

STATE FOREST LAND  
**SEPA ENVIRONMENTAL CHECKLIST**

**Purpose of checklist:**

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

**Instructions for applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

*Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

**Instructions for Lead Agencies:**

Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

**Use of checklist for nonproject proposals:**

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements – that do not contribute meaningfully to the analysis of the proposal.

**A. BACKGROUND**

1. Name of proposed project, if applicable:

*Timber Sale Name:*

**KARI MAKWA SORTS**

*Agreement # 30-093647*

2. Name of applicant: **Washington Department of Natural Resources**

3. Address and phone number of applicant and contact person:

**Olympic Region  
411 Tillicum Lane  
Forks, WA 98331**

**Contact Person: Gary McLaughlin  
Phone Number: (360) 374-2800**

4. Date checklist prepared: **04/12/16**

5. Agency requesting checklist: **Washington Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

a. Auction Date: **10/26/16**

b. Planned contract end date (but may be extended): **05/31/17**

c. Phasing:

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Timber Sale:

a. Site preparation:

**Landing piles may be removed for biofuels upon completion of harvest.**

b. Regeneration Method:

**Sale area will be hand planted the first season after harvest.**

c. Vegetation Management:

**Needs to be assessed five to seven years after harvest.**

d. Thinning:

**Needs to be assessed ten to twelve years after harvest.**

Roads: This proposal includes road construction, reconstruction, and abandonment. Road maintenance, which includes rocking, grading, ditch cleanout, and installation or replacement of culverts, will occur as necessary on existing roads. New roads and existing roads that receive pre-haul maintenance will be used to access the area for future management activities.

Rock Pits and/or Sale: Rock will be removed from the State Place Pit located in Sec 33, T31N R07W, W.M. or commercial sources. The State pit will be used in the future for road construction activities associated with forest management operations.

Other: None

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

303 (d) – listed water body in WAU:  temp  sediment  completed TMDL (total maximum daily load):  
(Note the source is the 2012 Assessment and 303(d) list available on the Washington Department of Ecology web site at: <http://www.ecy.wa.gov/programs/wq/303d/currentassessmt.html>)

Landscape plan:

Watershed analysis:

Interdisciplinary team (ID Team) report:

Road design plan: **Dated 03/01/16**

Wildlife report: **Wildlife Habitat Potential of Rocky Areas Near Unit 2 of the Sale Proposal, dated 03/18/16**

Geotechnical report: **Engineering Geologic Risk Assessment, dated 05/02/16**

Other specialist report(s):

Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):

Rock pit plan: **Place Pit Rock Source Development Plan (See road design plan)**

**Other:** Policy For Sustainable Forests (PSF) dated December 2006; State Soil Survey; Washington State Department of Natural Resources Habitat Conservation Plan (HCP) dated September 1997; ESA listed Salmonid Species Map from Forest Practices, dated 1999; Special Concerns Reports and TRAX Report. Documents are available for review at the Olympic Region Office during the SEPA comment period.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None at this time.

10. List any government approvals or permits that will be needed for your proposal, if known.

FPA # 2614395  FHPA  Burning permit  Shoreline permit  Incidental take permit  
 Existing HPA  Other: **Board of Natural Resources approval** FPA & Geo Tech Report available on FPARS. *aw*

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

a. Complete proposal description:

**Proposal area (includes acreage set aside for existing roads, stream RMZs, soil protection, and leave tree areas)**  
- 97 acres

**Net harvest area - 76 acres**

*3,879 MBF Timber Harvest aw*

The Kari Makwa Sorts Timber Sale is a timber harvest consisting of Douglas-fir with scattered western red cedar, western hemlock, grand fir and red alder. The proposal consists of two variable retention harvest units.

This proposal involves the harvest of timber, pre-haul maintenance, road construction, reconstruction, post-haul maintenance and road abandonment. Units may be salvaged for biofuels after harvest.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

The proposal is composed assorted even-aged stands of Douglas fir mixed with western hemlock, western red cedar and red alder. The origin dates are: Unit 1 - 1931; Unit 2 - 1939. Ground cover includes sword fern, salal, red huckleberry, and Oregon grape. Salmonberry and occasional scattered devils club are found in wet areas.

**Type of Harvest:** 76 acres of variable retention harvest. Individual scattered leave trees and leave tree areas have been marked in the variable retention units. Unit 1 has 0.4 acre set aside in two leave tree areas and Unit 2 has 0.6 acre set aside in two leave tree areas. Yarding methods include cable, shovel, and tracked skidder.

**Overall Objectives:** The overall objectives for this sale includes the production of saw logs, poles, pulp material, and biofuels revenue for trusts while expediting the development of a more diverse multi-storied canopy layer in the future stand. This will be accomplished through the retention of wildlife trees, legacy trees and riparian/wetland management zones (RMZs/WMZs). Approximately 20.1 acres (21 percent of the proposal) have been set aside for unstable slopes, wetlands, WMZs/RMZs, and leave tree areas. In addition, these stands will be managed to protect site productivity and maintain the integrity and water quality of adjacent streams.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		3,020	1.1*	0
Reconstruction		160		0
Abandonment		440**	0.2*	0
Bridge Install/Replace	0			0
Culvert Install/Replace (fish)	0			0
Culvert Install/Replace (no fish)	0			

**14,290 feet of pre-haul maintenance**

**Post-haul maintenance of all forest roads used during operations.**

**Ditch relief cross drains: install or replace 14 culverts**

**\*With 16 foot subgrade**

**\*\* Post-haul abandonment of new construction**

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

- a. *Legal description:* **T30N R8W S10  
T30N R8W S11  
T30N R8W S14  
T30N R8W S15**

