in the document is not the one now under consideration by the USDA Forest Service (Gerry Schauwecker, personal communication). We have not conducted an underwater investigation nor have we seen any information on the underwater habitat at the new site. The proposed A-frame LTF in Ushk Bay has also been replaced by a slide-type of LTF. Further, the LTF in Deep Bay is no longer under consideration. All timber is proposed for transfer over LTFs in Ushk Bay, Poison Cove, and Goal Creek. These changes and their effects on marine resources need to be addressed.

Our main concern with the timber sale is the decision to place log transfer and log storage facilities in Ushk Bay. This has the potential to affect an important king crab molting and rearing area. The USDA Forest Service has been aware of the importance of Ushk Bay to king and Dungeness crab for breeding.



and rearing since 1983 (USFWS field reports dated 7/8/83, 4/10/85, 7/9/86). Ushk Bay may be one of the most important bays for this purpose in the Peril Strait-Hoonah Sound area. Ushk Bay is used extensively by Sitka residents for subsistence, commercial, and sport take of king and Dungeness crab. We would discourage the construction and operation of a LTF and log raft storage in Ushk Bay and recommend all timber be transferred over the proposed Poison Cove LTF.

We appreciate the opportunity to comment.

Sincerely,

Steven Pennoyer
Director, Alaska Region

cc: ADFG, Douglas, Sitka
FWS, Juneau, Anchorage
ADEC, Juneau
Div. of Governmental
Coordination, Juneau

EPA, Anchorage
CE, Env. Sec., Anchorage
ADNR, Juneau

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- Jackson, R.G. 1986. Effects of bark accumulation on benthic infauna at a log transfer facility in southeast Alaska. Mar. Pollut. Bull. 17, 258-262.
- McDaniel, N.G. 1973. A survey of the benthic macroinvertebrate fauna and solid pollutants in Howe Sound. Fish. Res. Bd. Can. Tech. Rep. 385. 63pp.
- Schaumburg, F.D. 1973. The influence of log handling on water quality. EPA Office of Research and Monitoring, Rept. EPA-R2 -73-085. 105 pp.
- Schultz, A.D. and R.J. Berg. 1976. Some effects of log dumping on estuaries. NOAA-NMFS Rept., Environ. Assessment Div., P.O. Box 21668, Juneau, Alaska 99802. 64pp.

MEMORANDUM

State of Alaska DEPARTMENT OF FISH AND GAME

2

TO: Lorraine Marshall
DGC/OMB
Juneau

DATE: July 9, 1993

FILE NO.: AK 930607-02J

THRU:

TELEPHONE NO.: 747-5828

SUBJECT: Ushk Bay Timber Sale
DEIS

FROM: Dave Hardy
Area Biologist
Habitat & Restoration Division
Sitka Office

291.

The ADF&G has reviewed the DEIS for the Ushk Bay Timber Sale. The information and recommendations contained herein are intended for use in the interagency development of a consolidated state response. We look forward to working with your office and other departments in developing that response. We offer the following comments:

Subsistence:

The ADF&G Subsistence division had numerous contacts with the contractor on this EIS. We provided the contral contact with baseline subsistence harvest information, source material relevant to the affected communities, and suggestions on how to complete the subsistence analysis. We were pleased to cooperate with the professional staff responsible for presenting the subsistence and wildlife sections, and the planning team should be commended for the competence with which this staff presented and analyzed subsistence impacts.

The main tasks of an EIS are to:

- 1) review existing data and describe subsistence uses in the project area;
- 2) estimate the project and cumulative impact on subsistence uses, and
- 3) meet ANILCA, sec 810 requirement

We believe that the DEIS has done a reasonable job of describing subsistence uses and in estimating some of the impacts to subsistence uses. We also are encouraged to see a broader than usual array of action alternatives, which vary significantly both in land use and in total volume. We are concerned, however, that the preferred alternative (C) is one of the least favorable to subsistence because of its high volume of timber cutting and impacts on Deep Bay, an area used heavily by Sitka hunters and fishers. In addition, a number of issues need to be better addressed in the FEIS. These include:

1. Selection of Ushk Bay as a project

The selection and scheduling of this project does not appear to have been influenced by subsistence considerations. Scheduling of this

Lorraine Marshall
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Re: Ushk Bay Timber Sale DEIS

sale is discussed at 1-13 with more detail provided in Appendix A. The Sitka Sound-Peril Strait Area in particular has been a management hot spot for deer in recent years, and, along with the area adjacent to the Hoonah road system, has been one of the few areas in Game Management Unit 4 where demand for deer regularly exceeds the supply in part because previous timber harvesting in the areas has reduced the number of deer that the habitat of this area can support. Demand for deer in WAA (Wildlife Analysis Area) 3J11 already exceeds the sustainable supply, and this WAA historically has been a very important hunting area for Sitka residents. Since 1987, WAA 3J11 has been the sixth most productive deer hunting area out of more than 50 WAAs used Sitka residents. If minimizing effects on subsistence were a planning goal, Ushk Bay might not be scheduled for logging as long as other areas are available for logging where subsistence impact might be less.

2. Treatment of subsistence data gaps

The Tongass Resource Cooperative Survey (TRUCS) maps for Sitka are acknowledged as being "not reliable indicators of use due to a low response rate during the mapping phase... (p. 3-64)." We agree that these are not the best available data and suggest that for this reason they not be displayed. Instead we recommend using the salmon, finfish, and invertebrate maps from the Division of Subsistence baseline study for Sitka (Gmech and Gmelch 1985). These maps are more accurate for area coverages. Unlike the TRUCS maps, these maps show that salmon fishing, crab harvest, and halibut fishing occur throughout Deep Bay as well as in portions of Poison Cove and Ushk Bay. Unfortunately, neither set of maps provides definitive information on intensity of use. We encourage the planning team to help fill these data gaps by: 1) paying more careful attention to public input that was provided at the scoping phase and at the 810 hearings; 2) soliciting more definitive information from community leaders about potential impacts of each alternative on subsistence; and 3) making subsistence monitoring, and perhaps additional research, a component of the plan. The Division of Subsistence also recently completed a GIS Sitka community harvest map based on ADF&G harvest survey results which could be incorporated into the FEIS.

3. Roads

In the discussion of access (p. 4-87ff), much is made of the benefits of roads. The DEIS states that roads "allow ready access to interior hunting areas and to higher elevations," and that they make "more of the deer population in the project area accessible." On the other hand, the effects of potential increased competition due to roaded access are down played with rationalizations such as this: "Of course, the subsistence hunters who have previously used this area will have the opportunity to take advantage of the new access the same as new hunters, and will have the added advantages of knowing the area and of living relatively near the project area.... When this factor is considered... the logical conclusion is that the effect on

overall subsistence use will be small." We wonder why the EIS chooses to rely on abstract logic when the question "What are the impacts of roads on subsistence users?" can be addressed concretely based on past experience in other areas of the forest. Road systems on Prince of Wales Island and in the Hoonah area have led to very significant increases in competition for deer. At best, increased access is a two-edged sword; the FEIS should be more judicious in evaluating the potential effects of road access at this site based on public input and, perhaps, monitoring. Without further study and monitoring, we do not support a Road System Management objective which proposes that roads remain open after logging activities are complete. We note, too, that since there will be no intertie with the Sitka road system, roads will likely be used only by hunters with expensive recreational equipment or hunters who are logging in the area. Additional problems with such roads are discussed for marten, bears, and stream habitats.

4. Sec. 810 determinations, and requirements

The Sec 810 determinations are presented in table 4-53 (p.4-102). While table 4-53 does show that significant restriction may take place, we suggest that project and general impacts to subsistence uses be disaggregated and that both general community significant restrictions and site specific significant restrictions be shown. The DEIS at table 4-53 and in the text also suggests that a significant restriction may occur under alternative A, the no action alternative. This is misleading. What is going on here is a confounding of effects of past and non-project future logging with the effects of this particular project.

In order to be clear and to make site specific 810 determinations, the FEIS should include 4 short tables that replace table 4-53. These would show:

- a. Significant possibility of a significant restriction of subsistence use of Sitka Black-Tailed Deer from Project Activities for Project Area by Community.
- b. Significant possibility of a significant restriction of subsistence use of Sitka Black-Tailed Deer from Project Activities by WAA and by Community.
- c. Significant possibility of a significant restriction of subsistence use of Sitka Black-Tailed Deer from Project and Other Forest Management for Project Area by Community.
- d. Significant possibility of a significant restriction of subsistence use of Sitka Black-Tailed Deer from Project and Other Forest Management by WAA and by Community.

In addition, the Draft Determinations section does a poor job of

explaining how reasonable steps were taken to minimize adverse impacts upon subsistence uses in each alternative. As noted above, we are especially concerned that few such steps were taken formulating alternative C, which provides for a relatively high level of deer habitat reduction and significant impacts on Deep Bay, the most important subsistence area with the Project boundaries and the site of a native subsistence camp which has been used continuously for generations.

5. Cumulative effects forest wide. WAA maps

Although the project area is limited, Sitka's and other communities' subsistence patterns are also being affected by other timber sales nearby (e.g., Southeast Chichagof, North Baranof, Kelp Bay) and elsewhere in the Tongass. We recommend including GIS mapped analyses (see SE Chichagof FEIS Appendix E) of deer supply (10% habitat capability) vs. demand (present and future harvest) for all Tongass WAAs; we have already provided copies of these and other relevant maps to the Forest Service. This kind of spatial analysis is critical for the public to evaluate overall impacts on subsistence.

6. Mitigation of subsistence impacts

Mitigation of subsistence impacts need to be more explicitly identified. Examples of mitigation incorporated into the alternatives would include siting considerations that avoid ITFS or roads in intensively used subsistence use areas, avoidance of subsistence salmon fishing or marine invertebrate gathering areas, etc. Additional mitigation might include: specific regulatory proposals to the Federal Subsistence Board to change seasons or bag limits, restrictions on road use for deer hunting, etc.

7. Subsistence monitoring

Monitoring of subsistence uses should be part of the monitoring plan presented in Appendix I. This monitoring should receive similar treatment to other monitoring activities. We suggest that use of roads for hunting and other other changes and other changes in hunting patterns be monitored as part of the plan.

8. Impacts and competition from logging camps

That competition will temporarily increase due to increased access and the presence of the timber work force is obvious: the question is how much? The harvest demand model presented in the analysis does not take into account the sudden introduction of significant numbers of logging personnel into remote hunting areas. For some time we have suggested that the Forest Service develop a site-specific model for estimating the demand on wildlife by logging camp personnel. As with the regional model, the site-specific model should be tied to population (i.e. estimated population of the work force domiciled in the project area). It should not be assumed, however, that the percentage of remote logging community residents who hunt and fish is comparable to that of the general population: in fact, evidence

suggests that it is higher. This is a research question which could be addressed by examining hunting and fishing patterns of residents of existing logging camps. Mitigation and monitoring measures could include an analysis of the hunting and fishing patterns of logging camp personnel in the project area.

9. Cultural Resources

The discussion of cultural resources is narrow, focusing exclusively on archaeological sites. However, other historic sites, including Mr. Kitka's subsistence camp and associated lands, which have been occupied for generations, may also be considered cultural resources worthy of protection. We suggest that the planning team broaden its examination of cultural resources in the FEIS and conduct interviews with Mr. Kitka and other native leaders regarding cultural resources in the area. It is poor methodology to rely on intermittent surveying based on a general "Cultural Sensitivity Model" (p. 4-105) to locate potential sites, when specific site information may be available from Tlingit elders.

10. Photographs

Photographs are a good way to portray the affected environment and the activities that occur within it. They are considerably less useful, however, when they simply stock photos pasted in with no thought to as to their relevance. The photograph depicting hooligan netting (p. 4-96) is a case in point. The scene is the Chilkat River, far from the project area, and the activity, hooligan harvesting, is to our knowledge not conducted in the project area, mainly because hooligan do not occur there. Perhaps the planning team could solicit more appropriate photographs from subsistence harvesters who use the Ushk Bay project area.

Please contact Subsistence Division staff for further discussion of methods to improve the EIS.

Key Habitat Values:

In our 7/16/92 scoping comments we provided our assessment of key habitat values in the planning area. In terms of fisheries values, Deep Bay is the largest pink salmon producer, and also hosts a significant coho salmon run. Deep Bay is temperature sensitive with several recorded warm weather salmon die offs. The streams in Ushk Bay are next in terms of fisheries production. High crab values exist in Ushk and Deep Bays. Maintenance of deer winter range is a key project habitat component. Although the document acknowledges these values, in general the environmental consequences section downplays project impacts. This results in recommendations for road construction, timber harvest and related activities in or affecting these sensitive areas, rather than pursuing options to avoid them.

Alternatives:
We appreciate the broad range of alternatives presented. We are uncomfortable, however, with the selection of Alternative C as the preferred alternative. Like the Kelp Bay and SE Chichagof Plans before this, the selected volume exceeds the originally proposed volume by 10-20%, clearly indicating that the selected option is driven by timber objectives.

In our scoping comments we discussed our concerns with harvesting the target volume of 89 mmbf from this limited area, and recommended that the planning area be expanded or the target quantity lessened.

It is too soon at present to evaluate the effect of the proposed APC pulp mill closure on the need to supply timber to APC from the Chatham Area under the terms of the 50 year contract. It would appear however, that such closure might logically lessen APC's demand.

We ask that the USES reevaluate the targeted volume of 97 mmbf. The elements DF&G would recommend be included in the FEIS selected alternative include:

- a) camp and LTF in Poison Cove
- b) road connection to Ushk Bay
- c) no road timber harvest or LTF in Deep Bay
- d) no LTF or additional rafting in Ushk Bay
- e) if the FS determines that an LTF will be placed in Ushk Bay then we would recommend that it be a barge facility sited to minimize fill impacts
- f) although units on the Peril Strait side of VCU 279 and 281 are visually sensitive, they would have lower potential fisheries impacts than in the Deep Bay system

The DF&G preferred alternative would look something like Alternative F with the deletion of the Deep Bay portion and addition of units in the areas designated Group I and Group II in Alternative C.

Fish Habitat:

The environmental consequences section (pp 4-34 to 44) discusses effects of alternatives on fish and watershed values. The analysis in general and for Deep Bay in particular is flawed by assumptions of little or no adverse effect on riparian habitat from project activities. We recommend that the following issues be considered and the environmental consequences and decision section revised accordingly for the FEIS.

Lorraine Marshall
File: AK930607-02J
Re: Ushk Bay Timber Sale DEIS

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Erosion from Roads:

A long term fisheries/water quality issue is the construction of roads for logging which are not put to bed, and left without adequate maintenance and inspection. The document states for alternative C(p2-4) that "roads would be maintained after harvest to provide recreational access by truck or off road vehicle". The reality is that funding has consistently been inadequate to inspect and maintain roads on the Chatham Area. The Sitka district has not had adequate money to even maintain the few miles of FS road attached to the limited Sitka road system, let alone remote areas. Unless roads are routinely inspected and maintained they should be put to bed at the conclusion of logging.

The contribution of sediment from roads is discussed on p 4-39. The document states "For roads that are left open permanently, a program of regular maintenance will be maintained". We would ask that the FS realistically assess the miles of roads currently left open and what proportion benefit from "a program of regular maintenance". How many miles of road are open? How many are routinely maintained (broken out by inactive or active logging areas)?

Culvert Design:

The design criteria for culverts is described as (p2-8) "based on the expected volume of water produced by a ten-year flood event". ADOT/PF bases their crossing structure design on a 50 year flood event. Although the 10 year design criteria makes roads cheaper to construct, it also means the culverts are more apt to plug and/or wash out, with resultant consequences to roads and aquatic resources. A 10 year design culvert installed to provide fish passage may or may not provide fish passage over time if it plugs, washes out or hydraulically erodes a plunge pool downstream. Selection of this design criteria emphasizes the need to provide regular inspection and maintenance, or to put the roads to bed. The impacts assessment assumes such maintenance will occur and therefore culverts won't plug, roads won't wash out, and so on. This assumption needs to be carefully reevaluated.

Flood Plain Process Group and Deep Bay:

Deep Bay Creek has been shown to be both productive of fish and temperature sensitive. The large relatively flat valley bottom and lack of bedrock controls has developed into flood plain process group channel types which, as discussed on pp 4-34 to 4-44, tend to meander and which depend on old growth timber for LWD, fish habitat formation, energy dissipation, etc. On p 4-40 the DEIS says "if channels become clogged, the flow may jump channels and cause additional erosion by caring new channels adjacent to new ones". The FEIS needs to examine the consequences of channel change to or through clearcuts in terms of shading, temperature sensitivity, LWD recruitment, channel stability etc. for the Deep Bay stream.

Lorraine Marshall
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Re: Ushk Bay Timber Sale DEIS

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The FS standards and guidelines do not ensure that riparian buffers wider than 100' are left where needed on these lower valley bottom stream side situations. We disagree that "the environmental consequences to floodplains from all alternatives are generally limited to effects from road construction" (p 4-37). Longer term consequences over the life of the rotation are more likely to occur from channel instability and loss of LWD, assuming the roads are either maintained or adequately put to bed.

We disagree strongly with the analyses of BOD and temperature sensitivity on p 4-43 when referring to Deep Bay. We believe impacts of logging units described in the preferred Alternative C in this valley bottom are substantially greater than depicted.

Goshawk/Falcon/Murrelet/Vancouver Goose Surveys and Guidelines:

We believe prescriptions for protection of northern goshawks, a Federally designated Threatened Species are inadequate. In our scoping comments we asked that "wildlife surveys should be conducted in the project area to locate nests. The surveys should be conducted during the prime nesting period for each of the individual species. Road, camp, harvest unit, and LWF locations will need to be intensively surveyed and designed to prevent the destruction and/or disturbance of nests during the project."

We further advised that "the northern and Queen Charlotte goshawk populations in southeast Alaska have recently been the subject of status reviews by the Fish and Wildlife Service. Two adult goshawks, accidentally caught in traps, were recovered from Ushk Bay in December 1991. Another adult goshawk, rehabilitated at the Raptor Center in Sitka during the summer of 1991, had also been captured near the project area."

The DEIS p4-32 addresses goshawk inventory and protection by saying "If active nests are found during unit layout..." then the Region 10 interim habitat guidelines would be implemented.

The Forest Service Interim Guidelines for Goshawk Habitat Management is an "inhouse" Forest Service document which has not received the endorsement of the Department of Fish and Game or the U.S.Fish and Wildlife Service. Until guidelines are established utilizing expertise of all concerned resource agencies, we recommend the guidelines of the TLMP Population Viability Committee be used in conjunction with the suggestions made by the USFWS for the SE Chicagoof Timber Sale to address goshawks and their management.

At the present time the guidelines are applied only when a nest is discovered. As no surveys have apparently been conducted to search for nests, and because the probability of finding nests is low during unit layout, a broader landscape approach is necessary. Additionally, the guidelines are thought to be ineffective because

they do not adequately address the loss of foraging habitat or the protection of important foraging areas within home ranges. We question the applicability and effectiveness of the current standards. Until the Forest Service establishes better monitoring and mitigation guidelines we believe that the present plan are inadequate for the long term viability of this Category 2 species.

It is our understanding that the proposed guidelines would allow roading activities (including drilling and blasting) and logging activities (including cutting of timber and yarding) within 600 feet of nesting birds for three successive days during the period when they are most sensitive to disturbance. We are unaware of data that indicates the noise of the equipment at this distance would not be disturbing to nesting birds. These guidelines further allow timber harvest within the 600 acres surrounding nests provided openings are less than 20 acres or less than 600 feet in width. Within the 6000 acre foraging areas, the Forest Service need only map the location of nests and evaluate habitat conditions within the area.

The section on Marbled Murrelet in the DEIS (p4-32) includes no monitoring or mitigation guidelines. We continue to recommend monitoring followed by appropriate mitigation measures. As we understand it the FS Interim Standards and Guidelines require leaving a 30 acre windfirm buffer around all nests discovered. The FEIS should discuss appropriate monitoring and mitigation measures for Murrelet nests, Vancouver Canada Goose nesting and foraging habitat, and Peregrine Falcons as well.

Proportionality:

We continue to be concerned that disproportionate harvest of volume classes 6 and 7 old-growth will occur. Because of its inaccuracy we believe the TIMTYP database is not the appropriate database to use to determine proportionality. The Forest Service's analyst, J.R. Brickell, in a "Review of Forest Inventory Methodology and Results" (1989), pp 21-22, observed that "if anyone tries to make a volume inference from [figures based on volume class acres from the timber type maps], which they probably will since acres are labelled by volume class, then the resulting volume is likely to be quite incorrect". We are aware that before TTRA the Forest Service considered the TIMTYP so inaccurate in the Stikine Area that it had begun basing its forest inventory analyses on soil maps rather than TIMTYP data.

Another concern we continue to have is that the proportional harvest rule should be applied to volume classes 6 and 7 separately, and not to those classes combined. We have expressed concern about this to the Forest Service several times in the past. Combining those classes risks the disproportionate harvest or even elimination of volume class 7. Disproportionate loss of this volume class would affect biodiversity and wildlife values of the area. (Please refer

to DF&G comments provided to the Kelp Bay and SE Chichagof planning teams for further general discussion of this issue.)

The DEIS summary p2 indicates that the TTRA charges ensure that "Harvesting a disproportionate amount of old growth timber is eliminated". This is not true. The disproportionate harvest is continuing, but is masked by the poor quality of the timber type/volume maps. Harvested volumes are analyzed for proportionality based on the erroneous maps, not on actual volume class existing on the ground. In past EIS's these errors have been on the order of several orders of magnitude. (ref. DF&G comments on Kelp/Bay and SE Chichagof EIS's.)

Viable Populations:

Pages 4-31 to 4-34 discuss the concepts of biological diversity and long term productivity for wildlife indicator species (WIS). The DEIS concludes that WIS "will remain well distributed although at somewhat reduced levels as a result of the proposed actions." The DF&G recommends that in the absence of a plan for maintaining long term retention of specific identified growth habitats in the planning area, an alternative strategy needs to be applied for the proper protection of wildlife resources. We recommend that the FS incorporate current conservation biology concepts and strategies which will better maintain biological diversity in the Ushk Bay area, specifically the 1992 Interagency Viable Population Committee Report, which was accomplished at the request of the TTMP planning team.

We suggest that the concepts and recommendations of this interagency committee report be presented, discussed and incorporated as the principal theme of one or more alternatives of the FEIS. The work of the Interagency Viable Population Committee was not mentioned or analyzed in the DEIS, nor were specific reserves or Habitat Conservation Areas clearly identified in the planning area as being a part of a more wide-ranging overall plan for the protection of wildlife. These concerns need to be more prominently incorporated into the FEIS and ROD for this project area.

The DEIS indicates for Goshawk that (p 4-32) "the surrounding areas will have no timber harvest", but does not clearly reference past planned or currently occurring timber harvest in the VCUS comprising the "surrounding area". The viable population strategy for this and adjacent areas needs to be better displayed and analyzed in relation to timber harvest and road building decisions for this area.

The DEIS refers to "connectivity" of old-growth patches as if that will take care of the issue of viability. Connectivity of old-growth is not a strategy in itself, it is only part of a solution. Unless the project area contains enough habitat to support viable populations, its connectivity to old-growth in other areas will not help much. Corridors need to connect something to something else.

Lorraine Marshall
 File: AK930607-02J
 Re: Ushk Bay Timber Sale DEIS

Lorraine Marshall
 File: AK930607-02J
 Re: Ushk Bay Timber Sale DEIS

The report of the Interagency Viable Population Committee indicates the need for at least one small habitat conservation area of about 10,000 acres in the project area. At a minimum, such a small habitat conservation area should be established in the Deep Bay drainage.

Thinning: On page 4-34 the DEIS indicates that "canopy closure in second growth stands results in reduced habitat capability for deer, marten, and brown bear. Thinning second-growth stands could delay canopy closure to offset negative impacts of post-harvest succession."

Although thinning can delay canopy closure, silvicultural thinning as practiced in SE Alaska has not been shown to be an effective wildlife mitigation measure in large part because of the adverse effects of thinning slash and debris on the forest floor and its long decay time.

ADF&G would like to offer to jointly work with the FS to explore more productive ways in which KV money can be spent for wildlife projects, even if this involves pursuing an exemption to concepts which may apply to fire-ecosystems of other parts of the U.S., but not to the unique temperate rainforest ecology of southeast Alaska.

Ecosystem Management:

On page 6 of the summary and elsewhere the DEIS discusses ecosystem management as applied to timber harvest in the sale area. We recommend that the ecosystem management section be substantially improved and expanded to better address the June 4, 1992, USFS Washington Office Guidelines, and more recent policy guidance available from the Chatham Area ecoteam. It is disturbing that the list of landscape level practices is so limited as to not include a wider range of alternatives to clearcutting such as selective harvest. The analysis and decisions in the preferred alternatives of the DEIS appear to be driven by timber supply considerations, more than ecosystem management concepts. The concepts need to be better explained and applied to the planning area.

Deer Habitat:

This document does not relate the preferred alternative to important wildlife habitat, especially deer winter range (DWR). Identification of problem units such as 93, 94, 95, 96 in areas known to be heavily used by deer should occur.

Thank you for the opportunity to comment.

cc: Lana Shea, H&R, Douglas
 Kim Titus, WC, Douglas
 Tom Paul, WC, Douglas
 Bob Schroeder, Subsistence, Douglas

Tom Thonkon, Subsistence, Douglas
 Ron Josephson, FRED, Douglas
 Don Cornelius, H&R, Petersburg
 Jack Gustafson, H&R, Ketchikan
 Bob DeJong, CommFish, Sitka
 Art Schmidt, SportFish, Sitka

Subsistence Hearing Transcript

Public Hearing
July 19, 1993

Centennial Building
Sitka, Alaska

Subject: USDA Forest Service planned activities at Ushk Bay

PROCEEDINGS

MR. EVERY: Good evening, folks. I'm going to try to get us started here for the hearing part of this evening. We've had the last couple of hours here available for answering questions in an open house kind of a setting. For those of you who are willing, scoot forward so that we can all be able to see one another better maybe. Because of this being recorded, I'm going to speak directly into the mic and ask each one who has testimony tonight in the hearing to do the same. I'm Dave Every from Dames and Moore. We're under contract to the Forest Service to do the EIS and conduct the hearings and then to do the -- the final EIS as well. We've worked with the Forest Service people and there are several of -- of them here tonight. Here on the front row is Jim Franzel, District Ranger, Mike Reagan back here is a member of the planning team. He is standing in for Mike Webber who was not able to be here tonight and hanging out at the back door is Doug Stockdale and somewhere, I don't see him, there he is, just walked back in, is Dale Kanen. These folks are part of the -- the effort as well. Tonight Dames and Moore also represented by Maureen Sims back there at the back, who will run a shuttle of -- if others sign up to offer testimony -- and myself. We will conduct the hearing. The -- the plan is that the hearing is the formal part of this process.

There's a handout that's explained it. There are boards back there. I probably don't need to read it to you. We will not be answering questions during this formal hearing part, but simply listening. It will be recorded and transcribed so that we have the specific things that are said down on paper to provide input into the final EIS. Now if you have a written statement and are willing to just summarize the statement, and particularly if it's long, we would be happy to have it that way. If you do have a written statement, please give it to either me or to Maureen in the back before you leave. Other written comments can be mailed to the planning team leader and the address is on the handout there and you have until 'til the 26th for input of written materials. Tonight's meeting is going to be fairly straight forward. We didn't know how many people to expect so we asked the -- the larger room be available. I think at this rate we probably would have fit just fine in one of the other rooms, but with the announcement of the mill closure and some other things we weren't sure what we might find. This meeting is purposely to address the ANILCA section 810 subsistence comments, but in addition to receive comments on the draft EIS itself. If you have comments other than that, I guess we'll -- we will limit that by asking each person to limit their testimony to no more than ten minutes. Maureen, did you have a comment that you wanted me to raise? No, I thought that was a signal, I'm sorry, okay. I -- I don't think it's also necessary for me to tell you again what's in the draft EIS. It's

been available for review, there are summaries back there and additional copies can be made available through the Forest Service. Mike Reagan will be happy make them available to you if you haven't received one or would like to get one. We can get that information down and they can be sent to you. The -- for those who may have come in just recently and you wish to look at them in a little larger format than what's in the EIS, there are maps of the five alternatives. It's hard to map the no action alternative. The five action alternatives are mapped here. There is some additional information available and we'd like to hear your testimony. I have names of people who have signed up on the sheets, the sign in sheets at the back and indicated that they wish to testify. And I'll simply go from one sheet to the other right down the list and call your name. If you would come forward, restate your name please, for the record, so that the person transcribing it can get it correct and if there might be some trickiness to the spelling of it, please spell it for them. Although we do have it down on the, on the paper here so that may not be necessary. So I will now turn the -- the time over to people in the order that I have them here. If Mark Jacobs is available, if he would come first and, and take his time. Maybe he didn't make it back yet.

UNIDENTIFIED FEMALE: Could you turn the volume up a little bit, its real (indiscernible).

MR. EVERY: There was a problem with feedback and I hope that maybe we can get it adjusted but he turned it down so that we

didn't get a terrible squawk. Maureen will check and see if it can be turned up. How about Don Muller?

MR. MULLER: My name is Don Muller. A couple of weeks ago ALP announced that they were closing indefinitely after September 30th. Since that time Forest Service officials and others have pointed out that ALP under the terms of their contract, cannot log or operate their sawmill if the pulp mill is not operating. Now, unless you all, the Forest Service, knows something that we don't know, it seems clear to me that the course of action on Ushk bay is clear. You must postpone any action until the mill issue is resolved. Thank you.

MR. EVERY: Thank you. Next one on the list is Pat Joensuu.

MR. JOENSUU: My name is Pat Joensuu. I'm the general manager for logging operations for Alaska Pulp Corporation. I would like to go on record supporting Alternative C with some modifications that will be submitted by Alaska Pulp prior to the comment period closing. I would also ask, perhaps someone from the Forest Service to respond to Mr. Muller's question regarding the contract. Apparently you have some expertise, you think, on the contract. I'm not sure if your interpretation is -- is the way the contract is written. I haven't read exactly the words as you stated them. That's all I have.

MR. EVERY: Thank you. Mr. Rollo Pool.

MR. POOL: My name is Rollo Pool. I'm the official

representative here from Alaska Pulp Corporation this evening. I do not have prepared testimony, but I will have prepared testimony by the deadline which is next, week from today?

MR. EVERY: The written.

MR. POOL: Written testimony. The, one of the likely or logical explanations that people will say because of the closure, pending closure of mill, is that they don't need any more timber and to put the timber off, the timber sales off. To us we need the timber sales all the more. The reason we're in the predicament we're in right now is because of horribly uneconomical timber sales, and its very simple to have any recovery at all, you have to have a timber base. No timber supply, no recovery. It's not just a bad market right now, this is in a, we're in a survival mode and I think that, in a sense that we're, we're all here, in agreement that if we don't have the timber supply, there's no reason to even worry about the sawmill or the other logging jobs. But we need the timber supply, has to be economic and viable. Those are very important words to us. We also believe that the plans have to be in compliance with the existing laws. So anyway, we would hope that the Forest Service will continue the process of putting up timber sales in the hope that we have recovery in the future. But it's not a time to stop and forget about it right now. Thank you, very much.

MR. EVERY: Thank you. Mark Jacobs.

MR. JACOBS: (indiscernible)

MR. EVERY: Yes, please.

MR. JACOBS: Yeah, I noticed it was advertised for 7:00 o'clock. I have to take my glasses off. And when I came for the workshop I was told 7:30. I'm glad to be here. I thank the panel for allowing me to present my testimony. My name is Mark Jacobs, Jr. Post Office box 625 Sitka, Alaska. Home phone 747-8168. I am vice president of Southeast native subsistence commission. Also a member of the executive committee of the central council of Tlingit and Haida Indians. I testify on both -- on behalf of both organizations. Also on a local level, Mr. Herman Kitka, Sr. and myself are spokesman for the Alaska Native Brotherhood camp #1, any subsistence issues. I must favor Alternative A which is no action or no logging. Our reasons are many. The area is part of Hoonah sound which is rich for subsistence sport fishing, hunting and so on. There are many small coho side streams that feed into class 1 streams. The Alaska natives who filed for 160 acres native ANILCA entitlement are still pending. Smoke houses belonging to certain clans of Tlingits have been destroyed and burned as trespass by the Forest Service. Natives are not trespassers on their own land. Most or all fish camp sites are sacred and are significant archeological sites. Natives and non natives alike do not want any logging activities in the entire geographical areas of Hoonah sound. From Broad Island, north and west of Peril Straits to Kahklin (ph) Narrows. Recreational boating and camping and the natural beauty of scenic forest -- forested mountains should be

protected from logging blight. The fact that the U.S. Forest Service indicated to the Sitka natives, the Shee Atika corporation in convincing the board that no logging would ever be done in Hoonah sound. They then loaned a land engineer or technician to nominate ANILCA land selections in Hood Bay and (indiscernible) on Admiralty Island, near Angoon. This became very controversial. The final selection was in the Cube Cove area, northwest of Angoon. It cost our corporation several millions of dollars in attorneys' fees before any logging was allowed. After the costly lawsuits by Sierra Club and others, it is not surprising the strong feelings exist. The reasons listed above to choose Alternative A is number 1, the adverse impact on subsistence. Number 2, also sport fishing and hunting. The impact on class 1 streams by not lifting small side streams where coho salmon spawn. The unprocessed entitlement of 160 acres of Indian allotments has no impact. The destruction of native fish camps and smoke houses by the Forest Service, treating aboriginal occupants as trespassers or appear to be abandoned, unlivable and a blight. The Tingits were not trespassers on their own sacred lands. The natural scenic beauty is number 6, would be less a blight by slash left behind, which interferes with hiking and hunting. Number 7, destroyed fish camps by trespassing and burning by the Forest Service has been a gross violation of Indian property right. Number 8, all fish camps destroyed have existed from time immemorial and are significant archeological sites and should have been protected as such. Number

9, all of Ushk Bay and Deep Bay were lands originally nominated for selected lands under the ANSCA act. I personally worked several months on this particular project. Number 10, I strongly believe that Ushk Bay, Deep Bay cutting proposal would reactivate an organization similar to the Friends of Hoonah Sound. It seems that in the light of Alaska Pulp Corporation's announced closure or complete shutdown that any further sales of timber would be moot. Even if the Forest Service put all of the 50 year cutting contract on hold, they would not be breaking the contract. Who does the Forest Service have a contract with -- when the owners refuse to identify the real owners of Alaska Pulp. My understanding is that the original 50 year cutting contract was with the Alaska Lumber and Pulp Company. Signed and agreed upon by both parties. And that it required 51 percent American ownership to be valid. The change in ownership should have canceled the original document. Now I used, I heard, I heard some talk here about the economic reasons for the present shutdown. This is not in here, but I have my last paragraph comment that might not be considered as a valid testimony because it doesn't refer to Ushk Bay. But since we're talking about the reasons for shutdown as economic, I put in this one paragraph. I used to work on the revamping of the pulp mill boilers during the Christmas and New Year's holidays and other major holidays. Every New Years greeting that I noticed on the bulletin boards would convey from the president of the Alaska Lumber and Pulp, Happy New Year to all of our employees. This past

year we did not make a profit. This new year I ask you to do better. This wording is not ver bated but it has shown as indicating a yearly loss. How can this be? A yearly loss and still operate? Unless they sell here on American shores at a loss, to another company overseas which they own lock, stock, and barrel in our homeland to make enormous profits overseas. A small wonder of the United States suffers foreign trade deficits.

UNIDENTIFIED MALE: It works the other way.

MR. JACOBS: My last paragraph, my last comment on Alaska Lumber and Pulp Corporation will probably not be treated as valid on Ushk Bay EIS, submitted by Mark Jacobs, Jr. Thank you and I hope this document becomes public property and not changed. Thank you.

MR. EVERY: It will. Thank you. Scott Brylinsky.

MR. BRYLINSKY: My name is Scott Brylinsky. I live on the northwest corner of Middle Island and as far as I know I'm the closest permanent resident to the area under consideration for logging. I'd like to go on record as being in favor of the no action alternative for subsistence purposes. I live a subsistence life as much as I can. I gather most of my vegetables and meat from the land and it's really important to me that the deer and the fish not be impacted from any more logging in that area. It's been shown to be used a lot by Sitka residents and if the deer aren't there, they're going to be taken down here and there is just going to be less food available. People bring up a lot of economic

arguments but I think it's easy to forget that the basis of any economic system is food production first, not cash. If, if we don't have much cash here, we're going to need food in the woods and the waters to feed us and I would like to see that not be impacted.

MR. EVERY: John Lawson.

MR. LAWSON: I was kind of surprised at this meeting tonight. My name is John Lawson. I quit writing my written testimony but I will finish it up now. I thought with the mill closure we wouldn't be going into this but I see we are. I'm here mainly because of subsistence. Mr. Kitka is sitting here and he has some property in Deep Bay up there and he has a creek coming through his land which is one of the richest salmon producing streams in that area. It was also true of many other areas up there, clear on through Hoonah Sound. They used to be some of the richest seining waters in Alaska. It used to be some of the richest crab fishing in Alaska. This is one of the smallest areas that we have King crab in, in this area here at all. They shut down the season nine years ago and it shows no signs of recovery. The salmon stocks are down to nil up in that area except for Deep Bay there. And if you go into Deep Bay you see a tunnel when you go into that river. The trees are high over head and its dark in there. But you go up to some of these other areas and there isn't anything hardly. They have been cut in the years past with no thought whatsoever to the streams right to the streams edge. No

consideration at all whatsoever. Even today they look for ways to validate the 100 yard things by going ever so many feet and putting a roadway across it. They will do anything they can to get that last log out of there, with no thoughts to my needs or anybody else's needs in this area. So my thought is, I want Alternative A in that area. When I take my boat there is one small area left when you leave Sitka clear over to Chatham that you don't ride along and see a logged area and that's from Canoe Pass up to approximately Ushk Bay. And I would darn near like to see it left for that reason also. I will have a the written testimony on the rest of it turned in before time, sir, thank you.

MR. EVERY: Thank you. Ann Lowe.

MS. LOWE: Ann Lowe. I am presently the chairman of the southeast regional advisory committee for the state. Presently we're inactive due to funds. Also I've been active in the federal subsistence board's actions in the past and I'm quite familiar with these areas and the subsistence users needs throughout Southeast Alaska. And so I want to comment a little bit about what I see as subsistence problems that weren't addressed in this particular EIS. Of course our advisory committee is Sitka, the Fish and Game advisory committee in Sitka has gone on record many times as opposing any further logging in that area up there. However, they have worked with the Forest Service to come up with a alternative that would be acceptable in the past and I'm sure will continue to do so. Today I tried to get hold of some members to see if they

understood that this meeting was going to be here at this time and unfortunately the Forest Service often schedules things when people are out actually gathering and harvesting and do not schedule it for the public's good but rather for bureaucratic reasons and time schedules and I know the government moves slow but some times, there has to be a little more consideration given to people who are actually trying to live here and harvest the resource. So unfortunately today I couldn't get any other the committee members here but myself. A lot of people have shown some degree of happiness that maybe the pulp company shutting down would relieve logging action, relieve some of those areas that we're concerned about. But one of the things that a lot of the folks that I know and deal with don't understand is that this is a contract and it is all slated to be logged, period. It will all be logged at some point and time under the contract. All we're doing here is looking at small increments, five-year increments and what distresses me, and I'm going to make some points about some things that distress on some of these increments that we look at is, we never fully get a full view, picture of the whole area. So we see it in bits and pieces and we don't understand the full overall impact and by design, the way the Forest Service puts it out in five year increments, by design, that keeps you from understanding the full impact. So when I read through this for all intents and purposes, when it came up with impacts, it said well, we'll have long term impacts but we don't see any real short term impacts and it's real

hard to see what the full picture is like when you only look at small segments. Now there's going to be logging in Kelp Bay, logging, some more logging at False Island and some more logging along the Hoonah Sound area that were -- been concerned about for a long time and it's true that as we look at this plan, the units, the DC units that are going to be logged in there are small and scattered, but all those others are going to be picked up later, maybe ten, 15 years down the road or five, maybe next five years or whatever. And what I'm concerned about for subsistence users is the deer populations in this area. Sitka is a rural community. The federal subsistence board has recognized our community as rural. We have 8,500 people strong here. That means that we have to have a management tool that is going to have to be very carefully looked at because we've got a lot of people to look after and I don't think that has been done. I think basically there's hopes down the road to turn Sitka into a urban community because it's so much easier to run the forest if we're urban and so much harder to manage it if we're rural. One of the things that -- that you want to look at when you're looking at this is, what are impacts, one of the things they said that the deer harvest here did not look like it, it was, is intense as other areas and that is possibly true. In years past it has been a lot more intense. One of the things that, kind of is ironic is that, Sitkans use Ushk Bay for anchorage, for crabbing, for trapping. I've trapped up there myself, for bear hunting, for duck hunting, for all kinds of things

and I think one of the things that made it so popular or so evident was way back when we had a logging camp in there. People got in there, used the area, it was rich. They went home from their job and settled in Sitka. They took their friends back and so now it's become a customary, traditional place for Sitkans. Now granted it was customary and traditional place for others long before a lot of us Sitkans and that in, point and question here is the native population. There is records galore, if you take the time to look at them, Herman has a map of all the families that had places on the creeks and streams and what they meant. And they've used, they've all got names, they've all got reasons for what, who was where and so it's been used. But the ironical thing is that we've got all these Sitkans that go up there now and use it that were introduced to it because of logging activities and now we're going to go back in there and log and drive them all back out. So it's kind of an interesting twist of turn of events here. I am opposed to any alternative that crosses Herman's land. I notice in alternatives D, and F, I'll have to look at the charts to remember now, there's a road going through his patented (sic) lands and I think the only way that you could do that was to be, you would have to condemn his property, that right-of-way along there to get through there and I'm opposed to condemning anybody's private property. The government owns plenty of land, they don't take, need to take any poor man's or any other man's land away from him. They have a long history in the midwest of condemning big ranches

and stuff to put Air Force bases and other types facilities in and then they never let go of it, even if they close it down. It never goes back into the public domain or back to private, private hands again. So I would be opposed to any of those alternatives that include a road system through his land unless he wanted to do it and I don't know how Herman feels about that but I'm sure he will tell them. The other thing is I would prefer, even though I don't prefer to see any logging there, I would prefer to see the log dump kept in the Poison Cove area. You've already had logs stored in there and activity in there has been used there. I prefer to see it there. The Deep Bay area is very rich in salmon fishing. It's used, Herman has shared his land with people for a long time. They've come up there and there's a story is that he brought the fish there and planted them there, and that's what I hear and the Fish and Game gives him credit for that and he's more than generous with that area. They let people come in there and use that. I'm also concerned about the impact in Ushk Bay itself and that is that we've got people that use that as an anchorage and it's a place where you can jump off and go to different areas and not get caught in bad weather, bad moorage, or anchorage places.

It's true that ANILCA has said that the subsistence user has the right to determine his future. It's also true that it's been recognized the subsistence user does not have to use a bow and arrow and stone. That he may advance with culture, with cultural changes and that is he uses rifles, he uses fast boats, he may use

motorized vehicles on the road systems. He may be using whatever is available to him and because people come into Sitka, come into this area and because we are rural, they automatically become rural citizens and entitled to the same advantages to use the wildlife as we do. There is down the line eventually going to be a necessity probably to put into practice tier 1 and tier 2 considerations and that is when the game gets really short, who gets the last thing. Subsistence is supposed to take a priority. That means before any other things are cut, before subsistence users take a cut in the harvest, there should be no sports hunter. There should be no commercial use. Now that's hard to swallow, that's hard to take. I'm a commercial fisherman, it's somewhat scary when I think about that, but that is what ANILCA means. There's going to be some protection there for that local resident, that lives in that area and needs to have that. And there's been quite a bit of debate about subsistence, what it is, if it's a welfare system or what it is and I still feel that subsistence is the wrong word to use, that it's lifestyle that we're talking about and I don't, in my mind I don't think it makes any difference if you make hundreds of thousand dollars a year or if you only make \$20,000 a year, if you're accustomed to that fish and game and you use it, then you're a user of that subsistence and that's your right and we're guaranteed that right under ANILCA, native and non native and because of that I feel like it's unfortunate but the Forest Service has not done as adequate a job as they could on the impacts that

are going to be made to subsistence community. It's not exactly all their fault either because you have to have input from the public and the users. The truck survey that is talked about quite often was one that was not a very good job here, done here in Sitka. We do have some other surveys that have been done by the Department of Fish and Game recently, the subsistence division, habitat division. I know that those two divisions have been working with the Forest Service more than they used to in the past and that they can rely on these bits of information to come up with a better picture than they have. I realize the contract drives you to find volume for timber harvest and that's what is driving you, but also understand that ANILCA gives the subsistence user a priority. I know that the, the fight rages on between the Forest Service and subsistence protectors as to whether ANILCA means priority over everything else besides fish and game. I'd like to urge the Forest Service to take the time to get a better and more accurate look at what's happening there. I feel like the deer population are down. If you go in there now and you not (indiscernible) past harvesting in there and you've got timber that's grown up 25 years and (indiscernible) grown up and closed the canopy and it's not good habitat for deer. It's like a desert in there and they don't do well. So and I know that thinning is not what all you hoped it would be and I would hope that you would see if you could find some alternative methods to open up the canopies and maybe make that a little better regrowth coming back

a little better deal. In the mean time, you don't show enough overall impact to really understand what's going to happen in there, but it's my gut feeling that you will cut the deer populations down even further because of the fact that they are somewhat low in that area and that what's helping you in Kelp Bay and along the areas will further cause it, cause there to be more difficulty.

If you do go in there which I think you are probably will go in there, Alternative C is -- is a Forest Service preferred alternative and I think there is too much volume coming out of there in Alternative C. "F" might be a better choice with a few alterations on it. I'd, I would like to see it explored further about leaving roads opened versus leaving them closed. I think subsistence users change their habits the way they harvest things according to what opportunities present themselves to them and I think there might be some possibilities there for subsistence users to take more advantage of that area. Depending upon what you find out about deer numbers and fur bearers like martin and mink for trapping and that kind of thing. And with that in mind I would just like to reiterate one more time I'm really saddened by the continued types of schedules that we have out here for public comment, that come at the time when people are involved in living the lifestyle that they're here for and I know it's hard to get meetings together but, I really feel that winter times are more appropriate for Sitkans and especially when it starts raining and

they're indoors more, they can come to meetings more often and if you really want the input that you say you want from public meetings, that would be a good idea to think about those alternatives and change your schedules a little bit and that's all I have to say, thank you.

MR. EVERY: Thank you. Dave Katz.

MR. KATZ: Good evening, my name is Dave Katz, I live at 320 Bawden Street in Ketchikan and I'm up here tonight speaking on behalf of the Southeast Alaska Conservation Council. I'd like to thank the Forest Service for this opportunity to testify, while at the same time supporting those who have criticized to some the degree the timing of the hearing. It's certainly true that if one holds hearings when people can't get to them that sort of destroys the purpose for holding the hearings and, you know, kind of tends to send the wrong message as well. But at any rate, SEACC is a coalition of 15 conservation groups in 12 communities across the Panhandle from Ketchikan to Yakutat and the Sitka Conservation Society is a very important member group of SEACC. What I would like to -- to express tonight is our coalition's continuing interest in the Hoonah Sound and Peril Strait area. We've heard to night testimony about how rich the area is and I won't repeat that in any depth but it's true. Peril Strait is obviously heavily used by Sitkans for subsistence and recreation. It's an outstanding crabbing area and heavily used hunt area and it's also visually one of the most unique areas in Southeast that's viewed every year,

probably by, well tens of thousands or, or maybe as many as hundreds of thousands of people traveling up and down through Southeast and all of the -- all the action alternatives that the Forest Service is proposing here would just, would just devastate that area. We'd lose a lot of the resources of this area that are so rich and we would lose them and we wouldn't be able to replace them. This plan will really heavily impact this area. I should also point out that this area was rich enough, that the U.S. House of Representatives included it in the Tongass Timber Reform Act. They overwhelmingly endorsed it for wilderness classification. Now the particular area here -- it was going to be part of the West Chichagof/Yakobi wilderness. But this particular part of it didn't get included in the final bill. Nonetheless, the resources are there and it's up to the Forest Service certainly to show how the impacts of this timber sale are going to affect all of those resources that the U.S. House of Representatives considered to be so important. There has recently, of course been an event, here in Sitka which calls into question the need for this timber sale, and that is of course the announcement by ALP that it's going to close its doors on September 30th. The purpose and need of this sale was to provide timber to ALP, to run the pulp mill under the contract and if the mill is going to close down, there is likely no reason to have this sale. And with this uncertainty, I must digress for a second and say that I'm, I didn't follow the logic before in one of the previous speakers in which he, stated that if the mill

closed down there was a reason for more timber sales. The contract was originally put in place to support the Sitka pulp mill and again if that mill is going to close down, it raises great questions as to why we should have this timber sale. Certainly if the mill closes down, that's going to present a lot of economic challenges for Sitka and these are the kind of resources that Sitkans may very well need to make the adjustment that they face. That is tourist resources and subsistence and the other things, the other uses that Sitkans rely on. So with this background, it's our position that now is not the time for the Forest Service to be making the kind of irreversible commitment that will lose Sitkans the important, economic and other resources of the -- the Hoonah sound, Peril Strait area and what the Forest Service needs to do now is to just back up and think things through and figure out what the economic future of Sitka looks like and to re-examine the purpose and need for this timber sale and to not proceed with it until all the questions about ALP's closure are fully debated in public and there is some resolution to them. And finally, the subsistence uses of this area are just extremely important and -- and they should not be impacted the way the Forest Service is proposing to do here. Thank you, very much.

MR. EVERY: Thank you. That's all the people that I have on the list who marked definitely "yes". Have any more signed up, Maureen? There were some that marked "maybe". I see three hands. Mr. Kitka, why don't you go ahead.

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MR. KITKA: I wrote my name down, but I guess I wrote it down on the wrong sheet. My name is Herman Kitka, Tlingit Indian from Sitka. I'll be speaking for commercial fisherman, subsistence users and sportsman. Deep Bay is a, it has a very unique river, it's very sensitive to temperature. The river itself is not snow fed, so if the Forest Service do some logging action in that area, I'm afraid if they warm up the streams, it will finish the run that's in there. To commercial fisherman, it produces a lot of pink salmon. This last opening, three boats from Puget Sound got 8,000 humpies a piece in that area. This is the thing commercial fisherman going to lose and the sportsman, the river produces a lot of cohos. The stream is full of cohos in the fall and the culprit to the death of all salmon in streams is temperature. Some algae grows in the stream and the stream turns brown and everything that's in that stream, eggs, salmon, everything dies. They float out without even spawning. This is my way. I own part of the land in the (indiscernible) and I oppose any activity or any road building through my property and I oppose to log them. To log them would destroy the King crab and the Dungeness that the sportsman and subsistence users come to Deep Bay to fish in the fall. When I'm there they ask permission, even though I don't own the water, they come up to my cabin and, and ask me if they could fish that, King crab off the flats, I tell them go ahead I don't own it. These are the things I want to protect. I know the bark from the trees will destroy like it done in Poison Cove. Poison Cove used

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to produce a lot of Dungeness. Today you can't find any in there. So I oppose any activity in Deep Bay and this I'm going to stand firm on it, even if I have to go take action against the Forest Service on that activity they're planning in there. I prefer that the Forest Service leave Deep Bay alone because the river is too sensitive.

MR. EVERY: Thank you. Jude Pate, is it?

MR. PATE: My name is Jude Pate. If you look at where the Forest Service wants to log in Alternatives B through F, you will see the harvest units are all clustered around the streams like clogs in an artery. And what's going to happen if you log along those stream banks is you're going to have increased sedimentation, dirt's going to run off in there. You're going to have roads that are probably going to block access to the, for the fish to go up and down. You're going to have sedimentation that's going to cover spawning grounds. All kinds of things that are, going to reduce the cycle of salmon and other fish in there. And if you also look at the EIS, this draft EIS, you will see that they say there is no significant effect on subsistence uses except for deer. Now if this draft EIS goes into a final EIS in this form it's going to be fundamentally flawed because the Forest Service hasn't done its job. They're saying there is not going to be any significant effect on the fish and it's going to be obvious that there is. When you combine this with, I don't know the, the economic arguments about the mill and all, and you have, you're

trying to balance between a subsistence economy and a subsistence, sorry, a subsistence economy and a timber harvest economy and what's happening is that timber harvest economy has been mismanaged and its eating up the subsistence economy. Thank you.

MR. EVERY: Thank you. There is another name that's a signature here that I can't quite make out, the name was not printed

COURT REPORTER: It starts with a "K".

MR. EVERY: Looks like the first letter might be a "K", the last name may be . . .

UNIDENTIFIED MALE: (unclear)

MR. EVERY: Would you like to come forward and . . .

MR. DICK: That's okay, I can't read my own writing.

MR. EVERY: Would you mind printing it there for us?

MR. DICK: Which one, are you looking at this one or this one?

MR. EVERY: Right here. Thanks

MR. DICK: I was looking at the issues in your summary. Issue number 1, will it affect subsistence uses? Most certainly it will affect subsistence users, uses and then it asks about the economy. In a time when you have a down turn in the market economy with the pulp mill closing is when subsistence is much more important to the citizens of Sitka. This is not the time to adversely impact subsistence resources. When I look at your, your wildlife habitats, Alternative C, your preferred alternative is

second highest in cutting all growth, second high, in riparian habitat cut, second highest in beach fringe cut and second highest estuary fringe cutting and I mean this is the prime habitat. I don't think I have to tell you how important habitat is to wild life and how important it is to subsistence so I think that the preferred alternative certainly has at least the second highest most adverse impact on subsistence resources when we need it the most. Issue number two says will the timber harvest supply enough timber to meet APC contractual obligations. Since they're not going to be open I suspect that it would meet it if you didn't cut any at all. So again we should pay more attention to subsistence. I would also like to comment on the fact that every year we complain to the Forest Service that they're having the meetings in the summer when no one is here and every year they don't listen, so, is anybody home? The last thing I'd like to say is that my ancestors were moved off of their land in 1838 in violation of a Supreme Court order. They were moved to Oklahoma under a treaty that said they would have their land as long as the grass grows and the water runs and then they were moved off that land in violation of the treaty. And then during the 1920's -- and they were -- and that land was given to the homesteaders and then my grandfather lost his land, an allotment, during the depression to taxes. Now the United States Federal government has a long history of violating treaties and of abuse of its indigenous peoples. Now I think it's unconscionable that you would even consider building a

road through Herman Kitka's allotment. Every time I remind people of what happened to my ancestors, they say it's ancient history, it doesn't happen anymore. Well, it's happening today. I just think that you all going through there is just a repeat of history, you ought to be ashamed of your selves. Thank you.

MR. EVERY: Thank you. Now did I see another hand or two? Are you signed up here?

MR. NIELSEN: Yes.

MR. EVERY: Okay.

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MR. NIELSON: Good evening, my name is Ray Nielsen, Jr.