- b. *Distance and direction from nearest town (include road names):*

**Unit 1 - Drive to milepost 54.4 (east of Joyce) on State Route 112 and turn south onto Wasankari Road.**

**Drive 0.7 miles to the end of the county road and the start of the PA-J-4000 road. Drive 1.0 miles to Unit 1.**

**AA-1 gate on PA-J-4000 road.**

**Unit 2 - From Unit 1, drive another 1.0 miles to the PA-J-4030 road. Turn west and continue 0.6 miles to Unit 2.**

**Place Pit - Drive to milepost 58.9 on State Route 112 and turn north onto Place Road.**

**Drive 1.15 miles and turn west onto the PA-I-2600/2610 road. Continue 0.5 miles to the pit.**

**AA-1 gate on PA-I-2600/2610 road.**

- c. *Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website: <http://www.dnr.wa.gov/ResearchScience/sepa/Pages/Home.aspx> under the topic "Current SEPA Project Actions – Timber Sales" for a broader landscape perspective.)*

WAU Name	WAU Acres	Proposal Acres
<b>SALT CREEK</b>	<b>28404.60</b>	<b>76</b>

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under "SEPA Center for a broader landscape perspective.")*

**This proposal is located within the Salt Creek WAU.**

**Salt Creek WAU - The DNR manages approximately 12,500 acres of forestland within the WAU, which equates to 44 percent of the WAU's dry land acres. The other 56 percent of the WAU is federal, tribal, and**

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private lands. Known future State activities not associated with this proposal include other variable retention harvests and RMAPS work. Approximately 254 acres of State lands are planned for harvest using variable retention methods in the next five years.

Future Department of Natural Resources' (DNR) managed stands in this WAU will be scheduled for variable retention, commercial thinning and partial cut harvests as they meet the department's financial and ecological policies and mandates. All current and future DNR activities will be conducted according to the State's Habitat Conservation Plan (HCP), Policy for Sustainable Forestry and State Forest Practices rules, and are expected to mitigate for potential adverse cumulative effects. The HCP is designed to protect and promote fish and wildlife species and their habitats over a broad regional area. All future activities will be completed while protecting unstable soils and wildlife habitats.

The following measures have been taken while assessing this proposal, and will be taken when assessing future proposals, to reduce the risk of negative environmental impacts:

- Assessments to evaluate the potential use of the proposal area by threatened and endangered species, and to ensure their protection.
- Typing and protection of waters and wetlands in accordance with the HCP procedures.
- Verification of compliance with HCP agreements for spotted owls and marbled murrelets. For a detailed description of marbled murrelet habitat mitigation see B.5.d. below.
- Measures to analyze, design, construct, and maintain the road system in order to minimize the amount of road construction needed and to ensure the quality of existing and newly constructed roads. These measures will minimize potential adverse effects on the environment by reducing the potential for off-site movement of sediments.
- Analysis of G.I.S landscape reports to evaluate the location of the proposal relative to the rain-on-snow (ROS) zone mapping units and the forest inventory based Weighted Old Growth Habitat Index (WOGHI) assessment.
- Application of timing restriction(s) to the use of ground yarding equipment in sensitive areas in order to prevent impacts to water quality.
- Assessment of potentially unstable slopes and landforms in association with the proposal to insure that proposed management activities will not significantly increase the risk of mass wasting in the general area (B.1.d.1-5).

Over the past five to ten years, the private industrial forestlands scattered within the Salt Creek WAU has reached rotation age and are currently being harvested on an estimated rotation cycle of 40 to 60 years in accordance with forest practice laws. Some of these industrial forestlands will likely be converted to industrial and private landowner development. Future activities planned by small private forestland owners within the WAU are largely unknown except as noted in the table below.

Below are tables of Forest Practice Approved Applications for Harvest Activities within the WAUs.

Salt Creek WAU			
Harvest Type	Acres on DNR Land	Acres on Non-DNR Land	Acres on All Lands
EVEN-AGE	254	364	618
SALVAGE	19	46	65
UNEVEN-AGE	6	632	638

*NOTE: This information is derived from activity locations collected by varying methods ranging from hand drawn maps to precise GPS collection. No verification of map accuracy or activity completion is*

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conducted. Totals may not be the sum of all harvest types due to overlapping activities. The same land may be counted more than once if, in the past seven years, more than one forest practice application has been approved for different harvests (salvage and even-age for example). All acreages are approximate. Rounding to the nearest 10 or even to the nearest 50 acres may be appropriate. Totals may not be the sum of all harvest types due to overlapping activities.

*Data Source & Description: DNR Forest Practices Application Review System (FPARS) data. Table shows the last seven years of proposed harvest areas, some of these areas may not have actually been harvested. Data are continuously updated.*

**B. ENVIRONMENTAL ELEMENTS**

**1. Earth**

- a. General description of the site (check one):  
 Flat,  Rolling,  Hilly,  Steep Slopes,  Mountainous,  Other:

1) *General description of the WAU or sub-basin(s)(landforms, climate, elevations, and forest vegetation zone).*

**Salt Creek WAU**

The WAU contains 28,405 acres. Elevation ranges from sea level to 2,513 feet with a mean elevation of 635 feet. Landforms vary from flat and rolling in the lower elevations to steep and mountainous in the upper elevations. Steeper slopes are found in the south third of the WAU, especially on Forest Service and National Park lands. Average precipitation for the WAU is 47 inches, with rainfall increasing from north to south. Approximately 63 percent of the WAU is in the lowland zone with 23 percent of the WAU in the rain dominated zone and only 9 percent in the peak rain on snow zone. The dominant forest type is Douglas fir and western hemlock with associated western red cedar, grand fir, red alder, and big leaf maple. The managed forestlands are primarily regenerated with Douglas fir, western red cedar, and grand fir.

2) *Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).*

None.

- b. What is the steepest slope on the site (approximate percent slope)?