I'm here representing Sitka Tribal. And I have been appointed to speak for the tribe and -- and the family which owns some old fish camp sites in Ushk Bay. We had an anthropologist come from San Francisco last summer to work for the tribe and she identified the spot where a camp is. This is a huge tribal house which encompasses many families and there are other people here represented and that camp site is customary, traditional and seasonal. We don't, we -- we will not be there all the time, but as -- as the way of natives, all -- all our foods are seasonal and we have started a subsistence food project at Sitka Tribal which consists of us taking our people out and gathering which ever food is in season, which is spring summer, fall, winter and it is quite extensive. And with, if the mill shuts down, the -- the subsistence food project would come into play as being an important source of food for our people. And also this year, the proxy

system is coming into affect for a gathering of food, fish, and game and we will be getting together with the Alaska Department of Fish and Game and we will coming up with the tribal number -- number of people and how many of whatever we can gather for the tribe. We have boats to gather out, to take people inland there, or up and down the coast. And as far as the foods we go up there for hunting deer or bear whether you're a big boat, small boat in Ushk Bay or Deep Bay, fishing, commercial and sport and subsistence, trapping, shellfish, shrimp, crab, commercial and subsistence, bird hunting and also seal hunting. It is an important place for people to come up here from down below to go camping and it is also an important place for tourists just visually looking at the wild scenic beauty. And as far as an alternative, we would not like to see any logging at all, but if it comes down to a -- having a choice, Alternative F where we keep the camp and the landing out of Ushk Bay. We -- we cannot afford to have the competition from loggers competing with us the native people and the white people which all use that area. On a nice day all boats run that far, but on, if they're there, they're there everyday and Alternative D is a good source too, but to move the camp and the landing in Poison Cove and utilize the spot that's already there. It's a dead bay as far as we're concerned. We don't, we don't do any hunting or fishing in there. And we will write a more complete paper and send it in concerning the tribe and the families concerned on this issue. Thank you.

MR. EVERY: Thank you.

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MR. STORTZ: Yeah, my name is William Stortz. I -- I hunt up in this part of Hoonah Sound, Peril Strait area quite -- quite a bit in the fall and the traffic is intense sometimes. A lot of people from Sitka go here gather -- gather deer. I've camped in Ushk Bay, I've hunted these valleys that have these little spots all over them that aren't going to be there any more and, you know, that's going to be a major impact on me and other people who do this. I see these roads along the beach in Ushk Bay and Deep Bay. All these places I've been and, you know, they're not going to be the same and I guess nothing ever is, but, where do we go after this? I mean we look at the whole picture, we got a road system that's going to connect to Nakwasina in the next few years. We're talking the Duffield peninsula, Bear Cove or Bear Bay, Fish Bay, coming back into Nakwasina. Sixty percent harvest into Nakwasina. Where do we go? Where do we go to hunt and fish? It's going to be Deep Inlet and Silver Bay, you know, you're pushing us closer away or you're pushing us further away. There aren't many places left that haven't been impacted in a serious way. Some people will say that the deer harvest will get better after these clear cuts. Well, that may very well be the case, and we've seen that in the False Island area. We also saw the crash that it took when the heavy winters finally returned and there was no canopy to protect those populations. How many deer were found in the spring surveys that died on the beach because they had no

where to go? You could find more than one every few hundred yards, I'll guarantee you that. So from a subsistence standpoint, this is another mistake, that's all I can say.

MR. EVERY: Thank you. Go ahead.

MRS. EVANS: Hi, I'm Mandy Evans. I live in Sitka and I want to go on record as supporting Alternative A. In light of the impending mill closure, it seems ridiculous to not reconsider the reason and need for further logging in this area. I want to also encourage the Forest Service to take into consideration the weight of the two testimonies that represent tribal organizations and that those are -- are large groups. And I also want to voice my concern and amazement that you would consider abusing somebody's rights and their private land. And once again, I talked to three people yesterday who hadn't heard about this and couldn't be here because they're fishing and they were just in for a couple hours to turn around and I am disappointed in your choice of timing once again.

MR. EVERY: Thank you.

MR. NELSON: My name is Richard Nelson. First of all I would like to thank the Forest Service for the opportunity to comment on this timber sale. I'm a subsistence hunter and fisherman. In our household, we eat venison, some, somewhere between five and seven days a week, 365 days a year. It's a very important part of -- of our food. I don't claim any -- any of the kind of deep traditional connections with this area that Mr. Jacobs and Mr. Kitka have spoken of. I'd like to say how strongly I

respect their positions and -- and how urgently I believe that the rights of -- of the native American people and Sitka's community should be considered. I believe they should have the very highest consideration and -- and like others I would like to strongly support Mr. Kitka's -- the protection of Mr. Kitka's private land. I think that's extremely important. This area that's being considered is really a -- a part of the core subsistence and sport hunting and fishing and commercial fishing area in Sitka. There's a -- as you probably know as I'm sure the Forest Service is aware, a very high proportion of Sitka households are involved in some, sort of subsistence activity, hunting or fishing. Extremely high percentage that is really not all that different from some of the smaller villages around the state. It's -- it's extraordinary that way. Subsistence is a vital part of Sitka's economic life -- Sitka's economic life. Often times it seems that subsistence uses get shoved off into a corner and not considered on an equal basis with other kinds of economic life. I think that's, that's an error, especially as others have pointed out at a time when we face a -- a great increase in unemployment in the community that we -- we need to -- to even increase our -- our concern for the excess -- access by Sitkans to subsistence resources. It's also important that we consider as we look at the Ushk Bay timber sale the cumulative effects of this sale combined with -- with the other timber harvests that have occurred throughout this area that have been mentioned by other people. And I noticed that in the mail

today at our house, we got the scoping document for this, for the northwest Baranof Island timber sale which is right across Peril Strait from the one we're talking about tonight. So on the heels of one timber sale, we will be dealing with another one right across the water and on the heels of that we will be dealing with another one on the north end of Kruzoff Island. If you take -- I think it's important that none of us take these timber sales one at a time, but we look at the whole affect of it and as someone else pointed out earlier, the fact that you -- you have, you cut certain areas now and then you return, you cut other areas until there's very little left. As a deer hunter I'm especially concerned about the effects of clear cut logging on deer. As biologist from the Forest Service and the Department of Fish and Game have documented now over the past 25 or 30 and in a sort of an accumulating weight of research, clear cut logging is detrimental to deer populations. It can be extremely detrimental. William Stortz pointed out in the short term the effect of loss of the canopy on deer populations. In the long term the effect is even greater because of the closed canopy that doesn't have any food underneath it for deer. So that if the, if the United States Forest Service's own biologists are to be believed and I think they have plenty of evidence to demonstrate that they are correct, it will take some where in the neighborhood of 200 years to start returning to a kind of forest that will support the sorts of deer populations we have in the area already and for the whole forest ecosystem to replace itself, the best

estimates right now, according to Paul Alaback (ph) of the Forest Service is a matter of 500 years. So the effects of -- of the logging that takes place today is long term really beyond any of our comprehension. So I think they -- that we -- we face in this community a time of -- of great economic change and -- and this kind of, this economic change I think is going to move us from something that has been in force for the past 30 years towards something new and we don't, as other people have pointed out, know exactly what this is yet and until we do I think it's important that we take a very conservative approach on -- on new clear cut logging especially in a core subsistence area for Sitka. Therefore I would along with many others who have spoken here support Alternative A, that is the no logging option. I think continued logging in the Peril Strait area and closer in to Sitka as is being scheduled is -- is not in our -- in our best interest as a community either environmentally or economically. Thank you.

MR. EVERY: I think that is the last of the "maybe" list, perhaps, is there anyone else who wishes to present testimony?

MR. JOENSUE: Can I add something?

MR. EVERY: Could you come up here, so . . .

MR. JOENSUE: Sure. I respect and understand the reasons that Mr. Kitka gave for not going into Deep Bay. For some of those reasons as well as others that are of concern to Alaska Pulp, the economics, Alaska Pulp doesn't have any interest in going into Deep Bay either, and that will be reflected in the modified version of

Alternative C that we're going to prefer. I've heard many people happily come to the erroneous conclusion that the fact that the pulp mill is closing for an indefinite period of time as being a cast in concrete fact that there's no longer a need for the timber supply being offered by the Forest Service. It seems clear to me that many of you haven't read the contract and don't know the language in the contract. If you're interested I'd invite you to come by my office and I would be glad to show you a copy of the same.

MR. EVERY: If there are others who would like to say something that would go on the record, now is the time. If not -- go ahead. You need to come up here, though, to do it.

MR. KATZ: As long as we're going to be discussing the contract, I wonder if the gentlemen would be willing to say in public what those contract provisions are that he was referring to.

MR. JOENSUE: The provisions are the language in the contract that deal with closure of the mill and I can't quote them from memory but if you would come to my office as I said, or the Forest Service and look at a copy of the contract, I think you could draw a conclusion that would be different from the one that's so gleefully being touted here. (indiscernible) Go to 600 Sawmill Creek Road, the Alaska Pulp mill.

MR. EVERY: Okay, one more.

MRS. EVANS: I want to clarify my reasons for referring to the mill closure. I don't mean to be gleefully talking about it

closing at all. I'm just saying that, in considering the whole economy of Sitka with the impending closure and I would love to come and look at the contract, I -- I think that the Forest Service needs to reconsider its reasons and motives and ways of logging. So that's -- that's all I was saying.

MR. EVERY: Okay, I think we will consider the formal hearing part closed. If there are people who wish to stick around for a little bit and discuss things off the formal record, have questions answered and so forth, I think we would be willing to do that for a short while and you're certainly welcome to refer again to the materials that are here, particularly the copies of the summary that are there if anybody didn't get one of those, they're certainly welcome to those. There's also a hand out having to do with some questions concerning the mill closure if you didn't get one of those, please help yourself. Thanks very much for coming. Your input is very helpful and will definitely be considered in all of the preparations for the final EIS and comments that are on the record along with those that are submitted in writing will be responded to in the final EIS. Thank you. very much.

The meeting was concluded at 8:20 p.m.

Appendix M

Responses to Comments



Response to Public Comments on the Ushk Bay Draft EIS

1.) Proportionality

1a.) All alternatives must meet TTRA proportionality requirements.

Letters and comments on this subject received include: 140, 207

Forest Service Response: Some proposed harvest units containing Volume Class 6 area were reconfigured to reduce the amount of high-volume area to be harvested so that each alternative would meet proportionality using FSH methodology. However, proportionality is not a requirement on independent timber sales under TTRA. The decision to terminate the long-term contract with Alaska Pulp Corporation (APC) will result in timber from the Ushk Bay Project Area being sold as independent timber sales.

1b.) Timber Type maps are inaccurate and should not be used to determine proportionality.

Letters and comments on this subject received include: 179

Forest Service Response: Section 301(c)(2) of the Tongass Timber Reform Act provides the legal requirement for proportionality. The Forest Service implementation policy for TTRA proportionality is incorporated in Forest Service Handbook (FSH) 2409.18, Region 10 Supplement 2409.18-92-5, effective January 15, 1992. The FSH specifically states that the updated timber type map (TIMTYP) will be used as the basis for proportionality analysis and the acres of respective volume classes identified on the TIMTYP maps will be used to calculate the proportional volume ratios required by the statute. The TIMTYP maps meet all the criteria for the TTRA definition of volume class used in TLMP and supporting documents. Both TLMP and the timber type maps use photo interpretation of volume class strata calculated for standing net volume per acre. TIMTYP is the timber resource used by the TLMP as amended (1979) that displays, among other things, the inventoried volume class distribution of the Forest. This was the best available information used in the calculations of the proportionality based for each Management Area. New proportionality bases were calculated using the management areas and included within the proportionality analysis.

1c.) If no timber harvest is planned through 2011, then how will the Forest Service achieve proportionality during future timber sales in project area?

Letters and comments on this subject received include: 207

Forest Service Response: Portions of units were deleted to meet the intent of proportionality under all alternatives, even though proportionality is not a requirement of independent timber sales.

1d.) Was timber harvest in road right-of-ways included in proportionality analysis?

Letters and comments on this subject received include: 207

Forest Service Response: Proportionality calculations do not include right-of-way volume.

1e.) Do not combine volume classes 6 and 7 to determine proportionality.

Letters and comments on this subject received include: 291

Forest Service Response: The Forest Service implementation policy for TTRA proportionality is incorporated in Forest Service Handbook (FSH) 2409.18, Region 10 Supplement 2409.18-92-5, effective January 15, 1992. The Tongass Timber Reform Act required the Comptroller General to (1) audit the actions taken by the Secretary to revise the texts of the long-term timber sale contracts and (2) submit a report to the Senate Committee on Energy and Natural Resources and the House Committee on Interior and Insular Affairs describing the revisions made by the Secretary and stating whether the revised contracts complied with the act (TTRA Sec 301(g)). In the GAO report, Tongass National Forest Contractual Modification Requirements of the Tongass Timber Reform Act (GAO/RCED-91-133, March 1991), GAO concluded that "...the proportion of remaining timber in volume classes 6 and 7 be the same as existed on November 28, 1990. Section (c)(2) does not require that the proportion be determined separately for each volume class."

2.) Monitoring

2a.) Cumulative effects on watersheds need to be monitored to ensure compliance with state standards.

Letters and comments on this subject received include: 140

Forest Service Response: Additional monitoring activities have been added to the Monitoring Plan in Appendix I. Monitoring will be adequate to ensure compliance with State standards.

2b.) Windfirmness of wildlife corridors needs to be monitored.

Letters and comments on this subject received include: 207

Forest Service Response: Monitoring the windfirmness of stream buffers is part of the Monitoring Plan. Since most of the wildlife corridors are associated with streams, the stream buffer monitoring will also cover them.

2c.) Marten populations need to be monitored to prevent overharvesting during logging.

Letters and comments on this subject received include: 207

Forest Service Response: A monitoring activity that addresses marten has been added to the Monitoring Plan.

2d.) Deer population changes need to be monitored to indicate relative effects of weather vs. logging.

Letters and comments on this subject received include: 207

Forest Service Response: Monitoring activities that address changes in the deer population are included in the Monitoring Plan. Determining the effect of weather versus logging would require specific research and is outside the scope of this Plan.

2e.) Subsistence use of Project Area, and use of roads for subsistence hunting need to be monitored.

Letters and comments on this subject received include: 140, 291

Forest Service Response: A monitoring activity that addresses effects on subsistence use is included in the Monitoring Plan.

2f.) Marbled murrelet, northern goshawk, peregrine falcon, and Vancouver Canada goose nesting and foraging habitat needs to be monitored and mitigated.

Letters and comments on this subject received include: 291

Forest Service Response: Peregrine falcons occur in the project area only as migrants, and the conclusions of the Biological Assessment and Section 7 Consultation were that the project would not have an effect on them (thus suggesting no monitoring or mitigation is warranted). The Vancouver Canada goose is often used as a management indicator species, but is not included in state or federal lists of species to be afforded special protection. Based on the sparsity of information on habitat needs of marbled murrelets and northern goshawks, the type of study of most value would be a research study. While this is a worthy task and one in which the Forest Service participates on a regional basis, it is not appropriately attached to this project as monitoring or mitigation.

2g.) The Forest Service needs to establish a monitoring program to evaluate the cumulative effects of timber harvest on northern goshawks in Southeast Alaska.

Letters and comments on this subject received include: 90

Forest Service Response: This comment is also more related to research than monitoring. The Viability Committee is addressing these concerns on a Forest-wide basis.

2h.) All units and TTRA stream buffers need to be checked before logging. A greater percentage of units needs to be checked prior to logging. BMPs are inadequately monitored; refer to 1992 BMP performance report.

Letters and comments on this subject received include: 140, 178, 207

Forest Service Response: The Monitoring Plan in Appendix I states that 50 percent of the units near anadromous fish streams will be checked for compliance with TTRA. This is in accordance with the monitoring procedures outlined in FSH 2509.22 - Soil and Water Conservation Handbook, Region 10 Supplement 2509.22-91-1, dated February 26, 1991. This handbook is also referred to as the BMP Handbook. This handbook defines monitoring as:

"The periodic evaluation of resources or activities on a representative sample basis to establish long-term trends, assess the impacts of land management activities, determine how well objectives have been met, and check compliance with established standards."

As is the case in any monitoring, should the representative sample show that the desired standards are not being met, more buffers would be checked to ensure that the law is being met.

2i.) Checking by timber sale administrators is contract enforcement/management control, not BMP implementation monitoring. LTF/petroleum spill monitoring is NPDES compliance monitoring, not implementation monitoring. LTF removal is a management strategy, not implementation monitoring.

Letters and comments on this subject received include: 81

Forest Service Response: The activities described in the Appendix I (Monitoring Plan) are directly related to monitoring implementation and effectiveness of the management activities authorized by the Record of Decision. The Monitoring Plan is not specifying LTF removal or timber sale administration.

2j.) Units of measure for implementation monitoring must be defined.

Letters and comments on this subject received include: 81

Forest Service Response: For many of the implementation monitoring activities, the units of measure are simply distances from key features, such as streams. For some monitoring activities, a comparison between planned and laid out units requires checking of landmarks rather than measurements, per se. For activities where units of measure are really meaningful, the monitoring follows Forest Service handbooks or other protocols that specify units.

2k.) Precommercial thinning is not appropriate as an effective monitoring/mitigation measure. Precommercial thinning is a management activity, not effectiveness monitoring.

Letters and comments on this subject received include: 81, 291

Forest Service Response: The activity related to precommercial thinning specifies monitoring to ensure high productive sites are managed for future fiber production. Precommercial thinning is not the monitoring activity. To better communicate the intention, the heading for this monitoring item has been changed to Site Utilization.

2l.) Effectiveness monitoring activities should be tiered to the approved Chatham Area Effectiveness Monitoring Action Plan.

Letters and comments on this subject received include: 81

Forest Service Response: There is no approved Chatham Area Effectiveness Monitoring Action Plan at this time.

3.) Land Use/Management

3a.) The Ushk Bay Project Area should have been designated as wilderness or LUD II area. Ushk Bay and Deep Bay were nominated for selected lands under the ANSCA Act.

Letters and comments on this subject received include: 3, 16, 95, 117, 140, 177, 248, 303, 307

Forest Service Response: The Forest Service must respond to the laws and regulations that are in effect: The Ushk Bay area has been designated LUD III and IV through a specific process under the law. It is not within the purview of this EIS to change it, but only to address the issues.

3b.) The proposed action does not adequately respond to multiple-use management.

Letters and comments on this subject received include: 35, 73, 140, 165, 186, 191, 203, 222, 239

Forest Service Response: The Multiple-Use Sustained-Yield Act of 1960, Section 1 states, "It is the policy of the Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." The Tongass National Forest, as a whole, is managed for multiple uses. Not every area, watershed, or travel route can accommodate multiple uses at all times. Under TLMP as amended, approximately 23 percent of the Tongass National Forest is designated LUD IV (areas for commodity development) and an additional 15 percent is designated LUD III (areas for a mix of commodity and aesthetic resource management). Thus, over 60 percent of the entire Tongass National Forest is available to provide scenery, fisheries, wildlife, and subsistence opportunities without any timber development.

At the project level, the Ushk Bay project has developed a range of alternatives which addresses the issues identified in scoping. The range of alternatives, combined with the design criteria and the mitigation measures, protect resources such as wildlife, fisheries, subsistence, and tourism opportunities consistent with the Forest goals for the land use designations in the Project Area.

Alternative (C), which represents the proposed action, proposes management of the resources of the Project Area in an integrated manner. The following summarizes how each of the five resources alluded to in the Multiple-Use Sustained-Yield Act of 1960 are considered:

Outdoor Recreation

- Harvest units are designed to address visual concerns by the shape and placement of the unit, its placement in the landscape, or, in some cases, the type of harvest proposed.
- Some potential harvest units are not included in some or all alternatives to reduce impacts to visual and recreational resources.
- All known cultural sites are protected from harvest activities.

Range

- There is no use of the Tongass National Forest for domestic forage production.

Timber

- There is reduced reliance on clearcutting; 2,517 acres to be harvested by clearcutting and 579 acres to be harvested by alternative means of harvest.
- As some of the more isolated and difficult harvest areas are entered, there is a reliance on more sophisticated methods of yarding, such as helicopter.
- 90 MMBF of useable sawlog + utility logs would be produced.
- 25 percent of Tongass National Forest timber program receipts are returned to the State of Alaska for use in building and maintaining schools and roads.
- Approximately 500 jobs in timber related employment will be created.
- All harvested units will be regenerated within 5 years of harvest.

Watershed

- Through application of TTRA buffers, uneven-aged harvest adjacent to all riparian areas, and adherence to BMPs there will be no degradation of surface water quality.
- There will be no harvest adjacent to community water supplies.
- Although there may be additional water production, this is neither a benefit nor detriment within the Project Area.

Wildlife and Fish

- Almost no harvest is proposed within 500 feet of the saltwater shoreline and within 1,000 feet of all estuaries.
- There will be no harvest within 330 feet of all known bald eagle nests.

3c.) The Ushk Bay Project Area is designated LUD IV; therefore, other commodities (i.e., fish) need to be considered more.

Letters and comments on this subject received include: 81

Forest Service Response: The Ushk Bay EIS is consistent with the Multiple Use Sustained Yield Act. Please refer to the response to 3b above.

3d.) The Forest Service told the Natives years ago that Ushk Bay would not be logged; therefore this promise was made and Alternative A should be selected.

Letters and comments on this subject received include: 315, 318

Forest Service Response: Other areas of the Tongass, such as Admiralty Island, were likely available for timber harvest when the alleged promise was made. Ushk Bay was subsequently made available for timber harvest as a trade-off for other areas being designated LUD II or Wilderness.

4.) Scoping/Public Involvement

4a.) Public involvement was not extensive enough.

Letters and comments on this subject received include: 70, 73

Forest Service Response: There have been significant opportunities for public involvement. All of the steps for meaningful public involvement under NEPA have been followed. The Forest Service is pleased that so many people have responded.

4b.) Scoping report was inaccurate, incomplete by leaving out public sentiment to log elsewhere.

Letters and comments on this subject received include: 70, 71

Forest Service Response: This sentiment is acknowledged, and the DEIS addressed it with the No Action alternative, which would mean that the contract volume would have to come from elsewhere in the contract area.

4c.) The Friends of Hoonah Sound should be mentioned under the section on community response in Chapter 1 of the DEIS (page 1-3).

Letters and comments on this subject received include: 73, 191

Forest Service Response: Public involvement is summarized in Appendix B. Earlier comments on the 86-90 EIS are acknowledged in Chapter 1 of the Final EIS.

4d.) A Citizen Review committee should have been established.

Letters and comments on this subject received include: 73

Forest Service Response: Citizen Review committees are not Forest Service policy. However, public involvement can be effectively done in other ways.

4e.) The Forest Service should not consider xeroxed letters as informed public comment.

Letters and comments on this subject received include: 199

Forest Service Response: The Forest Service must consider all comments on their individual merit.

4f.) The comment period was too short.

Letters and comments on this subject received include: 13, 52, 70, 73, 127, 145, 186, 191, 205, 282

Forest Service Response: The Council on Environmental Quality Regulations (40 CFR Part 1506.10) require a minimum 45-day public comment period on draft environmental impact statements. The public comment period for the Ushk Bay DEIS ran from June 11 to July 26, 1993. The deadline was formally extended to August 25 in response to requests for extension. Comments were received and considered until August 25, 1993.

4g.) The schedule for public involvement was inappropriate. The subsistence hearing was inappropriately scheduled during summer when many people cannot attend.

Letters and comments on this subject received include: 70, 306, 307, 310, 313

Forest Service Response: All aspects of timing had to be considered in developing the project schedule, including contractual requirements, the season when field data collection could be done, and the convenience of the public. It is patently impossible to accommodate everyone to their complete satisfaction. Attendance at the hearing was not required to submit testimony. Written testimony was encouraged if attendance at the hearing was inconvenient.

4h.) The scoping period was applied too late in the process.

Letters and comments on this subject received include: 70

Forest Service Response: See the response to 4g above.

4i.) The reason for extending the comment period was the wrong reason.

Letters and comments on this subject received include: 199

Forest Service Response: The comment period was extended for the convenience of individuals wanting to submit comments.

4j.) There is no evidence that public involvement (from agencies or individuals) was incorporated into the planning process and selection of preferred alternatives.

Letters and comments on this subject received include: 70

Forest Service Response: The Forest Service has carefully considered public comment, both written and oral. The public involvement process for the Ushk Bay Project is outlined in Chapter 1. It included scoping, scoping briefings, media releases, briefings with special interest groups, subsistence hearings, and public comment on the DEIS. All comments were analyzed and incorporated as appropriate.

4k.) The project should be rescoped to correct problems with previous scoping on this project.

Letters and comments on this subject received include: 70

Forest Service Response: The Forest Service is not aware of any failings of the scoping process that would necessitate rescoping.

4l.) Scoping for the project should be based on management needs and public issues, as recommended in the Land/Resource Management Planning Handbook.

Letters and comments on this subject received include: 70, 73

Forest Service Response: Those factors were prominent in the planning for the public involvement.

4m.) The location and size of the project area should be addressed during scoping. Defining these parameters prior to scoping is inconsistent with NEPA.

Letters and comments on this subject received include: 70, 71, 73

Forest Service Response: The TLMP, as amended, is a programmatic document which determined available timber for the Forest. The TLMP, as amended, decided on the land use designations (LUDs) for each of the 867 VCUs on the Forest. Each LUD describes the broad purpose of management for each area of the Forest. LUDs III and IV permit timber harvest and road construction activities. The TLMP, as amended, detailed management direction/emphasis for each Management Area and also scheduled specific Management activities for two specific time periods (1985-89 and 1990-94). The TLMP, as amended, scheduled anticipated management outputs from the Chatham Area timber volume ranging from 70 million to 120.6 million annually. All of these decisions were made within the NEPA process.

The APC contract requires that a minimum current timber supply of 240 MMBF be available for harvest beyond what has already been harvested. The Forest Service has until the end of 1995 to increase this supply to at least 360 MMBF. The Comptroller General of the United States has indicated that these provision are in compliance with the TTRA, pursuant to Section 301(g).

In July 1990, a working group conducted a review of each VCU within the designated sale area for available volume. The results of this volume review, supported by TLMP revision information, provided the basis for scheduling the next series of environmental analyses. Upon completion of the volume review, two Project Areas (Kelp Bay and Southeast Chichagof) were identified and scheduled for environmental analysis. Following enactment of TTRA, a schedule of additional project level environmental analysis was identified for fiscal years 1993 through 1996. The Ushk Bay project was the next in priority due to the opportunity to efficiently use work done for a previous EIS prepared for the 1986-1990 five-year operating plan. This schedule has been reviewed and reaffirmed and is represented in Table 1 in Appendix A of the FEIS. This identification of areas to schedule for further NEPA analysis is not a major federal action itself subject to NEPA. The process is disclosed as part of the Ushk Bay project NEPA documentation.

4n.) The project should be rescoped when the situation with the APC contract is resolved.

Letters and comments on this subject received include: 70, 73

Forest Service Response: See the response to 5a below.

5.) Mill Closure

5a.) The logging plan should be cancelled or delayed because of the mill closure.

Letters and comments on this subject received include: 3, 13, 16, 20, 44, 52, 61, 67, 69, 70, 79, 95, 117, 122, 127, 140, 141, 145, 164, 165, 177, 178, 179, 191, 199, 203, 205, 222, 248, 251, 255, 277, 279, 282, 283, 287, 288, 300, 302, 307, 313

Forest Service Response: APC announced on June 30, 1993 that it intended to indefinitely suspend operations at their Sitka pulp mill, effective on September 30, 1993. On April 14, 1994, following closure of the mill, the decision was made by the Regional Forester to

terminate the contract with APC. The Record of Decision (ROD) has been delayed four months because of the termination decision. An independent timber sale market assessment, completed in May 1994, indicates that volume from the Ushk Bay Project Area is still needed to help meet market demand in Southeast Alaska. An evaluation of the effect of the contract termination decision on the Project is included in Appendix O of the Final EIS.

5b.) The logging plan should not be delayed because the mill could reopen depending on conditions, and because the Wrangell mill is dependent on timber harvesting.

Letters and comments on this subject received include: 39, 89, 105, 208, 240

Forest Service Response: See response to 5a above.

5c.) The Forest Service should address whether or not the mill closure constitutes a breach of contract.

Letters and comments on this subject received include: 95, 178, 179

Forest Service Response: See response to 5a above.

5d.) The Forest Service needs to address where the timber will be processed

Letters and comments on this subject received include: 35, 178

Forest Service Response: Because the timber will be sold as independent timber sales, to the highest bidder, there are a number of sites where the timber could be processed. Where the timber is processed does not have a bearing on the environmental consequences of harvesting the timber.

5e.) The Forest Service needs to address how the mill closure will affect the scheduling and scale of the timber sale.

Letters and comments on this subject received include: 81

Forest Service Response: The mill closure and subsequent decision to terminate the contract has delayed the Record of Decision but the scale of the Project has not changed. Independent timber sales will be offered in 1995 and 1996 and are discussed in the ROD. The continued need for volume, irrespective of the long-term contract, is addressed in Appendix O of the Final EIS.

5f.) The Forest Service should not be affected by APC's argument that environmental restraints are the cause of the mill closure.

Letters and comments on this subject received include: 145

Forest Service Response: Comment acknowledged.

5g.) The change in APC's ownership should have cancelled the contract.

Letters and comments on this subject received include: 303

Forest Service Response: Comment acknowledged.

5h.) How could the mill operate last year without a profit?

Letters and comments on this subject received include: 303

Forest Service Response: It is outside the scope of this EIS to address the yearly finances of APC.

5i.) What is the contract provision that allows for closure of the mill?

Letters and comments on this subject received include: 301, 307

Forest Service Response: See response to 5a above.

5j.) APC's contract should be cancelled or reassessed.

Letters and comments on this subject received include: 44, 135, 186, 191, 222, 287

Forest Service Response: See response to 5a above.

5k.) The temporary time frame in the contract should be defined as years not months or weeks, and defined relative to the average global business cycle.

Letters and comments on this subject received include: 242

Forest Service Response: See response to 5a above.

6.) Cumulative Impacts

6a.) The effects of the proposed project must be considered in combination with timber sales in surrounding areas. Cumulative impacts are inadequately addressed.

Letters and comments on this subject received include: 73, 140, 207

Forest Service Response: Cumulative impacts outside the Project Area are appropriately addressed in the Forest Plan. The analysis of Forest-wide cumulative effects done for the TLMP Revision are referenced in the EIS, and several resource discipline analyses include cumulative impacts discussion.

6b.) Revise discussion of cumulative impacts on the northern goshawk: include harvest of NW Baranof as a "surrounding area."

Letters and comments on this subject received include: 90, 291

Forest Service Response: The NW Baranof Project Area is not contiguous with the Ushk Bay Project Area. The planning and decisions on the NW Baranof project are not advanced far enough to do much more than acknowledge that the project is being planned and analyzed. Cumulative impacts to the goshawk on NW Baranof will be analyzed in a separate timber sale EIS.

6c.) Need to address cumulative effects on marbled murrelets due to proposed action along with other timber sales in region.

Letters and comments on this subject received include: 90

Forest Service Response: Cumulative effects within the Project Area are addressed in the EIS. Forest-wide cumulative effects are more appropriately addressed in the Forest Plan.

6d.) Much of the area has been logged; do not log any more.

Letters and comments on this subject received include: 61, 191, 199, 205, 248

Forest Service Response: As disclosed in the EIS, only 321 acres have been logged previously. The upper Hoonah Sound LUD II area and the West Chichagof-Yacobi Wilderness are immediately adjacent to the Project Area and will remain uncut.

6e.) Hoonah Sound is the last uncut area between Sitka and Chatham Strait.

Letters and comments on this subject received include: 3, 13, 20, 44, 73, 122, 125, 222, 305

Forest Service Response: See the response to 6d above.

6f.) The Forest Service needs to look at the whole picture, not just 5-year increments.

Letters and comments on this subject received include: 306

Forest Service Response: Since 1990 the Forest Service has been conducting environmental reviews and writing EISs for each timber sale, not for 5-year operating periods. The Forest Service addresses Forest-wide issues in a Forest Plan (TLMP). TLMP is currently being revised.

7.) Subsistence

7a.) Overall concern about impacts to subsistence use, subsistence resources.

Letters and comments on this subject received include: 20, 31, 39, 44, 52, 61, 67, 90, 113, 117, 125, 140, 156, 177, 185, 191, 195, 205, 232, 247, 251, 255, 277, 279, 282, 291, 304, 307, 309, 310, 311, 312, 314

Forest Service Response: The concerns are acknowledged and the subsistence analysis is revised in the Final EIS.

7b.) The intensity of use needs to be identified by incorporating public input from scoping and community leaders.

Letters and comments on this subject received include: 291

Forest Service Response: Additional information and analysis is included in the Final EIS Chapter 4.

7c.) The subsistence hearing transcripts need to be published and responded to.

Letters and comments on this subject received include: 140

Forest Service Response: The subsistence hearing transcript is included in Appendix L with the other comments. The comments made at the hearing are among these with responses.

7d.) The ANILCA Section 810 findings are inadequate; need to address take of halibut and restrictions of fish and shellfish harvesting.

Letters and comments on this subject received include: 90, 140

Forest Service Response: Additional analysis is included in the Final EIS Chapter 4.

7e) The ANILCA findings should be revised to show general and site-specific significant restrictions.

Letters and comments on this subject received include: 291

Forest Service Response: Additional analysis is included in the Final EIS, based on available data. One conclusion changed.

7f.) The Forest Service needs to consider that ANILCA gives subsistence priority over all other resources.

Letters and comments on this subject received include: 306

Forest Service Response: Subsistence can take priority, in that harvesting of resources for other purposes may be restricted to protect subsistence uses. This is mentioned in the EIS.

7g.) The record of previous Hoonah Sound logging proposals and subsistence user objections needs to be incorporated into the decision.

Letters and comments on this subject received include: 140

Forest Service Response: See the response to 4c.

7h.) The map on page 3-64 needs to be revised to reflect use of subsistence fishing sites as stated in 6/17/92 scoping meeting.

Letters and comments on this subject received include: 140

Forest Service Response: Changes in the subsistence sections have been made in the Final EIS, but maps may not have changed where scoping information was general in nature.

7i.) The TRUCS maps are unreliable; instead use maps from Gmelch and Gmelch 1985.

Letters and comments on this subject received include: 291, 306

Forest Service Response: The subsistence analysis does not rely solely on the TRUCS information. Although the TRUCS was done in 1987-88, the information is continuously supplemented with ADF&G harvest data, additional surveys by ADF&G Subsistence Division, and subsistence hearings held in the communities. In addition to the TRUCS and ADF&G data, information from individuals was received during scoping, and subsistence hearings were conducted in Sitka to ensure the Ushk Bay analysis was performed using the best information available.

7j.) Analysis needs to be site-specific; skip boilerplate approach with model results.

Letters and comments on this subject received include: 140

Forest Service Response: Predictions of impacts to subsistence users are analyzed using the best available data (deer habitat capability models, GIS, TRUCS, and ADF&G deer hunter surveys). Effects are displayed with maps, tables, graphs, and written text. Subsistence uses and needs are discussed in detail in Chapters 3 and 4, Subsistence. Formal and informal meetings have been held with individuals, communities, and organizations during the EIS process to gain an understanding of subsistence concerns. These subsistence concerns were

taken into consideration in the development of alternatives and analyses. Information gathered since the release of the DEIS (subsistence hearings and public comment) has been incorporated into the Final EIS.

7k.) Emphasize the importance of Ushk Bay and Deep Bay as crabbing and salmon fishing areas.

Letters and comments on this subject received include: 140

Forest Service Response: These items have been taken into consideration and are discussed in the EIS in the subsistence section of Chapter 3.

7l.) Address how the mill closure will place greater importance on and add pressure to subsistence use.

Letters and comments on this subject received include: 277, 279, 311

Forest Service Response: It is not clear how subsistence use will be affected by the mill closure and no data are available to evaluate the concern. Families that leave Sitka because of the closure may offset any increased use by remaining residents. Sitka would receive preference in the Project Area if the Federal Subsistence Board used its authority to prioritize the harvest of resources among rural residents, regardless of why the restriction was necessary.

7m.) Competition for subsistence will increase in other areas, such as Angoon.

Letters and comments on this subject received include: 179

Forest Service Response: No data is available to evaluate this concern. The distances are great enough that any effect would be small because it is too far for many people to go from Sitka.

7n.) Consider other timber sales in analyzing impacts to subsistence, and clarify how Alternative A results in significant cumulative impacts.

Letters and comments on this subject received include: 180, 207, 247, 291

Forest Service Response: The hunter demand estimates for deer exceed the estimated supply in the wildlife analysis area (WAA) that includes the project area and in several other WAAs in the area of subsistence use by residents of Sitka. Therefore, the cumulative effects of small habitat capability reductions in several timber sale areas combine to indicate a significant possibility of a significant restriction of subsistence uses of deer for all alternatives. The EIS references the Forest-wide cumulative impact analysis done for the TLMP Revision in supporting findings for the Ushk Bay area.

7o.) Address how increased pressure from logging camp residents could be harmful to subsistence resources such as crabs.

Letters and comments on this subject received include: 90, 113, 279, 291

Forest Service Response: There are two questions - one on competition with other users, and the other on overharvesting. The question of competition is addressed in the Final EIS, Subsistence section. The question of overharvesting is also a question of intent, regulation, and enforcement. It is not reasonable to assume that the laws and regulations will not be followed or that regulations will not be adjusted if needed, and enforced.

7p.) The effects of potential increased competition due to road access are downplayed.

Letters and comments on this subject received include: 291

Forest Service Response: All aspects of road access have been considered, including the distance of the project area from towns and the difficulty of transporting vehicles for use on the road system.

7q.) A site-specific model should be used to estimate subsistence demand by logging camp workers.

Letters and comments on this subject received include: 291

Forest Service Response: No such model now exists. This would require a research effort or could be provided by ADF&G. If such a model becomes available, the Forest Service will consider using it for future EISs.

7r.) Revise pages 4-91 through 4-94; the analysis has many incorrect statements regarding habitat capability, population levels, and hunter demand. Revise hunter demand to 431 deer, based on the hunter survey. Eliminate the irrelevant discussion of summer habitat capability.

Letters and comments on this subject received include: 207

Forest Service Response: The subsistence analysis has been revised to reflect many of the comments. For example, the hunter demand number has been revised to 431 deer. Discussions have been held to resolve concerns and guide the revision. The discussion of summer habitat is retained because it is relevant to evaluating some of the potential impacts.

7s.) Address how timber harvest could result in further restrictions or closure of hunting seasons.

Letters and comments on this subject received include: 125

Forest Service Response: This concern is addressed in the monitoring plan, Appendix I of the Final EIS.

7t.) Use the GIS-mapped analysis (in the Southeast Chichagof FEIS Appendix E) of deer supply vs. demand.

Letters and comments on this subject received include: 291

Forest Service Response: The maps from the earlier EIS (Figures E-46, 47, and 48) are included in Appendix N in the Ushk Bay Final EIS.

7u.) Mitigation measures for subsistence impacts need to be more explicitly defined.

Letters and comments on this subject received include: 291

Forest Service Response: Mitigation measures are appropriately associated with the impacts. Impacts on subsistence use are not quantifiable, and mitigation measures that are available are also influenced by other changing conditions. Therefore, more explicit definitions are not appropriate at this time.

8.) Wildlife

8a.) Overall concern was expressed about impacts to deer population, wildlife, wildlife habitat.

Letters and comments on this subject received include: 20, 31, 44, 61, 125, 177, 279, 291, 306, 310, 312, 314

Forest Service Response: Concerns are acknowledged and considered in the FEIS.

8b.) The analysis needs to be more site-specific.

Letters and comments on this subject received include: 140

Forest Service Response: Site-specific field surveys and unit reconnaissance were conducted during the 1992 field season, and the information was included in the Ushk Bay Draft EIS. The EIS certainly meets the test of site-specificity.

8c.) Locations of high-quality wildlife habitat need to be identified.

Letters and comments on this subject received include: 140, 207

Forest Service Response: High quality wildlife habitat was identified during the analysis and impacts are described in Chapter 4 in terms of changes in habitat capability.

8d.) Need to identify problem units in terms of heavy use by deer.

Letters and comments on this subject received include: 291

Forest Service Response: The Forest Service does not have quantitative data on deer use for every unit being considered for harvest. Habitat capability is a tool used to identify units of high value to deer and show relative impacts between alternatives.

8e.) Need to quantify how much high quality deer winter range would be impacted by the proposed action.

Letters and comments on this subject received include: 140

Forest Service Response: The Wildlife section of Chapter 4 of the Final EIS addresses high quality deer winter range and quantifies the effects of harvesting all deer winter range for each alternative, which gives the decision maker adequate information on which to base his decision.

8f.) Need to identify important wildlife corridors.

Letters and comments on this subject received include: 140

Forest Service Response: See response to comment 9d.

8g.) The selection of Management Indicator Species was inadequate; a forest bird such as the brown creeper needs to be included.

Letters and comments on this subject received include: 70, 140

Forest Service Response: The brown creeper would represent the high-volume (volume class 6 and 7) habitats. Impacts on those habitats are somewhat protected by proportionality requirements. However, the brown creeper has been added to the Final EIS discussion along with the hairy woodpecker.

8h.) Better mitigation measures need to be identified; protection of riparian, beach fringe, and estuary fringe is inadequate.

Letters and comments on this subject received include: 140

Forest Service Response: More than riparian, beach fringe, and estuary fringe will remain unaffected. At least 80 percent of the old-growth habitat in the Project Area would remain under all the alternatives. In addition, the Project Area is surrounded by Wilderness and LUD II areas that are unaffected by timber harvest. The recommendations of the Population Viability Committee have been incorporated into the Final EIS. Road closures and other measures to manage people will be mitigation measures with a positive effect on wildlife.

8i.) Roads should be closed after timber harvest to reduce impacts to marten and brown bear.

Letters and comments on this subject received include: 207

Forest Service Response: Comment noted. Various road management options were evaluated in different alternatives. The Record of Decision will specify the selected road management.

8j.) A floating logging camp should be used to minimize bear/human contacts.

Letters and comments on this subject received include: 228

Forest Service Response: Comment noted. At least one alternative evaluated this option. The Record of Decision will specify the selected camp type.

8k.) Effects of patch size, roads, and camps on Management Indicator Species needs to be included in the habitat capability models; if not included, impacts are probably underestimated.

Letters and comments on this subject received include: 207

Forest Service Response: Comment noted. This type of modelling has not been done in the Chatham Area (or northern Tongass). It is in the process of being developed based on research currently being conducted in Southeast Alaska. This type of analysis would require a significant amount of effort associated with defining criteria and assumptions, and is therefore not feasible for this EIS. However, we have included an analysis of patch sizes in the Biodiversity section of the Final EIS.

8l.) Additional timber harvesting will increase already significant impacts on wildlife.

Letters and comments on this subject received include: 67

Forest Service Response: Concerns about cumulative impacts on wildlife are addressed in the EIS.

8m.) Include discussion of future hunter demand and supply.

Letters and comments on this subject received include: 140

Forest Service Response: Comment acknowledged and incorporated into Chapter 4 of the Final EIS.

8n.) Include ADF&G's population objectives.

Letters and comments on this subject received include: 140

Forest Service Response: ADF&G's Population Objective for WAA 3311 is listed in Table 4-31 of the Final EIS. The effects of timber harvest on the population objectives are discussed in the Wildlife section of Chapter 4 of the Final EIS.

8o.) Additional harvesting should not occur because hunter demand is greater than habitat capability.

Letters and comments on this subject received include: 140, 291

Forest Service Response: While it will be an adjustment in approach, it is likely that human population growth in many areas of Alaska will require that wildlife managers limit the harvest to below the potential demand. This is a reality for most game species in most areas of the state and the world. Also, please note that ANILCA Section 810(a)(3) requires determinations of effects and a specific process, but activities are allowed even though the possibility of a subsistence restriction exists.

8p.) Why is the deer habitat capability estimate in the DEIS higher than the value in TLMP? What new site-specific data was incorporated? If the habitat capability is higher, then ADF&G's population objective should be revised.

Letters and comments on this subject received include: 207

Forest Service Response: The TLMP deer habitat capability modeling used a 40-acre grid. The Ushk Draft EIS modeling used a polygon-based approach that was thought to be more accurate. However, for consistency, the TLMP modeling results are used in the Final EIS.

8q.) Revise hunter demand to 431 deer, based on hunter survey.

Letters and comments on this subject received include: 207

Forest Service Response: Hunter demand numbers were changed in the Final EIS.

8r.) Bald eagle nests must be more fully protected from helicopter flight paths than seasonal restrictions.

Letters and comments on this subject received include: 140

Forest Service Response: The U.S. Fish and Wildlife Service has set the conditions of the variances to the Memorandum of Understanding with the Forest Service, and these conditions will be followed.

8s.) Address additional variance required at Goal Creek and consider other access routes and mitigation measures.

Letters and comments on this subject received include: 90

Forest Service Response: Comment acknowledged. All required variances have been obtained and are included in Appendix N of the Final EIS.

8t.) Note protection of eagles under Bald Eagle Protection Act on page 4-28.

Letters and comments on this subject received include: 90

Forest Service Response: Comment acknowledged and the information is included in the Final EIS.

8u.) Discuss ongoing investigations of the northern goshawk in Southeast Alaska.

Letters and comments on this subject received include: 90

Forest Service Response: Comment acknowledged and the information is included in the Final EIS.

8v.) FEIS conclusions about impacts to marbled murrelet nesting habitat should be supported by field surveys.

Letters and comments on this subject received include: 70, 90

Forest Service Response: Surveys for marbled murrelets are occurring throughout Southeast Alaska and could be the basis, in the future, of more definitive conclusions about logging impacts. Field surveys, sufficient to substantiate the conclusions drawn in this EIS, would constitute a research project, which is outside the scope of this analysis. The conclusions drawn are intuitive and based on what is currently known about the murrelet. When the results of on-going surveys and research lead to inferences or conclusions about logging impacts, they will be used in future EISs.

8w.) Need to address the development of a management plan for marbled murrelets to ensure viability of the species throughout the Tongass National Forest.

Letters and comments on this subject received include: 90

Forest Service Response: The latest population estimate of the marbled murrelet in Southeast Alaska is roughly 100,000 birds. The status of knowledge about marbled murrelet habitat requirements is still too sparse to allow reasonable management plans to be developed. As an interim measure, the interagency Population Viability Committee has concluded that adoption of their recommendations on Habitat Conservation Areas will provide some measure of protection.

8x.) Need to address an ecosystem/landscape approach to maintain marbled murrelet and northern goshawk habitat.

Letters and comments on this subject received include: 90, 291

Forest Service Response: See response to 8w.

8y.) The Forest Service should revise its strategy for protection of northern goshawk and marbled murrelet nest sites in Southeast Alaska.

Letters and comments on this subject received include: 90

Forest Service Response: Research in Southeast Alaska is ongoing and strategies will be revised as results indicate necessary.

8z.) Population viability recommendations should be implemented to protect northern goshawk habitat.

Letters and comments on this subject received include: 291

Forest Service Response: No northern goshawk nesting activity has been found in the Project Area. The Biological Diversity section of the EIS has been revised to address the recommendations of the Population Viability Committee, considering HCAs by alternative that would benefit goshawks.

9.) Biological Diversity

9a.) The section on biological diversity needs to be revised to comply with the population viability report.

Letters and comments on this subject received include: 140, 291

Forest Service Response: The section has been revised to address the concept.

9b.) At least one small HCA should be established in the Deep Bay drainage.

Letters and comments on this subject received include: 291

Forest Service Response: Alternative B would allow such an HCA. The Record of Decision will specify the configuration of the selected alternative and whether it includes an HCA.

9c.) The patch size analysis should be included in the discussion of fragmentation, following the example in the Central Prince of Wales FEIS.

Letters and comments on this subject received include: 140

Forest Service Response: We have included an analysis of patch sizes in the Biodiversity section of this Final EIS.

9d.) The discussion of connectivity is inadequate.

Letters and comments on this subject received include: 291

Forest Service Response: Beach and riparian buffers were identified as biological corridors "assumed to aid in the dispersal of old-growth associated species" as stated in the draft document, "A strategy for Maintaining Well-distributed, Viable Populations of Wildlife Associated with Old-growth Forests in Southeast Alaska, by Suring et al. (1993). The analysis in the FEIS is based on the current interpretation of beach and estuarine fringe and riparian corridors, and is adequate to assess effects of the proposed management actions on wildlife indicator species in the project area.

9e.) Continued clearcutting is threatening wildlife viability; the area should be left uncut to maintain biodiversity.

Letters and comments on this subject received include: 20

Forest Service Response: Comments acknowledged and considered in producing the Final EIS (see the revised Biodiversity section of Chapter 4).

10.) Soils

10a.) Road construction on high hazard soils must be avoided.

Letters and comments on this subject received include: 140

Forest Service Response: Road construction on very high mass movement index soils is avoided whenever possible. Forest Service Handbook 2509.22, Soil and Water Conservation, R10 Amendment 2509.22-91-1, describes timber management and transportation planning to assure soil and water resource considerations. BMP 13.5 is designed to protect potentially unstable areas and avoid landslides. BMP 14.2 states that "roads, trails, and LTFs will be located to avoid unstable, sensitive, or fragile areas to the extent possible."

10b.) BMPs are inadequate to prevent landslides.

Letters and comments on this subject received include: 140

Forest Service Response: The Forest Service works cooperatively with the Alaska Department of Environmental Conservation under a Memorandum of Agreement relative to BMP implementation and effectiveness. BMPs are the primary tool on the Tongass National Forest to prevent or mitigate adverse effects on water quality. The reasonable implementation, application, and monitoring of BMPs in effect achieves compliance with the intent of the Clean Water Act and State water quality standards (Forest Service Handbook, R10 Amendment 2509.22-91-1). Timber harvest and road construction activities in compliance with BMPs and monitored for effectiveness provide reasonable assurance that State water quality standards and Federal anti-degradation policy will be met. Continued monitoring and evaluation of BMPs will assure that water quality standards are being met. The monitoring plan for the Ushk Bay Project Area is contained in Appendix I of this Final EIS.

10c.) The practice of end-hauling road material to reduce landslide potential is questionable.

Letters and comments on this subject received include: 140

Forest Service Response: Comment noted, but other impacts may also be reduced by this practice.

11.) Minerals

11a.) Address past mineral exploration in project area.

Letters and comments on this subject received include: 90

Forest Service Response: Comment acknowledged and information included in the Final EIS.

12.) Karst

12a.) Ground surveys need to be conducted to determine if karst resources exist. Karst could be found in low probability areas. The logging plan is invalid because it doesn't consider implications of impacting karst resources as required under the Cave Protection Act.

Letters and comments on this subject received include: 70, 239

Forest Service Response: Public Law 100-691 states that "The Secretary shall ensure that significant caves are considered in the preparation of any land management plan..." The Ushk Bay Project FEIS is not a land management plan. The Tongass Land Management Plan is presently under revision, and caves, as required by P.L. 100-691, are addressed; proposed standards and guidelines have been prepared in fulfillment of this direction.

The Cave Resources Protection Act (Public Law 100-691) does not require an inventory of cave resources or karst features prior to implementing this project. Extensive field work was

conducted by people competent to recognize karst or cave features, and none were found. The status of the standards and guidelines notwithstanding, Public Law 100-691 requires only listing of significant caves within one year after publication of final regulations defining the criteria for the identification of significant caves. Such regulations have only recently been promulgated.

13.) Water Quality/Fisheries

13a.) Overall concern about impacts to fish, fish-bearing streams.

Letters and comments on this subject received include: 13, 31, 195, 279, 291, 305, 308, 309, 315, 317

Forest Service Response: Concerns noted. A significant effort has been expended to identify resources of concern and avoid impacts.

13b.) Overall concern about impacts to commercial fishing operations.

Letters and comments on this subject received include: 308 and others

Forest Service Response: Concern acknowledged. No likely impacts are perceived.

13c.) Overall concern about sedimentation.

Letters and comments on this subject received include: 140, 247, 309

Forest Service Response: Concerns noted. As with streams, significant effort has been expended to identify problem areas and avoid or minimize impacts.

13d.) More site-specific information is needed to meet NEPA requirements.

Letters and comments on this subject received include: 140

Forest Service Response: Comment noted. However, there has been extensive collection and use of site-specific information (more than required for most comparable EISs in other parts of the country). The work for this project was patterned after the SEISs for the 81-85 and 86-90 operating periods, which were determined by court test to be adequately site specific.

13e.) Need to assess consequences of channel change due to clearcuts in terms of shading, temperature sensitivity, LWD recruitment, and channel stability.

Letters and comments on this subject received include: 291

Forest Service Response: The streamside buffers will be delineated during sale layout from the outermost definable channel within the stream course, whether or not the channel contains flow during layout. This will provide room within the riparian area for maintenance of LWD recruitment, shading, and possible channel shifting.

13f.) Need to address long-term impacts of roads to channel stability and loss of LWD.

Letters and comments on this subject received include: 291

Forest Service Response: The impact analysis considered the road class (i.e. temporary or permanent) and therefore accounted for the potential long-term impact of roads. Permanent

roads were given the highest potential impact rating. Culverts and bridges will be designed for the 50-year event rather than the 10-year event for streams within floodplains on permanent roads.

13g.) Analysis of BOD and temperature sensitivity at Deep Bay is inadequate.

Letters and comments on this subject received include: 291

Forest Service Response: The buffers and BMPs are intended to prevent impacts on parameters such as these that have multiple interacting factors influencing them. The assessment was done with the best information available. Additional information on the methods of analysis is included in Appendix D of the Final EIS.

13h.) BMPs are not adequately monitored.

Letters and comments on this subject received include: 140

Forest Service Response: A study by Paustian (1987) which found that except for short-term localized deviations from numerical standards, BMPs are effective in maintaining sediment concentrations within State water quality standards. Both the 1987 study by Paustian and an additional study by Stednick et al. (1978) found that the initial pulse of sediment during grubbing, culvert bedding, and fill placement dissipated over a 48-hour period and that this sediment pulse was roughly equivalent to the sediment released during a typical fall storm event under natural conditions. The EPA has also concluded that the reasonable implementation, application, and monitoring of BMPs can be expected to achieve compliance with the intent of the Clean Water Act. As discussed and presented in the FEIS, the implementation and effectiveness of BMPs and stream buffers will be monitored in this project.

13i.) Statements that stream productivity would be reduced only very slightly and reduction of fish habitat production would be very small are insufficient.

Letters and comments on this subject received include: 140

Forest Service Response: These conclusions are based on extensive analysis described in the Fish and Watershed Environmental Consequences Report. The methods section of that report are included in Appendix D of the Final EIS.

13j.) Need an analysis of cumulative watershed effects.

Letters and comments on this subject received include: 81, 140

Forest Service Response: Since there are no remaining watershed impacts associated with previous site activities in the watersheds of the project area and no further entries for timber harvest in this rotation, there is no cumulative impact to analyze.

13k.) Need to calculate the sediment delivery potential.

Letters and comments on this subject received include: 81

Forest Service Response: Soil class ratings for erosion potential were included in the impact analysis as a factor for predicting relative impacts of alternatives. Meaningful quantitative estimates of sediment delivery cannot be made without baseline data on soil erodibility and

response to changes in cover and impacts of the specific logging practice. This would require a research study beyond the scope of this EIS.

13l.) The watershed sensitivity index in Appendix D is obscure and inadequate for evaluating impacts.

Letters and comments on this subject received include: 140

Forest Service Response: The sensitivity index compares watershed sensitivity to potential impacts based on identifiable watershed characteristics such as slope, soil type, drainage density, and fish habitat quality. These are factors known to affect sediment impacts on streams. The sensitivity ratings provide a basis for systematic comparison of potential impacts in the project area. Methodology is included in Appendix D of the Final EIS.

13m.) Bad practices implemented during previous logging in project area resulted in diminished fish runs.

Letters and comments on this subject received include: 277

Forest Service Response: Comment noted.

13n.) The Pacfish strategy with combination of riparian HCAs and cumulative effects analysis should be incorporated into the analysis.