**100% on roadcut for PA-J-4030 road running through Unit 2.**

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

*Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
<b>8047</b>	<b>V.GRAVELLY SANDY LOAM</b>	<b>30-65</b>	<b>20</b>	<b>LOW</b>	<b>HIGH</b>

1959	GRAVELLY SANDY LOAM	15-35	5	LOW	LOW
1958	GRAVELLY SANDY LOAM	0-15	48	INSIGNIFIC'T	LOW
5260	V.GRAVELLY LOAMY SAND	30-70	3	MEDIUM	HIGH

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) *Surface indications:*

Two deep-seated landslides (DSLS) with associated groundwater recharge areas (GWRA), five earth-flows, and two bedrock hollows are found in or near Unit 1. Portions of one landslide LS1 and both GWRA are proposed for harvest.

*Is there evidence of natural slope failures in the sub-basin(s)?*

No  Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

Natural slope events occur within incised draws where streams undercut the toe of the slope, causing some slides. Slope failures have occurred on very steep slopes underlain by unstable soils during periods of extreme saturation. Failures are known to occur and have been identified on over steepened slopes above Salt Creek. These failures are mostly shallow-rapid in nature, but there have also been deep-seated slides identified within the sub-basins.

2) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*

No  Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

No clear evidence of slope instability response to past harvest activities was observed in the field reconnaissance or review of historical imagery. However, a slope disturbance was observed in photographic imagery and others during field traverses. A tree canopy disturbance was observed in the 1990 historical aerial photographs where hollows were recorded during field traverses (Figure 4). This canopy disturbance occurred many years after logging occurred, pre-1939 and 1971, so a direct cause and effect relationship between harvest activities and the canopy disturbance was indeterminate.

The identified deep-seated landslide (LS1) is sourced in glacial sediments and is approximately 1.4 acres in size with an additional GWRA estimated at 9.0 acres. The headscarp of LS1 is vegetated and smooth as are the lateral margins. A skid road was identified along the headscarp, the left lateral scarp, and over the body of the landslide, but no displacement was observed along the road. The body of the feature is smooth and vegetated with predominantly straight coniferous trees that are of similar age and species as the surrounding forest. In situ old growth stumps were also observed. The toe of the landslide has been eroded by the stream below and has areas of saturation. This landslide is best described as a relict rotational debris slide.

*Associated management activity:*

Slope failures on the Olympic Peninsula typically have occurred where road construction has been performed on extremely steep unstable slopes. Road failures are primarily associated with older, poorly constructed sidecast roads. There is evidence of deep-seated and shallow failures resulting from past road construction and harvest methods in the associated WAUs. Typically, past failures due to harvest operations resulted from poor road locations and the standard road

**building practices and harvest methods employed before the 1950s.**

3) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*

No  Yes, describe similarities between the conditions and activities on these sites:

**Shallow and deep-seated landslides are common along steep, channel-adjacent slopes in the sub-basin. It was determined by the State geologist that the likelihood of movement on the two identified landslides would be low.**

4) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

**The RMZ along the Salt Creek tributary west of Unit 1 has been enlarged to include ground identified as potentially unstable. At the recommendation of the State geologist, the bedrock hollows, inner gorges, and shallow debris slides have been bounded out of the proposal. The last 440 feet of the PA-J-4020 road, 260 feet of which is on a GWRA, will be fully abandoned. When cable yarding is used by the harvest operators, no trees or stumps located on rule identified landforms outside the harvest area will be used as anchors or tail holds without review from a licensed Washington State Department of Natural Resources engineering geologist.**

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

*Approx. acreage new roads: 1.0 Approx. acreage new landings: 0.13*

*Fill Source: Place Pit*

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

**A small amount of surface erosion incidental to freshly exposed soils is anticipated until the site has revegetated. Exposed slopes near streams and on steep road cuts will be grass seeded to reduce runoff.**

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

**Approximately one percent of the proposal will be covered with additional road running surface as defined by compacted surfacing. This is based on the subgrade widths of newly constructed roads and associated landings.**

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:  
*(Include protection measures for minimizing compaction or rutting.)*

**Wet weather restrictions will apply to new road construction, reconstruction, pre/post-haul maintenance, road abandonment, rock haul, timber haul, and harvest operations unless operations are approved by the contract administrator. Additionally, new road construction will be restricted during periods of heavy rain fall when excess rutting and surface erosion may occur. Roads will be constructed with properly located ditches, ditch outs and cross drains to divert water onto stable forest floor and/or into stable natural drainages. Harvest operations shall be suspended during periods of wet weather or wet soil conditions when rutting of skid roads may occur. Additional guidelines for soil protection will include: proper distribution of surface runoff during road construction, managed usage of roads to minimize erosion and sediment delivery, and pullback of any landing debris on or near the tops of the steep slopes. Waterbars will be installed on skid trails and logging spurs as necessary to control erosion.**

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

**Insignificant amounts of engine exhaust from road and harvest operations along with dust from passage of rock and log trucks.**

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:

**Probable post-harvest biofuel grinding of the sale units will reduce the need to burn the logging slash. This would prevent smoke emissions resulting from the need to burn slash for site prep.**

### 3. Water

- a. Surface Water:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (*see timber sale map available at DNR region office, or forest practice application base maps.*)

**Unit 1 has one Type 3 stream along the west boundary of Unit 1 that is a tributary of Salt Creek. Salt Creek drains a Type B/Forested wetland south of Unit 2.**

- a. Downstream water bodies:

**Salt Creek to Strait of Juan de Fuca.**

- b. Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in feet (per side for streams)
Stream	3	1	159
Stream	5	2	None
Wetland	Type B	1	160
Wetland	Forested	1	160

- c. List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

**A minimum 159 foot buffer protects the Type 3 stream west of Unit 1. Additional buffer width was used when protecting unstable slopes within this area.**

**The Type B/Forested wetland with an associated Type 5 stream is protected with a 160 foot buffer. A culvert will be installed at station 75+30 on the PA-J-4000 road southeast of Unit 1 to re-establish the natural flow of a disconnected type 5 stream.**

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No  Yes (*See RMZ/WMZ table above and timber sale map available at DNR region office.*)

*Description (include culverts): See B.3.a.1c above.*

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected.  
Indicate the source of fill material.