Letters and comments on this subject received include: 140, 178

Forest Service Response: Our impact analysis identified baseline watershed sensitivity and impacts by watershed. These types of analyses are in agreement with the overall Pacfish Strategy. We have not adopted the Pacfish stream buffers, but have followed the TTRA requirements.

13o.) Minimum 300-foot buffers should be established along fish-bearing streams.

Letters and comments on this subject received include: 140

Forest Service Response: Stream buffers were established using a systematic, interdisciplinary approach. Factors which were considered in determining the width of stream buffers include:

- 1.) Section 103(e) of the TTRA which states that a buffer zone of no less than 100 feet in width on each side of Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into a Class I stream, shall be maintained.
- 2.) Best Management Practices as defined in the Region 10 Soil and Water Conservation Handbook.
- 3.) The actual width of buffers will often be greater than 100 feet to provide a windfirm boundary, conform to topographical features, protect riparian soils, follow timber stand boundaries, and because of varying stream channel location.

13p.) Long-term upland log storage could result in leachate and sediment problems in streams.

Letters and comments on this subject received include: 145

Forest Service Response: While this may be true, no such storage is planned for the project.

13q.) Timber harvest will impact fish because best fish habitat = best timber.

Letters and comments on this subject received include: 67

Forest Service Response: Concern noted. Potential impacts are thoroughly addressed in the EIS.

13r.) Rivers should be restocked as a mitigation or restoration measure.

Letters and comments on this subject received include: 195

Forest Service Response: Concerns noted. Enhancement and restoration measures are sought out and considered in planning for project areas.

14.) Maps

14a.) Need color maps with contours.

Letters and comments on this subject received include: 70, 207

Forest Service Response: After careful consideration, it was decided that color maps were not required to adequately display the proposed activities for each alternative for this project. Some map changes and some additional maps have been included in the Final EIS.

14b.) Need maps to indicate existing conditions, extent of productive forest land, location of high volume stands, previous clearcuts, and planned permanent retention.

Letters and comments on this subject received include: 70, 207

Forest Service Response: Some map changes and some additional maps have been included in the Final EIS (e.g., Figure 2-1).

14c.) Need maps of high quality wildlife habitat for deer, marten, and otter.

Letters and comments on this subject received include: 207

Forest Service Response: High quality wildlife habitat was identified during the analysis, and impacts are addressed in Chapter 4 of the Final EIS in terms of relative changes in habitat capability. This approach to showing impacts is sufficient to support a decision on impacts relative to wildlife habitat. However, some maps of habitat quality have been taken from the Resource Inventory Report and placed in Appendix N of the Final EIS.

14d.) Need maps with contours, logging units overlaid with habitat types and quality.

Letters and comments on this subject received include: 73

Forest Service Response: See the response to 14c. Some map changes have been included in the FEIS.

14e.) Need mass movement hazard maps for each alternative with location of logging units.

Letters and comments on this subject received include: 73

Forest Service Response: The relative impacts by alternative are discussed in the Fish and Watershed Section of the Final EIS. Mass movement hazard is one of the considerations taken into account in the analysis. Appendix F includes a map of mass movement hazard for the Project Area.

15.) Photos

15a.) Delete photo of hooligan netting; does not occur in project area; more appropriate subsistence photos should be solicited from local subsistence users.

Letters and comments on this subject received include: 291

Forest Service Response: Comment acknowledged. Photo deleted.

15b.) The photograph of the typical logging camp is actually an LTF site at Corner Bay.

Letters and comments on this subject received include: 105

Forest Service Response: The Final EIS has been corrected.

16.) Unit Cards

16a.) BMPs should be cited on unit cards.

Letters and comments on this subject received include: 81

Forest Service Response: BMP language is used on the unit cards where appropriate.

16b.) Revise recommendation from "units have been designed for windfirmness" to "units should be designed for windfirmness" or revise some units.

Letters and comments on this subject received include: 81

Forest Service Response: Unit design for windfirmness is not an exact science. Although windfirmness was a consideration in the original design of units, some units have been revised to increase the probability of windfirmness.

17.) Revise/Supplement EIS

17a.) Issue SDEIS or new DEIS to account for mill closure.

Letters and comments on this subject received include: 73, 140

Forest Service Response: An evaluation was done on the need to issue a Supplemental Draft EIS (see Appendix O of the Final EIS). The decision was to continue with the Final EIS and ROD.

17b.) Revise purpose and need to account for mill closure.

Letters and comments on this subject received include: 3, 20, 70, 73, 81, 95, 140, 178, 179, 186, 191, 307

Forest Service Response: See response to comment 17a. Any change to the purpose and need was part of the evaluation of whether to issue a Supplemental Draft EIS.

17c.) Submit SDEIS with new maps.

Letters and comments on this subject received include: 70, 207

Forest Service Response: The maps included in the Draft EIS were adequate to display the proposed activities for each alternative. The maps published in an EIS are not intended for analysis purposes. Some map changes and some additional maps have been included in the Final EIS.

17d.) Substantial reworking of analysis needed. Re-evaluate economic and environmental concerns. Conduct more studies.

Letters and comments on this subject received include: 70, 145, 195, 279

Forest Service Response: The Ushk Bay Final EIS provides a full and fair discussion of significant environmental impacts and informs the decision-maker and the public of the reasonable alternatives which avoid or minimize adverse impacts or enhance the quality of the human environment. The Code of Federal Regulations (40 CFR 1502.14(a)) states agencies shall "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which have been eliminated from detailed study, briefly discuss the reasons for their having been eliminated. Each alternative (except the no action alternatives) must meet the purpose and need to some large degree to be considered "reasonable."

17e.) The DEIS downplays impacts to subsistence, deer winter range, crab resources, and fisheries production.

Letters and comments on this subject received include: 291

Forest Service Response: The EIS tries to accurately portray relative impacts for the decision maker without downplaying or exaggerating them.

18.) Road Management

18a.) The roads should be closed after harvest to reduce impacts, including impacts to brown bear and marten.

Letters and comments on this subject received include: 2, 95, 113, 162, 207, 247, 277, 316

Forest Service Response: Road closures are executed for numerous reasons including fish and wildlife protection and lack of road maintenance funding. It may be necessary to close roads to specific uses. There are different types of road closures that are used, including gates, roadway obliteration, and vegetative management, depending upon the intent of the closure. Types of closure for each road will be designated in the Road Management Objectives. Access Management (AM) classification prescriptions indicate whether or not roads are to be closed. Under AM classes 3, 4, and 5, all local roads are to be closed to motorized vehicles. This will result in at least 90 percent (depending on alternative) of new specified roads being closed after harvest activities are completed. Non-motorized access, such as hiking, bicycles, cross-country skiing, etc. are permitted.

18b.) The roads should be maintained after harvest to provide access for recreational users.

Letters and comments on this subject received include: 39, 208, 240

Forest Service Response: See response to issue 18a.

18c.) If roads remain open, the Forest Service needs to do more maintenance (and commit to maintenance) to clear alder, brush, maintain culverts. The Forest Service should realistically assess how many miles of road to leave open with a commitment to funding road maintenance.

Letters and comments on this subject received include: 81, 208, 240, 291

Forest Service Response: Comment noted. Road Management Objectives (RMOs) for each alternative are included in the Appendix K of the Final EIS. The RMOs for the final preferred alternative are included in the Record of Decision and represent a realistic assessment of needs.

18d.) 10-year design culverts are inadequate to provide fish passage over time.

Letters and comments on this subject received include: 291

Forest Service Response: After the Draft EIS was written, the Forest Service Handbook requirements for stream crossings was revised. They are now designed for the 50-year events.

18e.) If roads are closed, will APC receive purchaser road credits for building roads?

Letters and comments on this subject received include: 81

Forest Service Response: Whoever purchases the timber will receive purchaser credit. Purchaser road credit is not determined by the Forest Service's management objectives for a road.

19.) Marine

19a.) LTFs should not be located at Ushk Bay or Deep Bay to minimize impacts to marine resources.

Letters and comments on this subject received include: 70, 209

Forest Service Response: Concerns noted and considered in the EIS.

19b.) Long-term storage of logs in log rafts due to mill closure would result in impacts to marine organisms from bark accumulation.

Letters and comments on this subject received include: 145, 209, 279

Forest Service Response: Anticipated changes in log transportation are evaluated in the Final EIS, but there is no reason to anticipate longer than usual log raft storage as a result of the mill closure or contract termination.

19c.) Need to address bark/woody debris deposition as a direct impact of LTF development (page 4-45).

Letters and comments on this subject received include: 90

Forest Service Response: This is not a large timber sale in terms of timber volume for each LTF. The direct impact of bark deposition was considered to be minimal on the basis of timber volume in the Draft EIS.

19d.) Revise statement that bark accumulation can impact benthic abundance without affecting diversity (page 4-46).

Letters and comments on this subject received include: 90

Forest Service Response: Comment acknowledged. This may be a difference of professional opinion.

19e.) Logging, sedimentation, and bark deposition would be detrimental to shellfish.

Letters and comments on this subject received include: 61, 113, 177, 185, 279, 308

Forest Service Response: Concerns noted and addressed in the EIS on the basis of timber volume.

19f.) Poison Cove used to be excellent crab habitat until area was used for log storage.

Letters and comments on this subject received include: 308

Forest Service Response: Comment noted.

19g.) Emphasize value of crab resource in vicinity of the new proposed LTF site in Ushk Bay.

Letters and comments on this subject received include: 90, 119

Forest Service Response: The protection of marine resources is one of the Alaska Timber Task Force siting guidelines for LTFs and was a consideration for all LTF locations.

19h.) Underwater investigations should be conducted by professional biologists at new proposed LTF site in Ushk Bay.

Letters and comments on this subject received include: 90, 119, 209

Forest Service Response: Underwater investigations have been conducted by a professional diver who has been used on investigations for LTF permits in the past.

19i.) Revise DEIS based on revised LTFs (locations and types).

Letters and comments on this subject received include: 90, 119, 209

Forest Service Response: Alternative E has been revised to include the new LTF site.

19j.) Revise design of log entry to < 15% grade to comply with BMPs.

Letters and comments on this subject received include: 119

Forest Service Response: BMPs do not address percent grade of log entry. LTF design will take into account the objective of minimizing bark loss during entry into salt water.

19k.) Address cumulative impacts resulting from combination of current proposed sale along with expected future sale (page 4-48).

Letters and comments on this subject received include: 90

Forest Service Response: Even with a possible future harvest associated with Alternative D, the total amount of bark deposition would not be larger than with the largest alternative evaluated in the Draft EIS.

19l.) Status of Corps permit for log storage must be confirmed; and clarify inconsistency of this permit between pages 3-62 and 3-33.

Letters and comments on this subject received include: 90

Forest Service Response: The new permit has been received and the discrepancy has been corrected.

19m.) Do better analysis of log storage areas in Ushk Bay, evaluate other sites to minimize impacts to wetlands and shellfish, and to meet TTF Guidelines for siting LTFs.

Letters and comments on this subject received include: 90

Forest Service Response: Log storage areas are not a part of this project.

19n.) Address marine, wetland, and wildlife habitat values of log storage site at head of Ushk Bay.

Letters and comments on this subject received include: 90

Forest Service Response: Log storage areas are not a part of this project.

19o.) Address impacts on beaches and estuaries by logs lost while being towed to mill.

Letters and comments on this subject received include: 228

Forest Service Response: We are not aware of any studies that address the concern of drift log impacts to beaches and estuaries. The logs tend to be moved by currents and winds and deposited by storms, and are often carried significant distances. Certain locations are more likely to collect logs than others. These log deposits are made up of a mixture of naturally occurring fallen trees, lost harvested logs, and other debris. The percentage attributable to lost harvested logs is undoubtedly variable and is unknown, and the amount attributable to one timber sale is smaller and also unknown. The impacts of the log deposits might include effects on habitat for marine and terrestrial animals and effects on human use of the affected areas. To some extent, destruction of habitat for one kind of animal may be offset by an increase in habitat value for another. Effects on human use are negative, but the overall use and effect are generally small relative to the extent of available use areas.

20.) Socioeconomics

20a.) Revise pages 4-77, 4-78 to account for the mill closure and change in market demand.

Letters and comments on this subject received include: 140, 178

Forest Service Response: The socioeconomic analysis has been updated, but please see the market assessment in Appendix O of the Final EIS.

20b.) Revise the analysis of employment generated by project.

Letters and comments on this subject received include: 140, 178

Forest Service Response: See response to 20a. Jobs will be generated if timber is harvested. Where those jobs will occur depends on who the independent purchaser is and where his processing facility is located.

20c.) Need to consider the economic value of subsistence, tourism, sport guiding, hunting, fishing, and wildlife; and ecological value of old-growth habitat.

Letters and comments on this subject received include: 3, 13, 31, 44, 52, 61, 67, 69, 73, 81, 95, 122, 140, 145, 186, 191, 203, 207, 288, 304, 305, 307

Forest Service Response: It is difficult to assess the economic trade-offs associated with this specific project's proposed harvest and the effects of not harvesting on recreation, fishing, tourism, and subsistence economies. The direct and indirect effects of harvest and nonharvest alternatives have been evaluated in terms of timber-related jobs and income. Also the environmental effects of this project's alternatives upon the water and fish, wildlife, subsistence, recreation, and visual quality resources was evaluated. However, the analysis of long-term costs and benefits of management activities to the various economies of Southeast Alaska are better assessed at the Forest planning level and are displayed in the TLMP Revision.

20d.) Sitka's subsistence-based economy will only be adversely affected without economic benefits of pulp mill if logging plan goes ahead.

Letters and comments on this subject received include: 279

Forest Service Response: Timber will not be harvested from the Project Area before the 1996 logging season. The Sitka mill could be in operation by then as a dissolving pulp or medium density fiber board plant under APC or other ownership. Even if the mill is not operating by then, the timber is still needed to meet market demand in Southeast Alaska (see Appendix O of the Final EIS).

20e.) The Forest Service must consider the long-term economic needs of Sitka.

Letters and comments on this subject received include: 3, 61, 69, 73, 113, 170, 186, 191, 222, 248, 255, 288, 307

Forest Service Response: See response to 20f.

20f.) Need to ensure diversified economy for Sitka.

Letters and comments on this subject received include: 16, 20, 44, 73, 205, 222

Forest Service Response: The Forest Service is concerned about community stability. A viable timber industry has contributed significantly to the diversification of Sitka's economy. The Forest Service has participated in the City's Task Force formed to address the mill closure and has made it's Forest Products Laboratory available to help address the need to maintain a timber-based industry in Sitka.

20g.) Address cumulative impacts through 2011 resulting from mill closure.

Letters and comments on this subject received include: 140

Forest Service Response: Cumulative impacts of the mill closure are not germane to evaluation and comparison of the Ushk Bay alternatives.

20h.) Concerned about potential impacts of mill closure on local economy of Wrangell.

Letters and comments on this subject received include: 287

Forest Service Response: APC can still purchase timber through independent timber sales to maintain a wood supply for the Wrangell mill.

20i.) Operation of Wrangell and Sitka mills must be considered in a comprehensive cost/benefit analysis.

Letters and comments on this subject received include: 180

Forest Service Response: The economic analyses that have been conducted and discussed in the Final EIS are consistent with analyses done for other timber sale EISs and give the decision maker a relative comparison of the economic impacts of the alternatives on which to base his decision.

20j.) Include analysis of value-added timber industries.

Letters and comments on this subject received include: 122, 179

Forest Service Response: See the response to 20i.

20k.) Local economy would benefit dramatically from continued logging and road building. People, jobs, and welfare should be considered. The Forest Service should be increasing economic benefits by harvesting more timber.

Letters and comments on this subject received include: 150, 263

Forest Service Response: The directly- and indirectly-related jobs that are expected to result from the harvest of timber in the Ushk Bay Project Area are displayed in the Economic section of Chapter 4. Also discussed in this section is the role the Tongass National Forest timber program plays in providing greater economic diversity and stable employment opportunities in Southeast Alaska.

20l.) Reanalyze effects of Alternative A because it will not cause economic slowdown without the mill.

Letters and comments on this subject received include: 140

Forest Service Response: An independent timber sale market assessment (see Appendix O in the Final EIS) indicates there should be no economic slowdown because of the mill closure and subsequent decision to terminate the contract. There is a strong market for timber that will go to other mills in Southeast Alaska.

20m.) Need to emphasize increasing value of tourism in local economy.

Letters and comments on this subject received include: 73, 186, 191

Forest Service Response: Concern acknowledged. This is noted in the Economics sections of the EIS.

21.) Visual

21a.) Overall concern about impacts to visual resources and high quality value of visual resources in project area.

Letters and comments on this subject received include: 20, 69, 122, 140, 177, 185, 205, 283, 303, 307, 311

Forest Service Response: Concerns acknowledged. This was a prominent scoping comment and has been addressed in the analysis.

21b.) Do not harvest Peril Strait area because of the visual value.

Letters and comments on this subject received include: 67, 127, 199

Forest Service Response: Concerns acknowledged.

21c.) Quality of visual resources along Peril Strait inadequately addressed.

Letters and comments on this subject received include: 140

Forest Service Response: Concerns about visual quality impacts along Peril Strait have been addressed in great detail, including development of at least two alternatives specifically to address these concerns. The coverage is definitely considered adequate.

21d.) Do not harvest along Ushk Bay because of the significant visual quality.

Letters and comments on this subject received include: 39, 140

Forest Service Response: Concern acknowledged and considered in the EIS.

21e.) Must meet VQOs as prescribed by TLMP; cannot adopt new VQOs.

Letters and comments on this subject received include: 140

Forest Service Response: TLMP does not prescribe VQOs that must be met in each project area. VQOs within TLMP are inventory level VQOs until a project level analysis occurs, at which time, the VQOs are adopted as part of the Record of Decision for that project.

21f.) Entire visual section is confusing.

Letters and comments on this subject received include: 95

Forest Service Response: Some revisions have been incorporated to make it clearer.

21g.) Regenerating forest on Kruzof Island is fantastically beautiful.

Letters and comments on this subject received include: 208, 240

Forest Service Response: Comment acknowledged.

22.) Recreation

22a.) Overall concern about impacts to recreational use of project area.

Letters and comments on this subject received include: 2, 20, 52, 69, 117, 125, 140, 156, 177, 180, 185, 205, 251, 255, 258, 303, 307

Forest Service Response: Concerns acknowledged. This was a scoping issue that received considerable attention in the EIS. Some revisions have been included in the Final EIS.

22b.) Do not harvest Peril Strait area because of the recreational value.

Letters and comments on this subject received include: 67, 127, 199

Forest Service Response: Concerns acknowledged. At least one action alternative addresses that concern.

22c.) Do not harvest along Ushk Bay because of the recreational value.

Letters and comments on this subject received include: 39, 140

Forest Service Response: Concerns acknowledged and addressed in the Final EIS.

22d.) Concern for loss of usable primitive/semiprimitive acres.

Letters and comments on this subject received include: 140, 179

Forest Service Response: Concerns acknowledged.

22e.) Wilderness setting of Project Area should be maintained.

Letters and comments on this subject received include: 113

Forest Service Response: Concerns acknowledged..

22f.) Wilderness areas along outside coast are inaccessible from small boat.

Letters and comments on this subject received include: 113

Forest Service Response: Comment acknowledged.

22g.) Concern for impacts of logging, roads, and habitat loss to bear hunting, outfitter/guides.

Letters and comments on this subject received include: 2, 69, 140, 179, 207, 228

Forest Service Response: Concerns acknowledged.

22h.) Bear guides could go out of business because competition in other areas is too great.

Letters and comments on this subject received include: 179

Forest Service Response: Concerns acknowledged and considered in the EIS.

22i.) Inappropriate to state that displaced commercial activities can go elsewhere because few alternatives are available.

Letters and comments on this subject received include: 178, 179

Forest Service Response: Concerns acknowledged and the effects are noted in the EIS.

22j.) Need to address wildlife viewing as important tourism activity.

Letters and comments on this subject received include: 73, 191, 207

Forest Service Response: Comment acknowledged. The concept is part of the analysis in both Chapter 3 and Chapter 4.

22k.) Need to address how non-rural hunters could continue to be restricted from hunting in area if habitat capability is reduced.

Letters and comments on this subject received include: 207

Forest Service Response: Comment acknowledged. Hunter demand versus supply is addressed in the Wildlife section of the Final EIS.

22l.) Revise page 4-61: outfitter/guides would not use the road system to find bears for their clients.

Letters and comments on this subject received include: 207

Forest Service Response: Comment acknowledged.

22m.) Need more recreational facilities, i.e., cabins, trails.

Letters and comments on this subject received include: 16

Forest Service Response: Concern acknowledged.

22n.) The Forest Service should charge fees for recreation, subsistence use.

Letters and comments on this subject received include: 16

Forest Service Response: Concern acknowledged.

22o.) Road vehicle access is important for recreation users.

Letters and comments on this subject received include: 208, 240

Forest Service Response: Concerns acknowledged and considered in context in the Final EIS.

23.) Support of Alternatives

23a.) Select Alternative A, no action.

Letters and comments on this subject received include: 2, 31, 52, 67, 70, 73, 113, 127, 135, 140, 156, 162, 179, 186, 189, 191, 199, 205, 228, 232, 247, 248, 251, 258, 279, 282, 287, 303, 304, 311, 313, 314

Forest Service Response: Comment noted.

23b.) Select Alternative B as compromise.

Letters and comments on this subject received include: 2, 95, 113, 315

Forest Service Response: Comment noted.

23c.) Select Alternative C, maximum harvest.

Letters and comments on this subject received include: 89, 124, 233, 242, 243, 262, 263 plus 211 individually signed form letters

Forest Service Response: Comment noted.

23d.) Revise Alternative C to reduce water quality impacts.

Letters and comments on this subject received include: 81

Forest Service Response: Comment noted.

23e.) Select Alternative C with modifications (see comment letters for modifications).

Letters and comments on this subject received include: 105, 139, 301

Forest Service Response: Comment noted.

23f.) Combine Alternatives B and D.

Letters and comments on this subject received include: 162

Forest Service Response: Comment noted.

23g.) Select Alternative F as compromise.

Letters and comments on this subject received include: 228, 291, 306, 311, 315

Forest Service Response: Comment noted.

23h.) Keep units out of Ushk Bay drainages.

Letters and comments on this subject received include: 39, 140, 277

Forest Service Response: Comment noted.

23i.) Keep units out of Deep Bay.

Letters and comments on this subject received include: 39, 105, 140, 162, 291, 301, 308

Forest Service Response: Comment noted.

23j.) Do not harvest along Peril Strait.

Letters and comments on this subject received include: 67, 127, 177, 199, 283

Forest Service Response: Comment noted.

23k.) Select additional units from Groups I and II.

Letters and comments on this subject received include: 162

Forest Service Response: Comment noted.

23l.) Select additional units at Poison Cove.

Letters and comments on this subject received include: 39, 106

Forest Service Response: Comment noted.

23m.) Concentrate harvest in VCU's 279 and 281.

Letters and comments on this subject received include: 39

Forest Service Response: Comment noted.

23n.) Locate camp and LTF in Poison Cove.

Letters and comments on this subject received include: 162, 209, 228, 277, 291, 306, 311

Forest Service Response: Comment noted.

23o.) Select South Poison Cove LTF.

Letters and comments on this subject received include: 106, 139

Forest Service Response: Comment noted.

23p.) Select LTF on north shore of Ushk Bay.

Letters and comments on this subject received include: 106, 139

Forest Service Response: Comment noted.

23q.) Do not locate an LTF in Ushk Bay.

Letters and comments on this subject received include: 90, 209, 247, 291

Forest Service Response: Comment noted.

23r.) Redesign LTF in Ushk Bay as barge facility to reduce fill impacts.

Letters and comments on this subject received include: 291

Forest Service Response: A barge facility was considered for the south Ushk Bay site and found not to be feasible for engineering reasons.

23s.) Do not locate LTF at Goal Creek.

Letters and comments on this subject received include: 106

Forest Service Response: Comment noted.

23t.) Add that the USFWS and NMFS are opposed to LTF in Ushk, page 3-35.

Letters and comments on this subject received include: 90

Forest Service Response: Comment acknowledged and incorporated.

23u.) Explain how preferred alternative was selected.

Letters and comments on this subject received include: 70, 81

Forest Service Response: The preferred alternative was selected in a meeting of the Forest Supervisor, his Staff Officers, the District Ranger, and individuals involved in the analysis. The preferred alternative was selected because it met the purpose and need identified for the Project and it included management options that the Forest Supervisor specifically wanted public comment on.

23v.) Use floating logging camp.

Letters and comments on this subject received include: 113, 228

Forest Service Response: Comment noted.

24.) Native Land Allotment

24a.) Do not construct road through Kitka's claim.

Letters and comments on this subject received include: 105, 140, 247, 279, 303, 306, 308, 310, 314, 316

Forest Service Response: Comment noted.

24b.) The Forest Service should not dispute Kitka's claim and should explain its decision to appeal BLM's award.

Letters and comments on this subject received include: 140

Forest Service Response: The objection to the claim is based on a similar situation on Prince of Wales Island and not specific just to Mr. Kitka's claim. The Ushk Bay EIS is not the appropriate venue for discussing a pending legal matter.

24c.) The Forest Service cannot legally proceed with alternatives in Deep Bay until adjudication is complete.

Letters and comments on this subject received include: 289

Forest Service Response: The Forest Service does not plan to proceed with a road across the disputed claim before adjudication is complete unless Mr. Kitka agrees to the road location.

24d.) Are there any other pending Native allotments?

Letters and comments on this subject received include: 279

Forest Service Response: BLM records show no other pending claims.

25.) Cultural Resources

25a.) Ensure protection of cultural resources. Develop a mitigation plan to minimize potential impacts. Reconsider eligibility designation. Conduct more extensive investigations.

Letters and comments on this subject received include: 289

Forest Service Response: Cultural resources will be protected and the eligibility determinations are being reconsidered. Regardless of a sites eligibility, no site will be adversely affected by any of the alternatives. Mitigation would be developed on a site by site basis should avoidance not be possible.

25b.) Consider additional historical sites and historic use, such as the smokehouses. The planning team should interview native leaders, Tlingit elders for more information on historic use of project area.

Letters and comments on this subject received include: 195, 277, 290, 291, 303, 306, 314

Forest Service Response: Considerable effort was spent between the Draft EIS and Final EIS working with the Sitka Tribe of Alaska to identify any additional cultural sites that may be impacted by the alternatives. The discussions in the Final EIS are based on the most complete information available on cultural resources in the Project Area.

25c.) The EIS is incomplete because there has been no formal consultation between the Forest Service and Tribe as required by law.

Letters and comments on this subject received include: 195

Forest Service Response: Consultation has been formally completed.

25d.) Reliance on intermittent surveying based on cultural sensitivity model is poor methodology.

Letters and comments on this subject received include: 291

Forest Service Response: The research design was worked out in consultation with the State Historic Preservation Officer (SHPO) and the results have been reviewed by the SHPO.

26.) Marine Safety

26a.) Log towing presents serious hazard to marine navigation.

Letters and comments on this subject received include: 135, 228, 279

Forest Service Response: Concern acknowledged.

26b.) Displacement of subsistence users to other areas will expose them to treacherous waters and inclement weather.

Letters and comments on this subject received include: 279

Forest Service Response: Comment acknowledged.

26c.) Recommended mitigation: establish permanent tie-up facilities to replace lost anchorages.

Letters and comments on this subject received include: 279

Forest Service Response: This is a mitigation measure proposed in the Draft EIS. The Record of Decision will define what mitigation measures will be used for the Project.

27.) Harvesting Methods

27a.) The Forest Service should ban high-grading.

Letters and comments on this subject received include: 282

Forest Service Response: The practice of disproportionately harvesting volume class 6 and 7 timber was addressed in the Tongass Timber Reform Act of 1990. See the response to 1a and 1b.

27b.) The plan should emphasize more selective harvesting to reduce impacts. Other techniques besides clearcutting should be used.