**A small amount of dredge and fill material will be moved during installation of the one Type 5 culvert during road maintenance. Source of fill material will be native soils and rock from Place Pit or commercial sources.**

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (*Include diversions for fish-passage culvert installation*).

No       Yes, description:

**Water diversion may be necessary during stream culvert work. Diversions will be made using Forest Practices guidelines, restrictions, and as described in the HPA. Water will be directed back into stream channel to ensure continued flow downstream of diversion. Stream work will be during the dry season to minimize the diversion of water flow.**

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No       Yes, describe location:

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No       Yes, type and volume:

- 7) *Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?*

**The potential for surface and/or mass erosion exists in the headwaters of the WAU, typically in headwalls with steep slopes of 60 percent or greater and/or where unstable soils are present. A majority of these sites occur near watercourses with deeply incised channels and steep headwall areas. A storm event could result in eroded material entering surface water. The potential for eroded material to enter surface water based on this proposal is low due to erosion control measures that will be included in the proposal. Furthermore, the terrain in the WAU is heavily vegetated and limits the occurrence of soil erosion; therefore, it is unlikely that a significant amount of eroded material will enter surface water. All active unstable soils were excluded from the sale by the State geologist and forester.**

- 8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*

No       Yes, describe changes and possible causes:

**There have been changes to channels in area streams due to past slides. Due to the hilly terrain in the area, most of these channel movements were restricted to the existing narrow flood plains of the streams. These narrow flood plains and steeper stream side slopes often resulted in streams returning to their original channels.**

- 9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*

No       Yes, explain:

**There may be a temporary minimal effect to the water quality during the placement of the culverts in live streams.**

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*

**There are 4.1 road miles per square mile in the Salt Creek WAU. The approximate road miles per square mile in the sub-basins are unknown.**

11) *Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?*

No       Yes, describe:

12) *Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*

No       Yes, approximate percent of sub-basin(s) in significant ROS zone:  
Or, approximate percent of WAU:

13) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

14) *Is there evidence of changes to channels associated with peak flows in the WAU and sub-basin(s)?*

No       Yes, describe observations in the WAU and in the sub-basin(s):

**Within the WAU many streams experience exceptionally high flows during the major storms resulting in channel scour, deposition, and changes in channel location within their flood plains.**

15) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

**Past, current, or reasonable foreseeable proposals may slightly change the timing, duration, and/or amount of peak flow, and flow rates may increase slightly during low flow periods due to decreased transpiration and interception. However, the unit size, WMZs, RMZs and green-up policies should limit contributions to peak flow problems.**

16) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*

No       Yes, possible impacts:

**As per the landforms described in B.1.d.1) west of Unit 1, the Engineering Geologic Risk Assessment**

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states the following concerning possible effects from the proposal:

*The likelihood of delivery of sediment or debris to a public resource, or in a manner that would threaten public safety, is in our opinion low.*

*This conclusion is based on our opinion that there is low likelihood the proposed forest practices will cause movement on the potentially unstable slopes or landforms. However, if there are any shallow failures, there may be some likelihood that sediment and debris will be delivered to a public resource. Again, it is our opinion that there is an overall low risk of such an outcome, but the location of potentially unstable slopes is such that if failures do occur it may deliver sediment and debris indirectly to waters draining DNR lands.*

- 17) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

**Establishing an RMZ along the Type 3 stream west of Unit 1 should help maintain bank stability and supply large organic debris, which helps control the rate of stream flow. Providing for green-up before harvesting adjacent DNR stands will help decrease potential peak flow/flooding impacts. See B.1.d.4) for additional protection measures.**

b. Ground Water:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

**Does not apply.**

- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*

No       Yes, describe:

**The Department of Ecology lists ground water rights well over one mile from the proposal. The area of Unit 1 is capped by glacial till with low hydraulic conductivity. This will restrict groundwater recharge to LS1 and LS2.**

*a. Note protection measures, if any.*

**The bedrock hollows, shallow debris slides, and inner gorges noted in B.1.d.1) are west of Unit 1 above the Salt Creek tributary. These geologic features have been excluded from the proposal area. Any movement of these features would have minimal impact to the noted water resources downstream, due to the distance and nature of the resources in relation to the creek (springs and wells).**

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

**Storm water runoff will be collected by road ditches and diverted onto the forest floor. Existing culverts and ditchouts have been placed to minimize the amount of ditch water that may enter into stream channels.**

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

No  Yes, describe:

**No lubricants will be intentionally disposed of on site, but insignificant amounts of oil and other lubricants could be inadvertently discharged as a result of heavy equipment use.**

- a. Note protection measures, if any.

**If contamination is suspected, discovered, or occurs during the proposed timber harvest and road construction, testing of the potentially contaminated media will be conducted. If contamination of soil or groundwater is readily apparent, or is revealed by testing, the Washington Department of Ecology will be notified. Contact will be made with the Environmental Report Tracking System Coordinator in the Southwest Regional Office (SWRO). For assistance and information about subsequent cleanup and to identify the type of testing that will be required, the SWRO Toxic Cleanup Program will be contacted.**

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No.

- d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

*(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)*

#### 4. Plants

- a. Check the types of vegetation found on the site:

deciduous tree:

alder,  maple,  aspen,  cottonwood,  western larch,  birch,  other:

evergreen tree:

Douglas fir,  grand fir,  Pacific silver fir,  ponderosa pine,  lodgepole pine,  western hemlock,  mountain hemlock,  Englemann spruce,  Sitka spruce,  red cedar,  yellow cedar,  other:

shrubs:

huckleberry,  salmonberry,  salal,  other: Oregon grape

grass

pasture

crop or grain

wet soil plants:

cattail, buttercup, bullrush, skunk cabbage, devil's club,  
other: **false hellebore, starry false Solomon's-seal, three-leaved foamflower, false lily-of-the-valley, horsetail, pioneer violet, sweet-scented bedstraw**

water plants:

water lily, eelgrass, milfoil, other:

other types of vegetation:

plant communities of concern:

*FPRAM search verified  
No conflict with T+E  
plant species*

b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See color landscape/WAU and adjacency maps on the DNR website:

<http://www.dnr.wa.gov/ResearchScience/sepa/Pages/Home.aspx>

(Click on the DNR region under the Topic "Current SEPA Project Actions - Timber Sales.")

All units are surrounded by stands similar in composition – predominately single story homogenous second rotation Douglas fir, western hemlock, red alder, and grand fir. Origin years of adjacent stands are as follows:

Unit 1: north – 1931, 1989, and 2011; east – 2011; south – 1924; and west – 1931.

Unit 2: north - 1924; east – 1990 and 1998; south - 1913; west – private land.

2) Retention tree plan: 694 individual and clumped leaf trees in two units.

Unit #	Individual Trees	# of Clumps	Clumped	Leaf Trees
1	399	2	72	471
2	113	2	110	223

List threatened and endangered plant species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found In Database Search				

c. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

**The units will be planted with a mix of conifers the first planting season after final harvest. Approximately 350 trees per acre will be planted.**

d. List all noxious weeds and invasive species known to be on or near the site.

**Scotchbroom, Canada thistle**

## 5. Animals

a. List any birds and other animals or unique habitats which have been observed on or near the site or are known to be on or near the site. Examples include:

birds: hawk, heron, eagle, songbirds, pigeon, other:

mammals: deer, bear, elk, beaver, other: **cougar, bobcat, bushy tailed woodrat, and**

**mountain beaver**

fish: bass, salmon, trout, herring, shellfish, other:

unique habitats: talus slopes, caves, cliffs, oak woodlands, balds,  
mineral springs

- b. List any threatened and endangered species known to be on or near the site *include federal- and state-listed species*).

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	71353	SPOTTED OWL: Site:1065-MT BALDY WEST	THREATENED	ENDANGERED
1	71353	SPOTTED OWL: Site:741-SALT CREEK	THREATENED	ENDANGERED
1	71353	SPOTTED OWL: Site:94-BEAR VALLEY	THREATENED	ENDANGERED
2	89955	SPOTTED OWL: Site:1065-MT BALDY WEST	THREATENED	ENDANGERED
2	89955	SPOTTED OWL: Site:741-SALT CREEK	THREATENED	ENDANGERED
2	89955	SPOTTED OWL: Site:94-BEAR VALLEY	THREATENED	ENDANGERED

- c. Is the site part of a migration route? If so, explain.  
Pacific flyway Other migration route: Explain if any boxes checked:

**This proposal is located in the Pacific flyway. Migratory waterfowl use the Pacific flyway, but the harvest area for this proposal is not generally of the type used for resting or feeding by migratory waterfowl. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan.**

- d. Proposed measures to preserve or enhance wildlife, if any:  
 1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

Species/Habitat: **Multi-species**

Protection Measures: **Professionally designed roads reduce potential water quality impacts for downstream aquatic and riparian wildlife. Grass seeding exposed soils should protect water quality**

and provide forage. Large diameter leave trees will enhance wildlife habitat value of the future stand. RMZs and WMZs along the Type 3 and 4 streams and associated wetlands will protect water quality, provide mature forest habitat, and maintain habitat for fish, amphibians, and other riparian obligate species.

Species /Habitat: **marbled murrelet**

Protection Measures: **Potential impacts to marbled murrelets were analyzed. To avoid disturbance, additional seasonal protection measures are necessary on the northeast portion of Place Pit that is within 100 meters from an occupied site. Approximately four acres in the east portion of Unit 2 lacks forest inventory and was designated as requiring biological consultation to evaluate its value as a potential component of DNR's long-term murrelet conservation strategy. It was determined that the area in question is not high-quality murrelet habitat and was appropriate to include in the proposal.**

Species /Habitat: **northern spotted owl**

Protection Measures: **Potential impacts to owls were minimized and mitigated by implementing HCP procedures statewide. Harvest areas are non-habitat and are located out of the best 70-acre core for Salt Creek, Bear Creek, and Mt Baldy West.**

- e. List any invasive animal species known to be on or near the site.

**No cataloged invasive species are known to use the site.**

## 6. Energy and natural resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

**Does not apply.**

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

**Does not apply.**

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

**Does not apply.**

## 7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

**Minimal hazards incidental to operation of heavy machinery, such as the risk of fire or small amounts of oil and other lubricants, may be accidentally discharged as a result of heavy equipment use.**

- 1) Describe any known or possible contamination at the site from present or past uses.

**None.**

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

**None.**

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

**Fuel for equipment will be used and may be stored on site.**

- 4) Describe special emergency services that might be required.

**Pump trucks and/or pump trailers will be required on site during fire season. In the event of a lubricant spill the Contractor will contact DNR and the Department of Ecology and follow proper clean up requirements.**

- 5) Proposed measures to reduce or control environmental health hazards, if any:

**Contract language will require that preventative measures be taken to avoid on-site disposal, or spilling of hazardous materials. The reporting and cleanup of any spills of petroleum based products or other waste will also be required.**

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

**None.**

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

**Minimal noise levels associated with logging operations and truck traffic during working hours.**

- 3) Proposed measures to reduce or control noise impacts, if any:

**None.**

**8. Land and shoreline use**

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. (*Site includes the complete proposal, e.g. rock pits and access roads.*)

**Commercial forest.**

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

**Proposal site is forest land. None of the proposal will be converted to other uses.**

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

**No.**

- c. Describe any structures on the site.

**None.**

- d. Will any structures be demolished? If so, what?

**No.**

- e. What is the current zoning classification of the site?

**Commercial forest.**

- f. What is the current comprehensive plan designation of the site?

**Forest management.**

- g. If applicable, what is the current shoreline master program designation of the site?

**Does not apply.**

- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

**No.**

- i. Approximately how many people would reside or work in the completed project?

**None.**

- j. Approximately how many people would the completed project displace?