Letters and comments on this subject received include: 170, 279, 291

Forest Service Response: The Forest Service preferred alternative (C) contains increased emphasis on the use of uneven-aged management. This alternative has 2,517 acres proposed to be harvested by clearcutting and 579 acres to be harvested by other methods. Clearcutting remains the most widely used method of timber harvest for this project and is based on recommended prescriptions developed by a certified silviculturist to ensure adequate regeneration and stocking levels. Alternative silvicultural treatments included in the Final EIS are selective harvest cuts to mitigate adverse effects on visual quality.

27c.) Logging procedures and road construction guidelines should be re-evaluated.

Letters and comments on this subject received include: 44

Forest Service Response: Comment noted. Logging procedures and road construction guidelines are always being evaluated and adjusted for site-specific situations and to take advantage of available technology.

27d.) The Forest Service should find alternative methods to open canopy of regenerating forest besides thinning.

Letters and comments on this subject received include: 306

Forest Service Response: The Forest Service is always looking for new and innovative ways to accomplish forest management. Thinning has been a cost effective way to increase timber production on productive sites but if an alternative is found that is more beneficial we will use it.

28.) Economics of Timber Harvest Plan

28a.) The Forest Service should stop subsidizing logging of a resource so valuable for other purposes.

Letters and comments on this subject received include: 44, 282

Forest Service Response: The Forest Service does not subsidize timber harvesting. It is Forest Service policy to offer all timber purchasers an economically viable timber sale. During the

NEPA analysis for a proposed timber sale in Region 10, the Forest Service performs a mid-market assessment of timber economic conditions. This assessment is performed at the time of the Notice of Intent and is used as a planning tool to compare benefits and costs of a project. Actual offerings are not based on this assessment.

Independent timber sales arising from Ushk Bay will be cruised and appraised to estimate applicable timber values and associated logging and processing costs, using site-specific timber conditions and up-to-date costs and values at the time of the sale. The timber will be sold in a competitive bidding process.

The Chatham Administrative Area conducts an annual Timber Sale Program Information Reporting System (TSPIRS) review. The reports from the last four fiscal years, which have been agreed upon by Congress, GAO, and the Forest Service, provide the best basis for evaluating timber sale profitability. These reports, which show gross receipts before payments are made to the State of Alaska, indicate a positive program in three of the past four reporting years available at the time of publication.

28b.) Redo midmarket appraisal. Make the offering more economical.

Letters and comments on this subject received include: 105, 106, 139

Forest Service Response: The midmarket analysis has been redone for the Final EIS. Please see the response to 28a above.

28c.) Change bidding system to obtain fair market value for stumpage.

Letters and comments on this subject received include: 186

Forest Service Response: See response to 28a above.

28d.) Relationships with corporate interests that support large-scale logging should be severed.

Letters and comments on this subject received include: 35

Forest Service Response: Comment noted.

28e.) Concerned about \$2 million spent; money should be put to more productive means.

Letters and comments on this subject received include: 161

Forest Service Response: The proposed timber sale will provide economic benefits for Southeast Alaska communities far in excess of the cost of producing this EIS. As displayed in the Economics section of the Final EIS, regional economic benefits would vary from \$27 million to \$48 million, depending on alternative.

29.) Regulatory Compliance

29a.) Timber sale plans should be delayed until completion of TLMP.

Letters and comments on this subject received include: 73, 140

Forest Service Response: The TLMP (1979, as amended in 1986 and 1991) is the existing Forest Plan and provides the current approved direction to the Ushk Bay project. In addition, Ushk Bay is consistent with the standards and guidelines outlined in Alternative P of the TLMP

Draft Revision. The purpose and need in Chapter 1 of the Final EIS states that this action is in part to help satisfy the obligation set by Congress under the TTRA of 1990 "... 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 meets the annual market demand..." Because this component of the purpose and need relates to providing timber volume within a specific timeline, it is not reasonable to delay the project until the TLMP Revision is finalized.

29b.) Inappropriate to tier to TLMP.

Letters and comments on this subject received include: 140, 180

Forest Service Response: The Ushk Bay EIS tiers to the analyses in the TLMP 1979 EIS, as amended in 1986 and 1991. Although not required, the proposed alternatives are consistent with the proposed standards and guidelines and management prescriptions of the TLMP SDEIS. Standards, guidelines, and direction contained in the current TLMP, the recent TLMP SDEIS, the Alaska Regional Guide, and applicable Forest Service manuals and handbooks have been applied in the development of alternatives and design of harvest units and roads.

The Ushk Bay Project would implement activities which are consistent with both the management direction of the current TLMP and the recent TLMP SDEIS. When the proposed plan's standards, guidelines, and mitigation measures were stricter than the current plan's, they were followed so that the project would be in compliance with the new plan when its decision is signed. But because the current plan is the governing plan, all Land Use Designations from the current plan were used to plan the project.

29c.) NEPA/TTRA require more site-specific information.

Letters and comments on this subject received include: 140

Forest Service Response: Site-specific field surveys and unit reconnaissance were conducted during the 1992 field season, and the information was included in the Ushk Bay Draft EIS. This level of site specificity is certainly adequate.

29d.) The plan must comply with Section 101 of TTRA.

Letters and comments on this subject received include: 180

Forest Service Response: See response to 30b below.

29e.) Dedicating areas to timber harvest is a violation of NFMA and TTRA.

Letters and comments on this subject received include: 186

Forest Service Response: The land use designations made by the TLMP identified areas where commodity uses would be emphasized but did not dedicate those areas exclusively to those uses. Other resources are considered and accommodated in accordance with the TLMP, NFMA, and TTRA.

30.) Alternative Development

30a.) Need a broader range of alternatives.

Letters and comments on this subject received include: 70, 180, 291

Forest Service Response: Under 40 CFR 1502.14(a) agencies are required to "...rigorously explore and objectively analyze all reasonable alternatives..." Alternatives must meet the project purpose and need to be considered "reasonable". In the Notice of Intent published in the Federal Register, the Forest Service identified the purpose and need for the proposed action to be to make approximately 89 million board feet (MMBF) of timber volume available for harvest . The Ushk Bay project has not considered in detail any alternatives, with the exception of the no-action alternative, which were significantly above or below the volume level identified in the purpose and need. The action alternatives presented in the FEIS range from 49.9 MMBF to 94.8 MMBF net sawlog plus utility. This range is 56 percent to 107 percent of the stated goal of 89 MMBF of total harvest. More importantly, these alternatives represent reasonable courses of action that address the issues and provide a clear basis for choice among options while accomplishing the stated purpose and need.

30b.) The purpose and need is too narrow.

Letters and comments on this subject received include: 70

Forest Service Response: The Council on Environmental Quality regulations do not provide specific guidelines for the development of the purpose and need for a project. Thus an agency has discretion in determining the purpose and need. The Forest Service has exercised this authority in a reasonable way that is not arbitrary or capricious. The Final EIS examines a full range of alternative methods of attaining the specified purpose and need. The purpose and need statement is consistent with the sale schedule included in the TLMP as amended and the TLMP Draft Revision. The range of alternatives for the Ushk Bay project do not violate Section 101 of TTRA, which is addressed directly in the TLMP and TLMP Draft Revision.

30c.) The Forest Service is trying to get too much timber out of project area.

Letters and comments on this subject received include: 70, 186, 291, 306

Forest Service Response: The TLMP prescribes timber removal during three entries over a rotation. The alternatives propose harvesting between 11 and 20 percent of the commercial forest land in the Project Area. The Forest Service does not consider the amount of timber proposed for harvest inappropriate.

30d.) Alternative A should not be dismissed just because it doesn't meet the purpose and need.

Letters and comments on this subject received include: 70

Forest Service Response: The Code of Federal Regulations (40 CFR 1502.14(d)) requires that agencies shall "include the alternative of No Action." This alternative is required within all NEPA analyses to provide a benchmark to compare outputs and effects, even though this alternative does not meet the purpose and need of the project. For Ushk Bay, the Forest Service has identified Alternative A as the no-action alternative. The outputs and environmental effects of Alternative A are shown in all tables, figures, and graphs within the Final EIS where alternatives are analyzed.

30e.) Consider alternatives that are not necessarily consistent with management direction and purpose/need.

Letters and comments on this subject received include: 70, 71

Forest Service Response: The primary basis for the purpose and need for the Ushk Bay project is providing 89 MMBF of timber to meet market demand. It is not reasonable to consider

alternatives that would provide volume of substantially less than 100 MMBF since the purpose and need of the project would not be met. See also the response to issue 30a.

30f.) Alternatives should be developed to avoid impacts to deer winter range, salmon runs, crabs, and other resources.

Letters and comments on this subject received include: 291

Forest Service Response: Each alternative responds differently to the issues discussed in Chapter 1 of the Final EIS. The alternative development process was issue-driven and began with the determination of specific options that could be utilized to resolve each issue. The developed alternatives explore ways to satisfy public concerns and resolve the issues. They respond differently to the issues and provide a range of choices to the decision maker and the public.

One specific approach for addressing the identified issues was developing the theme of Alternative D to disperse the proposed actions, as much as possible. Alternative B would leave the Deep Bay valley unharvested and keep all activities in other parts of the Project Area.

30g.) Need to show how reasonable steps were taken to minimize adverse impacts on subsistence use in each alternative.

Letters and comments on this subject received include: 291

Forest Service Response: Subsistence uses and needs are discussed in detail in both Chapter 3, Affected Environment, and Chapter 4, Environmental Consequences. Formal and informal meetings have been held with individuals, communities, and organizations during the EIS process to gain an understanding of subsistence concerns. These subsistence concerns were taken into consideration in the development of alternatives and analyses. The Forest Service feels there are enough options displayed in the existing alternatives for the decision maker to adequately take subsistence needs into account.

31.) Forest Management Strategy

31a.) Need sustained yield management of all resources.

Letters and comments on this subject received include: 73, 95, 122, 145, 165, 186, 222

Forest Service Response: The Multiple Use Sustained Yield Act (1960) states in Section 2: "The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom. In the administration of the national forest due consideration shall be given to the relative values of the various resources in particular areas." The Act further states in Section 4(b): "Sustained yield of the several products and services' means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.

Further direction regarding sustained yield management is contained in Section 101 of the TTRA (1990) which states: "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 market demand from such forest for each planning cycle."

Sustained yield is calculated and managed at the Forest level, which means the Forest Service must manage the entirety of the Tongass National Forest on a sustained yield basis. There is not a requirement that each project area or other segment of a National Forest be managed in isolation on a sustained yield basis. It is also not biologically possible to manage any isolated area for maximum production of all resources simultaneously. The Forest Service has no requirement to manage the Ushk Bay Project Area in and of itself for sustained yield of non-timber resources. Nonetheless, there are individual resources which can achieve "maintenance in perpetuity of a high-level annual or regular periodic output..." Water quality, soil productivity, fishery production, and outdoor recreation are predicted to be maintained at high levels. Other resources, such as deer, brown bear, and old-growth habitat, will probably decline on a localized basis, but are planned to be available on a Forest-wide basis. The cumulative effects over time, including sustainability of timber harvest, are displayed in the TLMP Draft Revision which is incorporated in this project by reference.

31b.) Timber is a renewable resource and should be harvested to keep loggers working.

Letters and comments on this subject received include: 241

Forest Service Response: See the first two paragraphs in the previous response (issue 31a). The Forest Service has no requirement to manage the Ushk Bay Project Area in and of itself for a non-declining sustained yield of timber. This requirement is applied to the overall Chatham Administrative Area. Table 4-44 on page 4-79 of the DEIS displayed economic consequences by alternative on jobs, compensation and gross regional product. The long-term sale contracts were created to provide a stable, continuous level of employment in Southeast Alaska. The Ushk Bay timber sale is proposed as a component of that stability by providing part of the timber supply.

31c.) If the APC contract is breached, management of Tongass National Forest resources should be reassessed.

Letters and comments on this subject received include: 95

Forest Service Response: Comment Noted. See response to 5a.

31d.) The Forest Service should not continue harvesting, instead should focus on enhancing remaining forests.

Letters and comments on this subject received include: 127

Forest Service Response: Comment acknowledged.

31e.) The resources should be protected for future generations.

Letters and comments on this subject received include: 122, 156, 203, 247

Forest Service Response: Comment noted. See response to 31a.

31f.) Need ecosystem management.

Letters and comments on this subject received include: 117

Forest Service Response: Comment noted.

31g.) The Forest Service, with open public involvement, needs to re-evaluate forest plan.

Letters and comments on this subject received include: 222

Forest Service Response: The Forest Plan has been in the revision process, with much open public involvement, since 1988. Future opportunities for public involvement may occur before a new Forest Plan is adopted.

31h.) The Forest Service needs flexible response to changes.

Letters and comments on this subject received include: 164

Forest Service Response: The Forest Service will consider the resources of the forest and the communities that are dependent on those resources in responding to any changes.

32.) Miscellaneous

32a.) Volunteers (i.e., Boy Scouts) should be used to reseed forests after harvest.

Letters and comments on this subject received include: 195

Forest Service Response: Most sites regenerate naturally and it is not cost effective to reseed or hand plant them. Hand planting is done, by contract, where regeneration is a problem. Using Boy Scouts would take jobs away from individuals that need employment.

32b.) Harmful insect species could propagate in stored logs.

Letters and comments on this subject received include: 145

Forest Service Response: Comment noted.

32c.) The planning record is inaccessible.

Letters and comments on this subject received include: 70

Forest Service Response: An important consideration in preparation of this EIS has been reduction of paperwork as specified in 40 CFR 1500.4. The objective is to furnish enough site-specific information to demonstrate a reasoned consideration of the environmental impacts of the alternatives and how these impacts can be mitigated, without repeating detailed analyses and background information readily available elsewhere. The Planning Record documents the process of producing this EIS. The Planning Record is available by request under the Freedom of Information Act at the Forest Supervisor's Office, Sitka, Alaska. Other referenced documents, such as the TLMP, the TLMP Draft Revision, the Tongass Timber Reform Act, the Resources Planning Act, and the Alaska Regional Guide, are available at public libraries around the region as well as at the Supervisor's Office in Sitka.

Appendix N

Wildlife



0 0.5 1
Scale in Miles







**HABITAT SUITABILITY OF USHK BAY PROJECT AREA
FOR SITKA BLACK-TAILED DEER**

Ushk Bay Project



LEGEND

Habitat Suitability Index:

-  0 to 0.2
-  0.2 to 0.4
-  0.4 to 0.6
-  0.6 to 0.8
-  0.8 to 1.0
-  Lake

0 0.5 1
Scale in Miles

**HABITAT SUITABILITY OF USHK BAY PROJECT AREA
FOR BROWN BEAR**



LEGEND

Habitat Suitability Index:

- 0 to 0.2
- 0.2 to 0.4
- 0.4 to 0.6
- 0.6 to 0.8
- 0.8 to 1.0
- Lake

0 0.5 1
Scale in Miles

**HABITAT SUITABILITY OF USHK BAY PROJECT AREA
FOR PINE MARTEN**

Ushk Bay Project



LEGEND

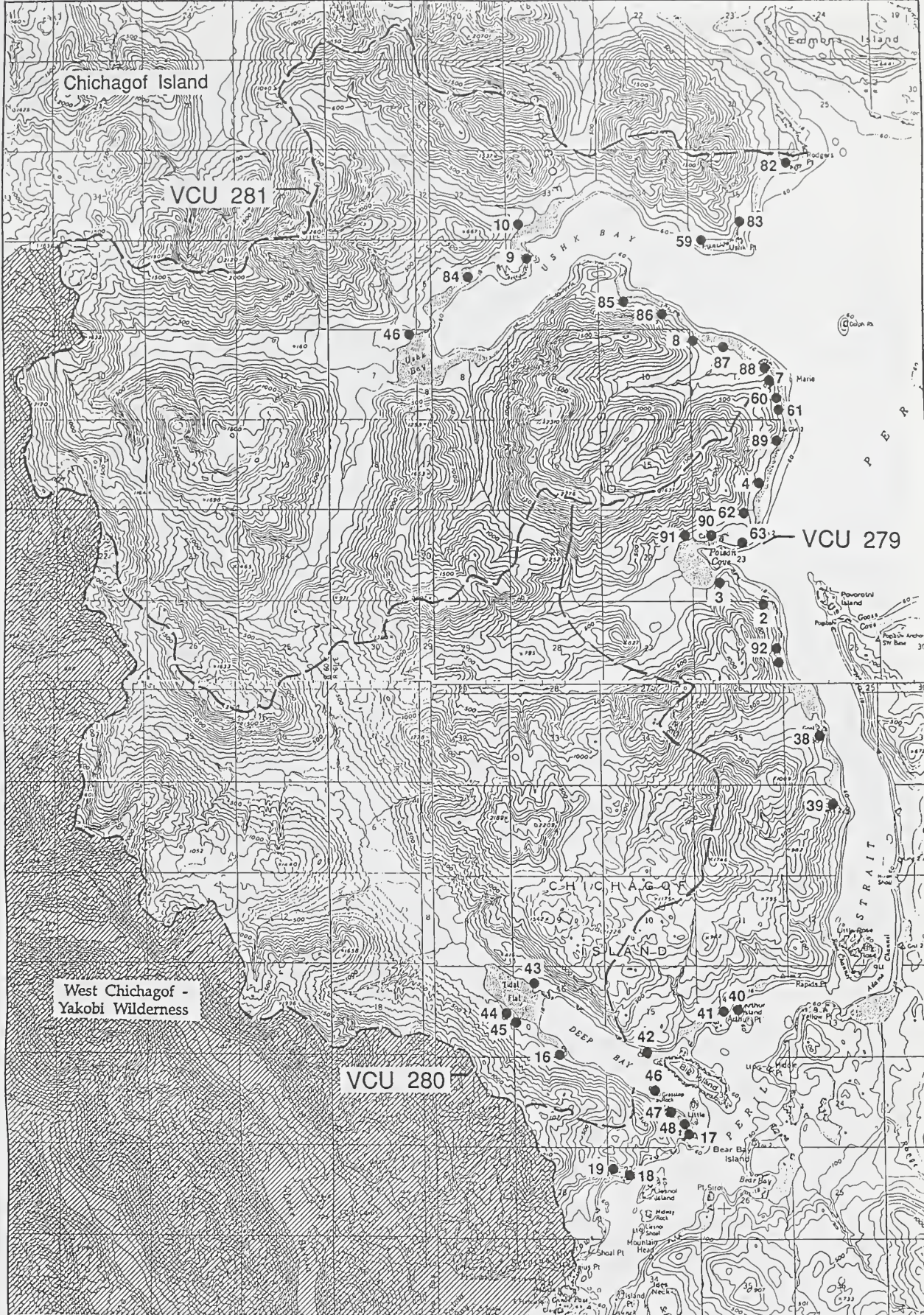
Habitat Suitability Index:

-  0.1
-  0.3
-  0.8
-  1.0
-  Lake

0 0.5 1
Scale in Miles

**HABITAT SUITABILITY OF USHK BAY PROJECT AREA
FOR RIVER OTTER**

Ushk Bay Project



Chichagof Island

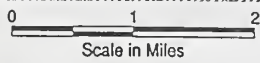
VCU 281

VCU 279

VCU 280

West Chichagof -
Yakobi Wilderness

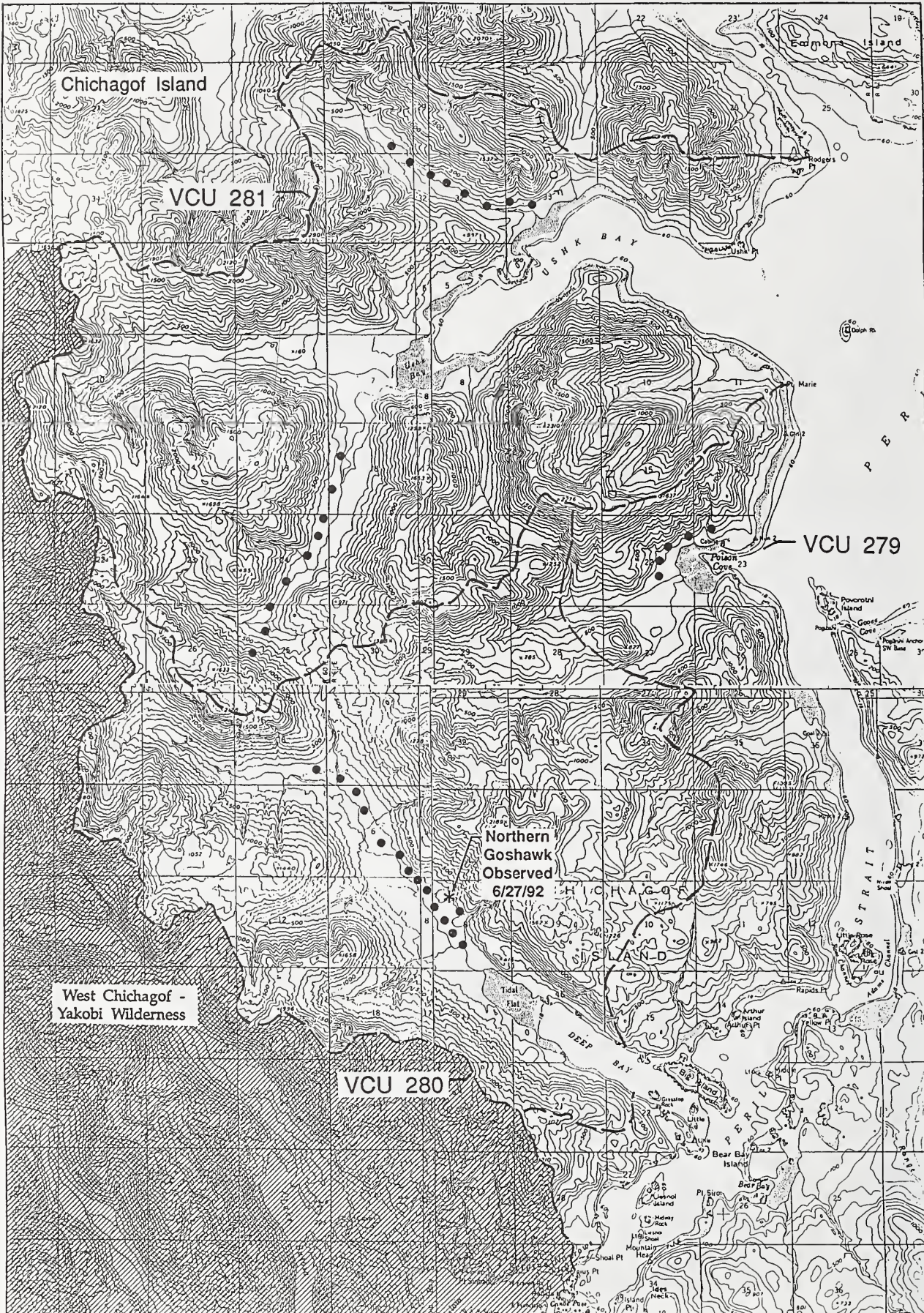
**LOCATIONS OF BALD EAGLE NESTS IN THE
USHK BAY PROJECT AREA**



Source: US Fish and Wildlife Service,
USGS 1:63360 topographic map -
Sitka B-5, B-6, C-5, C-6.



Ushk Bay Project



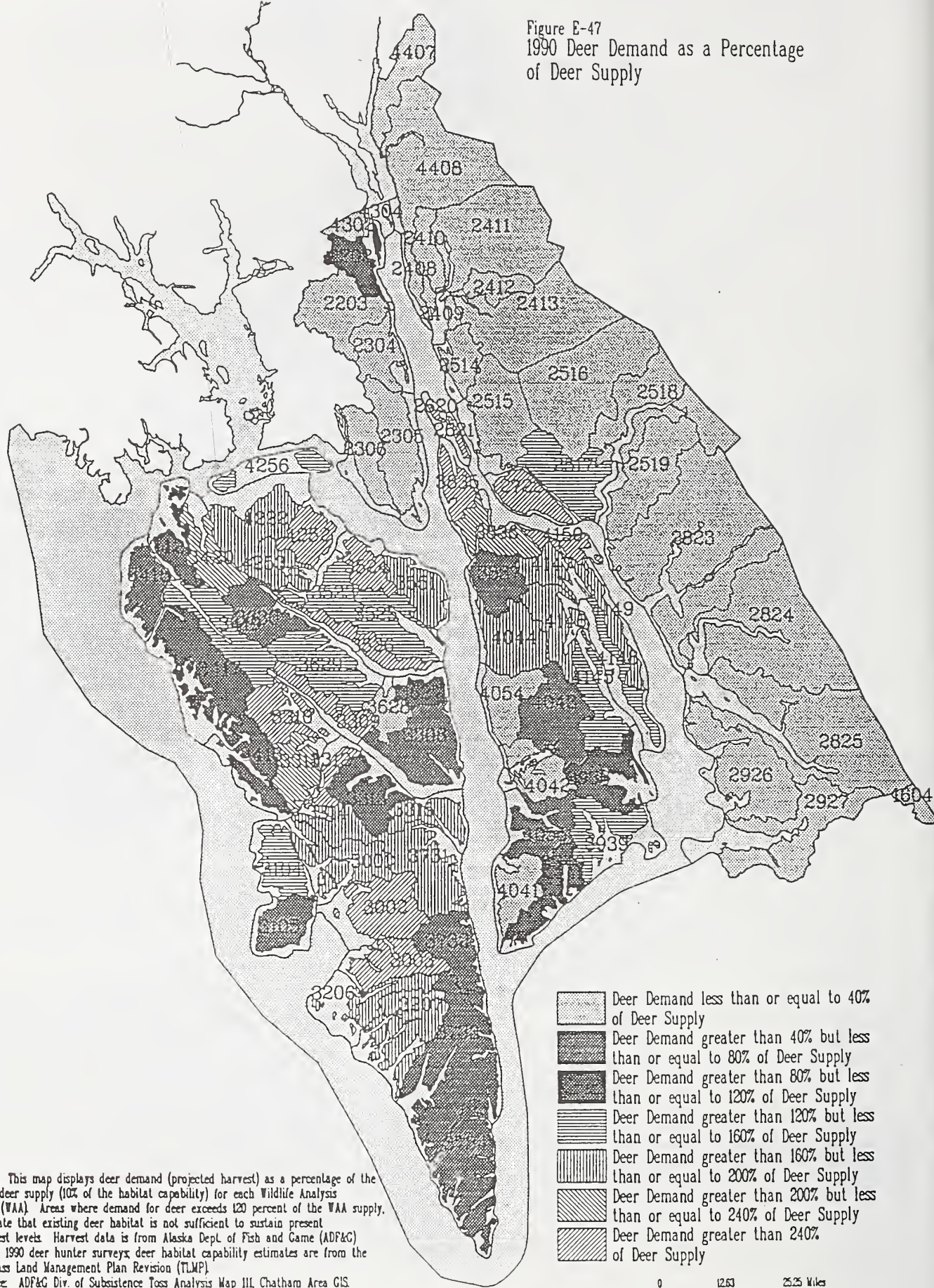
0 1 2
Scale in Miles



Source: USGS 1:63360 topographic map -
Sheet B-5, B-6, C-5, C-6.

**APPROXIMATE LOCATIONS OF POINT SURVEYS FOR
NORTHERN GOSHAWK IN THE USHK BAY PROJECT AREA, 1992**

Figure E-47
1990 Deer Demand as a Percentage
of Deer Supply








Note: This map displays deer demand (projected harvest) as a percentage of the 1990 deer supply (10% of the habitat capability) for each Wildlife Analysis Area (WAA). Areas where demand for deer exceeds 120 percent of the WAA supply indicate that existing deer habitat is not sufficient to sustain present harvest levels. Harvest data is from Alaska Dept. of Fish and Game (ADF&G) 1987-1990 deer hunter surveys; deer habitat capability estimates are from the Tongass Land Management Plan Revision (TLMP).
Source: ADF&G Div. of Subsistence Toss Analysis Map III, Chatham Area GIS.

PATCHES OF OLD-GROWTH



Old-growth Forest Patch Size

-  0 to 25 acres
-  26 to 100 acres
-  101 to 500 acres
-  1/ 501 to 1000 acres
-  2/ 1001+ acres

1/ Include patches > 1000 acres when < 1200 feet wide.
 2/ Does not include patches < than 1200 feet wide.








*Geographic Information System
 Dames & Moore Inc.*

PATCHES OF OLD-GROWTH ALTERNATIVE B



Old-growth Forest Patch Size

-  0 to 25 acres
-  26 to 100 acres
-  101 to 500 acres
-  1/ 501 to 1000 acres
-  2/ 1001+ acres

- 1/ Include patches > 1000 acres when < 1200 feet wide.
- 2/ Does not include patches < than 1200 feet wide.

3000 0 3000 6000 9000 12000 15000








miles

*Geographic Information System
Dames & Moore Inc.*

PATCHES OF OLD-GROWTH ALTERNATIVE C



Old-growth Forest Patch Size

-  0 to 25 acres
-  26 to 100 acres
-  101 to 500 acres
-  1/ 501 to 1000 acres
-  2/ 1001+ acres

1/ Include patches > 1000 acres when < 1200 feet wide.
2/ Does not include patches < than 1200 feet wide.

3000 0 3000 6000 9000 12000 15000

1 0 feet 1 2






miles

Geographic Information System
Dames & Moore Inc

PATCHES OF OLD-GROWTH ALTERNATIVE D



Old-growth Forest Patch Size

-  0 to 25 acres
-  26 to 100 acres
-  101 to 500 acres
-  1/ 501 to 1000 acres
-  2/ 1001+ acres

- 1/ Include patches > 1000 acres when < 1200 feet wide.
- 2/ Does not include patches < than 1200 feet wide.

3000 0 3000 6000 9000 12000 15000



1 0 feet 1 2








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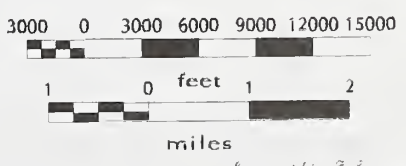
PATCHES OF OLD-GROWTH ALTERNATIVE E



Old-growth Forest Patch Size

-  0 to 25 acres
-  26 to 100 acres
-  101 to 500 acres
-  1/ 501 to 1000 acres
-  2/ 1001+ acres

1/ Include patches > 1000 acres when < 1200 feet wide.
 2/ Does not include patches < than 1200 feet wide.








Geographic Information System
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PATCHES OF OLD-GROWTH ALTERNATIVE F



Old-growth Forest Patch Size

-  0 to 25 acres
-  26 to 100 acres
-  101 to 500 acres
-  1/ 501 to 1000 acres
-  2/ 1001+ acres

- 1/ Include patches > 1000 acres when < 1200 feet wide.
- 2/ Does not include patches < than 1200 feet wide.



miles

Geographic Information System
Dames & Moore Inc.



United States Department of the In

IN REPLY REFER TO:	Signature	Timber	District Ranger
			JH

RECEIVED BY
 SITKA RANGER DISTRICT
 JUN 21 1993

FISH AND WILDLIFE SERVICE
 Resource Management
 P.O. Box 021287
 Juneau, Alaska 99802-1287
 (907) 586-7243

May 14, 1993

James S. Franzel
 District Ranger
 U.S. Forest Service, Sitka Ranger District
 204 Siginaka Way
 Sitka, Alaska 99835

Dear Mr. Franzel:

This letter is in reply to your request for variances to come near bald eagle nests at the Ushk Bay Timber sale. Based on our FWS survey of 1991 and the information provided to you by Dames and Moore for 1992, no nest has been found at the site of nest No. 3 at South Poison Cove during 1991 and 1992 surveys, so the nest is probably gone. Also, because of the negative visual impact, the steep grade, and a required switchback if an alternate route were used, your request to come within the 330 foot radius zone of nest site No. 3 to construct a road at Poison Cove is agreeable to us. Likewise at nest No. 91 on the north shore of Poison Cove, because of the steep unstable slopes, a stream crossing, visual impacts and other problems posed if an alternate route were taken we do not object to road construction within the 330 foot management zone of nest No. 91.

Timing constraints should be incorporated at these sites. Road construction should not occur within a 330-foot distance from bald eagle nest No. 3 and No. 91 between March 1 and May 31, and this period should continue to August 31 if a nest is occupied by eagles. These nests should be checked by a Forest Service biologist during the early nesting period to determine if they are used by eagles.

We have not received information regarding the lifespan of the proposed roads at Poison Cove, and we assume there will be just one Log Transfer Facility at the Cove. We would prefer the LTF to be located on the north side of Poison Cove because the proposed road would be further from the waterfront and therefore less destructive to bald eagle habitat than the alternative location on the south side of Poison Cove.

Your letter also requests variances for helicopter logging within 1/4 mile of several bald eagle nests within the vicinity of Deep Bay and along the Peril Strait shoreline from Ushk Bay to Deep Bay. We do not foresee major problems with this so long as helicopter operations take place during the non-nesting season. There is no mention of how close to the waterfront the helicopter logging would occur. We encourage logging of any type to be located at least 1/8 mile from the waterfront.

Our preference is to wait for more information before approving variances for proposed helicopter logging within 1/4 mile of eagle nests in this area.

Thank you for providing the information concerning the nest sites. Consider this letter as a variance to our Interagency Agreement to enter the 330-foot management zones of bald eagle nest tree No. 3 and No. 91 at Poison Cove. This variance does not alleviate the U.S. Forest Service or its contractors of the responsibility to meet the requirements of the Bald Eagle Protection Act. Please contact me or Phil Schempf if you have any questions.

Your letter dated April 6, 1993 was not received at our office until April 23. Apparently the U.S. Postal Service is not sure where the Federal Building Annex in Juneau is located. It's true that most people cannot find us. For future correspondence, please use our post office box address as shown on the letterhead above.

Sincerely,

A handwritten signature in cursive script that reads "Mike Jacobson".

Mike Jacobson
Eagle Management Specialist



RECEIVED BY
SITKA RANGER DISTRICT

United States Department of the Interior

AUG '6 '93

FISH AND WILDLIFE SERVICE
Raptor Management
P.O. Box 021287
Juneau, Alaska 99802-1287
(907) 586-7243

IN REPLY REFER TO:

James S. Franzel
District Ranger
U.S. Forest Service, Sitka Ranger District
204 Siginaka Way
Sitka, Alaska 99835

Dear Mr. Franzel:

This letter is in response to your letter with the additional information regarding helicopter operations at timber units in the Ushk Bay timber sale.

All timber units in the three alternatives C, D and E are approximately 500 feet or more from the waterfront. Alternative C involves 11 cutting units and up to 21 bald eagle nests where helicopter operations may fall within 1/4 mile of the nests. Our recommendation is that helicopter operations within 1/4 mile of eagle nests should not take place during the nesting season, March 1 through August 31.

Your letter mentions the uninventoried Goal Creek eagle nest located about 150 feet from the flagged road junction, NE of unit 10. Road construction should not occur within a 330 foot distance from this nest between March 1 and May 31, and this period should continue to August 31 if the nest is occupied by eagles.

Thank you for providing the additional information for the Ushk Bay timber sale. Consider this letter as a variance to our Interagency Agreement to conduct helicopter operations within 1/4 mile of bald eagle nests at the Ushk Bay timber sale along the Peril Strait shoreline from Ushk Bay to Deep Bay, and also to enter the 330-foot management zone of the uninventoried nest at Goal Creek for the purpose of road construction. This variance does not alleviate the U.S. Forest Service or its contractors of the responsibility to meet the requirements of the Bald Eagle Protection Act.

Sincerely,

Mike Jacobson
Eagle Management Specialist

	FYI	ACT
District Ranger		
Timber		
Silviculture		
August 3, 1993		
R & L Minerals		
Compound		
Business		
Planning		
File		



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Migratory Bird Management-Raptors
3000 Vintage Blvd., Suite 240
Juneau, Alaska 99801-7100

IN REPLY REFER TO:

To: Gordon
Anderson

November 23, 1993

NOV 29 1993

Jim ✓
Paul ✓
Bill ✓
Joe Costa ✓

James S. Franzel
District Ranger
U.S. Forest Service, Sitka Ranger District
204 Siginaka Way
Sitka, Alaska 99835

Dear Mr. Franzel:

This letter is in reply to your request for a variance to the Bald Eagle Interagency Agreement to locate road 7516 near bald eagle nest No. 90 at Poison Cove on Chichagof Island. I have also discussed this project with Brett Light of your staff.

As I understand it, if the proposed road is located outside of the 330 foot nest management zone as originally planned, it will be situated on steep terrain, creating an extremely difficult stream crossing, with the likelihood of mass soil failure. It will also create a wide swath on the hillside causing an increased visual impact. To rectify these problems the Forest Service is considering moving the road downslope and closer to bald eagle nest No. 90.

Recent information I've received from Brett Light states that road 7516 is proposed to be located 100' to 150' inland of eagle nest No. 90. The proposed road is to be used for two years. The first year for construction and the second year to haul logs. No re-entry is planned for the next 30 years along this route.

I have the following recommendations:

- 1). In order to permit eagles to initiate nesting activities there should be no road construction work within 330 feet of nest tree No. 90 from March 1 to May 31. This period should continue to August 31 if the nest is occupied by eagles.
- 2). The nest should be checked by a Forest Service biologist during May to determine its use by eagles.

- 3). No blasting should occur within 1/2 mile of the nest from March 1 to May 31, and this period should continue to August 31 if the nest is occupied by eagles.
- 4). Cutting of trees within 330 feet of the nest should be the absolute minimum required for the road right-of-way.

Be advised that clearing of trees for a road right-of-way near nest No. 90 could result in the loss or abandonment of the nest tree, and as a consequence, be subject to prosecution under the Eagle Protection Act.

Consider this letter as a variance to our Interagency Agreement to enter the 330 foot management zone of bald eagle nest No. 90 at Poison Cove for the construction of road 7516. This variance does not alleviate the U.S. Forest Service or its contractors of the responsibility to meet the requirements of the Eagle Protection Act. Please contact me or Phil Schempf at 586-7243 if you have any questions.

Sincerely,



Mike Jacobson
Eagle Management Specialist

NOV 29 '93

re: Jerry Cegelske, LE, Ketchikan
Bill Hughes, Sitka



Appendix O

Ushk Bay DEIS

Supplementation Evaluation

Ushk Bay DEIS Supplementation Evaluation

This evaluation reviews the April 14, 1994, Alaska Pulp Corporation Long-Term contract termination letter relative to the Ushk Bay Environmental Impact Statement and determines whether a supplement to the Draft Environmental Impact Statement (DEIS) is warranted.

The National Environmental Policy Act (NEPA) implementing regulations (40 CFR 1502.9(c)) and Forest Service Handbook direction (1909.15-92-1 Section 18.2) provide that agencies:

- (1) Shall prepare supplements to either draft or final environmental impact statements if:
 - (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
 - (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.
- (2) May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.

The EIS contains evaluations regarding impacts of timber harvest operations upon subsistence uses, pursuant to section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). This analysis also reviews these evaluations in light of the contract termination to ascertain whether a supplement to the DEIS is warranted under ANILCA section 810.

In August 1993, after publication of the Supplement to the Draft Environmental Impact Statement for the Tongass Land Management Plan (TLMP) revision, Alaska Regional Forester Michael Barton requested that the Pacific Northwest Research Station (PNW) charter a review of the wildlife management aspects of the TLMP. The results of that review were published in a document titled "Review of the Wildlife Management and Conservation Biology on the Tongass National Forest: a Synthesis with Recommendations" (March 1994) known as the "Peer Review" report. This evaluation also reviews the findings and recommendations of the Peer Review and related information with respect to the Ushk Bay EIS.

Background

Public scoping, data gathering and analysis, and document production began on the Ushk Bay EIS with publication of the Notice of Intent in the Federal Register May 8, 1992. The Notice of Availability for the DEIS was published in the Federal Register June 11, 1993, and the public comment period for the DEIS closed August 25, 1993. On April 14, 1994, the Alaska Pulp Corporation Long-Term Timber Sale Contract (APC Contract) was terminated by Regional Forester Michael Barton, excepting orderly closure operations. The printing and distribution of the Ushk Bay Final EIS and Record of Decision (ROD) was stopped until implications of the termination could be evaluated. The purpose and need for the Ushk Bay Project was based, in part, on the Long-Term Timber Sale Contract (No.12-11-010-1545). Proportional harvest requirements under section 301(c)(2) of the Tongass Timber Reform Act of 1990 (TTRA), which were applied to the design of the harvest units analyzed in the EIS, apply as a statutory and contractual requirement only to long-term contract timber harvest. It is, therefore, appropriate to review the EIS in light of the contract termination to determine if a supplement to the DEIS is warranted under the criteria in 40 CFR 1500 and Forest Service directives.

Purpose and Need

There are three primary components to the purpose and need for the Ushk Bay Environmental Impact Statement: 1) "implement Forest Plan direction for the project area"; 2) "meet federal government obligation to make timber volume available under the APC contract"; and, 3) "to improve the timber productivity of the project area by harvesting mature stands of timber and replacing them with faster growing stands of second growth timber."

A. Forest Plan Direction

Timber harvest analyzed in the Ushk Bay EIS is located on lands designated as LUD III and LUD IV in the Forest Plan. According to the Forest Plan, LUD III lands will have emphasis on "both amenity- and commodity-oriented uses in a compatible manner to provide the greatest combination of benefits," and LUD IV lands are to "provide opportunities for intensive development of resources." The timber harvest analyzed in the EIS spans two management Areas, C39 (Ushk Bay) and C40 (Neva-Olga Straits).

Management Direction/Emphasis for C39 [Value Comparison Units (VCUs) 280 and 281] states that scheduled activities include reforestation, road construction, recreation facility near Ushk Bay, timber stand improvement, and timber sale preparation for the 1986-90 and 1991-95 time periods.

Management Direction/Emphasis for C40 (VCU 279) states that timber sale preparation for the 1986-90 and 1991-1995 time periods are scheduled.

Forest Plan direction has not changed as a result of the contract cancellation. The project area is still comprised of LUD III and LUD IV lands that are to be managed to provide commodity-oriented uses. Although the Forest Plan did anticipate that the APC Contract would provide the contractual vehicle for the sale of the timber, the underlying need to enhance timber growth, provide wood fiber, and provide jobs and income for local communities is unchanged.

Providing local employment opportunities is of particular importance. This was one of the basic objectives of the APC Contract. Approximately 400 jobs have been lost as a result of the pulp mill closure in Sitka. Another 230 people are employed at the Wrangell Sawmill. These 230 jobs represent about 19 percent of the total employment in the community of Wrangell. An estimated additional 300 to 350 jobs in Wrangell are tied to the timber industry and dependent on a continuous supply of timber (Memo from Carol Rushmore, Economic Development Planner, City of Wrangell, April 12, 1994). These are jobs held by rural Alaskans, many of them Native Alaskans (TLMP Revision, Part 2, Chapter 3, p. 751).

B. APC Contract Obligations

Termination of the contract ended APC contract volume obligations. The April 14, 1994, contract termination letter directs completion of timber harvest and other operations previously authorized which are identified as part of orderly contract closure. The termination letter also states an objective to continue to supply timber from the former APC sale area, which includes Chichagof Island and the Ushk Bay Project Area, through competitively-bid independent timber sales. This timber will be available to supply the operation of the Wrangell sawmill and other mills and provide related employment. As indicated in Enclosure 2, there is now also an indicated need to provide Ketchikan Pulp Company (KPC) contract timber volume from the former APC contract sale area. Implementing timber harvest and other operations through competitively-bid independent sale timber offering projects or KPC long-term contract offerings,

rather than continued APC long-term contract offerings, does not change the environmental impacts associated with the operations as displayed in the EIS.

Appendix A of the EIS provides the rationale for scheduling the Ushk Bay Project. The information on the background for the contract states that a primary function of the long-term contract was to "establish a new industrial enterprise which will be an important and significant step in the industrial development of Alaska" (USDA Forest Service. 1956. Alaska Lumber and Pulp Company Timber Sale Contract. Contract Number 12-11-010-1545). Appendix A addresses the need for the Ushk Bay Project in terms of maintaining employment levels and the availability of other sources (Native Corporation lands and Canadian lands) for raw materials to supply mills in Southeast Alaska.

Appendix A also addresses impacts on subsistence resources and subsistence users as a result of timber harvest from the Ushk Bay Project Area as opposed to timber harvest in other locations. Four points related to subsistence are noteworthy:

1. Subsistence resources are available on other areas of Chichagof Island, including LUD II areas adjacent to the Project Area.
2. Most communities are relatively independent from the subsistence resources in the Ushk Bay Project Area.
3. Subsistence hunting of deer and other uses occur in virtually every area of the Tongass with substantial quantities of harvestable timber.
4. Any environmental analysis area within the Tongass would have a similar chance of having a significant possibility of a significant restriction on subsistence resources for Sitka black-tailed deer and other mammals.

A Forest Service Region 10 May 1994 market assessment of mill consumption and capacity in relation to independent sale volume indicates an existing mill capacity in Southeast Alaska of 374 MMBF, excluding mills supplied by the KPC long-term contract (Enclosure 1, p. 2, Table 1). The analysis projects that 110 MMBF in timber sale volume would meet projected Wrangell mill consumption through May 1995, and an additional 30-40 MMBF in timber sale volume would meet the reopening Klawock mill projected consumption over the next 12 months (Enclosure 1, p. 5, Timber Outlook for the Wrangell and Klawock Sawmills). Existing scheduled independent sales are projected to fall short of this estimated consumption by 100-110 MMBF (Enclosure 1, p. 5, Summary). The analysis projects a total of 263 MMBF per year or more in fiscal year 1995 and beyond to meet total projected consumption rates in mills not supplied by the KPC contract volume, including Wrangell and Klawock mill consumption beyond May 1995 (Enclosure 1, p. 5, Summary). Scheduled independent sales from outside the former APC sale area are projected to provide an average of 85 MMBF per year (Enclosure 1, p. 4, Table 2). Thus about 178 MMBF or more per year can be projected to be sought from the former APC sale area if predicted consumption rates are to be met.

Also relevant is the Ketchikan Pulp Company (KPC) Long-Term Timber Sale Contract (USDA Forest Service. 1951. Contract Number A10fs-1042). As discussed in Enclosure 2, there is now an indicated need to provide timber to KPC under the KPC long-term contract from the former APC sale area in 1994 and 1995.

While no longer needed to contribute to meeting APC contract timber volume obligations, the harvest from the Ushk Bay Project remains an important source of timber for meeting projected independent sale program purchases, particularly to supply the Wrangell and other sawmills over the next couple of years, and for meeting contract timber volume needs under the KPC long-term contract during the same time

period. Approximately 346 MMBF in NEPA-cleared volume within the former APC sale area is available for independent sales and long-term timber sale offerings to KPC. The Ushk Bay Project is the only other significant amount of additional timber volume from the former APC sale area currently expected to be cleared through the NEPA and administrative appeals process and otherwise ready for offering as independent sales or KPC long-term contract offerings until 1996 or beyond.

C. Improve Timber Productivity

The third part of the purpose and need for the project, improving timber productivity by replacing slow growing old-growth stands with faster growing second-growth stands, was derived both from direction in the Forest Plan and from assumptions upon which the allowable sale quantity (ASQ) for the Tongass National Forest was calculated. This objective of the Ushk Bay Project is not related to the contract cancellation and is still valid.

The EIS documents recognition of the many values of old growth, especially for wildlife habitat and aesthetics. However, the production of wood fiber is much lower in a typical old-growth stand than it is in a second-growth stand on an equivalent site.

The ASQ calculated in the Forest Plan and used in Congressional deliberations and decisions on ANILCA assumed harvest in all LUD III and IV VCU's on a three-entry, 100-year rotation. (Some areas were anticipated to have longer rotations for visual and other considerations.) If the initial entry is not made within a reasonable period of time, the projected growth rates will not be achieved. The result is that either the ASQ cannot be achieved, or, if that level actually is harvested, some areas will receive a heavier first entry, resulting in a pattern of high percentage first entry being established. This could create conditions under which the three-entry rotation may not be achievable.

Tongass Timber Reform Act Proportional Harvest Requirements

Section 301(c)(2) of the TTRA modified the APC and KPC long-term contracts to require proportional harvest of volume classes 6 and 7 timber. The harvest units included in the EIS alternatives were designed to be in compliance with section 301(c)(2). Forest Service methodology used to implement section 301(c)(2) has been challenged in court, in *Wildlife Society et al. v. Barton*, J93-001-CIV (HRH) (D.Alaska).

The statute does not require proportional harvest on independent sales. Implementation of the Ushk Bay Project through independent sale contracts, therefore, need not apply proportional harvest as a legal constraint. However, the long-term contract termination and exclusion of independent sales from the proportional harvest statute requirements does not require or suggest any change in the present design of the harvest units or the environmental consequences portrayed in the EIS. Only the mechanism (independent sale contract rather than APC long-term sale contract offerings) is being changed. Therefore, no significant change in the proposed action or new information or circumstances relating to the environmental impacts of the harvest analyzed in the EIS are projected as a result of the contract termination. Any changes in harvest units which might be subsequently proposed as a result of the *Wildlife Society et al. v. Barton* suit or otherwise during implementation will be addressed at that time in compliance with NEPA and other laws.

ANILCA Section 810 Evaluation and Findings

The subsistence evaluation conducted for the Ushk Bay EIS indicated that the potential foreseeable effects from the alternatives did not present a significant possibility of a significant restriction of subsistence uses for brown bear, furbearers, marine mammals, waterfowl, and other foods such as berries and roots. The evaluation did conclude that there was a significant possibility of a significant restriction of subsistence use of Sitka black-tailed deer in the Project Area under all alternatives considered, including the No-Action Alternatives and of fish and shellfish under alternatives that propose an LTF or logging camp in Ushk Bay. The determinations required by Section 810(a)(3) of ANILCA when a significant restriction may occur are fully detailed in the EIS.

Although the contract volume obligations to APC no longer exist, timber harvest from the Ushk Bay Project remains reasonably necessary as a source of timber to meet independent timber sale program objectives related to mill consumption and employment and to supply timber under the KPC long-term contract, as described in the discussion above regarding purpose and need. As discussed above, all areas of harvestable timber on the Tongass are used for subsistence. Not implementing the Ushk Bay Project would simply shift subsistence impacts to other areas on the Forest in the short term. To attempt to meet projected KPC long-term contract and independent sale needs without harvesting timber from the Ushk Bay Project can be expected to result in a significant possibility of a significant restriction to subsistence uses in other areas. The lack of alternative timber sale areas is particularly apparent for the near-term transition from APC long-term timber contract supply of the Wrangell mill to an independent sale program that makes available timber for this and other mills in Southeast Alaska dependent upon Tongass National Forest timber sales, and for near-term KPC contract offerings. Draft conclusions in the EIS state that alternatives analyzed in the EIS, are necessary, consistent with sound management of public lands. Because a reasonably foreseeable need remains for harvest from the Ushk Bay Project, this conclusion is still valid. Efforts to protect the highest value subsistence areas and to minimize adverse impacts upon subsistence uses and resources are described in the EIS.

PNW Peer Review of Wildlife Species Viability on the Tongass

The Tongass Land Management Plan (TLMP) revision team commissioned an Interagency Viable Population Committee (V-POP) to develop recommendations for standards and guidelines to maintain well-distributed viable populations of old-growth forest associated species. V-POP developed a draft habitat conservation strategy that considered multiple species, across a broad landscape, with a long time-frame. A system of large (40,000-acre), medium (10,000-acre), and small (1600-acre) Habitat Conservation Areas (HCA's) well-distributed across the Tongass National Forest was recommended. (see Enclosure 3)

Alaska Regional Forester Michael Barton requested the Pacific Northwest Research Station (PNW) to conduct a scientific peer review of the wildlife planning documents for the TLMP revision. PNW obtained the services of eighteen experts in wildlife ecology and conservation biology to review three TLMP revision documents, including the V-POP strategy. The "Peer Review" of the strategy found it to be a "solid attempt to integrate species viability concerns with the Habitat Conservation Area approach."

The Peer Review made thirteen recommendations, one of which could potentially have immediate effect on project level activity (Peer Review, p. 25):

7.3 Immediate Management Recommendation: Keep landscape options open.

1. The existing largest blocks of contiguous high volume old-growth forest not be further fragmented by timber harvesting or road building.
2. The letter and spirit of the provision against highgrading in the Tongass Timber Reform Act be strictly adhered to. Operationally this amounts to not differentially cutting in low altitude, high volume stands (greater than 30 thousand board feet per acre). Meeting the recommendation will require compensatory lowgrading.

The Region is following a phased strategy where projects are screened against the V-POP draft HCA strategy and adjusted as necessary in order to maintain HCA options while further analysis proceeds. Following conceptual design of the V-POP strategy significantly increases the assurance that any individual project will meet NFMA viability requirements. The draft HCA strategy provides a substantial forest-wide viability analysis.

The Ushk Bay project was screened against the V-POP draft HCA strategy and found no activities planned within the bounds of a mapped large or medium HCA. The project is already designed to comply with TTRA proportional harvest requirements and maintenance of low elevation, high volume stands. No adjustments are required to meet "highgrading" concerns expressed in the "Peer Review" report (see Enclosure 3).

In May 1994, the V-POP issued a "Response to the Peer Review" and in Appendix II listed seven recommendations to respond to Peer Review comments. Review of the V-POP Response recommendations which went beyond the HCA Strategy indicates that changes in timber offerings are not required at present to address these additional recommendations (see Enclosure 3).

Determination

I have reviewed National Environmental Policy Act and other requirements regarding supplementation of the Ushk Bay DEIS. I have considered these requirements in relation to the termination of the Alaska Pulp Corporation Contract, ANILCA Section 810 Subsistence requirements, and the "Peer Review" report.

I have determined that supplementation of the Ushk Bay DEIS is not warranted in relation to the contract termination. Even without the contract, the basic objectives of providing wood fiber and employment opportunities for rural Alaskans, while improving wood fiber production and minimizing subsistence impacts are still valid objectives. The purpose and need for the project has not changed to a degree that warrants a supplement to the DEIS as a result of the termination of the Alaska Pulp Corporation Long-Term Timber Sale Contract. The environmental consequences of the activities analyzed in the EIS have not changed. Neither the "Peer Review" report nor the V-POP Response to the Peer Review contain any significant new information relevant to environmental concerns bearing on the Ushk Bay project and its impacts that warrants supplementing the Ushk Bay DEIS.

I have also determined that the ANILCA Section 810 Subsistence determinations are still valid for the actions analyzed in the EIS.


GARY A. MORRISON
Forest Supervisor

8/1/94
Date

Enclosure 1

Tongass National Forest - Independent Sale Program Market Assessment

by

**Kathleen Morse
Economist**

**USDA Forest Service
Region 10, Alaska**

Tongass National Forest - Independent Sale Program Market Assessment

Introduction

In a letter to Alaska Pulp Corporation (APC) dated April 14, 1994, Alaska Regional Forester Mike Barton officially terminated the company's long-term timber sale contract with the USDA Forest Service, excepting orderly closure operations. As a result of the termination, some of the timber previously scheduled for APC may be made available as part of the independent sale program. A total of 346 MMBF of timber from the APC contract area has been cleared through the National Environmental Policy Act (NEPA) process and could be made available for purchase on the open market over the next few years. Of this, 141 MMBF was released to APC prior to contract termination and is available for competitive bidding reoffer as independent sales. An additional 205 MMBF of the NEPA-cleared timber could be offered in the form of new independent sales. The total NEPA-related investment in this timber volume is estimated at over \$8.6 million.

This paper examines the potential market for this and other independent timber sale volume in Southeast Alaska, including a discussion of the capacity of the independent mills currently in operation, expressed interest by other companies and individuals outside the region, and recent trends in the market for solid wood products. The information provided here will be useful in identifying the key players in the independent timber market and the role they are likely to play in the market for Tongass timber.