**None.**

- k. Proposed measures to avoid or reduce displacement impacts, if any:

**None.**

- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

**None.**

- m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

**None.**

## **9. Housing**

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

**Does not apply.**

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

**Does not apply.**

- c. Proposed measures to reduce or control housing impacts, if any:

**Does not apply.**

**10. Aesthetics**

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

**Does not apply.**

- b. What views in the immediate vicinity would be altered or obstructed?

**Immediate views would be extended within the harvest areas due to a reduction in the number of trees.**

- 1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*

No  Yes, viewing location:

**Unit 1 can be viewed from residences along a portion of State Route 112.**

- 2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*

No  Yes, scenic corridor name:

**State Route 112**

- 3) *How will this proposal affect any views described in 1) or 2) above?*

**The remote views noted above will consist of scattered voids in the tree canopy coverage created by timber harvest until newly planted trees grow and fill in voids.**

- c. Proposed measures to reduce or control aesthetic impacts, if any:

**694 trees have been scattered or clumped throughout the variable retention harvest units to help with aesthetics. See B.4.b. for details.**

**11. Light and glare**

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

**Lights from vehicles will be present during morning and evening operations, especially during winter months.**

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

**No.**

- c. What existing off-site sources of light or glare may affect your proposal?

**None.**

- d. Proposed measures to reduce or control light and glare impacts, if any:

**None.**

12. **Recreation**

- a. What designated and informal recreational opportunities are in the immediate vicinity?

**Hiking, hunting.**

- b. Would the proposed project displace any existing recreational uses? If so, describe.

**Will temporarily restrict use of the Olympic Discovery Trail and other recreational activities during active operations.**

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

**Olympic Discovery Trail will be closed in Unit 1 during operations and will be restored afterward.**

13. **Historic and cultural preservation**

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

**No. This proposal was screened for potential archaeological sites or artifacts using the P&T special concerns report, historical GLO maps, and during the pre-sales phase.**

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

**No.**

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

**Not applicable.**

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

**Not applicable.**

14. **Transportation**

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

**This proposal is served by State Route 112, the PA-J-4000 road, and the PA-J-4030 road.**

- 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

**No.**

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

**No. The approximate driving distance to a transit stop is 2.0 miles via the Wasankari and PA-J-4000 Roads.**

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

**None.**

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

**See A.11.c for new construction and reconstruction. The last 440 feet of the PA-J-4020 road will be abandoned at the end of operations. The first 2740 feet of the PA-J-4000 is on private property and will have one curve slightly re-aligned during pre-haul maintenance. In addition, all forest roads used during operations will have pre-haul and post-haul maintenance.**

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

**There may minor disruption to local traffic during re-alignment/pre-haul maintenance of the PA-J-4000 road and later during rock/timber haul.**

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

**No.**

How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

**A minor number of trips will be generated in association with normal land management activity.**

- f. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

**No.**

- g. Proposed measures to reduce or control transportation impacts, if any:

**None.**

#### **15. Public services**

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
- b. **No.**
- c. Proposed measures to reduce or control direct impacts on public services, if any.

**None.**

#### **16. Utilities**

a. Check utilities currently available at the site:

- electricity  natural gas  water  refuse service  telephone  sanitary sewer  
 septic system  other:

**Does not apply.**

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

**Does not apply.**

**C. SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Name of signee Gary McLaughlin

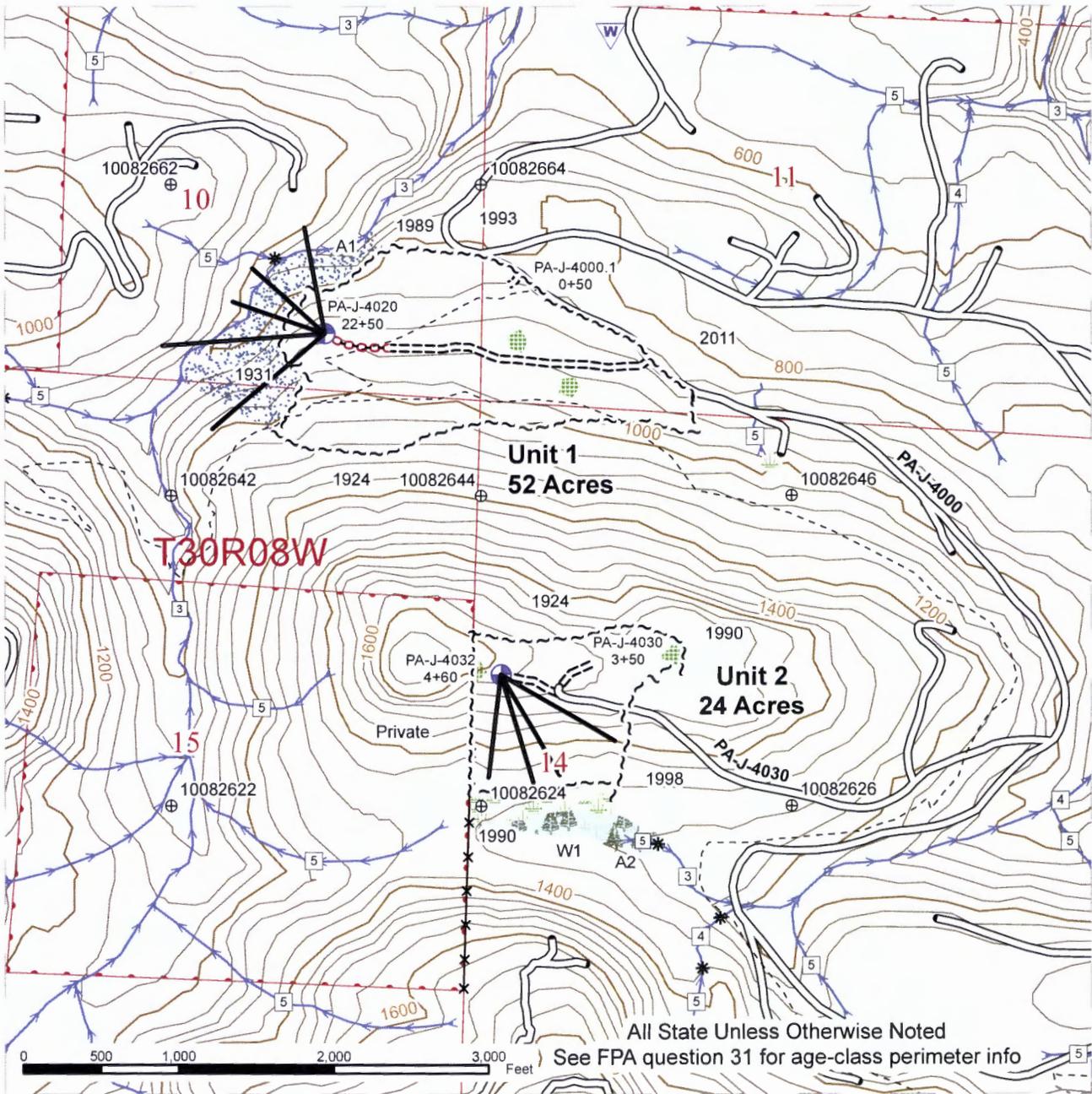
Position and Agency/Organization Unit Forester, Department of Natural Resources