Installed Mill Capacity

The timber offered under the independent sale program on the Tongass National Forest is purchased for use by a wide variety of processors (Table 1). Most of these buyers can be grouped into one of three market segments, each of which requires special consideration as to the amount and quality of the timber made available. At the present time, the Wrangell Sawmill and a sawmill at Klawock are expected to be primary purchasers of the wood supply from the former APC contract area. These two mills are the largest independent operations in the region and have a combined processing capacity of 140 MMBF. The second market segment includes four relatively new sawmills, with a combined capacity of 60 MMBF. Finally, there are at least 10-12 other buyers who use very small amounts of wood in the manufacture of musical instruments, cedar shakes and shingles, and lumber using small, portable mills. The total capacity of these operations is estimated at 7 MMBF.

Table 1. Independent Mills in Southeast Alaska

	FY 1994 Operations	Installed Capacity
APC Wrangell Mill	70	110
Klawock Sawmill	20	30
Metlakatla Indian Tribe Enterprises	10	10
Saxman Wood Products	10	10
Seley/Seaborne Lumber	25	30
Jim Ensely	10	10
Misc Other Small Purchases	7	7
This includes music wood, cedar salvage, and small portable sawmilling operations		
Total Sawlog Consumption	152	207
Total Timber Sale Volume	263	369
Wrangell/Klawock	180	280
Other mills	83	89

Note: volumes are in MMBF (sawlog and utility)

Note: The "installed mill capacity" assumes double-shift operation of the sawmill and does not include additional capacity for pulp log chipping at the Wrangell mill. Plans for the Klawock mill also include installation of a chipping facility.

The Wrangell Sawmill is owned and operated by Alaska Pulp Corporation. Despite record lumber prices, the sawmill has employed a single shift and produced at about 60 percent of its two-shift capacity for the last five years. Reasons for APC's decision to operate at this level are not known. For purposes of this report, it is assumed that the mill will continue to operate at the level observed in 1993 (70 MMBF sawlog consumption) for the next 12 months. The consumption level has been as low as 55 MMBF per year during the last five years. A log consumption rate of more than 70 MMBF per year is possible assuming a continued strong market for solid wood products, the opportunity to share pulp quality wood with Ketchikan Pulp Company (KPC) or other outlets, and the availability of an adequate timber supply.

The Klawock mill was purchased recently and the new owner is planning an August/September start-up with full capacity output to be reached by February/March of 1995. Plans also include the construction of an on-site chipping facility to be completed by March of 1995. For purposes of this report, based upon the above stated plans by the owner, it is assumed that the sawmill will initially operate at the rate of 20 MMBF and gradually work up to full production (30 MMBF).

Table 1 provides two estimates of the rate of timber consumption by independent mills in the next two years. The first column incorporates the assumptions regarding the start-up period for the Klawock mill and the continued operation of the Wrangell mill at recent production levels, and the second column lists the installed mill capacity.

Finally, it is important to recognize that mill consumption and capacity reflects the sawlog use and capacity

of the mill; therefore, the pulp component of the timber supply is not included in these figures. Mill consumption and capacity figures were adjusted upward accordingly in the lower portion of Table 1 to correlate timber consumption with timber sale volume. Data collected for timber appraisals in prior years indicate that on average, 50 percent of the total timber harvest is sawn, with the remainder used in pulp manufacture. The newer small mills have specialized equipment and can generally use a somewhat larger percentage of the wood supply. For purposes of this analysis, it is assumed that 75 percent of the total sale volume purchased is actually sawn in the Metlakatla, Saxman, Seley, Ensely, and miscellaneous mills. Using these sawn ratios, a total annual sale volume of 263 MMBF to 369 MMBF would provide a supply of sawlogs meeting the range of timber consumption rates depicted in Table 1. Operation of the Wrangell and Klawock mills alone under the assumptions in the first column of Table 1 can be expected to consume some 180 MMBF of timber sale volume within the next 12 months. Timber already rafted and decked at the Wrangell mill and timber supplied from orderly closeout of the APC contract will meet some of the projected consumption.

Review of the Independent Sale Program

The purchaser of the Klawock mill and the owners of the other operations listed above have stated their intent to rely on the commercial timber supply from the Tongass National Forest for the bulk of their processing needs. There are three sources of timber for processors in Southeast Alaska: 1) the Tongass National Forest, 2) Native-owned timberlands, and 3) State timberlands. Although Canadian logs were obtained at a very low cost in the early 1980's, they no longer serve as an economical supply for Alaska's mills. Canada's log exports in general have declined as cutbacks in timber supply were initiated in response to environmental concerns. A subsequent rise in selling values for Canadian pulp logs has kept import volumes at a near-zero level for the past several years.

Since 1983, timber harvest on lands owned by the Alaska Native Corporations has exceeded harvest levels on the Tongass. However, in contrast to National Forest timber supplies, timber from Native lands is not subject to in-State processing requirements. Because export market prices greatly exceed those paid by local manufacturers, all but the lowest quality Native timber is sold overseas. Therefore, although some Native pulp logs are sold locally, this timber is not well-suited for lumber production and does not meet the needs of the local sawmills.

Some 58,000 acres of State land are available for timber management in the Haines vicinity and another 3,000 acres near Yakutat. After several years of inactivity the timber sale program was recently resumed on the Haines State Forest. The State's timber program is relatively small, however, with an average annual harvest of 9 MMBF over the last five years.

Table 2 illustrates sale activities under the Tongass National Forest independent sale program for fiscal years 1989-1993 and the outlook for sale offerings based on a five-year sale schedule dated March 23, 1994.

Table 2. Independent Sale Program Timber Supply

Year Contract	Offered	Sold	Harvest	Under
FY 1989	93	92	142	missing
FY 1990	54	26	173	260
FY 1991	79	52	90	184
FY 1992	40	81	72	83
FY 1993	61	45	55	77
Projected:				
FY 1995	88			
FY 1996	92			
FY 1997	89			
FY 1998	71			

Note: Volumes are in MMBF (sawlog + utility)

As of March 31, 1994, a total of 81 MMBF of timber was under contract to independent sale operators; none of the 81 MMBF is known to be sold to the Wrangell or Klawock mills. The 81 MMBF equates to about one year of timber consumption in the smaller mills. An additional 40.3 MMBF of timber is scheduled to be offered before the end of the fiscal year. This includes the following sales:

Campbell	Stikine Area	11.0 MMBF
Beaver Creek	Ketchikan Area	10.3 MMBF
McKenzie Inlet	Ketchikan Area	16.4 MMBF
Misc. small sales	Ketchikan Area	2.6 MMBF
TOTAL		40.3 MMBF

Note: The Bohemia Sale (Stikine Area) is listed as a FY 1994 offering but has been reversed on appeal and is, therefore, not included here.

Timber Outlook for the Wrangell and Klawock Sawmills

As of March 31, 1994, a total of 14.3 MMBF of sawlogs was rafted and decked by APC and considered available for use in the Wrangell sawmill. Orderly closeout of APC's long-term contract harvest operations is estimated to provide an additional 61 MMBF of timber to the company within the next two months. Of this, an estimated 30.5 MMBF (assuming a 50 percent sawn ratio) will be sawn. In total, the Wrangell mill has an estimated current supply of 44.8 MMBF of timber suitable for processing into lumber. Data supplied by the company indicates a lumber production rate of 304 MBF/day for the month of December 1993. Given the average overrun of 10 percent realized in 1993, this equates to a log consumption rate of 276 MBF/day. Thus, the total timber volume available to APC subsequent to contract termination should be adequate to operate the Wrangell mill for 162 days, or through the end of fiscal year 1994, assuming the above consumption rate. It is projected that the mill will seek to secure at least 110 MMBF in additional timber sale volume to ensure continued operation at the 1993 level through the winter months (through May 1995). This figure was estimated using the following assumptions:

April 94-May 95 = 14 months * 26 days/month * 276 MBF/day * .5 sawn ration = 155 MMBF - 45 MMBF = 110 MMBF

Assuming that the Klawock mill opens as planned, an additional 30-40 MMBF of sale volume is likely to be sought within this same timeframe. In sum, it is reasonable to anticipate that these two mills will seek to purchase a minimum of 140-150 MMBF of independent timber sale volume to meet projected consumption rates for the next 12 months. Of course, additional offerings would provide the opportunity for the mills to accumulate volume under contract and for capacity utilization of the Wrangell mill to be expanded.

Summary

An additional 140-150 MMBF of timber sale volume is anticipated to be sought by operators to meet projected consumption rates in the Wrangell and Klawock mills over the next 12 months. Assuming the remaining scheduled FY 1994 independent offerings were purchased to supply the Wrangell mill, a 100-110 MMBF shortfall would still remain (see Table 3).

In future years, should these two larger mills continue to operate at the projected rates, it is estimated that operators will seek to purchase a total timber volume of 263 MMBF or more annually under the independent sale program. This is roughly 178 MMBF above the average offering level (85 MMBF) for independent sales currently projected in the five-year sale plan.

Table 3. Projected Timber Volume and Mill Consumption

Mill	Estimate of Sawable Volume Available			Expected Consumption April 1994-May 1995	Shortfall Sawable Volume	Shortfall Sale Volume
	Rafted/ Decked	Close out	Total			
Wrangell	14.3	30.5	44.8	100	55.2	110.4
Klawock	n/a	n/a	n/a	15-20	15-20	30-40
TOTAL	>14.3	>30.5	>44.8	115-120	70-80	140-150

Appendix: Lumber Markets and Potential Investment

The composite price for framing lumber in the domestic market reached a record high of \$506/MBF in December of 1993 (Figure 1). Although lumber prices have since declined somewhat, most industry observers look for price averages to remain at an elevated level for some time. Export lumber price averages from Alaska followed a similar pattern, and the 1993 fiscal year brought record prices to most suppliers.

The favorable market conditions for solid wood products have generated renewed interest in the availability of timber from the Tongass National Forest. In recent months, a number of callers have contacted the Regional Office and expressed interest in the status of the Tongass timber program. The inquiries reflect an assortment of interests and locations, including CRI (helicopter co. in California), Rayonier (wood products manufacturer in Seattle), and CH2M (engineering firm in Seattle). At least one caller maintained that the uncertainty in timber supply, rather than market conditions, kept his firm from investing in Southeast Alaska.

Timber staff from the USFS Alaska Regional Office have also met with local timber companies including Sealaska Timber Corporation, Seley Corporation, Fox River Logging, Lloyd Harding, Alaska Pulp Corporation, Ketchikan Pulp Company, Alaska Forest Association, Alaska Lumberman's Association, and many of the purchasers of small timber sales. Each of these groups and individuals was concerned with what they perceive as a shortage of timber sale volume being made available for purchase on a regular basis. They all encouraged the Forest Service to make more timber available

Enclosure 2

**Offering Volume to KPC from the Former APC Contract
Area In Relation to KPC Long Term Contract Timber
Volume Needs**

by

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Offering Volume to KPC from the Former APC Contract Area In Relation to KPC Long-Term Contract Timber Volume Needs

The Ketchikan Pulp Company (KPC) Long-Term Timber Sale Contract (USDA Forest Service. 1951. Contract Number A10fs-1042), includes the following provisions:

B0.61 Timber Offering Schedule. Each year prior to February 15, Forest Service after consultation with the Purchaser shall develop a tentative Offering schedule based upon the Tongass National Forest Land and Resource Management Plan, which shall display Offering Areas and timber volumes proposed for harvest, and the expected NEPA process commencement and completion date for making any additional Offerings under the terms of this contract. To the extent authorized by law, Offering Areas may be identified for harvest outside the Sale Area, as needed to meet sale volume requirements. The tentative schedule shall list sufficient timber volume and schedule commencement of the NEPA process by Offering Area or Areas to provide Purchaser a Current Timber Supply sufficient for at least three years of operations hereunder or until the contract termination date, whichever occurs first, adjusting for the provisions of B0.63 and B6.36. In developing the schedule, Forest Service will consider the production requirements of Purchaser's manufacturing facilities.

B0.62 Specifying Offerings for Harvest. Based upon the tentative schedule and the NEPA process, and consistent with timber sale planning, management requirements, and environmental assessment procedures for independent Tongass National Forest timber sales, Forest Service after consultation with Purchaser and completion of the NEPA process, shall specify any additional offerings. Forest Service shall seek to specify sufficient offerings to maintain a current timber supply in all offering areas that totals at least three years of operations hereunder or until the contract termination date, whichever occurs first, and which meets the production requirements of Purchaser's manufacturing facilities.

KPC currently projects harvesting at a rate averaging about 194 MMBF per year for the years 1994 to 1999. KPC's average harvest rate from fiscal years 1988 through 1993 was about 172 MMBF per year. So a three-year timber supply is currently estimated to range from 514 to 582 MMBF.

Section B0.3 states that the estimated total amount of timber to be cut under the KPC contract is 1,500,000 cubic feet, or about 8.25 billion board feet (BBF). As of October 1, 1993, KPC had harvested about 5.95 BBF. The contract is due to expire June 30, 2004. An average annual harvest of 214 MMBF would harvest the remainder of the estimated total timber volume by the year 2004. Section B0.52 however provides for a maximum harvest amount during each five year operating period under the contract corresponding to an annual average of 35,000,000 cubic feet. This equates to an annual average harvest of about 192.5 MMBF. KPC harvest at the maximum level authorized by section B0.52 of the contract would therefore total about 960 MMBF for the 1994-1999 five-year operating period and somewhat less than 2 BBF for the period 1994-2004.

As of June 1, 1994, KPC has a current timber supply of approximately 193 MMBF. The maximum volume of timber that can be provided to KPC from within the contract area in the remainder of fiscal year 1994 is about 14 MMBF. The maximum amount that can be provided to KPC from within the contract area during 1995 is expected to be an additional approximate 150 MMBF. There have been suggestions that layout and other actions could be expedited to increase the amounts available from the contract area during the remainder of 1994 and in 1995. But the current assessment is that an increased amount is not practical to accomplish, even with significant increased funding, with a reasonable assurance of quality work.

The above estimated 357 MMBF is not enough volume to make progress toward the contract three-year timber supply objective, considering on-going harvest at the projected or historic rates noted above. If more volume than the above is not provided in 1994 and 1995, added volume will be required in subsequent years, if sufficient volume is going to be made available for KPC to harvest at the maximum level authorized by Section B0.52 for the years 1994-2004. If the volume provided to KPC is limited to this 357 MMBF, KPC is likely to have less volume available to it at the end of 1995 than it does at present, even if KPC harvest during 1994-95 fell significantly below the projected, historic or contract maximum annual average rates.

The Forest Service has made efforts to accelerate the preparation of new offerings within the contract area. At present, about 871 MMBF are being prepared within the contract area. However, because of the amount of time required to prepare new offerings in accordance with applicable laws, no significant amount of this volume is projected to be available during 1994 and 1995. It remains to be seen how much of the volume in preparation will be cleared through the NEPA process and when it will be available in years subsequent to 1994 and 1995.

The Campbell timber sale from the Stikine Area is currently scheduled to be offered to KPC under the long-term contract in FY 1994. This sale totals 13.4 MMBF. This amount alone is not expected to add enough volume to make substantial progress towards meeting contract volume needs. Only offerings within the former APC contract area remain as a source of additional timber in a sufficient stage of preparation to be available in 1994 and 1995. Other scheduled sales in a stage of preparation that can render them available in 1994 or 1995 are needed for the independent sale program; if these sales were converted to KPC contract offerings, equivalent volume from the former APC contract area would need to be substituted as independent sale offerings.

Enclosure 3

Wildlife Species Viability Recommendations Tongass National Forest

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Wildlife Species Viability Recommendations Tongass National Forest

Interagency Viable Population Committee (V-POP)

The Tongass Land Management Plan (TLMP) is currently undergoing revision under National Forest Management Act (NFMA) implementing regulations (36 CFR 219.10(g)). NFMA regulations also require that "fish and wildlife shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area" (36 CFR 219.19).

As part of the revision process, the TLMP planning team commissioned an Interagency Viable Population Committee (V-POP) to develop recommendations for standards and guidelines to maintain well-distributed viable populations of old-growth forest associated species. V-POP developed a draft habitat conservation strategy (Strategy) that considered multiple species, across a broad landscape, with a long time-frame. A system of large (40,000-acre), medium (10,000-acre), and small (1600-acre) Habitat Conservation Areas (HCA's) well-distributed across the Tongass National Forest was recommended. Specific standards and guidelines described the size, landscape spacing, and habitat composition of HCA's.

In the Supplement to the Draft Environmental Impact Statement (SDEIS) for the revision, the V-POP recommendations were not adopted.

PNW Peer Review of the Wildlife Strategy

In August 1993, after publication of the SDEIS, Alaska Regional Forester Michael Barton requested the Pacific Northwest Research Station (PNW) to conduct a scientific peer review of the wildlife planning documents for the TLMP revision. Barton's request for the review clearly identified a goal: Develop the best information available for revising the TLMP regarding wildlife habitat conservation planning.

PNW obtained the services of eighteen experts in wildlife ecology and conservation biology to review three TLMP Revision documents, including the Strategy: 1) Appendix M: Fish and Wildlife: A Viability Risk Assessment for SDEIS TLMP Revision, 2) Habitat Capability Models for Wildlife in Southeast Alaska, and, 3) A Proposed Strategy for Maintaining Well-distributed, Viable Populations of Wildlife Associated with Old-growth Forests in Southeast Alaska. The resulting "Peer Review" document, "Review of Wildlife Management and Conservation Biology on the Tongass National Forest: a Synthesis with Recommendations" (Pacific Northwest Research Station, March 1994), contained a synthesis by Dr. A. Ross Kiester and Dr. Carol Eckhardt of the 18 individual scientists' reviews of the above three documents.

The "Peer Review" report found the V-POP draft conservation strategy to be "a solid attempt to integrate species viability concerns with the Habitat Conservation Area approach" and generally gave the strategy "high marks." They concluded, however, "the particular pattern of Habitat Conservation Areas that it suggests will not ensure viability of all species." This observation was made without the reviewers having any of the TLMP Revision SDEIS documents or maps available for their reviews and, therefore, the peer review did not include any actual analysis of viability in relation to the alternatives proposed for the TLMP Revision. There was no time scale discussed.

The Peer Review made thirteen recommendations. The recommendation that potentially could have immediate effect on project level activity is number 7.3: Immediate Management Recommendation: Keep landscape options open (Peer Review, p. 25). In particular, the Peer Review recommended:

1. The existing largest blocks of contiguous high volume old-growth forest not be further fragmented by timber harvesting or road building.
2. The letter and spirit of the provision against highgrading in the Tongass Timber Reform Act (TTRA Title III Sec 302 C 2) be strictly adhered to. Operationally this amounts to not differentially cutting in low altitude, high volume stands (greater than 30 thousand board feet per acre). Meeting the recommendation will require compensatory lowgrading.

However, the reviewers added, "we do not have a good enough account of the current fragmentation pattern on the Tongass National Forest and the effects of natural fragmentation and habitats other than old-growth have not been factored in" (p. 25). Even though the review defines high volume as those stands with greater than 30 MBF per acre, it does not give a definition of what a "large" block would be, or how to identify the "largest" blocks. These uncertainties suggest that a more detailed analysis regarding conservation strategies and maintenance of viable populations is necessary. Preserving landscape options in the meantime will increase the likelihood that a satisfactory approach to viability can be achieved in the TLMP revision.

With the termination of the Alaska Pulp Corporation (APC) contract on April 14, 1994, only the Ketchikan Pulp Company (KPC) long-term contract offerings are subject to the proportionality provision of the TTRA. The Southeast Chichagof, 81/96 and 86/90 Operating Plan Final SEIS, Kelp Bay, North and East Kuiu, and Ushk Bay projects are designed to maintain proportionality requirements of TTRA. Much of the lower elevation high volume timber is furthermore being maintained in streamside buffer strips, identified old growth habitat areas, and other elements of the project design. Therefore, any sales or KPC contract offerings to implement the Southeast Chichagof, 81/86 and 86/90 Operating Plan Final SEIS, Kelp Bay, North and East Kuiu, or Ushk Bay projects are not expected to require any changes related to the PNW recommendation regarding proportional harvest.

Current Viability Strategy

The Region is following a phased strategy. The first phase is to reschedule and modify projects in order to maintain options to address the PNW Peer Review recommendations. Specifically, projects are screened against the V-POP draft HCA strategy and adjusted as necessary in order to maintain HCA options while further analysis proceeds.

The rationale for using the draft HCA strategy as a standard for evaluation is two-fold: 1) The PNW review recommendation to minimize further fragmentation of large blocks of old growth is achieved, thus preserving management options, and 2) Following the conceptual design of the V-POP draft HCA strategy significantly increases the assurance that any individual project will meet NFMA viability requirements. The HCA strategy provides a substantial forest-wide viability analysis.

Subsequent phases of the strategy will further address the Peer Review recommendations through interim direction, such as Forest Plan amendments, or the Forest Plan revision. Interim direction or the revision may use the HCA strategy or some other approach to addressing the Peer Review recommendations.

Habitat Conservation Area Screening Process

In response to the PNW review finding and recommendations and to better assure NFMA viability objectives are met, a project screening process was developed to ensure that all projects were consistent with the V-POP draft HCA strategy.

The screening process included these steps:

1. The March 24, 1992, V-POP map of an example of an HCA strategy was first used as a landscape template to screen the location of existing and planned projects. If no activities were proposed within the bounds of a mapped large or medium HCA, the project was considered consistent.
2. If proposed activities occurred within a large or medium mapped HCA, the specific recommended standards and guidelines developed by V-POP were used to determine if the HCA could be adjusted to minimize or avoid proposed activities in conflict with a mapped HCA. Modifications in HCA configuration were permitted if adjusted HCA's continued to satisfy the size, spacing, and habitat composition requirements identified by V-POP.
3. Where original project scope, design, or location precluded the opportunity to satisfy the HCA Strategy, the project was modified (harvest units were deferred) or the entire project was deferred.
4. All modifications to existing or planned projects are considered temporary deferrals of activity while the Peer Review recommendations are being further analyzed and evaluated. Subsequent interim direction may provide for further adjustment.

The Southeast Chichagof and Ushk Bay projects were determined to be consistent with step one above, with no activities planned within the bounds of a mapped large or medium HCA.

Within the Kelp Bay EIS analysis area, the large HCA on northwest Baranof conflicted with the Hanus Cable and Hanus Helicopter offerings and the Benchland offering. An analysis of the surrounding landscape revealed some flexibility in redesigning the previously mapped HCA and still satisfy the size, spacing and composition requirements developed by V-POP. Additional landscape surrounding all of Kelp Bay was added to the large HCA as an acceptable redesign. However, there was no additional flexibility within the surrounding landscape to design any further adjustments to minimize conflicts of the Benchland offering. Because no further HCA adjustments were possible and to meet the HCA design specifications, the Benchland offering was deferred to maintain HCA integrity.

Within the Final SEIS for the 81/86 and 86/90 Operating Periods for the APC Long-term Sale analysis area, only two offerings remain to be completed. The Corner Bay helicopter offering contains no conflicts with any mapped HCAs. The Game Creek offering units which conflicted with mapped HCA's have already been harvested.

Within the North and East Kuiu analysis area, initial HCA screening revealed potential conflicts with two proposed harvest units and the Kadake HCA. A review of the HCA and the surrounding landscape determined that the integrity of the Kadake HCA could be maintained by moving the boundary away from the two harvest units and satisfy the HCA size, spacing, and habitat composition.

V-POP Response to the PNW Peer Review

In May 1994, the V-POP published a "Response to the Peer Review" (V-POP Response) and in Appendix II

listed seven recommendations to respond to comments made by the Peer Review. It is premature to reschedule any timber offerings or take other action recommended in the V-POP Response beyond the HCA strategy screening described above, for the following reasons:

1. The V-POP Response recommendations do not have the benefit of any form of scientific peer review.

The V-POP draft HCA Strategy has received considerable "peer" reviews (including the May 1993 Review Draft) and has a significant level of "standing" in the management and science arena. The V-POP Strategy was reviewed by Dr. Bruce Marcot, PNW Research Scientist, the Alaska Region Steering Committee headed by Jack Capp, and the PNW Peer Review led by Dr. Ross Kiester. Individual species chapters within the V-POP draft HCA Strategy also received varying levels of peer review.

2. The V-POP Response recommendations were developed without rigorous analysis and were subjectively designed in a matter of days without the development of any scientific merit for the recommendations. While the V-POP recommendations may individually have merit, they should be subjected to more analysis before determining whether to adopt any of them.

The V-POP Strategy was developed over a period of several years and contained objective and quantitative support for the development and synthesis of a the conservation strategy.

3. Due to the urgent and immediate nature of timber sale scheduling needs, the effort has focused on the PNW Peer Review Immediate Recommendation number 7.3: Keep Landscape options open: (1) do not further fragment existing large blocks of high volume old growth, and (2) do not differentially cut low altitude high volume old growth.

The V-POP Strategy was designed as a system of Habitat Conservation Areas and was used as a template to address fragmentation (7.3 (1)). Existing TTRA proportional harvest measures and other design features of timber offerings which maintain substantial lower elevation old growth address differential harvesting (7.3 (2)).

4. Several of the V-POP Response's recommendations do not directly address PNW Peer Review recommendations or the viability issue; the recommendations beyond the HCA Strategy do not otherwise require immediate consideration.

For example, the V-POP Response's Recommendation 'F' suggests maintaining all previously mapped "wildlife retention areas" within Records of Decision (ROD) signed prior to 1992. While retention areas may be important wildlife habitat, the decision criteria used to define retention areas in the RODs often had little linkage to the viability or fragmentation issue. Sitka black-tailed deer, black bear, geese, and bald eagles were species often cited as rationale (e.g., TLMP 1979) for establishing retention areas. None of these species were driving elements in the viability issue during development of the V-POP Conservation Strategy. Mapped "retention" areas included in existing project ROD's remain intact throughout project implementation, subject only to implementation changes which go through environmental analysis before approval. This analysis considers any additional impacts upon wildlife and other resources attendant to what are generally minor adjustments of harvest units and other operations.

The V-POP Response's Recommendation 'A' suggests a total moratorium on the harvest of Volume Class 6 and 7 (high volume) old-growth forest, and extending strict proportional harvest limits to all Volume Class 5 areas. The PNW Peer Review did not recommend a moratorium regarding high-volume old growth or any action with respect to Volume Class 5, but suggested that low

altitude high volume forest not be "differentially" harvested. A total moratorium on harvest of Volume Class 6 and 7 old-growth forest or extension of proportional harvest limits to Volume Class 5 is probably not practical to implement in the near future; virtual shutdown of timber offerings could result. Disputes about the methodology of identifying volume class 6 and 7 timber areas are pending in court. The V-POP Response does not document that preservation of all remaining volume class 6 and 7 areas or less harvest of volume class 5 areas forestwide is necessary for the viability of any species. Volume Class 5, 6, and 7 areas are not threatened with extensive disproportionate reduction within the next few years under current timber project designs.

Many of the V-POP Response recommendations may have merit and will be given further consideration in the development of any interim wildlife viability direction and in the ongoing Tongass Plan Revision.

Conclusion

With respect to implementation of projects pending further analysis and issuance of interim direction, deferral of units and HCA adjustments incorporated in the first phase of the viability strategy are expected to avoid any potentially significant environmental effects of harvest indicated in the Peer Review. The unit deferrals are an implementation scheduling change that is not a significant change in the proposed action or environmental effects indicated in the project EIS's. Further evaluation of the Peer Review and related information will result in further review of whether it is significant in relation to project environmental effects and any potentially significant changes associated with interim direction, in compliance with NEPA and other laws.

Neither the PNW "Peer Review" of the V-POP draft HCA strategy nor the V-POP "Response to the Peer Review" contain any significant new information relevant to environmental concerns bearing on the proposed action and its impacts that warrants supplementation of the Ushk Bay FEIS, the 81/86 and 86/90 Operating Plan FEIS, the North and East Kuiu FEIS, the Kelp Bay FEIS, or the Ushk Bay EIS.

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