Date Submitted: \_\_\_\_\_

**FOREST PRACTICES ACTIVITY MAP**

**SALE NAME:** KARI MAKWA SORTS  
**APPLICATION #:** None

**COUNTY(S):** CLALLAM  
**TOWNSHIP(S):** T30R08W



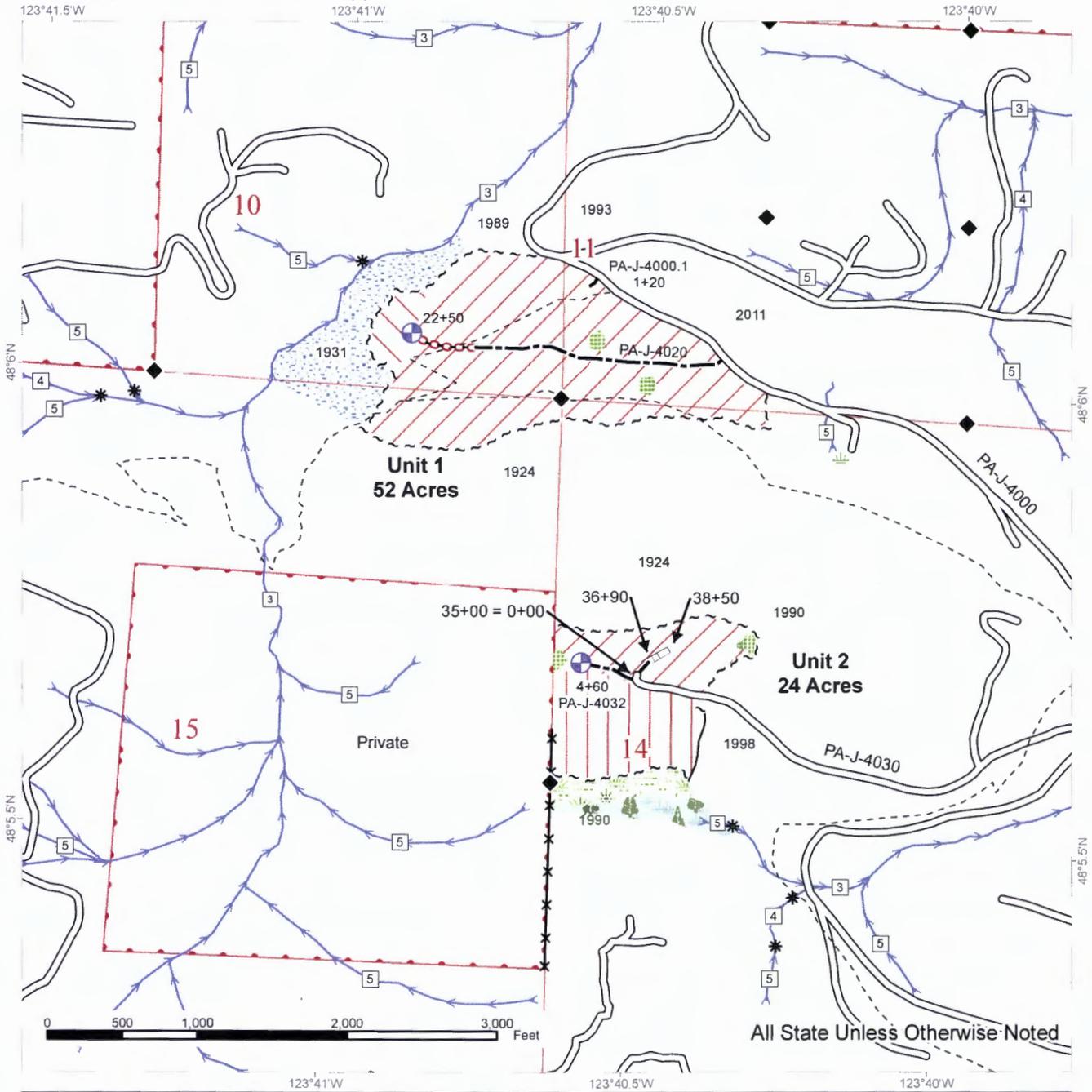
~ ~ ~ Timber Sale Boundary Tags	— Cable Area	Wetland Mgt Zone
Existing Road	⊕ Cable Landing	Forested Wetland
==== New Construction	Wetland	Riparian Mgt Zone
⊕⊕⊕ Required Abandonment	Waste Area	Leave Tree Area
--- Olympic Discovery Trail	Streams	DNR Managed Lands
* * * Fence	□ Stream Type	
	* Stream Type Break	



**TIMBER SALE MAP**

**SALE NAME:** KARI MAKWA SORTS  
**AGREEMENT #:** 93647  
**TOWNSHIP(S):** T30R08W  
**TRUST(S):** State Forest Transfer(1)

**REGION:** Olympic Region  
**COUNTY(S):** CLALLAM  
**ELEVATION RGE:** 754-1617



All State Unless Otherwise Noted

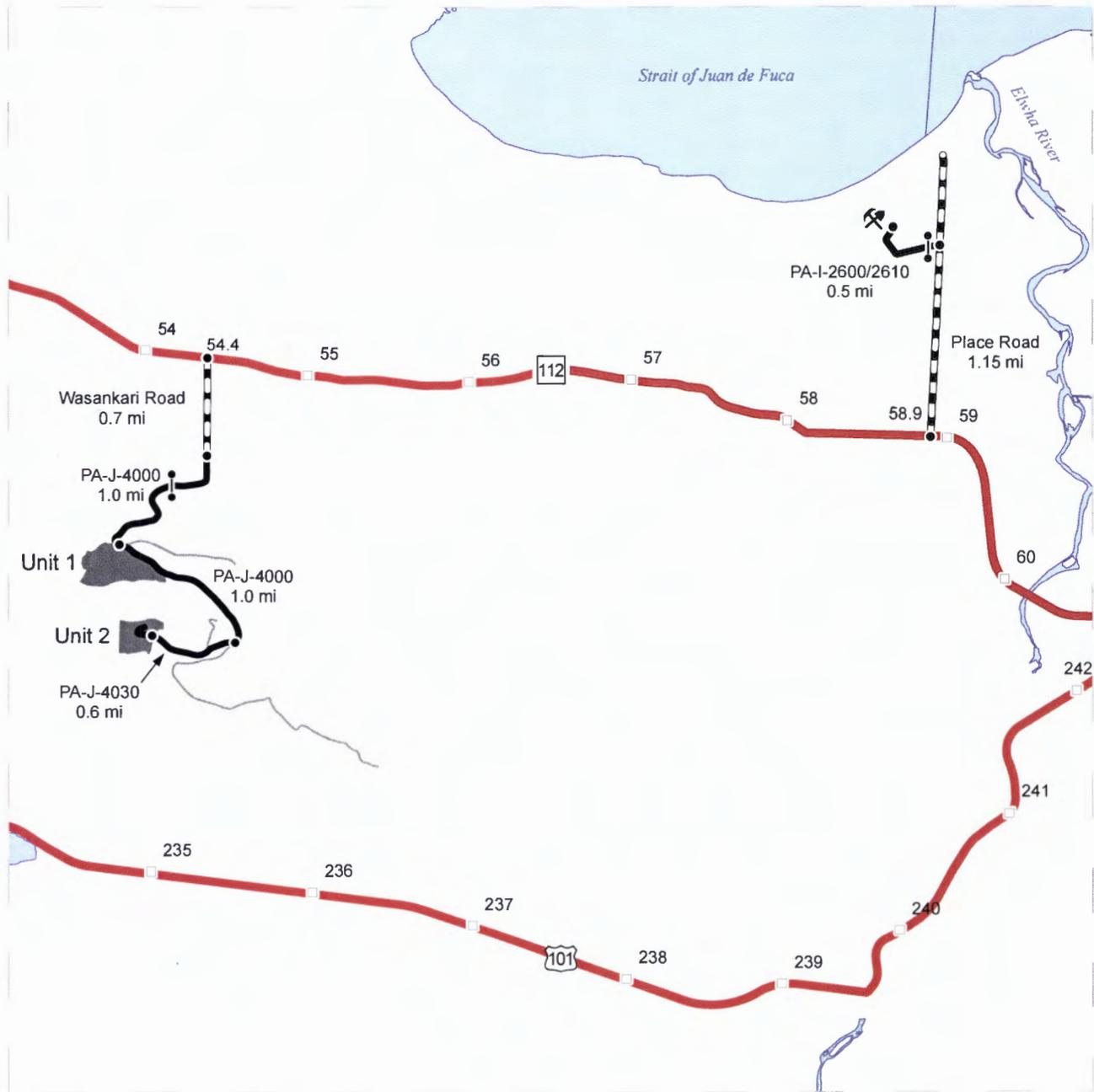
Cable and/or Self-Leveling Shovel	Required Abandonment	Stream
Cable Only	Sale Boundary Tags	Stream Type
Ground and/or Cable	Reprod	Stream Type Break
Cable Landing	Leave Tree Area	Fence
Existing Roads	Riparian Mgt Zone	Monumented Corner
Optional Construction	Forested Wetland	Olympic Discovery Trail
Optional Reconstruction	Wetland Mgt Zone	



**DRIVING MAP**

**SALE NAME:** KARI MAKWA SORTS  
**AGREEMENT#:** 93647  
**TOWNSHIP(S):** T30R08W  
**TRUST(S):** State Forest Transfer(1)

**REGION:** Olympic Region  
**COUNTY(S):** CLALLAM  
**ELEVATION RGE:** 754-1617



- Timber Sale Unit
- Highway
- Haul Route
- Other Route
- County Road
- Milepost Markers
- Gate
- Distance Indicator
- Place Pit

**DRIVING DIRECTIONS:**

**Unit 1** - Drive to milepost 54.4 on State Route 112 and turn south onto Wasankari Road. Drive 0.7 miles to the end of the county road and the start of the PA-J-4000 road. Drive 1.0 miles to Unit 1. AA-1 gate on PA-J-4000 road.

**Unit 2** - From Unit 1, drive another 1.0 miles to the PA-J-4030 road. Turn west and continue 0.6 miles to Unit 2.

**Place Pit** - Drive to milepost 58.9 on State Route 112 and turn north onto Place Road. Drive 1.15 miles and turn west onto the PA-I-2600/2610 road. Continue 0.5 miles to the pit. AA-1 gate on PA-I-2600/2610 road.

